Cluster –II: Common with B.Tech in (a) Computer Sci. & Engg. (b) Information Technology (c) Electronics & Communication Engg. (d) Electrical Engineering (e) Electrical & Electronics Engineering (f) Electronics Engg.

Bachelor of Technology in Computer Sci. & Engg. (Credit Based)

KURUKSHETRA UNIVERSITY, KURUKSHETRA

Scheme of Studies/Examination

Semester I (w.e.f. session 2022-2023)

S.No.	Course No./ Code	Subject	L:T:P	Hours/ Week	Credits	Examination Schedule (Marks)				Duration of exam (Hours)
						Major Test	Minor Test	Practical	Total	
1A	BS-115A	Semiconductor Physics	3:1:0	4	4	75	25	0	100	3
1B	BS-101A	Chemistry	3:1:0	4	4	75	25	0	100	3
2A	ES-105A	Programming for Problem Solving	3:0:0	3	3	75	25	0	100	3
2B	HM-101A	English	2:0:0	2	2	75	25	0	100	3
3	BS-133A	Calculus & Linear Algebra	3:1:0	4	4	75	25	0	100	3
4A	ES-109A	Engineering Graphics & Design	1:2:0	3	3	75	25	0	100	3
4B	ES-111LA	Manufacturing Processes Workshop	0:0:3	3	1.5	-	40	60	100	3
5A	BS-141A	Biology	2:1:0	3	3	75	25	0	100	3
5B	ES-101A	Basic Electrical Engineering	4:1:0	5	5	75	25	0	100	3
6A	BS-117LA	Semiconductor Physics Lab	0:0:3	3	1.5	--	20	30	50	3
6B	BS-103LA	Chemistry Lab	0:0:3	3	1.5	--	20	30	50	3
7A	ES-107LA	Programming for Problem Solving Lab	0:0:2	2	1	--	20	30	50	3
7B	ES-103LA	Basic Electrical Engineering Lab	0:0:2	2	1	--	20	30	50	3
8A	ES-113LA	Engineering Graphics & Design Practice	0:0:3	3	1.5	--	20	30	50	3
8B	HM-103LA	Language Lab	0:0:2	2	1	--	20	30	50	3
		Total	12:5:8/ 12:3:10	25/25	21.0/ 20.0	375/ 300	185/ 200	90/ 150	650A/ 650B	

Note: A branch will study either the subjects corresponding to Sr. No. Marked A or corresponding to Sr. No. marked B in one particular semester.
Induction Program (Three weeks duration) is a part of scheme of first year in 1st semester for all branches.

Cluster –II: Common with B.Tech in (a) Computer Sci. & Engg. (b) Information Technology (c) Electronics & Communication Engg. (d) Electrical Engineering (e) Electrical & Electronics Engineering (f) Electronics Engg.

Bachelor of Technology in Computer Sci. & Engg. (Credit Based)
KURUKSHETRA UNIVERSITY, KURUKSHETRA
Scheme of Studies/Examination
Semester II (w.e.f. session 2022-2023)

S.No.	Course No./Code	Subject	L:T:P	Hours/ Week	Credits	Examination Schedule(Marks)				Duration of exam (Hours)
						Major Test	Minor Test	Practical	Total	
1A	BS-115A	Semiconductor Physics	3:1:0	4	4	75	25	0	100	3
1B	BS-101A	Chemistry	3:1:0	4	4	75	25	0	100	3
2A	ES-105A	Programming for Problem Solving	3:0:0	3	3	75	25	0	100	3
2B	HM-101A	English	2:0:0	2	2	75	25	0	100	3
3	BS-134A	Probablity & Statistics	3:1:0	4	4	75	25	0	100	3
4A	ES-109A	Engineering Graphics & Design	1:2:0	3	3	75	25	0	100	3
4B	ES-111LA	Manufacturing Processes Workshop	0:0:3	3	1.5	-	40	60	100	3
5A	BS-141A	Biology	2:1:0	3	3	75	25	0	100	3
5B	ES-101A	Basic Electrical Engineering	4:1:0	5	5	75	25	0	100	3
6A	BS-117LA	Semiconductor Physics Lab	0:0:3	3	1.5	--	20	30	50	3
6B	BS-103LA	Chemistry Lab	0:0:3	3	1.5	--	20	30	50	3
7A	ES-107LA	Programming for Problem Solving Lab	0:0:2	2	1	--	20	30	50	3
7B	ES-103LA	Basic Electrical Engineering Lab	0:0:2	2	1	--	20	30	50	3
8A	ES-113LA	Engineering Graphics & Design Practice	0:0:3	3	1.5	--	20	30	50	3
8B	HM-103LA	Language Lab	0:0:2	2	1	--	20	30	50	3
		Total	12:5:8/ 12:3:10	25/ 25	21.0/ 20.0	375/ 300	185/200	90/150	650A/ 650B	

Note: A branch will study either the subjects corresponding to Sr. No. Marked A or corresponding to Sr. No. marked B in one particular semester.

B. Tech in Artificial Intelligence and Machine Learning
Scheme of Studies/Examination
Semester III
(w.e.f. session 2023-2024)

S. No.	Course No.	Subject	L:T:P	Hour/ Week	Credits	Examination Schedule				Duration of Exam (Hrs.)
						Major Test	Minor Test	Practical	Total	
1	PC-AI-201A	Data Structure & Applications	3:0:0	3	3	75	25	0	100	3
2	PC-AI-203A	Introduction to Object oriented Programming	3:0:0	3	3	75	25	0	100	3
3	PC-AI-205A	Digital Electronics	3:0:0	3	3	75	25	0	100	3
4	PC-AI-207A	Statistical Analysis for AI & ML	3:0:0	3	3	75	25	0	100	3
5	PC-AI-209A	Introduction to AI	3:0:0	3	3	75	25	0	100	3
6	HM-902A	Business Intelligence & Entrepreneurship	3:0:0	3	3	75	25	0	100	3
7	PC-AI-211LA	Data Structure Lab	0:0:4	4	2	0	40	60	100	3
8	PC-AI-213LA	Object oriented Programming Lab	0:0:4	4	2	0	40	60	100	3
9	PC-AI-215LA	AI &ML workshop-I	0:0:4	4	2	0	40	60	100	3
		Total		**30**	**24**	**450**	**270**	**180**	**900**	
11	SIM-201A*	Seminar on Summer Internship	2:0:0	2	0	0	50	0	50	

***Note: SIM-201A* is a mandatory credit-less course in which the students will be evaluated for the Summer Internship (training) undergone after 2nd semester and students will be required to get passing marks to qualify.**

1. Regarding the course SIM-201A* (Seminar on Summer Internship) is a part of the curriculum of B.Tech – 2nd Semester. Since the students are admitted directly through LEET (Lateral Entrance Examination Test) in the B.Tech. – 3rd Semester, therefore, they need not to undergo this course.
2. In the D.M.C for LEET students it may be mentioned
   *NOT APPLICABLE
   * ADMITTED UNDER LEET

B. Tech in Artificial Intelligence and Machine Learning
Scheme of Studies/Examination
Semester IV
(w.e.f. session 2023-2024)

S. No.	Course No.	Subject	L:T:P	Hours/ Week	Credits	Examination Schedule				Duration of Exam (Hrs.)
						Major Test	Minor Test	Practical	Total	
1	PC-AI-202A	Programming Language	3:0:0	3	3	75	25	0	100	3
2	PC-AI-204A	Operating Systems	3:0:0	3	3	75	25	0	100	3
3	PC-AI-206A	Database Management System	3:0:0	3	3	75	25	0	100	3
4	PC-AI-208A	Intelligent Systems	3:0:0	3	3	75	25	0	100	3
5	PC-AI-210A	Machine Learning	3:0:0	3	3	75	25	0	100	3
6	PC-AI-212AL	Operating Systems Lab	0:0:4	4	2	0	40	60	100	3
7	PC-AI-214AL	Database Management System Lab	0:0:4	4	2	0	40	60	100	3
8	PC-AI-216AL	AI & ML workshop-II	0:0:4	4	2	0	40	60	100	3
		Total		**27**	**21**	**375**	**245**	**180**	**800**	
9	MC-901A	Environment Sciences	3:0:0	3	0	75	25	0	100	3

***MC-901A is a mandatory credit-less course and student has to get passing marks in order to qualify for the award of B.Tech. Degree.**

B. Tech in Artificial Intelligence and Machine Learning

Scheme of Studies/Examination

Semester V

(w.e.f. session 2024-2025)

S. No.	Course No.	Subject	L:T:P	Hours /Week	Credit	Examination Schedule				Duration of Exam (Hrs.)
						Major Test	Minor Test	Practical	Total	
1	PC-AI-301A	Software Engineering	3:0:0	3	3	75	25	0	100	3
2	EEE-309A	Microprocessor	3:0:0	3	3	75	25	0	100	3
3	PC-AI-303A	Design and Analysis of Algorithms	3:0:0	3	3	75	25	0	100	3
4	PC-AI-305A	Theory of Computation	3:0:0	3	3	75	25	0	100	3
5	PC-AI-307A	Neural network and Deep Learning	3:0:0	3	3	75	25	0	100	3
6	HTM-901A	Universal Human values: Understanding Harmony	2:0:0	2	2	75	25	0	100	3
7	EEE-315A	Microprocessor Lab	0:0:4	2	1	0	40	60	100	3
8	PC-AI-309LA	Neural network and Deep Learning Lab	0:0:4	4	2	0	40	60	100	3
		Total		**25**	**20**	**450**	**230**	**120**	**800**	
9	MC-904A	Energy Resources & Management	3:0:0	3	0	0	100	0	100	3
10	SIM-201A*	Seminar on Summer Internship	2:0:0	2	0	0	50	0	50	

*Note: SIM-301*is a mandatory credit-less course in which the students will be evaluated for the Summer Internship undergone after 4th semester and students will be required to get passing marks to qualify.

B. Tech in Artificial Intelligence and Machine Learning

Scheme of Studies/Examination

Semester VI

(w.e.f. session 2024-2025)

S. No.	Course Code	Subject	L:T:P	Hours /Week	Credit	Examination Schedule				Duration of Exam (Hrs)
						Major Test	Minor Test	Practical	Total	
1	PC-AI-302A	Big Data Analysis	3:0:0	3	3	75	25	0	100	3
2	PC-AI-304A	Optimization Techniques in ML	3:0:0	3	3	75	25	0	100	3
3	PE	Elective-I	3:0:0	3	3	75	25	0	100	3
4	PE	Elective-II	3:0:0	3	3	75	25	0	100	3
5	OE	Open Elective-I	3:0:0	3	3	75	25	0	100	3
6	PROJ-PC-AI-306A	Project-1	0:0:6	6	3	0	40	60	100	3
7	PC-AI-308LA	Big Data Analysis Lab	0:0:4	4	2	0	40	60	100	3
8	PC-AI-310LA	Optimization Techniques in ML Lab	0:0:4	4	2	0	40	60	100	3
Total				**29**	**22**	**375**	**245**	**180**	**800**	

PE-Elective-I	**PE- Elective-II**
Human AI interaction: PE-AI-S306A	Natural Language Processing: PE-AI-S310A
Simulation & Modelling: PE-CS-S310A	Computer vision Techniques: PE-AI-S312A
Bioinformatics: PE-AI-S308A	Computer Architecture: PE-AI-S314A

OE-AI Open Elective-I
Soft Skills and Interpersonal Communication: OE-CS-302A
Data Mining: OE-AI-304A
Software Project Management: OE-AI-306A

Note: Students be encouraged to go to 6-8 weeks summer internships mandatory during the summer break after the completion of sixth semester exams.

The course of both (PE) & (OE) will be offered at 1/3rd strength or 20 students (whichever is smaller) of the section.

B. Tech in Artificial Intelligence and Machine Learning
Scheme of Studies/Examination
Semester VII
(w.e.f. session 2025-2026)

S. No.	Course Code	Subject	L:T:P	Hours/Week	Credits	Examination Schedule				Duration of Exam (Hrs)
						Major Test	Minor Test	Practical	Total	
1	PE	Elective-III	3:0:0	3	3	75	25	0	100	3
2	PE	Elective-IV	3:0:0	3	3	75	25	0	100	3
3	OE	Open Elective-II	3:0:0	3	3	75	25	0	100	3
4	PROJ-PC-AI-401A	Project-II	0:0:12	12	6	0	40	60	100	3
5	PE- AI-LA	Elective-III Lab	0:0:2	2	1	0	40	60	100	3
6	PE-AI- LA	Elective-IV Lab	0:0:2	2	1	0	40	60	100	3
Total				**21**	**17**	**225**	**115**	**180**	**600**	
7	SIM-401*	Seminar on Summer Internship	2:0:0	2	0	0	50	0	50	

PE- Elective-III	**PE- Elective-IV**
Computer Graphics and Animation: PE-AI-403A	Problem Solving, Reasoning in Robotics: PE-AI-409A
Signal and System: PE-AI-405A	Cloud Computing: PE-CS-A402A
Speech and Natural Processing: PE-CS-D407A	Introduction to R Programming: PE-AI-411A
OE- Elective-II	
Cyber Law & Ethics: OE-CS-401A	
Android Application &Development: OE-AI-403A	
Software Engineering: OE-AI-405A	

The course of both (PE) & (OE) will be offered at 1/3rd strength or 20 students (whichever is smaller) of the section.

***Note:** SIM-401* **is** a mandatory credit-less course in which the students will be evaluated for Summer Internship undergone after 6th semester and students will be required to get passing marks to qualify.

B. Tech in Artificial Intelligence and Machine Learning
Scheme of Studies/Examination
Semester VIII
(w.e.f. session 2025-2026)

S. No.	Course Code	Subject	L:T:P	Hours/Week	Credits	Examination Schedule (Marks)				Duration of Exam (Hrs)
						Major Test	Minor Test	Practical	Total	
1	PE	Elective-V	3:0:0	3	3	75	25	0	100	3
2	OE-AI	Open Elective-III	2:0:0	2	2	75	25	0	100	3
3	OE-AI	Open Elective-IV	2:0:0	2	2	75	25	0	100	3
4	PROJ-PC-AI-402A	Project-III	0:0:12	12	6	0	40	60	100	3
5	PE-AI-LA	Elective-VI Lab	0:0:4	4	2	0	40	60	100	3
		Total		**23**	**15**	**225**	**155**	**120**	**500**	

The course of both (PE-AI) & (OE-AI) will be offered at 1/3rd strength or 20 students (whichever is smaller) of the section.

PE-Elective-V	
Internet of Things:PE-AI-402A	
Data Handling & Visualization:PE-AI-404A	
Software Reliability: PE-CS-A406A	
OE-AI Elective-III	**OE-AI Elective-IV**
Intellectual Property Rights: OE-AI-402A	Web and Internet Technology: OE-AI-408A
AI and Expert System: OE-AI-404A	Image Processing: OE-AI-410A
Cluster Computing: OE-AI-406A	Distributed Operating System: OE-AI-412A

BS-115 A	Semiconductor Physics						
L	T	P	Credit	Major Test	Minor Test	Total	Time
3	1	-	4	75	25	100	3h

Purpose	**To introduce the fundamentals of solid state physics and its applications to the students.**
	Course Outcomes
CO1	**To make the students aware of basic terminology of crystal structure.**
CO 2	**Introduce the elementary quantum mechanics, which will be useful in understanding the concepts of solid state physics.**
CO 3	**Discussion of classical free electron theory, quantum theory and Band theory of solids.**
CO 4	**Basics and applications of semiconductors.**

Unit - I

Crystal Structure: Crystalline and Amorphous solids, Crystal Structure: lattice translation vector, symmetry operations, space lattice, basis; Unit cell and Primitive cell, Fundamental types of lattices: two-dimensional and three dimensional Bravais lattices; Characteristics of Unit cells: Simple Cubic (SC), Body Centred Cubic (BCC), Face Centred Cubic (FCC), Hexagonal Close Packed (HCP) structure; Simple crystal structures: Sodium Chloride, Cesium Chloride, Diamond, Cubic Zinc Sulfide; Miller Indices, Bonding in Solids, Point defects in crystals: Schottky and Frenkel defects.

Unit – II

Quantum Theory: Need and origin of Quantum concept, Wave-particle duality, Phase velocity and group velocity, Uncertainty Principle and Applications; Schrodinger's wave equation: time-dependent and time –independent; Physical Significance of wave function ψ.

Unit – III

Free Electron Theory: Classical free electron theory: electrical conductivity in metals, thermal conductivity in metals, Wiedemann-Franz law, success and drawbacks of free electron theory; Quantum free electron theory: wave function, eigen values; Fermi-Dirac distribution function, Density of states, Fermi energy and its importance, Thermionic Emission (qualitative).

Band theory of Solids: Bloch theorem, Kronig-Penney Model (qualitative), E versus k diagram, Brillouin Zones, Concept of effective mass of electron, Energy levels and energy bands, Distinction between metals, insulators and semiconductors, Hall effect and its Applications.

Unit –IV

Semiconductors: Conduction in Semiconductors, Intrinsic Semiconductors: Conductivity of charge carriers, Carrier concentration in intrinsic semiconductors; Extrinsic Semiconductors: n-type semiconductors, p-type semiconductors, charge carrier concentration in extrinsic semiconductors.

Semiconductor Devices: The p-n junction, Current-voltage characteristics of p-n junction; The Transistor: Bipolar Junction Transistor (BJT), Field Effect Transistor (FET), Metal-Semiconductor Junction (Ohmic and Schottky); Semiconductor Laser.

Suggested Books:

1. Applied Physics for Engineers, Wiley India Pvt. Ltd.
2. Introduction to Solid State Physics, John Wiley & Sons. .
3. Concepts of Modern Physics (5th edition), Tata McGraw-Hill Publishing Company Limited.
4. Solid State Physics, New Age International (P) Limited.
5. A Textbook of Quantum Mechanics, McGraw Hill Education (India) Private Limited. Introduction to Nanotechnology, John Wiley & Sons.

Note: The paper setter will set the paper as per the question paper templates provided.

BS-117LA	Semiconductor Physics Lab						
L	T	P	Credit	Practical	Minor Test	Total	Time
-	-	3	1.5	30	20	50	3h
Purpose	To give the practical knowledge of handling the sophisticated instruments.						
Course Outcomes							
CO1	To make the students familiar with the working of semiconductor devices.						
CO2	To make the students familiar with the working of physics related phenomenon.						
CO3	To make the students familiar with the physics behind semiconductors.						
CO4	To make the students familiar with the physics behind magnetic materials.						

Note: Student will be required to perform at least 10 experiments out of the following list.

1. To study the V-I characteristics of a p-n diode.
2. To find the flashing and quenching potential of Argon and to find the capacitance of unknown capacitor.
3. To find the value of Planck's constant by using photoelectric cell.
4. To find the temperature coefficient of resistance by using Pt resistance thermometer by post office box.
5. To find the ionization potential of Argon/Mercury using a thyratron tube.
6. To study the variation of magnetic field with distance and to find the radius of coil by Stewart and Gee's apparatus.
7. To study the characteristics of (Cu-Fe, Cu-Constantan) thermocouple.
8. To find the value of Hall Coefficient of semiconductor.
9. To find the value of e/m for electrons by Helical method.
10. To find the band gap of intrinsic semiconductor using four probe method.
11. To calculate the hysteresis loss by tracing a B-H curve.
12. To find the frequency of ultrasonic waves by piezoelectric methods.
13. To verify Richerdson thermionic equation.

Suggested Books:

1. C. L. Arora, B. Sc. Practical Physics, S. Chand.
2. B.L. Worshnop and H, T, Flint, Advanced Practical Physics, KPH.
3. S.L. Gupta & V. Kumar, Practical Physics, Pragati Prakashan.

BS-101A	Chemistry						
L	T	P	Credit	Major Test	Minor Test	Total	Time
3	1	-	4	75	25	100	3h

Purpose	To familiarize the students with basic and applied concept in chemistry
	Course Outcomes
CO1	An insight into the atomic and molecular structure
CO2	Analytical techniques used in identification of molecules
CO3	To understand Periodic properties
CO4	To understand the spatial arrangement of molecules

UNIT - I

Atomic and molecular structure (10 lectures)

Molecular orbitals of diatomic molecules (N_2, O_2, CO) Equations for atomic and molecular orbitals. Energy level diagrams of diatomics. Pi-molecular orbitals of butadiene and benzene and aromaticity. Crystal field theory and energy level diagrams of $[Co(NH_3)_6]$, $[Ni(CO)_4]$, $[PtCl_2(NH_3)_2]$ and magnetic properties of metal complexes. Band structure of solids and the role of doping on band structures.

UNIT - II

Spectroscopic techniques and applications (8 lectures)

Principles of spectroscopy and selection rules. Electronic spectroscopy(basic concept). Fluorescence and its applications in medicine. Vibrational and rotational spectroscopy of diatomic molecules. Applications. Basic concepts of Nuclear magnetic resonance and magnetic resonance imaging, Diffraction and scattering.

UNIT - III

Use of free energy in chemical equilibria (4 lectures)

Thermodynamic functions: energy, entropy and free energy. Estimations of entropy and free energies. Free energy and emf. Cell potentials, the Nernst equation and applications.

Periodic properties (4 Lectures)

Effective nuclear charge, penetration of orbitals, variations of s, p, d and f orbital energies of atoms in the periodic table, electronic configurations, atomic and ionic sizes, ionization energies, electron affinity and electronegativity, polarizability, oxidation states, coordination numbers and geometries, hard soft acids and bases, molecular geometries (H_2O, NH_3, PCl_5, SF_6, CCl4, $Pt(NH_3)_2Cl_2$

UNIT - IV

Stereochemistry (6 lectures)

Representations of 3 dimensional structures, structural isomers and stereoisomers, configurations and symmetry and chirality, enantiomers, diastereomers, optical activity, absolute configurations and conformational analysis.

Organic reactions and synthesis of a drug molecule (4 lectures)

Introduction to reactions involving substitution, addition, elimination, oxidation, reduction, cyclization and ring openings. Synthesis of a commonly used drug molecule (paracetamol and Aspirin)

Suggested Books:

1) University chemistry, by B. M. Mahan, Pearson Education
2) Chemistry: Principles and Applications, by M. J. SienkoandR. A. Plane
3) Fundamentals of Molecular Spectroscopy, by C. N. Banwell
4) Engineering Chemistry (NPTEL Web-book), by B. L. Tembe, Kamaluddin and M. S.Krishnan
5) Physical Chemistry, by P. W. Atkins
6) Organic Chemistry: Structure and Function by K. P. C. Volhardt and N. E. Schore,5th Edition http://bcs.whfreeman.com/vollhardtschore5e/default.asp

Note: The paper setter will set the paper as per the question paper templates provided.

BS-103LA	Chemistry Lab						
L	T	P	Credit	Practical	Minor Test	Total	Time
-	-	3	1.5	30	20	50	3h
Purpose	To make student gain a practical work experience of chemical and its chemistry in industries.						
Course Outcomes							
CO 1	To familiarize the understanding of use of chemicals in different industries.						
CO 2	To learn working with various equipment available in industries.						
CO 3	To practice working on basic requirements based on chemistry.						
CO 4	To gain practical experience with physio-chemical based machines.						

LIST OF EXPERIMENTS

1. To Determine the surface tension of a given liquid
2. To determine the relative viscosity of a given liquid using Ostwald's viscometer
3. To identify the number of components present in a given organic mixture by thin layer chromatography
4. To determine the alkalinity of a given water sample
5. Determination of the strength of a given HCl solution by titrating it with standard NaOH solution using conductometer
6. Synthesis of a drug (paracetamol/Aspirin)
7. Determination of chloride content of a given water sample
8. To determine the calcium & magnesium or temporary & permanent hardness of a given water sample by EDTA method
9. To determine the total iron content present in a given iron ore solution by redox titration
10. Determination of the partition coefficient of a substance between two immiscible liquids
11. To find out the content of sodium, potassium in a given salt solution by Flame Photometer
12. To find out the λmax and concentration of unknown solution by a spectrophotometer
13. To find out the flash point and fire point of the given oil sample by Pensky Martin apparatus
14. To determine the amount of dissolved oxygen present in a given water sample
15. To find out the pour point and cloud point of a lubricating oil
16. Determination of the strength of a given HCl solution by titrating it with standard NaOH solution using pH meter
17. Using Redwood Viscometer find out the viscosity of an oil sample

Note: Atleast 9 experiments to be performed from the list.

ES-105A	Programming for Problem Solving						
L	T	P	Credit	Major Test	Minor Test	Total	Time
3	-	-	3	75	25	100	3h

Purpose	To familiarize the students with the basics of Computer System and C Programming
	Course Outcomes
CO 1	Describe the overview of Computer System and Levels of Programming Languages.
CO 2	Learn to translate the algorithms to programs (in C language).
CO 3	Learn description and applications of conditional branching, iteration and recursion.
CO 4	To use arrays, pointers and structures to formulate algorithms and programs.

UNIT – I

Overview of Computers: Block diagram and its description, Number systems, Arithmetic of number systems, Computer Hardware: Printers, Keyboard and Mouse, Storage Devices.

Introduction to programming language: Different levels of PL: High Level language, Assembly language, Machine language; Introduction to Compiler, Interpreter, Debugger, Linker, Loader, Assembler.

Problem Analysis: Problem solving techniques, Algorithms and Flowchart representation.

UNIT – II

Overview of C: Elements of C, Data types; Storage classes in C; Operators: Arithmetic, relational, logical, bitwise, unary, assignment and conditional operators, precedence & associativity of operators.

Input/output: Unformatted & formatted I/O function in C.

Control statements: if statement, switch statement; Repetition: for, while, and do-while loop; break, continue, go to statements.

UNIT – III

Arrays: Definition, types, initialization, processing an array, String handling.

Functions: Definition, prototype, parameters passing techniques, recursion, built-in functions, passing arrays to functions, returning arrays from functions.

UNIT – IV

Pointers: Declaration, operations on pointers, pointers and arrays, dynamic memory allocation, pointers and functions, pointers and strings.

Structure & Union: Definition, processing, passing structures to functions, use of union. Data files: Opening and closing a file, I/O operations on files.

Suggested Books:

1. Brian W. Kernighan Dennis Ritchie, "C Programming Language" Pearson Education India.
2. Subrata Saha, Subhodip Mukherjee: Basic Computation & Programming with 'C'-Cambridge University Press. 3.Ajay Mittal, "Programming in C - A Practical Approach", Pearson.
4. **E Balagurusamy :Programming in ANSI C,TMH Education.**
5. Pradip Dey and Manas Ghose, "Computer Fundamental and Programming in C", Oxford Pub.
6. ForouzanBehrouz, "Computer Science: A Structured Programming Approach Using C", Cengage Learning.
7. Ashok Kamthane, "Programming in C, 3e", Pearson Education India.. 8.Yashwant Kanetker, "Let us C", BPB Publications.
9. **A K Sharma, " Fundamentals of Computers & Programming" Dhanpat Rai Publications**
10. **Rajaraman V., "Computer Basic and C Programming", Prentice Hall of India Learning.**

Note: The paper setter will set the paper as per the question paper templates provided.

ES-107LA	Programming for Problem Solving Lab						
L	T	P	Credit	Practical	Minor Test	Total	Time
-	-	2	1	30	20	50	3h
Purpose	To Introduce students with problem solving using C Programming language						
Course Outcomes							
CO 1	To formulate the algorithms for simple problems						
CO 2	Implementation of arrays and functions.						
CO 3	Implementation of pointers and user defined data types.						
CO 4	Write individual and group reports: present objectives, describe test procedures and results.						

LIST OF PROGRAMS

1. Write a program to find the sum of individual digits of a positive integer.
2. Write a program to generate the first n terms of the Fibonacci sequence.
3. Write a program to generate all the prime numbers between 1 and n, where n is the input value given by the user.
4. Write a program to find the roots of a quadratic equation.
5. Write a function to generate Pascal's triangle.
6. Write a program for addition of Two Matrices
7. Write a program for calculating transpose of a matrix.
8. Write a program for Matrix multiplication by checking compatibility
9. Write programs to find the factorial of a given integer by using both recursive and non-recursive functions.
10. Write a function that uses functions to perform the count the lines, words and characters in a given text.
11. Write a program to explores the use of structures, union and other user defined variables
12. Write a program to print the element of array using pointers
13. Write a program to implement call by reference
14. Write a program to print the elements of a structure using pointers
15. Write a program to read a string and write it in reverse order
16. Write a program to concatenate two strings
17. Write a program to check that the input string is a palindrome or not.
18. Write a program which copies one file to another.
19. Write a program to reverse the first n characters in a file.

Note: At least 10 programs are to be performed & executed from the above list.

HM-101 A	English						
L	**T**	**P**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**-**	**-**	**2**	**75**	**25**	**100**	**3h**
Purpose	**To develop & enhance the industry related communication, interaction and discussion skills.**						
Course Outcomes							
CO 1	**Building up the vocabulary**						
CO 2	**Students will acquire basic proficiency in English including writing skills**						
CO 3	**Develop correct and better pronunciation through stress on word accent, intonation and weak forms.**						
CO 4	**Improve fluency in English and thereby respond confidently due to reduced communication apprehension.**						

UNIT- 1

Vocabulary Building

1.1 The concept of Word Formation

1.2 Root words from foreign languages and their use in English

1.3 Acquaintance with prefixes and suffixes from foreign languages in English to form derivatives.

1.4 Synonyms, antonyms, and standard abbreviations.

UNIT- 2

Basic Writing Skills

2.1 Sentence Structures

2.2 Use of phrases and clauses in sentences

2.3 Importance of proper punctuation

2.4 Creating coherence

2.5 Organizing principles of paragraphs in documents

2.6 Techniques for writing precisely

UNIT- 3

Identifying Common Errors in Writing

3.1 Subject-verb agreement

3.2 Noun-pronoun agreement

3.3 Misplaced modifiers

3.4 Articles

3.5 Prepositions

3.6 Redundancies

3.7 Clichés

UNIT- 4

Nature and Style of sensible Writing

4.1 Describing

4.2 Defining

4.3 Classifying

4.4 Providing examples or evidence

4.5 Writing introduction and conclusion

4.6 Comprehension

4.7 Précis Writing

4.8 Essay Writing

Suggested Books:

(i) Practical English Usage. Michael Swan. OUP. 1995.

(ii) Remedial English Grammar. F.T. Wood.
Macmillan.2007 (iii)On Writing Well. William Zinsser.
Harper Resource Book. 2001
(iv) Study Writing. Liz Hamp-Lyons and Ben Heasly. Cambridge University Press. 2006.
(v) Communication Skills. Sanjay Kumar and Pushp Lata. Oxford University Press. 2011.
(vi) Exercises in Spoken English. Parts. I-III. CIEFL, Hyderabad. Oxford University Press

Note: The paper setter will set the paper as per the question paper templates provided.

HM-103 LA	Language Lab						
L	**T**	**P**	**Credit**	**Practical**	**Minor Test**	**Total**	**Time**
-	**-**	**2**	**1**	**30**	**20**	**50**	**3h**
Purpose	**To provide students a platform to enhance English language skills, communication skills and to practice soft skills.**						
Course Outcomes							
CO 1	**To equip the students with good communication skills,**						
CO 2	**To emphasis the need of English in technical world.**						
CO 3	**To enhance the confidence among students.**						
CO 4	**To improve presentation skills.**						

LIST OF EXPERIMENTS

1. Listening Comprehension
2. Pronunciation, Intonation, Stress and Rhythm
3. Common Everyday Situations: Conversations and Dialogues
4. Communication at Workplace
5. Interviews
6. Formal Presentations

BS-133 A	Calculus and Linear Algebra						
L	T	P	Credit	Major Test	Minor Test	Total	Time
3	1	-	4	75	25	100	3 h
Purpose	To familiarize the prospective engineers with techniques in calculus, sequence & series, multivariable calculus, and linear algebra.						
Course Outcomes							
CO1	To introduce the idea of applying differential and integral calculus to notions of improper integrals. Apart from some applications it gives a basic introduction on Beta and Gamma functions.						
CO 2	To introduce the fallouts of Rolle's Theorem that is fundamental to application of analysis to Engineering problems.						
CO 3	To develop the essential tool of matrices and linear algebra in a comprehensive manner.						
CO 4	To familiarize the student with vector space as an essential tool in most branches of engineering.						

UNIT-I

Calculus:

Evaluation of definite and improper integrals: Beta and Gamma functions and their properties; Applications of definite integrals to evaluate surface areas and volumes of revolutions.

Rolle's Theorem, Mean value theorems, Indeterminate forms and L'Hospital's rule.

UNIT-II

Matrices

Matrices, vectors: addition and scalar multiplication, matrix multiplication; Linear systems of equations, linear Independence, rank of a matrix, determinants, Cramer's Rule, inverse of a matrix, Gauss elimination and Gauss-Jordan elimination.

UNIT-III

Vector spaces

Vector Space, linear dependence of vectors, basis, dimension; Linear transformations (maps), range and kernel of a linear map, rank and nullity, Inverse of a linear transformation, rank nullity theorem, composition of linear maps.

UNIT-IV

Vector spaces

Eigenvalues, eigenvectors, symmetric, skew-symmetric, and orthogonal Matrices, eigen bases. Diagonalization; Inner product spaces.

Suggested Books:

1.ErwinKreyszig, Advanced Engineering Mathematics, 9th Edition, John Wiley & Sons, 2006.

2. Erwin Kreyszig and Sanjeev Ahuja, Applied Mathematics- I, Wiley India Publication, Reprint 2015.

3. G.B. Thomas and R.L. Finney, Calculus and Analytic geometry, 9th Edition, Pearson, Reprint, 2002.

4. Veerarajan T., Engineering Mathematics for first year, Tata McGraw-Hill, New Delhi, 2008.

5. Ramana B.V., Higher Engineering Mathematics, Tata McGraw Hill New Delhi, 11th Reprint, 2010.

6. D. Poole, Linear Algebra: A Modern Introduction, 2nd Edition, Brooks/Cole, 2005.

7. N.P. Bali and Manish Goyal, A text book of Engineering Mathematics, Laxmi Publications, Reprint, 2008.

8. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, 36th Edition, 2010.

9. V. Krishnamurthy, V.P. Mainra and J.L. Arora, An introduction to Linear Algebra, Affiliated East–West press, Reprint 2005.

10. S. Lipschutz and M. Lipson, Schaum's outline of Linear Algebra,, McGraw Hill Education; 3 edition (1 July 17).

Note: The paper setter will set the paper as per the question paper templates provided.

BS-134 A	Probability & Statistics						
L	T	P	Credit	Major Test	Minor Test	Total	Time
4	1	-	4.5	75	25	100	3 h
Purpose	To familiarize the prospective students with techniques of probability and statistics.						

Course Outcomes	
CO1	Probability theory provides models of probability distributions (theoretical models of the observable reality involving chance effects) to be tested by statistical methods which has various engineering applications, for instance, in testing materials, control of production processes, robotics, and automatization in general, production planning and so on.
CO 2	To develop the essential tool of statistics in a comprehensive manner.
CO 3	To familiarize the student with the problem of discussing universe of which they in which complete enumeration is impractical, tests of significance play a vital role in their hypothesis testing.
CO 4	To familiarize the students with the various curve analysis methods and test for hypothesis verification.

UNIT-I

Basic Probability: Introduction, additive law of probability, Conditional Probability, Independent Events, Bayes' Theorem.

Random Variables: Discrete random variables, probability distribution, Probability mass function and distribution function, Expectation, Moments, Variance and standard deviation of discrete random variables.

UNIT-II

Continuous Probability distribution:

Continuous random variables, probability distribution, Probability density function and distribution function, Expectation, Moments, Variance and standard deviation of Continuous random variables. Probability distributions: Binomial, Poisson and Normal - evaluation of statistical parameters for these three distributions.

UNIT-III

Basic Statistics:

Measures of Central tendency: Mean, median, quartiles, mode, Geometric mean, Harmonic mean, Measures of dispersion: Range, Quartile deviation, mean deviation, standard deviation, coefficient of variation, Moments, Skewness and Kurtosis, Correlation, Coefficient of correlation, methods of calculations, Lines of regression, Rank correlation.

UNIT-IV

Applied Statistics:

Curve fitting by the method of least squares: Introduction, Fitting of a straight line, fitting of second degree curve, fitting of a polynomial of degree m, fitting of a geometric or power curve of the form $y = ax^b$, fitting of an exponential curve of the form $y = ab^x$.

Test of significance: Basic terminology, Large sample test for single proportion, difference of proportions, single mean, difference of means, Small samples test for single mean, difference of means, Chi-square test for goodness of fit.

Suggested Books:

1. Erwin Kreyszig, Advanced Engineering Mathematics, 9th Edition, John Wiley & Sons,2006.
2. P. G. Hoel, S. C. Port and C. J. Stone, Introduction to Probability Theory, Universal Book Stall, 2003 (Reprint).
3. S. Ross, A First Course in Probability, 6th Ed., Pearson Education India, 2002.
4. W. Feller, An Introduction to Probability Theory and its Applications, Vol. 1, 3rd Ed.,Wiley, 1968.
5. N.P. Bali and and Manish Goyal, A text book of Engineering Mathematics, Laxmi Publications, Reprint, 2010.
6. Ramana B.V., Higher Engineering Mathematics, Tata McGraw Hill New Delhi, 11th Reprint, 2010.

7. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, 36th Edition, 2010. 8.Veerarajan T., Engineering Mathematics (for semester III), Tata McGraw-Hill, New Delhi,2010.

Note: The paper setter will set the paper as per the question paper templates provided.

ES-109A	Engineering Graphics & Design						
L	T	P	Credit	Major Test	Minor Test	Total	Time
1	2	-	3	75	25	100	3 h
Purpose	To expose students to the basics of Engineering Drawing, graphics and Projections.						

Course Outcomes	
CO-1	To learn about construction of various types of curves and scales.
CO-2	To learn about orthographic projections of points, lines and planes.
CO-3	To Learn about the sectional views and development of Right regular solids
CO-4	To Learn about the construction of Isometric Projections and conversion of Isometric views to Orthographic views and vice-versa.

UNIT - I

Introduction to Engineering Drawing:

Principles of Engineering Graphics and their significance, usage of Drawing instruments, lettering, Conic sections including the Rectangular Hyperbola (General method only); Cycloid, Epicycloid, Hypocycloid and Involute; Scales – Plain, Diagonal and Vernier Scales;

UNIT - II

Orthographic Projections:

Principles of Orthographic Projections-Conventions-Projections of Points and lines inclined to both planes; Projections of planes inclined to one principal Plane.

Projections of Regular Solids:

Solid with axis inclined to both the Planes;

UNIT - III

Sections and Sectional Views of Right Regular Solids:

Sectional views of simple right regular soilds like prism, pyramid, Cylinder and Cone. Development of surfaces of Right Regular Solids-Prism, Pyramid, Cylinder and Cone;

UNIT - IV

Isometric Projections:

Principles of Isometric projection – Isometric Scale, Isometric Views, Conventions; Isometric Views of lines, Planes, Simple and compound Solids; Conversion of Isometric Views to Orthographic Views and Vice-versa, Conventions;

Suggested Books:

1. Engineering Graphics using AUTOCAD 2000: T. Jeyapoovan, Vikas Publishing House.
2. Engineering Drawing: Plane and Solid Geometry: N.D. Bhatt and V. M. Panchal, Charotar Publishing House.
3. Engineering Drawing: Amar Pathak, Dreamtech Press, New Delhi.
4. Thomas E. French, Charles J. Vierck, Robert J. Foster, "Engineering drawing and graphic technology", McGrawHill
   International Editions.
5. Engineering Graphics and Drafting: P.S. Gill, Millennium Edition, S.K. Kataria and Sons.
6. A Primer on Computer aided Engineering Drawing-2006, published by VTU, Belgaum.
7. A. Yarwood, Introduction to AutoCAD 2017, Published by CRC Press.
8. O. Ostrowsky, Engineering Drawing with CAD applications, Butterworth Heinemann,1999.
9. BSI, Technical production documentation (TPD) – specification for defining, specifying and graphically reporting products, BS8888, 2002.
10. Corresponding set of CAD Software Theory and User Manuals.

Note: The paper setter will set the paper as per the question paper templates provided.

ES-113LA	Engineering Graphics & Design Practice						
L	**T**	**P**	**Credit**	**Practical**	**Minor Test**	**Total**	**Time**
-	-	3	1.5	30	20	50	3h
Purpose	**To make student practice on engineering graphics and design software and provide exposure to the visual aspects of engineering design.**						
Course Outcomes							
CO-1	**To give an overview of the user interface and toolboxes in a CAD software.**						
CO-2	**To understand to customize settings of CAD software and produce CAD drawing.**						
CO-3	**To practice performing various functions in CAD softwares.**						
CO-4	**To Learn about solid modelling and demonstration of a simple team design project.**						

Module 1: Overview of Computer Graphics:

Listing the computer technologies that impact on graphical communication, Demonstrating Knowledge of the theory of CAD software [such as: The Menu System, Toolbars (Standard, Object Properties, Draw, Modify and Dimension), Drawing Area (Background, Crosshairs, Coordinate System), Dialog boxes and windows, Shortcut menus(Button Bars),The Command Line(where applicable),The Status Bar, Different methods of zoom as used in CAD, Select and erase objects.; Isometric Views of lines, Planes, Simple and compound Solids];

Module2: Customization & CAD Drawing:

Setup of the drawing page and the printer ,including scale settings, Setting up of units and drawing limits ;ISO and ANSI standards for coordinate dimensioning and tolerancing; Orthographic constraints, Snap to objects manually and automatically; Producing drawings by using various coordinate input entry methods to draw straight lines, Applying various ways of drawing circles;

Module3: Annotations, layering & other functions:

Applying dimensions to objects ,applying annotations to drawings ;Setting up and use of Layers ,layers to create drawings,Create ,edit and use customized layers; Changing line lengths through modifying existing lines (extend/lengthen);Printing documents to paper using the print command ;orthographic projection techniques; Drawing sectional views of composite right regular geometric solids and project the true shape of the sectioned surface; Drawing annotation ,Computer-aided design(CAD) software modeling of parts and assemblies .Parametric and non-parametric solid, surface, and wire frame models. Part editing and two-dimensional documentation of models. Planar projection theory, including sketching of perspective, isometric, multi-view, auxiliary, and section views. Spatial visualization exercises .Dimensioning guidelines ,tolerancing techniques; dimensioning and scale multi views of dwelling;

Module4: Demonstration of a simple team design project:

Geometry and topology of engineered components: creation of engineering models and their presentation in standard 2D blue print form and as 3D wire-frame and shaded solids; meshed topologies for engineering analysis and tool-path generation for component manufacture; geometric dimensioning and tolerancing; Use of solid-modeling software for creating associative models at the component and assembly levels; floor plans that include: windows ,doors ,and fixtures such as WC, bath ,sink ,shower ,etc. Applying colour coding according to building drawing practice; Drawing sectional elevation showing foundation to ceiling; Introduction to Building Information Modeling (BIM).

Suggested Books(ES-113L):

1. Chris McMahon and Jimmie Browne, CAD/CAM – Principle Practice and Manufacturing Management, Addison Wesley England, Second Edition, 2000.
2. Chougule N.K.; CAD/CAM /CAE, Scitech Publications India Pvt. Ltd.
3. Vikram Sharma; Computer Aided Design and Manufacturing, S.K. Kataria and Sons.
4. Rogers, D.F. and Adams, A., Mathematical Elements for Computer Graphics, McGraw Hill Inc, NY, 1989
5. Ibrahim Zeid, CAD/CAM theory and Practice, Tata McGraw Hill Publishing Co. Ltd., New Delhi, 1992.
6. M.P. Groover, Automation, Productions systems and Computer-Integrated Manufacturing by Prentice – Hall.
7. A Primer on Computer aided Engineering Drawing-2006, published by VTU, Belgaum.
8. A.Yarwood, Introduction to AutoCAD 2017, Published by CRC Press.

9. O. Ostrowsky, Engineering Drawing with CAD applications, Butterworth Heinemann,1999.
10. BSI, Technical production documentation (TPD) – specification for defining, specifying and graphically reporting products, BS8888, 2002.
11. (Corresponding set of)CAD Software Theory and User Manuals
12. Ibrahim Zeid, Mastering CAD/CAM, Tata McGraw Hill Publishing Co. Ltd., New Delhi.
13. P. Radhakrishnan, S. Subramanayan and V.Raju, CAD/CAM/CIM, New Age International (P) Ltd., New Delhi.
14. Groover M.P. and Zimmers E. W., CAD/CAM: Computer Aided Design and Manufacturing, Prentice Hall International, New Delhi, 1992.
15. Dr. Sadhu Singh, Computer Aided Design and Manufacturing, Khanna Publishers, New Delhi, Second Edition, 2000.
16. Thomas E.French, Charles J.Vierck, Robert J.Foster, "Engineering drawing and graphic technology", McGraw Hill International Editions.

ES-111LA	Manufacturing Processes Workshop						
L	**T**	**P**	**Credit**	**Practical**	**Minor Test**	**Total**	**Time**
-	**-**	**3**	**1.5**	**60**	**40**	**100**	**3 h**
Purpose	**To make student gain a hands on work experience in a typical manufacturing industry environment.**						
Course Outcomes							
CO-1	**To familiarize with different manufacturing methods in industries and work on CNC machine.**						
CO-2	**To learn working in Fitting shop and Electrical and Electronics shops,**						
CO-3	**To practice working on Carpentry and Plastic moulding/glass cutting jobs.**						
CO-4	**To gain hands on practice experience on Metal casting and Welding jobs.**						

Manufacturing Processes Workshop Contents

1. Manufacturing Methods-casting, forming, machining, joining, advanced manufacturing methods
2. C N C Machining, Additive manufacturing
3. Fitting operations & power tools
4. Electrical & Electronics
5. Carpentry
6. Plastic moulding, glass cutting
7. Metal casting
8. Welding (arc welding & gas welding), brazing

Suggested Books:

1. Kalpakjian S. And Steven S. Schmid, "Manufacturing Engineering and Technology" , 7th edition, Pearson Education India Edition.
2. Hajra Choudhury S.K., Hajra Choudhury A.K. and Nirjhar Roy S.K., " Elements of Workshop Technology" , Vol. I 2008 and Vol. II 2010, Media promoters and publishers private limited, Mumbai.
3. Gowri P. Hariharan and A. Suresh Babu," Manufacturing Technology – I" Pearson Education, 2008.
4. Roy A. Lindberg, " Processes and Materials of Manufacture" , 4th edition, Prentice Hall India, 1998
5. Rao P.N., "Manufacturing Technology" , Vol. I and Vol. II, Tata McGraw-Hill House, 2017.

BS-141A	Biology						
L	T	P	Credit	Major Test	Minor Test	Total	Time
2	1	-	3	75	25	100	3 h
Purpose	To familiarize the students with the basics of Biotechnology						
Course Outcomes							
CO1	Introduction to essentials of life and macromolecules essential for growth and Development						
CO2	Defining the basic concepts of cell division, genes and Immune system						
CO3	Introduction of basic Concept of Thermo Genetic Engg. & Biochemistry						
CO4	Introduction of basic Concept of Microbiology & Role of Biology in Different Fields						

Unit – I

Introduction to living world: Concept and definition of Biology; Importance of biology in major discoveries of life Characteristic features of living organisms; Cell ultra-structure and functions of cell organelles like nucleus, mitochondria, chloroplast, ribosomes and endoplasmic reticulum; Difference between prokaryotic and eukaryotic cell; Difference between animal and plant cell.

Classification of organisms: Classify the organisms on the basis of (a) Cellularity;- Unicellular and Multicellular organisms. (b) Energy and Carbon Utilization:- Autotrophs, Hetrotrophs and Lithotrops (c) Habitat (d) Ammonia excretion:- ammonotelic, 19ricotelic and ureotelic. (e) Habitat- acquatic or terrestrial (e) Molecular taxonomy- three major kingdoms of life

Unit-II

Introduction to Biomolecules: Definition, general classification and important functions of carbohydrates, lipids, proteins, nucleic acids (DNA& RNA: Structure and forms). Hierarch in protein structure: Primary secondary, tertiary and quaternary structure. Proteins as enzymes, transporters, receptors and structural elements.

Enzymes as biocatalysts: General characteristics, nomenclature and classification of Enzymes. Effect of temperature, Ph, enzyme and substrate concentrations on the activity of enzymes. Elementary concept of and coenzymes. Mechanism of enzyme action. Enzyme kinetics and kinetic parameters (Km and Vmax)

Unit-III

Genetics:-Mendel's laws of inheritance. Variation and speciation. Concepts of recessiveness and dominance. Genetic Disorders: Single gene disorders in human. **Human traits**: Genetics of blood groups, diabetes type I & II.

Cell Division:- Mitosis and its utility to living systems. Meiosis and its genetic significance. Evidence of nucleic acids as a genetic material. Central Dogma of molecular biology

4. Role of immune system in health and disease: Brief introduction to morphology and pathogenicity of bacteria, fungi, virus, protozoa beneficial and harmful for human beings.

Unit-IV

Metabolism:-Concept of Exothermic and endothermic reactions. Concept of standard free energy and Spontaneity in biological reactions. Catabolism (Glycolysis and Krebs cycle) and synthesis of glucose (Photosynthesis:- Light and Dark Reaction) of glucose. ATP as Energy Currency of the cell

Microbiology: Concept of species and strains, sterilization and media compositions, growth kinetics.

Role of Biology : Role of Biology in Agriculture, Medicine, Forensic science, Bioinformatics, Nanotechnology, Micro-electromechanical systems (Bio-MEMS) and Sensors (Biosensors).

Note: The paper setter will set the paper as per the question paper templates provided Text Book:

1. Introduction to Biotechnology, By Deswal & Deswal, Dhanpat Rai Publications N.A
2. Campbell, J. B. Reece, L. Urry, M. L. Cain and S. A. Wasserman, "Biology: A global approach", Pearson Education Ltd, 2014.
3. E. E. Conn, P. K. Stumpf, G. Bruening and R. H. Doi, "Outlines of Biochemistry", John Wiley and Sons, 2009.
   D. L. Nelson and M. M. Cox, "Principles of Biochemistry", W.H. Freeman and Company, 2012.
4. G. S. Stent and R. Calendar, "Molecular Genetics", Freeman and company, 1978.

Suggested Books:

1. Molecular Biology of cell, 4th ed. Alberts, Bruce et al. Garland Science Publishing, New York.
2. Microbiology. Pelczar Jr., M.J.; Chan, E.C.S. and Krieg, N.R. Tata McGraw Hill, New Delhi.
3. Lehninger: Principles of Biochemistry, 3rd edition, by David L. Nelson and M.M. Cox. Maxmillan/ Worth publishers.
4. Genetics by Snusted& Simmons.

5. Molecular Biotechnology: Principles Application of Recombinant DNA. Glick, B. R. and Pasternak, J. J. ASM press Washington DC.
6. Kuby's Immunology, Goldsby, R A,.Kindt, T.J, Osborne, B.A.(2003) W. H. Freeman and company, New York.
7. Recombinant DNA 2nd Edition. Watson, James D. and Gilman, M. (2001) W.H Freeman and Company, NewYork.
8. Essentials of Molecular Biology 4thed, Malacinski, G. M. (2003) Jones &Bartlet Publishers, Boston.

ES-101A	BASIC ELECTRICAL ENGINEERING						
L	T	P	Credit	Major Test	Minor Test	Total	Time(Hrs)
4	1	-	5	75	25	100	3 h
Purpose	To familiarize the students with the basics of Electrical Engineering						
Course Outcomes							
CO1	Deals with steady state circuit analysis subject to DC.						
CO 2	Deals with AC fundamentals & steady state circuit response subject to AC.						
CO 3	Deals with introductory Balanced Three Phase System analysis and Single Phase Transformer.						
CO 4	Explains the Basics of Electrical Machines & Electrical installations						

Unit-I

D.C. circuits: Ohm's Law, junction, node, circuit elements classification: Linear & nonlinear, active & passive, lumped & distributed, unilateral & bilateral with examples. KVL, KCL, Loop and node-voltage analysis of resistive circuit. Star-Delta transformation for resistors.

Network Theorems: Superposition, Thevenin's, Norton's and Maximum power transfer theorems in a resistive network.

Unit-II

AC Fundamentals: Mathematical representation of various wave functions. Sinusoidal periodic signal, instantaneous and peak values, polar & rectangular form of representation of impedances and phasor quantities. Addition & subtraction of two or more phasor sinusoidal quantities using component resolution method. RMS and average values of various waveforms.

A.C. Circuits: Behavior of various components fed by A.C. source (steady state response of pureR, pure L, pure C, RL, RC, RLC series with waveforms of instantaneous voltage, current & power on simultaneous time axis scale and corresponding phasor diagrams), power factor, active, reactive & apparent power. Frequency response of Series & Parallel RLC ckts. including resonance, Q factor, cut-off frequency & bandwidth. Generation of alternating emf.

Unit-III

Balanced Three Phase Systems: Generation of alternating 3- phase emf). 3-phase balanced circuits, voltage and current relations in star and delta connections. Measurement of 3-phase power by two wattmeter method for various types of star & delta connected balanced loads.

Single Phase Transformer (qualitative analysis only): Concept of magnetic circuits. Relation between MMF & Reluctance. Hysteresis & Eddy current phenomenon. Principle, construction & emf equation Phasor diagram at ideal, no load and on load conditions. Losses & Efficiency, regulation. OC & SC test, equivalent circuit, concept of auto transformer.

Unit-IV

Electrical Machines (qualitative analysis only)**:** Construction and working of dc machine with commutateor action, speed control of dc shunt motor. Generation of rotating magnetic fields, Construction and working of a three-phase induction motor, Significance of torque-slip characteristic. Basics of Single-phase induction motor, capacitor start capacitor run Single-phase induction motor working. Basic construction and working of synchronous generator and motor.

Electrical Installations (LT Switchgear): Switch Fuse Unit (SFU), MCB, ELCB, MCCB, Types of Wires and Cables, Earthing.

Suggested Books:

1. Basic Electrical Engg: A complete Solution by Vijay Kumar Garg, Wiley India Ltd.
2. Electrical Engg. Fundamentals by Rajendra Prasad, PHI Pub.
3. Basic Electrical Engg. by S.K. Sahdev, Pearson Education
4. Electrical Engg. Fundamentals: by Bobrow, Oxford Univ. Press
5. Basic Electrical Engg. By Del Toro.
6. Saxena & Dasgupta: Fundamentals of Electrical Engg (Cambridge University Press).

Note: The paper setter will set the paper as per the question paper templates provided.

ES-103LA	BASIC ELECTRICAL ENGINEERING LAB						
L	T	P	Credit	Practical	Minor Test	Total	Time(Hrs)
-	-	2	1	30	20	50	3 h
Purpose	To familiarize the students with the Electrical Technology Practical						
Course Outcomes							
CO1	Understand basic concepts of Network theorems						
CO 2	Deals with steady state frequency response of RLC circuit parameters solution techniques						
CO 3	Deals with introductory Single-Phase Transformer practical						
CO 4	Explains the constructional features and practical of various types of Electrical Machines						

LIST OF EXPERIMENTS

1. To verify KVL and KCL.
2. To verify Superposition theorem on a linear circuit with at least one voltage & one current source.
3. To verify Thevenin's Theorem on a linear circuit with at least one voltage & one current source.
4. To verify Norton's Theorem on a linear circuit with at least one voltage & one current source.
5. To study frequency response of a series R-L-C circuit on CRO and determine resonant frequency & Q- factor for various Values of R, L, and C.
6. To study frequency response of a parallel R-L-C circuit on CRO and determine resonant frequency& Q - Factor for various values of R, L, and C.
7. To perform O.C. and S.C. tests on a single phase transformer.
8. To perform direct load test on a singlephase transformer and plot efficiency v/s load characteristic.
9. To perform speed control of DC shunt motor.
10. To perform starting & reversal of direction of a three phase induction motor.
11. Measurement of power in a 3 phase balanced system by two watt meter method.
12. Study of Cut sections of DC Machines, Induction Motor
13. To study components of various LT Switchgears

Note: At least 9 out of the listed experiments to be performed during the semester.

Kurukshetra University, Kurukshetra

(Established by the State Legislature Act XII of 1956)
('A+' Grade, NAAC Accredited)

Scheme of Examination and Syllabus of
Master of Science (M.Sc.) Printing, Graphics & Packaging Technology
CBCS CURRICULUM (2022-23) in phase manner

INSTITUTE OF MASS COMMUNICATION AND MEDIA TECHNOLOGY

KURUKSHETRA UNIVERSITY, KURUKSHETRA

SCHEME OF EXAMINATION FOR MASTER OF SCIENCE (PRINTING, GRAPHICS & PACKAGING TECHNOLOGY)
CHOICE BASED CREDIT SYSTEM (CBCS)
W. E. F. ACADEMIC SESSION 2022-23 IN PHASED MANNER

Semester-I

Course Code	Course Title	Credits	Marks				Duration of Exam
			T	P	IA	Total	
MPGPT-101	Advance Printing Technology	4	75	-	25	100	3 Hours
MPGPT-102	Package Graphics Technology	4	50	25	25	100	3 Hours
MPGPT-103	Printing & Packaging Material Technology	4	50	25	25	100	3 Hours
MPGPT-104	Research & Development	4	75	-	25	100	3Hours
MPGPT-105	Soft skills and Personality Development	4	50	25	25	100	3hours
Total		20	-			500	

Semester-II

Course Code	Course Title	Credits	Marks				Duration of Exam
			T	P	IA	Total	
MPGPT-201	Industrial Packaging	4	50	25	25	100	3Hours
MPGPT-202	Packaging Laws And Regulation	4	75	-	25	100	3 Hours
MPGPT-203	Advanced Security Printing	4	50	25	25	100	3 Hours
MPGPT-204	Environmental Considerations for Packaging	4	75	-	25	100	3Hours
MPGPT-205	Organizational Management	4	75	-	25	100	3 Hours
OE/MOOC*	Open Elective Based on MOOCs (The selected course should not be directly related with Printing ,Graphics and Packaging Technology) Or As Per University Guidelines	2	-	50	-	-	-
Total		20	-			500	

* The students will have to study open elective paper to be offered within the faculty only in 2nd semester. However, student will have also a choice of opting one MOOC course offered on the SWAYAM portal of Ministry of Human Resources Development in 2nd semester in lieu of open elective paper.

Note:- Summer Training / Internship will be held immediately after 2nd Semester Examination and will be having a minimum duration of one month. Students have to submit the Summer Training / Internship Report latest by 30th August. Evaluation of the Report and Viva-Voce shall be held during 3rd Semester. The Viva-Voce will be conducted by a panel of three faculty members appointed by Director.

MPGPT - 101
ADVANCE PRINTING TECHNOLOGY

Time: 3 Hrs. **Total Marks: 100**
Credits: 4 **Theory: 75**
Internal Assessment: 25

Course Objectives: This course is designed for theoretical understanding of principles, applications and material used in printing technology. It provides the technical ability to understand various production operations in printing technology.

Course Learning Outcomes: The students learned about the advancement in printing techniques and the student will be able to:
MPGPT101.1: To acquire information about various activities in the Prepress, Press and Post press
MPGPT101.2:To study about the various printing technologies
MPGPT101.3: Enhance knowledge about printing operations in press section.
MPGPT101.4:Know about the troubleshooting in printing presses..

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

UNIT-I

Printing Industry – Recent Trends and Scenarios for the Future, scope of printing, Impact of Globalization on printing Industry, Environmental considerations in the printing industry, Organizational structure in a printing press,Production of commercial jobs, packaging jobs and newspaper.

UNIT-II

Pre-Press Techniques- Basic colour theory, additive and substractive colours, colour controls, Colour control devices, Image setter Technology-Type, Working, Principal, Advantages, Limitation & applications, CTP Machines-Type, Working, Principal, Advantages, Limitation & applications. Scanner-Types, Techniques, Advantages, Limitation & applications.

UNIT-III

Printing Techniques -Computer aided offset presses, Automatic plate mounting and automatic blanket cleaning systems for offset presses,Driography process and Hybrid systems such as Gravure – Flexo, Offset, and Gravure etc., Procurement material for printing, Store-keeping, stock room conditions.

UNIT-IV

Production room condition and planning - production planning,Study of job and its work flow, Trouble shooting in printing presses, printing defects associated with paper and paperboard, printing defects associated with ink, Proofing Techniques and devices, Operational care and maintenance.

References Books:

1. Lithographers Manual Lithographic Technology - **Erwin A Dennis, Olusegun Odesina**
2. Printing Technology By **Adams, Faux, Rieber**
3. Art & Production by **N.N. Sarkar**
4. Packaging Technology - **Volume I, II, III - II**
5. Production Planning and inventory control-**Seetharama L.Narasimhan,Dennis W.Mcleavey,Peter J.Villington**
6. Production Planning ,Control and management-**K.C.Jain, L.N. Aggarwal**

MPGPT -102
PACKAGE GRAPHICS TECHNOLOGY

Time: 3 Hrs. **Total Marks: 100**
Credits: 4 **Theory: 50**
Practical:25
Internal Assessment: 25

Course Objectives: This course is designed for theoretical understanding of package graphic technology. It provides the technical ability to understand tools and techniques used in package graphic designing.

Course Learning Outcomes: The students learned about the package design techniqueand the student will be able to:
MPGPT102.1: To describe the importance of package graphic technology.
MPGPT102.2: To explain role of graphic design in package graphics
MPGPT102.3:To know about the package development process.
MPGPT102.4: To about the package structural design and packaging structural design software's .

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

UNIT I

Introduction to Package Designing basics, Role, scope product package cycle, Design considerations – structural development, packaging coordination, graphics, packaging line engineering, cost of development; Package design Economic considerations- package cost vs. product cost, Environmental Considerations, Life cycle Assessment, Legal issues, Recent trends in package graphics

UNIT II

Fundamental of Typography, Color Technology, Illustrations, Graphic Design Basics, Package Design Marketing concept, Package Aesthetics, Decoration Aspects, Layout and Feature Selection, Introduction to graphic design software's, The Retail Environment of various packaging.

UNIT III

Packaging Graphics Function, Project Scope, Consumer Research, Behavioural Measures, Features of a package, Optimizing flexible and rigid Package Design, Package Design stages, Specifications, Package Designer's Checklist an Evaluation,

UNIT IV

Structural Design – folding cartons, cans, glass containers, plastic containers, bags and pouches; Container Dimensioning; Die-making, Drawing, Moulds, Prototypes, Samples. Hand Hole Design, Package Optimization, Predicting & Assessment of the package performance; Introduction to Package structural design software.

Function, Types, Selection considerations, Closure dimensioning, Metal closures, Closure seals, Plastic closures, Injection moulds and Closure design, Tamper evident closures, Child resistant closures. Special closures and functions, Case study and Mini Project for package design.

LIST OF EXPERIMENTS

1. Introduction to Graphic Design Software Tools
2. Creation of shapes & objects using drawing tools
3. Graphic design using layers
4. Typographic design using text tool
5. Symbols, Logo and Label creation
6. Color specification - Color modes, Process color, Pantone colours
7. File preparation- File formats, Preflighting, PDF Export
8. Image acquisition and editing
9. Digital Proofing
10. Ripping- Process colour, spot colours, coatings separations

REFERENCES

1. Aaron L. Brody and Kenneth S. Marsh, “The Wiley Encyclopedia of Packaging Technology”, 1997
2. Walter Soroka, “Fundamentals of packaging technology”, 3rd Edition, Institute of packaging
professionals, Naperville, Illinois, USA, 2002
3. Giles Calver, “What is Packaging Design?: Essential design handbook”, Rotovision,2004
4. Marianne R. Klimchuk and Sandra A. Krasovec, “Packaging Design: Successful Product Branding
from Concept to Shelf”, Wiley, 2006,
5. Steven DuPuis, John Silva,” Package Design Workbook: The Art and Science of Successful
Packaging”, Rockport Publishers, 2008

MPGPT -103
PRINTING & PACKAGING MATERIAL TECHNOLOGY

Time: 3 Hrs. **Total Marks: 100**
Credits: 4 **Theory: 50**
Practical:25
Internal Assessment: 25

Course Objectives: This course is designed for theoretical understanding of material used in printing and packaging. It provides the technical ability to understand properties and testing of material used inprinting and packaging.

Course Learning Outcomes: The students learned about the manufacturing of paper and paperboard the student will be able to:
MPGPT103.1: To learn the types of glass, wood and metal packages in detail.
MPGPT103.2: To enhance the knowledge of wood packaging system.
MPGPT103.3: To impart knowledge on metal packaging materials techniques.
MPGPT103.4: Provide an overview about the metal processing for packaging.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

UNIT I

Paper and Paperboard- Manufacturing process of paper & paperboard .Sources, pulping, bleaching, stock preparation, Non-fibrous additives, consistency and other rawmaterials; , Paper and board Coating, Properties and application of paper used in packaging-uncoated, coated, Tissue, Parchment, greaseproof, glassine, wetstrength, stretchable papers, MD: CD. Boards used in packaging-Solid bleached/unbleached, folding boxboard, white lined chip board, Specialty boards, FBB, White back, Grey back. Corrugated board and component.Tests of paper and paper boards cob sizing, bursting strength, GSM, Drop test, compression, vibration, Inclined , rain test.

UNIT II

GLASS PACKAGING - Manufacturing Glass & Additives, Definition, Raw materials, Additives, Other types of glass, Borosilicate, Lead, Leaching,Glassmaking, Furnace, , Regenerator, Refiner, Container Manufacture, press and blow,Centrifugal casting, Ribbon Machine, Annealing, Coating, Nomenclature,Strength/Performance, Brittle failure, Internal pressure, impact, top Load, Hydrodynamic failure, Thermal shock, Stress concentration, Defects, Specifications, Labeling, Recycling methods.
Cushioning Material, types of cushioning and importance of cushioning.

PLASTIC – Definition, Manufacturing process of plastics, application & importance. BOPP, PET, PP, Polyester, HDPE; LDPE, LLDPE, Polyethylene properties and application. Aluminium foil, , films, metalized films. Factors to be considered for selecting plastic substrate for package.

Identification of the materials for printing & packaging by burning & solubility. Importance of recycling of plastic substrates, Environment Issues. Biodegradable substrates and its characteristics.

UNIT III

METALS IN PACKAGING - Properties, manufacturing and application of metals in packaging; Aluminum based, Steel based –stainless steel, galvanized steel – coated steel like tinplate, tin free plate. Metal cans – Three-Piececan, Two – Piece can (DI and DRD), Internal food can lacquers, Composite cans, Can stresses,Metal foil packaging, Metal Strapping/Banding.

PACKAGING METALS PROCESSING Manufacturing process – steel, Stainless, Tinplate containers, Aluminum – Collapsible tubes, Metaldrums and pails, Metal Tubes, drums pails, Aerosols, Uses, Two anThree Phase systems, Valvesand dip tubes, Principles of operation; Propellants – fluorocarbons,hydrocarbons,compressedgasses; Special aerosols – Piston type, Co-dispensingpumps.

WOOD PACKAGE - Wood Classification, Nominal Dimensioning, Board Footage, Moisture Content,Shrinkage/Expansion, Moisture Stresses, Mechanical Properties, Pallets – Wood,Pallet types – one way, two way pallet, design/performance, Wood design principles - Nails, typesand holding capacity, Crates/Boxes/Bin Pallets, Wirebound Boxes, Plywood, Particleboard, Fiberboard, Regulations,

UNIT IV

LEGALASPECTS AND FUTURE TRENDS - Standards of Weights & Measures Act, Standard packages, Maximum permissible error, Packaged Commodities act, ECO-Regulations, Label declaration, Hygiene management system, Food safety Act, Prevention of food adulteration act. Declaration of maximum retail price, Environmental laws for print industry. Latest trends in Packaging Material Technology. Market Capacity and Future Scenario of Printing & Packaging Material.

LIST OF EXPERIMENTS

1 To find Grammage and thickness of paper, paperboard and plastic films.
2 To determine Crush strength of various packaging materials
3 To find Cobb value of paper and board.
4 To find Bursting strength and burst factor of paper and CFB.
5 To find Tearing Strength of paper.
6 To find Stiffness of board.
7 To determine Heat sealability of various plastic packaging materials
8 To find Box Compression strength of a CFB
09 Determination of gloss & haze of various packaging materials
10 To find Scuff resistance of various packaging materials.

REFERENCES:

1. Handbook on Modern Packaging Industries by National institute of industrial research & Asian Pacific Business press.1978.
2. Joseph F. Hanlon, Robert J. Kelsey, and Hallie Forcinio, “Handbook of Package Engineering”, Third Edition, CRC press, 1998.
3. L. Brody, K. S. Marsh, “The Wiley Encyclopedia of Packaging Technology”, 2nd
4. Walter Soroka, “Fundamentals of packaging technology”, 3rd Edition, Institute of Packaging professionals, Naperville, Illinois, USA, 2002

MPGPT -104
RESEARCH & DEVELOPMENT

Time: 3 Hrs. **Total Marks: 100**
Credits: 4 **Theory: 75**
Internal Assessment: 25

Course Objectives: This course is designed for theoretical understanding of Research and development especially in printing and packaging technology. It provides ability to understand the various types of research and the development of various products for any organization.

Course Learning Outcomes: The students learned about the Research and development activities and the student will be able to:
MPGPT104.1: Enhance knowledge about Innovative idea generations and their implementations.
MPGPT104.2:Learn about Research and development process and the challenges for implementations.
MPGPT104.3:Knowledge increase about the wastage reduction and environmental impact of printing.
MPGPT104.4:Know about the advanced technology used in packaging sectors because of R& D.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

Unit-I

Introduction: Introduction of Research& Development, types of R & D-Basic Research, Applied research, development. R&D in business, Innovation, New product development, Design ,Product design, R& D Decision- Proprietariness, Timing ,Risk ,Cost. In House R &D, External and Joint R&D, R&D Project selection, Evaluation, Management and Termination of R&D projects. Importance of R&D.

Unit-II

R&D Process: Foster ideas, Focus ideas, Develop, Prototype and trials. Regulatory, Product development activities, Launch. An effective R& D Process, Advantages of R& D- Tax breaks, cost ,financing, recruitment, Patents. R&D challenges- High cost, Uncertain result, Market condition.

Unit-III

R&D in the Printing Industry – Innovation in Printing, Reducing the environmental impact of printing, Waste reduction of printing processes, Minimizing solvent use, Process and machine optimisation in offset and flexography printing, Quality evaluation and standardisation in digital printing, Packaging and label printing, Print finishing, Measurement and testing methods for controlling machine settings and the printing process, Functional coatings, Ink curing and migration

Unit IV

R&D in Packaging Industry-Packaging machinery research and development, especially paperboard forming, Converting of fibre-based packaging materials, Tool design and manufacturing, Sealing solutions for fiber-based packages, Package quality control development, Packaging material technology, Coating and dispersion barriers, Digital printing, Fiber engineering and technology, Nanothin functional coatings.

REFERENCES:

1. Research and development by Prof. M Devendra edition 1st , 2022
2. https://www.investopedia.com/terms/r/randd.asp
3. Managing reaearch, development and innovation byRavi K. Jain 3rd edition

MPGPT -105
SOFT SKILLS AND PERSONALITY DEVELOPMENT (THEORY)

Time: 3 Hrs. **Total Marks: 100**
Credits: 4 **Theory: 75**
Internal Assessment: 25

Course Objectives: This course is designed the help the students to groom their personality by learning effective communication and presentation skills. The course will help them to be good professionals as well as established as intelligent citizens of the society.

Course Learning Outcomes: After completing the course the student will be able to:
MPGPT -105. 1: Learn soft presentation skills, etiquette and manners
MPGPT -105.2: Re-Engineer the personality, attitude and understand the influence of habits and body language
MPGPT -105.3: Use yoga and meditation to control stress, anger and time management
MPGPT -105.4: Hone the skills of resume writing, interview and group discussion for today's job Market.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

. **Unit - I**

Soft Skills and Hard Skills, Decision making and leadership Skills, Public Speaking and Presentation Skills: Types, content, audience analysis, Personality: Basic of Personality, Human growth and Behaviour, Habits and Attitude

Unit - II

Leadership Skills, Team Building and, social etiquettes and mannerism; Body Language: Posture and Gestures, Eye-Contact, Facial Expression Timing, Space. Techniques in Personality development: Self-confidence, Mnemonics, Goal setting, Time Management and Time Planning tools and techniques.

Unit – III

Self, Self-confidence, Self-Disclosure, Self-Awareness, Self esteem. SWOT Analysis, Types of Personalities and their characteristics, Techniques in Personality Development: Stress Management, Meditation and Concentration Techniques, Importance of Yoga and meditation for personal wellbeing.

Unit IV

Resume / CV Writing: Difference between resume/CV and bio-data, Types, Layout and draft of resume in digital age; Cover letter; Interview: Types of interviews, preparing for interviews, facing interviews, reviewing during and after the interview. Group Discussions: Importance, planning, elements, group discussion skills.

References:

- Wood, Julia T: Communication Mosaics: An Introduction to the field of Communication, 2001. Wadsworth
- Larson, Charles U; Persuasion - Reception and Responsibility. Wadsworth, 2001
- Personality Development by Rajiv K Mishra, Rupa& Co.
- An Appointment with Personality: Unlock the Personality by Dr TapeshKiran; Evincepub Publishing;2023

MPGPT - 201
INDUSTRIAL PACKAGING

Time: 3 Hrs. **Total Marks: 100**
Credits: 4 **Theory: 50**
Practical:25
Internal Assessment: 25

Course Objectives: This course is designed for theoretical understanding of packaging techniques, applications, machines and material used in packaging industry. It provides the technical ability to understand various production and converting operations in packaging.

Course Learning Outcomes: The students learned about the advancement in packaging techniques and the student will be able to:
MPGPT201.1: To acquire information about various activities used in preparation of package through Prepress, Press and Post-press sections.
MPGPT201.2: To study about the various advance packaging technologies.
MPGPT201.3: Enhance knowledge about packaging operations in press section.
MPGPT201.4: Know about the troubleshooting in packaging organization.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

UNIT I

INTRODUCTION

Packaging Industry, scope of packaging industry, Automotive packaging industry and various departments of packaging organization – Planning, Marketing, Pre-press, Press, Post-press, Quality, electrical, mechanical, warehousing, management practices- supply chain management, components of supply chain management systems and features of effective supply chain management.

UNIT II

PACKAGE CONVERTING OPERATIONS

Lamination- Laminating process, Laminating machinery and laminating types, Different Types Of Lamination Films, Importance of lamination, Coating process, Types Of Varnish Coating-aqueous (water-based) and ultraviolet coatings, Importance of coating, Embossing/De-embossing process, Die-cutting process, Liner process, Hot and Cold Foil stamping process, Folding and Gluing.

UNIT III

PACKAGE HANDLING AND STORAGE

Paperboard folding cartons, Flexible cartons, filling machine, packaging defect, shrink machine, stretch wrapping machine, Labelling and numbering - Label tracking and recognition system. Warehousing handling-pallets pick and place of product package equipment, fragile materials, receipt and dispatch, stock condition assessment, control package, preservation, delivery system.

UNIT IV

CORROSION PROTECTION & PACKAGE WASTE MANAGEMENT SYSTEM

Corrosion in packaging causes of corrosion, corrosion prevention, Corrosion inhibitors, Packaging hazards –Mechanical hazards, climatic hazards and biological hazards. Package recycling and reuse- Recycling process, Reuse, Bio compatible packaging materials- dry

grass, banana bark, natural fibres composites.

LIST OF EXPERIMENTS

1. Lamination
2. Study of types Of Varnish
3. Embossing/De-embossing process, Die-cutting process
4. Hot and Cold Foil stamping process,
5. Folding and Gluing
6. Paperboard folding cartons
7. stretch wrapping machine,
8. Labelling and Numbering

References Books:

1. Joseph F. Hanlon, Robert J. Kelsey, and Hallie Forcinio, “Handbook of Package Engineering”, Third Edition, CRC press, 1998
2. Walter F. Friedman, and Jerome J. Kipnas, "Industrial Packaging", Willey.
3. Hans-Hermann Braess, Ulrich Seiffert “Handbook Of Automotive Engineering”,Society of Automotive Engineers, 2005
4. Walter Soroka, “Fundamentals of packaging technology”, 3rd Edition, Institute of Packaging professionals, Naperville, Illinois, USA, 2002.

MPGPT -202

PACKAGING LAWS AND REGULATION

Time: 3 Hrs. **Total Marks: 100**
Credits: 4 **Theory: 75**
Internal Assessment: 25

Course Objectives: This course is designed for theoretical understanding of Indian regulatory system for packaging industries. It provides the ability to understand packaged commodities, international laws and packaging requirements.

Course Learning Outcomes: The students learned about packaging Indian act, laws and regulations and Bureau of Indian Standards.
MPGPT202.1: Enhance knowledge about Indian regulatory system for packaging.
MPGPT202.2: Learn about packaged commodities, trade and commerce.
MPGPT202.3:Knowledge increase about the packaging storage requirements
MPGPT202.4:Know about the declaration and labeling,PFA,FPO etc..

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

UNIT I

INDIAN REGULATORY SYSTEM

Introduction, The Standards of weights and Measures Act (SWMA), Standard Units, Laws, Regulations and Ministries involved, Essential Commodities Act, Agricultural Produce (Grading and Marketing) Act, Prevention of Food Adulteration Act, Codex Standard Act, Export (Quality Control and Inspection) Act, Bureau of Indian Standards

UNIT II

DECLARATIONS ON PACKAGED COMMODITIES - Declarations for Interstate Trade and Commerce, Standard Packages, Maximum Permissible Error, Label Declarations, Standard Quantity specifications for various products, Symbols and Units used

UNIT III

INTERNATIONAL LAWS AND VIOLATION OF LAW - Uniform Weights and Measures Law, Uniform Packaging and Labelling Regulation (UPLR), Uniform Unit Pricing Regulation (UPR), Details of Violations, offences, Penalties under various sections, EU-REACH Regulations in packaging.

UNIT IV

PACKAGING STORAGE REQUIREMENTS -various storage requirements of Products, Specifications of Raw Materials used, is Specifications with respect to packaging and Packaging Materials

PACKAGING REQUIREMENTS AND PFA 12 Packaging requirements under PFA, Declaration and Labelling, Specification of Display panels, Statutory Requirements on Packages, PFA Enforcement methods, Fruit Products Order (FPO) Meat Food Products Order (MFPO) Agricultural Grading and Marking Rules (AGMARK), Edible Oil Packaging (Regulatory) Order.

REFERENCES

1. G C P Range Rao," Modern Food Packaging, Packaging Laws and Regulations", CFTRI Mysore , IIP Publications, 2005
2. The Standards of Weights and Measures act, (1976) & Standards of Weights and Measures (Packaged Commodities) Rules (1977), Rule Book, Govt. Of India.
3. BIS Rule Book, Govt. Of India.

MPGPT -203
ADVANCED SECURITY PRINTING

Time: 3 Hrs. **Total Marks: 100**
Credits: 4 **Theory: 50**
Practical:25
Internal Assessment: 25

Course Objectives: This course is designed for theoretical understanding of different types of security printing features and methods being used in printing of Currency and other secured documents along with their practical applications in modern time.

Course Learning Outcomes: The students learned about the security features and methods used in security printing.
MPGPT203.1: To learn the types of security printing and currency printing.
MPGPT203.2: To enhance the knowledge of negotiable instruments printing
MPGPT203.3: To impart knowledge of security printing processes.
MPGPT203.4: Provide an overview about Security Inks and Substrates.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

UNIT I

Security Printing : - Introduction to Security Printing, Introduction to Currency, Certificates, Postal Stamps, Judicial and Non-judicial Stamps, Identity cards, Adhar Card. 2. Currency Printing :- Introduction to Currency Printing, Incorporation of Security features in currency, Design concepts for currency, Secret Patterns, Watermarks, Fine line Printing, Micro Printing, Identification standards, Secret Patterns, etc.

UNIT II

Negotiable Instruments Printing: - Cheque Printing, Draft Printing, Cheque numbering, coded information, MICR system-magnetic ink character recognition, CBS requirements, Instruments for identification of security features. 4. Credit & Charge cards Printing:- Credit card, Debit Card, Plastic Card for payment, Magnetically enclosed stripping, embossed information and holograms, caliper and dimensions, Protection, Signature panels, Identity Cards.

UNIT III

Security Printing Processes: - Introduction of security features by Sheet- fed Gravure, Sheet-fed offset, Web-fed gravure, Web-fed offset, Dry offset, Letterpress, Digital printing.Modern Security Techniques: - RFID, Bar-coding, Holography, Foils, Highresolution borders, Micro printing.

UNIT IV

Security Inks and Substrates:- Metallic inks, Florescent Inks, OVI, Non-convention substrates : -Non tear able paper, plastic. Watermark, Security threads. 8. Educational Certificates: - Security features for Degree, DMC and other secured documents of Universities and educational institutes.

LIST OF EXPERIMENTS

1. Colour sequence for security printing
2. Dot loss and dot gain in film imaging
3. Study of Barcode
4. Study of RFID
5. Hologram
6. Security features of currency printing.
7. Security printing substrates and inks

References:

1. Printing Guide to Systems and their uses by W.R. Durrant.
2. MICR by Kant Dabholkar Note:

MPGPT -204

ENVIRONMENTAL CONSIDERATIONS FOR PACKAGING

Time: 3 Hrs. **Total Marks: 100**

Credits: 4 **Theory: 75**

Internal Assessment: 25

Course Objectives: This course is designed for theoretical understanding of environmental issues related to packaging. It provides ability to understand the various types of storage, disposing of waste material, environment policies.

Course Learning Outcomes: The students learned about the Research and development activities and the student will be able to:
MPGPT204.1: Enhance knowledge about various types of environmental pollutions.
MPGPT204.2: Learn about storage and disposal of waste packaging materials.
MPGPT204.3: Knowledge increase about the wastage reduction and environmental impact of printing and packaging.
MPGPT204.4: Know about the the government environmental policies packaging industries.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

UNIT I

INTRODUCTION : Components of environment; Environmental pollutions, its measurements and management; Air pollution and its control; Water pollution and its control; Solid wastes; Microorganisms as components of the environment; microorganisms as indicators of environmental pollution; bioorganic pollution; microbial toxicants and pollutants their biodegradation; biodegradation of plastics, biofouling; bioremediation. Packaging – Concerns on Environmental Pollution

UNIT II

STORAGE & DISPOSAL OF WASTE : Types of waste generated; Non- degradable & biodegradable wastes, Solid waste storage and disposal methods- land-filling, burial, incineration, recycling; Biological treatment of food, medical, consumer goods, pharmaceutical, industrial wastes, storage and disposal of liquid and gaseous waste; legal aspects related to storage and disposal; environmental laws; pests & their control. 25

UNIT III

ENVIRONMENTAL AND WASTE MANAGEMENT ISSUES Plastics Manufacturing and Life cycle assessment, Plastic waste management, Life Cycle Analysis, Optimization of packaging materials, Sources-Reduce, Reuse and Recycling (3R's), 7R's of Packaging, Biodegradable materials, Case Studies.

UNIT IV

RECYCLING: Waste - Collection, Sorting, Cleaning; Recycling Rate; Recycling techniques/methods – Paper/Paperboard, Plastics, Metals, Glass. Environmental policies of India, Packaging Code of Practice, International Approach - Green Dot; EU Packaging Directive. T

REFERENCES:

1. Ann-Christine Albertsson, “Degradable Polymer, Recycling Plastic Waste Management”, Taylor & Francis Group, 1995.
2. Herbert F.Lund, “McGraw-Hill Recycling Handbook”, 2nd Edition, 2001.
3. John Scheirs, “Polymer Recycling”, Wiley Series in Polymer Science, 1997.
4. Joseph P. Greene, “Sustainable Plastics: Environmental Assessments”, Wiley, 2014.

MPGPT -205
ORGANIZATIONAL MANAGEMENT

Time: 3 Hrs. **Total Marks: 100**
Credits: 4 **Theory: 75**
Internal Assessment: 25

Course Objectives: This course is designed for theoretical understanding of management concepts related to organization. It provides ability to understand the various theories, principle and process of management.

Course Learning Outcomes: The students learned about the management process in an organisation and student will be able to:
MPGPT205.1: Enhance knowledge about various types of management.
MPGPT205.2: Learn about planning and organizing of work and staff.
MPGPT205.3: Knowledge increase about motivation and leadership.
MPGPT205.4: Know about the importance of communication and controlling

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

UNIT-I

Introduction: Management: Concept and Nature –Types of Managers- Responsibilities and skills of Professional Manager, Functions of Management, Principles of Management, Administration vs. Management– Management Process – Levels of Management – Approaches to the study of Management. Organizational Behaviour, Change and Development: Concept, Meaning, Definition, Objectives, Importance and Limitations of OB.

UNIT-II

Planning and Organizing: Planning: Concept, Meaning and Definition, Process, Benefits and Limitations-Decision making: Concept, process & techniques- Departmentation: Concept- Basis of Power and Authority: Concept-Delegation and Decentralization: Concept and Definition, Importance and Limitations, Process – Line and Staff Organization – Conflicts between Line and Staff.

UNIT-III

Motivation and Leadership: Motivation: Concept and Definition, Types, Importance – Theories of Motivation – Motivators: Financial and Non-financial- Leadership: Concept and Definition, Importance, Styles of Leadership, Theories of Leadership- Leader vs. Manager.

UNIT-IV

Communication and Control: Communication: Concept and Definition, Importance, Process, Barriers to Effective Communication and Measures to Overcome Communication barriers- Controlling: Concept, Definition, Basic control process, Requirement of Effective control, Control Techniques.

References:

1. L.M.Prasad, Principles and Practice of Management, 7Ed, S.Chand Publishers, 2007.
2. Weihrich&Koonty, Essentials of Management, TMH, 1990.
3. Robbins.P, Essential of Organizational Behaviour, 10 Ed, PHI, 2010.
4. Fred Luthans, Organizational Behaviour, 11Ed, TMH, 2006.
5. K.Aswathappa, Organizational Behaviour, 5Ed, Himalaya Publishers, 2001.

Learning Outcome-based Curriculum Framework (LOCF)

for

M.Sc. (Graphic Animation & Multimedia)

A Two Year Master Degree Programme

under

Choice Based Credit System (CBCS)/Learning Outcome-based Curriculum Framework(LOCF)

w.e.f. Academic Session 2022-23.

Institute of Mass Communication & Media Technology
Kurukshetra University, Kurukshetra

SCHEME OF EXAMINATION FOR MASTER OF SCIENCE (Graphic Animation & Multimedia)
w. e. f. Academic Session 2022-23 (CHOICE BASED CREDIT SYSTEM (CBCS))

Semester-I

Course Code	Course Title	Credits	Marks				Duration of Exam
			T	P	IA	Total	
M-GAM-101	Visual Arts and Creativity	4	50	25	25	100	3 Hours
M-GAM-102	Graphic Designing and Publishing	4	50	25	25	100	3 Hours
M-GAM-103	Multimedia and Technologies	4	75	-	25	100	3 Hours
M-GAM-104	Story, Script and Storyboarding	4	75	-	25	100	3Hours
M-GAM-105	Techniques of 2D Animation	4	50	25	25	100	3hours
Total		20	-			500	

Semester-II

Course Code	Course Title	Credits	Marks				Duration of Exam
			T	P	IA	Total	
M-GAM-201	Film Appreciation and Cinematography	4	75	-	25	100	3Hours
M-GAM-202	Digital Video Production and VFX	4	50	25	25	100	3 Hours
M-GAM-203	Multimedia Programming	4	50	25	25	100	3 Hours
M-GAM-204	3D Modeling and Texturing	4	50	25	25	100	3Hours
M-GAM-205	Cyber Laws and Intellectual Property Rights	4	75	-	25	100	3 Hours
OE/MOOC*	OPEN ELECTIVE (Students has to select a paper from other department(s) of Faculty of commerce and management of KUK)	2	-	50	-	-	
Total		20	-			500	

* The students will have to study open elective paper to be offered within the faculty only in 2nd semester. However, student will have also a choice of opting one MOOC course offered on the SWAYAM portal of Ministry of Human Resources Development in 2nd semester in lieu of open elective paper.

Note:- Summer Training / Internship will be held immediately after 2nd Semester Examination and will be having a minimum duration of one month. Students have to submit the Summer Training / Internship Report latest by 30th August. Evaluation of the Report and Viva-Voce shall be held during 3rd Semester. The Viva-Voce will be conducted by a panel of three faculty members appointed by Director.

M-GAM-101: Visual Arts and Creativity

Time:3 Hrs. Total marks:100
Credits: 4 Theory: 50
Practical:25
Internal Assessment: 25

Course Objectives: This course is designed for theoretical understanding of aesthetics of arts and creating sense of creativity, colors, and design for making artistic content for multimedia composition.

Course Learning Outcomes:
After completing the Course, the student will be able to:
M-GAM-101.1: Understand art aesthetics including Indian concept of aesthetics.
M-GAM-101.2: Acquire skills to create interesting and interactive components for multimedia
M-GAM-101.3: Develop the capacities to design, assess, enact with creative projects
M-GAM-101.4: Develop the ability to link art theory with using creative practices.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT-I

Development of Art & Ideas

Origin of Art**:** Study of Prehistoric Indian Art, Visual Arts & Its Forms & Creative Pedagogies
Drawing Concepts
Perception of Color
Pictorial Composition

UNIT-II

Drawing & 3D Design

Perspectives on the Creative Process
Living & Non-Living objects
Basic Elements & Principles of 3D Design
Calligraphy & Typography

UNIT-III

Six limbs of art
Aesthestics of Indian Art
Introduction to different kind of clay
Natural clay & Synthetic clay

UNIT-IV

Development of Character Design

Anatomy & Proportions
Body Types, Poses, Facial Expression
Model sheet of Character
Character Line-up

List of Practical Exercises:

Drawing anatomy
Pencil shading techniques
Analogous Colors and Color Wheel
Composition in Art
Landscape drawing
Cartoon character sketch
Patterns and 2D design
Textures and 3D design
Calligraphy
living and non living objects.
Poster making
Stone art
Mandala art

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

References:

1. Drawing Human Anatomy: Giovanni Civardi
2. Keys to Drawing (Paperback) byBert Dodson
3. Fundamentals of Drawing: A Complete Professional Course for Artists, Barrington Barber, Paperback

M-GAM-102: Graphic Designing and Publishing

Time:3 Hrs. Total marks:100
Credits: 4 Theory: 50
Practical:25
Internal Assessment: 25

Course Objectives: This course is designed for the understanding of an important element of multimedia i.e. graphics/image; and to learn the image manipulation techniques with its publishing platforms.

Course Learning Outcomes:
After completing the Course, the student will be able to:
M-GAM-102.1: understanding the basic principles of graphic design
M-GAM-102.2: learn the major tools of graphic designing
M-GAM-102.3: To know about the color theory and color scheme
M-GAM-102.4: Understand different kind of layouts in graphic designing

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT-I

Introduction to graphics

- Introduction to graphics, tools of graphics, uses & types of graphics
- Meaning and definition of graphics design
- Elements and principles of graphic design
- Graphics Overview: Raster graphics, Vector graphics

UNIT-II

Corel draw

- Tools and menus, Effects and masking
- social advertising
- Cartoon character design, Product design

Photoshop

- Introduction to Photoshop, workspace and photo editing tools
- Filters and Adjustments
- Digital matte painting

Unit-III

Illustrator

- Introduction to Illustrator, Applications and features, Illustrator interface
- Aligning objects, working with groups, arrange object, distributing objects. Templates
- Transforming objects: Scaling, Reflection, Distorting and Shearing objects
- Coloring and painting
- Using effects, appearance attributes and graphics styles

Unit – IV

Publishing

- Authoring and process of publishing
- Publishing types, newspaper and magazine publishing
- Research papers and publications
- Packaging and its types, Functions of Packaging

List of Practical Exercises:

Image Retouching and Enhancement
Image Manipulation
Visiting card lay-outing and designing
Letter Head Design
Poster Design (Social / Productive)
Magazine Cover / Book Cover
Typography Designs
Social Media Designs
Google Banners
Broacher Design
News Letter Design

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

M-GAM-103: Multimedia Technologies

Time: 3 Hrs. Total marks:100
Credits: 4 Theory: 75
Internal Assessment: 25

Course Objectives: This course is designed for the learning of several multimedia and web technologies in the real world environment.

Course Learning Outcomes:
After completing the Course, the student will be able to:
M-GAM-103.1: understand the file organization of different multimedia elements
M-GAM-103.2: learn the knowledge of various multimedia equipments and kiosks
M-GAM-103.3: create the linking inputs of interconnected multimedia systems
M-GAM-103.4: learn to secure the created multimedia content

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit I

Multimedia Elements, Multimedia Applications, Multimedia System Architecture, Evolving Technologies for Multimedia Systems, Multimedia Databases; Types of Compression, Binary Image Compression Schemes, Color, gray scale, still-video image compression, video Image compression, audio compression; Data and File format standards- RTF, TIFF, RIFF, MIDI, JPEG, AVI, JPEG

Unit II

Key Technology Issues, Pen Input, Video and Image Display Systems, Print Output Technologies, Image Scanners, Digital Voice and Audio, Video Images and Animation, Full Motion Video; Magnetic Media Technology, Optical Media, WORM optical drives, Hierarchical Storage Management, Cache Management for storage systems.

Unit III

Types of Multimedia systems, Virtual Reality Design, Components of Multimedia system, Distributed Application Design Issues, Multimedia Authoring and User Interface, Hypermedia Messaging, Distributed Multimedia Systems

Unit IV

Secured Multimedia, Digital Rights Management Systems, Technical Trends, Multimedia encryption, Digital Watermarking, Security Attacks; Multimedia Authentication, Pattern, Speaker and Behavior Recognition, Speaker Recognition, Face Recognition

References:

- Weixel, Fulton, Barksdale.Morse, "Multimedia Basics", Easwar Press 2004.
- Andleigh PK and Thakrar K, "Multimedia Systems", Addison Wesley Longman, 1999.
- Fred Halsall, "Multimedia Communications", Addison Wesley, 2000.
- Ralf Steinmetz, KlaraNahrstedt, "Multimedia, computing, communications and applications", Prentice Hall, 1995.
- Tay Vaughan, "Multimedia making It work", TMH 5th Edition 2001.

M-GAM-104: Story, Script and Storyboarding

Time: 3 Hrs. Total marks:100
Credits: 4 Theory: 75
Internal Assessment: 25

Course Objectives: This course is designed for the understanding the theory of content writing and idea generation using the primary multimedia element i.e. text.

Course Learning Outcomes:
After completing the Course, the student will be able to:
M-GAM-104.1: learn the idea creation for writing a story
M-GAM-104.2: understand the grammar fundamentals for writing content
M-GAM-104.3: understand the language, dialect and script
M-GAM-104.4: convert the written content into the multimedia formats

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit I

Story

Elements of story, Resources and ideas from life, Story Genres, Characters and the story, character driven stories, Event driven stories.

Story structures and styles

Narrative, non-narrative, abstract, absurd with reference to stories for animated film Basic writing for Animation, Story Structure, Plot, Dramatic structure, Conflict, Setting mood, Rising action, Falling Action, Dénouement, Resolution

Unit II

Script

Anatomy of a Script, Script Elements and Scene Heading, Action, Characters, Dialogue, Parenthetical, Extension, Transition, Shots, Page Breaking, Finer Points, Dual Dialogue, and Adlibs, Abbreviations and Montages, A Series of Shots and Short Lines/Poetry/Lyrics, transitions, continuity etc.

Titles or Opening Credits, and Superimpose or Title, Title Page, Production Drafts, Top Continued and Bottom Continued, Locking Script Pages and Locking Scenes, Header, Do's and Don'ts, Other Script Formats, radio scripts, TV scripts, animation film scripts.

Unit III

Storyboarding

Introduction to Storyboard, Importance of StoryBoard, difference between storyboard and Graphic Comic, Difference between Story, Script and Storyboard.Advantages of Storyboard in Animation and Anatomy of a Storyboard.

Unit IV

Shots

Introduction to various shots, Camera angles and Camera Movements used in Storyboard panels.continuity and Timing, Building a sequence of shots. Use of Perspective, Composition, Light & Shadow in Storyboarding.

Script to Storyboard

Designing a storyboard based on a short script, Use of Thumbnails and Quick story sketches, Creating visual narrative using Animatics.

References:

- Animation history and production by aparna vats; new delhi publishers; First edition 2017
- Story: Substance, Structure, Style and the Principles of Screenwriting by Robert McKee
- The Way of the Storyteller by Ruth Sawyer
- Comic Book Design: The Essential Guide to Creating Great Comics and Graphic Novels Gary Spencer Millidge
- Facial Expressions: A Visual Reference for Artists, Mark Simon, Publisher: Watson-Guptill,
- The Animation Book: A Complete Guide to Animated Filmmaking--From Flip-Books to Sound Cartoons to 3- D Animation, Three Rivers Press
- The Illusion of Life: Disney Animation, Ollie Johnston and Frank Thomas, Publisher: Disney Editions;
- Making Comics: Storytelling Secrets of Comics, M... by Scott McCloud
- The Art of story board by John Hart
- 'How to Write for Animation' by Jeffrey Scott's book
- Animation Art: From Pencil to Pixel, the world of Cartoon Anime and CGI- Jerry Beck
- The Animation Bible: A Practical Guide to the Art of Animating from Flipbooks to Flash [Paperback], Maureen Furnis

M-GAM-105: Techniques of 2D Animation

Time:3 Hrs. Total marks:100
Credits: 4 Theory: 50
Practical:25
Internal Assessment: 25

Course Objectives: This course is designed for the understanding the Theoretical Concept of 2d Digital Animation and Digital Tools and Principal of Animation.

Course Learning Outcomes:
After completing the Course, the student will be able to:
M-GAM-105.1: Understand the 2d Digital Animation Techniques
M-GAM-105.2: Learn the Concept of Animation Principal
M-GAM-105.3: To gain knowledge about tools of animation
M-GAM-105.4: Understand the Concept of Facial and Action Movements

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit I

- Interface of Adobe Flash/ Animator
- Flash workspace , Timeline, Using Tools to create character for animation
- Shape tween and motion tween,Symbols and Keyframes
- Character Model Sheet, Character Line Up in Software such as Photoshop and Flash.

Unit II

- Introduction to Layout and importance of layout in Animation.
- Cinematic Camera Angles, Aspect Ratio, Preparing/Posing Layouts, Camera Movements – tracking, zoom, panorama, Camera movement calculation to animation – matching speeds.
- Principles of animation; Creating object animation (Different weighted ball with different properties, Book fall from book self, moving object interaction with other moving objects, pendulum and Tail animation) using all principles of animation.

Unit III

- Character Animation; Creating walk cycle for male and female characters, creating run and jump for biped and quartered characters

- Acting for Animation
    - Basics of Facial Expressions with different Emotions, Understanding the Gestures and Postures. Understanding the importance of acting in animation, Body Language, Pulling , pushing and lifting objects.

Unit IV

- Facial Animation
    - Adding life to characters using expressions. Classical approaches to depict various expressions and emotions. The mechanics of eye movements, blinking, talking, and making various gestures, Lip sync with dialog
- Rendering and Output
    - Fundamentals of rendering and exporting, Exporting still images and sequences. Learning output formats, terminologies related to rendering.

List of Practical Exercises:

Square to Circle Shape Transformation
Trace and Create cartoon Digitally
Weight and Mass in Ball Animation
Vehicle Animation
Anticipation in Jump
Arc and Slow in Slow out in Leaf Animation
Character Walk cycle
Facial animation
Liquid Animation
60 Sec Video of animation

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

Reference Material:

- Animator's Survival kit – Richard Williams, Pub.-Focal Press.
- Timing for Animation – Harold Whitaker, Pub.-Focal Press.
- Cartoon Animation – Preston Blair, Pub.-Walter Foster.
- The Animator's Survival Kit - Richard Williams
- Basics Animation: Digital Animation - Andrew Chong

M-GAM-201: Film Appreciation and Cinematography

Time:3 Hrs. Total marks:100
Credits: 4 Theory: 75
Internal Assessment: 25

Course Objectives: This course is designed to gain a working of the diverse artistic and practical elements that go in to the making of a film.

Course Learning Outcomes:
After completing the Course, the student will be able to:
M-GAM-201.1: Introduce to the narrative and stylistic techniques used in film making.
M-GAM-201.2: Understand the way that content, form and contexts to create meaning in film.
M-GAM-201.3: Identify the key concepts, model and tools in film criticism.
M-GAM-201.4: Emphasis on the analyze of the visual and aural aspects of selected motion pictures.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT I

Introduction to Indian Cinema

- History of Indian Cinema: Realism, Neo-realism
- Other arts and cinema - theater, painting
- Cinema and Literature, Language in Indian Cinema
- Foreign Cinema

UNIT II

Film Genres

- What are Movie Genres
- Westerns and Gangster Films, Mysteries and Film Noir, Horror, Fantasy and Science Fiction(Scifi), Thrillers
- Romantic Comedy Musicals and Documentaries, Drama

UNIT III

Cinematography

- What is Cinematography?
- Lighting Color Saturation and Desaturation
- The Camera, Lens and Their Uses Framing Special Effects
- Cinematography Editing - Time and Space, Narrative, Shot, Set and Design, Lighting, Sound/Music

UNIT IV

Hollywood, Short Films and Animation

- Criticism and Analysis
- Famous Animated Movies
- Best Movie Oscar Winners
- Award winning short films and Web Series

Reference Material:

- Allen, Robert & Douglas Gomery. Film History: Theory and Practice. New York: McGraw- Hill, Inc., 1987.
- Carroll, Noel. Mystifying Movies: Fads and Fallacies in Contemporary Film Theory. New York: Columbia University Press, 1988.
- Gledhill, Christine & Linda Williams. Eds. Reinventing Film Studies. London: Arnold, 2000.
- Stam, Robert & Toby Miller. Eds. Film and Theory: An Anthology. London: Blackwell Publishers, 2000.
  Stam, Robert & Toby Miller. Eds. A Companion to Film Theory. London: Blackwell Publishers

M-GAM-202: Digital Video Production and VFX

Time:3 Hrs. Total marks:100
Credits: 4 Theory: 50
Practical:25
Internal Assessment: 25

Course Objectives: This course is designed to inculcate, shape and enhance their skills for short film making and video production.

Course Learning Outcomes:
After completing the Course, the student will be able to:
M-GAM-202.1:Learn the Process of video production
M-GAM-202.2: To gain the skill of different video editing techniques
M-GAM-202.3: Understand the concept of visual effect
M-GAM-202.4: To know the different techniques of VFX

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit I

Video Editing

Introduction and history of evolution of the specialized stream called Editing. Deciding an edit. Develop an understanding of the digital video production process: pre-production, shooting, editing, and post-production. Understanding importance of editing in the flow of a narrative.Pace and Rhythm in editing. Linear and Non Linear Film Editing.

Editing Tool

Working with interface. Importing supported files and saving project. Understanding tools and palettes, timeline and project panel.Previewing footages.Managing footages.

Unit II

Working with footages

Setting up project, removing frames, naming, finding and deleting footages, learning file size limitations, Using markers, In-out points, Scaling clips, adding transitions. Changing and replacing transitions. Adding Key, Time remapping, video formats and resolutions.Editing mode, changing Frame size, Exporting, Aspect Ratio, Pixel Aspect Ratio, Audio sample rate, Color Correction and Grading.

Unit III

Introduction to AfterEffects

Working with interface. Importing supported files and saving project. Understanding tools and palettes, timeline and project panel.Previewing footages. Managing footages, Introduction to Layers System(2D, 3D layers), Working with different types of Tools, Key Frame Animation

Working with footages

Rotoscope Techniques(Overview on Roto paint, Animating Roto Shape, Paint Techniques), Wire Removal Techniques, Green/Blue screen, Understanding of Pre-composing/Nesting, 3D Render Pass Comping, Color Correction & Grading.

Unit IV

Creating Masks

Key, Matte, Alpha, and Mask, Creating a Luma-Key, Creating a Chroma-Key, Creating a Mask(The Difference Mask, The Color Difference Mask, Geometric Primitives, Drawing Shapes, Painting a Mask, Combo Masks).

Compositing

Introduction to Compositing, Compositing CGI(Multipass Compositing, Depth Compositing, Multiplane Compositing, Working with Premultiplied CGI), Blue Screen Compositing (The Blue Screen Composite, About Keyers, Compositing Outside the Keyer, Shooting Blue Screens and Green Screens).

List of Practical Exercises:

Different Camera angles and Shots
Apply Video Editing techniques by using own footage
Transformation, Speed and Time
Rendering in different format
Different Key-framing Techniques in after effect
Masking in video footage
Composting, 2d and 3d
Video Advertisment
Motion Graphics advertisement

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

References:

- Editing Digital Video : The Complete Creative and Technical Guide by Robert Goodman (McGraw-Hill), Pub.- McGraw-Hill/TAB Electronics.
- Adobe premiere pro Bible by Adele Droblas, Pub.-Wiley.
- The Art and Science of Digital Compositing: Techniques for Visual Effects, Animation and Motion Graphics (The Morgan Kaufmann Series in Computer Graphics) by Ron Brinkmann
- Video editing: a post-production by S.E. Browne
- The technique of film editing by Reisz and Miller
- Grammar of editing by Roy. Thompson
- Rotoscoping: Techniques and Tools for the Aspiring Artist

M-GAM-203: Multimedia Programming

Time:3 Hrs. Total marks:100
Credits: 4 Theory: 50
Practical:25
Internal Assessment: 25

Course Objectives: This course is designed to introduce the basic concepts of programming for multimedia. Students will learn the principles of programming and how to create scripts for the manipulation of graphics ,audio and text to construct a web based multimedia presentation.

Course Learning Outcomes:
After completing the Course, the student will be able to:
M-GAM-203.1:learn about programming basics and fundamentals of c
M-GAM-203.2: Knowledge about webpage and static website .
M-GAM-203.3: Develop familiarity with the javascript language.
M-GAM-203.4: understand ing of database concepts and DBMS softwares.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT-I

Fundamental Of Computer Programming

- Programming Environment, Basic Syntax, Data Types, Variables, Keywords, Basic Operators, Decision Making, Control Statements, Numbers, Characters, Arrays, Strings Functions

UNIT-II

Web Essentials, HTML, CSS

- Basic Structure of a Web Page
- Basic Tags: Links, Images, Fonts, Colour and Character entities
- Images, Forms, Lists, Tables
- Block and Text level Elements

UNIT-III

JavaScript & PHP

- JavaScript Introduction, Variables and Data types, Control Structures, JavaScript Objects.
- PHP, PHP language Basics , Files and directories, Data Retrieval

UNIT-IV

SQL and Database Management

- Introduction to Sql: Creating Databases and Tables
- Sql Queries: Inserting, Deleting, Updating Data, Joins
- Sorting and Filtering Data
- Querying Sql Database in PHP

List of Practical Exercises:

1.Develop various C program.
2.Create a static webpage using HTML.
3.Design CSS and link with HTML document.
4.Develop and run javascript program.
5.Develop and run PHP program.
6. SQL and database management

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

*Reference Material**:***

- Paul Wilton and Jeremy McPeak, "Beginning JavaScript, 3rd Edition", Wrox Press Inc., 2007.
- Mercer, Kent, Nowicki, Squier and Choi, "Beginning PHP5", John Wiley & Sons, Inc., 2004.
- Jeffrey C. Jackson, "Web Technologies: A Computer Science Perspective", Pearson Education, 2006.
- Chris Bates, "Web Programming – Building Intranet applications", Wiley Publications, 3rd Edition, 2009.

Deitel, Deitel& Nieto, "Internet and World Wide Web - How to Program", ***References:***

M-GAM-204: 3D Modeling and Texturing

Time:3 Hrs. Total marks:100
Credits: 4 Theory: 50
Practical:25
Internal Assessment: 25

Course Objectives: This course is designed to give an introduction to create, edit and analyze 3D models.

Course Learning Outcomes:
After completing the Course, the student will be able to:
M-GAM-204.1: Understand the concept of 3d production process
M-GAM-204.2: understand the different techniques of 3d modeling
M-GAM-204.3: gain knowledge about texturing and mapping in 3d
M-GAM-204.4: know about scrupling in 3d

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT-I

Introduction to 3D Modeling

- 3D Production process
- Introduction to 3d software (workspace and tools)
- Modelling types
- Polygon Modelling Elements
- Tools of polygon modeling
- NURBS/Surface Modeling
- Elements and tools of NURBS Modelling

UNIT-II

3D Modeling Techniques

- Sculpting Tools
- Objecting modeling by using polygon modeling techniques
- Game Assets modeling
- Hard Surface Modeling: Interiors and Exteriors.

- Organic Modeling: Hand and foot
- Eyes, lips, nose and ear modeling

UNIT-III

Texturing and UV Mapping

- Hyper-shade Editor
- UV Projections: Planar Maps, Cylindrical Maps, Spherical Maps, Automatic Mapping
- Normal Maps, Bump Maps, Displacement Maps
- 3D Cut and Sew UV Tool
- UV Editor and UV Toolkit: Unfold, Normalize, Distribute, Layout, Optimize
- Texturing with Substance Painter

UNIT-IV

Introduction to Z brush

- Z brush Interface, ZTools: Primitives, Subtools, Geometry, Deformations
- Basic Brush: Type, Size, Intensity, Color, Alpha, Stroke
- Symmetry, Masking, Slicing, Clipping
- Working with DynaMesh
- Transpose: Move, Scale, Rotate
- Retopology Workflow for Animation (Zbrush to Maya)

List of Practical Exercises:

Workspace of 3d software
Object modeling by using polygon Modeling techniques
Game asset modeling
Interiors Modeling
Exteriors Modeling
Hand and Foot Modeling
Texturing by using bitmaps
Texturing by UVW Wrapping
3D Sculpting techniques

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

*Reference Material**:***

- Prof. Sham, PixologicZBrush 2018: A Comprehensive Guide, CADCIM Technologies, 2019, ISBN: 978-1640570481
- Beginner's Guide to ZBrush, 3DTotal Publishing, 2017, ISBN: 978-1909414501
- Kurt Papstein, ZBrush Characters and Creatures, 3DTotal Publishing, 2015, ISBN: 978-1909414136
- Chris Legaspi, Anatomy for 3D Artists: The Essential Guide for CG Professionals, 3dtotal Publishing, 2015, ISBN: 978-1909414242
- Lee Lanier, Advanced Maya Texturing and Lighting, Sybex, 2015, ISBN: 978-1118983522

M-GAM-205: Cyber Laws and Intellectual Property Rights

Time:3 Hrs. Total marks:100
Credits: 4 Theory: 75
Internal Assessment: 25

Course Objectives: this course is designed to prevent cyber crime and keep people safe from criminals and other cyber crime committing entities.

Course Learning Outcomes:
After completing the Course, the student will be able to:
M-GAM-205.1 learn about various cyber threats.
M-GAM-205.2: describe the legal issues related to use of communication technology.
M-GAM-205.3: learn about IPR and patent laws.
M-GAM-205.4: apply IPR law principles to real problems and analyse the social impact of IPR

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT-I

Cyber Threats

Cyber Crimes, vulnerabilities, risks, theft, Hacking, Virus/Worm attacks, DOS attack, Trojan , Spoofing, Spamming, E-commerce/ Investment Frauds, Defamations, Privacy, Confidentiality, Cyber Stacking

UNIT-II

Cyber Law & Information Technology Act 2000

Cyber Jurisprudence, Cyber Ethics, Cyber- Jurisdiction, Hierarchy of Courts, Civil and Criminal Jurisdictions, Overview of IT Act, 2000, Section 66a of IT Act, Amendments and Limitations of IT Act, Digital Signatures, Cryptography.

UNIT-III

Patent Law

Patents – International Law, Patents Law- Emerging Trends, Social Implication of Patents, Infringement of Patents.
Introduction to Copyrights as forms of Intellectual Property, Copyright Law in India (Copyright Act of 1957), Copyright infringement.
Right conferred by Registration and use of Trademarks, Infringement of Trademarks and passing off, Offences, remedies and enforcement, Trademarks, International Law.

UNIT-IV

Intellectual Property Rights

Introduction to Intellectual Property Rights, Evolution of Intellectual Property Laws Standards and Concepts in Intellectual Property, IPRs and Information Technology IPRs, Management of Intellectual Property Rights, Law of Intellectual Property and Ethical Issues, Intellectual Property Rights in India and abroad.

*Reference Material**:***

- Law and practice of intellectual property in India by VikasVashishth
- Intellectual property by A.Kalank
- Intellectual property- patents, copyrights ,trademarks and allied rights by Cornish W R
- Patents, copyrights, trademarks and design by B L Wadhera
- Intellectual property law by P Narayana
- Patents, copyrights, trademarks and design by Rajeev Jain

cheme of Examination of B.A. (Journalism & Mass Communication) programme in accordance with NEP 2020 (Multiple Entry-Exit, Internships and Choice Based Credit System) w.e.f. Academic Session 2022-23 in phased manner

Semester-I

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
AECC-N100	Communicative English	AECC-1	2	-	-	2	2	2	25	-	25	50	2 Hours
B-JMC-N101	Introduction to Communication	CC-1	5	1	-	6	6	6	75	-	75	150	3 Hours
B-JMC-N102	History of Media	CC-2	5	1	-	6	6	6	75	-	75	150	3 Hours
B-JMC-N103	Introduction to Journalism	CC-3	5	1	-	6	6	6	75	-	75	150	3 Hours
B-JMC-N104	Computer Science (Theory)	SEC-1	1	-	-	1	1	2	20	-	5	25	2 Hours
B-JMC-N105	Computer Science (Practical)		-	-	-	1	1		-	20	5	25	2 Hours
B-JMC-N106	Activity/Hobby							2	Satisfactory/Non Satisfactory				
							Total Credits	**24**	**Total Marks**			**550**	

Semester-II

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
AECC-N200	Environmental Studies	AECC-2	2	-	-	2	2	2	25	-	25	50	3Hours
B-HIN-N200	Communicative Hindi	AECC-3	2	-	-	2	2	2	25	-	25	50	2 Hours
B-JMC-N201	Basics of Reporting and Editing (Theory)	CC-4	4	-	-	4	4	6	50	-	50	100	3 Hours
B-JMC-N 202	Basics of Reporting and Editing (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-JMC-N 203	Introduction to Radio & TV Journalism (Theory)	CC-5	4	-	-	4	4	6	50	-	50	100	3 Hours
B-JMC-N 204	Introduction to Radio & TV Journalism (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-JMC-N 205	Writing for Media (Theory)	CC-6	4	-	-	4	4	6	50	-	50	100	3 Hours
B-JMC-N 206	Writing for Media (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-JMC-N 207	Human Values and Ethics (Theory)	SEC-2	1	-	-	1	1	2	20	-	5	25	2 Hours
B-JMC-N 208	Human Values and Ethics (Practical)		-	-	-	1	1		-	20	5	25	2 Hours
B-JMC-N 209	Activity/Hobby	Activity/ Hobby					2	2	Satisfactory/Non Satisfactory				2 Hours
Total Credits								**26**	**Total Marks**			**600**	
Internship @ 10 credits (450 hours) after 2nd Semester (only for Exit Option) Certificate in Journalism & Mass Communication@ 50 credits													

AECC-N100: Communicative English

Time: 2 Hrs. Total Marks: 50
Credits: 2 Theory:25
Internal Assessment: 25

Contact hours per week: 2

Course objectives: The paper is designed to enhance proficiency in English Language. It seeks to develop the basics of English Language through different modules. Each unit will enable and capacitate the learner to have communication competence which is required in the present-day world. The basic knowledge of communication will enable the learners to share and enliven ideas, experience and know-how ubiquitous in the world.

Course Learning Outcomes:
After completing the Course, the student will be able to:
AECC-N100.1:Learn the rhetoric of presentation
AECC-N100.2: Learn, comment and respond to correspondence
AECC-N100.3: Learn the basics of grammar and composition
AECC-N100.4: Acquaint with verbal and non-verbal communication

Note: All questions are compulsory.

Q.1. The paper setter will set two question from unit-II. The student shall attempt one out of the given two. (05)

Q.2. This question shall be based on unit-III. The student shall attempt one out of the given two. (10)

Q.3. There will be 15 grammatical items based on unit-IV. The student shall attempt any 10 items. (10)

Internal Assessment: The students shall be required to make presentation /PPT based on unit-I.

Unit-I

Listening and speaking skills

Listening skills (Active-passive, Accent)
Speaking Skills (Accent, Stress, Intonation, Assertion, Rhetorical questions, Pause, Pitch)
Oral presentation, Debates, Elocution and Extempore

Unit-II

Writing skills

Report writing
Paragraph writing
Letter writing

Unit-III

Technical and Modern communication

Resume writing
E-mail
Blogs and comments on social media

Unit-IV

Grammar

Noun, Pronoun, Verb, Adverb, Adjective, Preposition, Conjunction and their uses
Common errors in the use of English (Noun, Pronoun, Adjective, Adverb, Conjunctions)
Correct use of verbs and Articles
Vocabulary: Homonyms, Homophones, Pair of words

References:

- Communicative English, Dr. Jimmy Sharma, Arihant Parkashan Pvt. Ltd.
- Strengthen Your English, Bhaskaran and Horsburgh, Oxford University Press
- Basic Communication Skills for Technology, and area J Rutherfoord, Pearson Education Asia.
- Murphy's English Grammar with CD, Murphy, Cambridge University Press
- English Skills for Technical Students by Orient Longman
- Everyday Dialogues in English by Robert J. Dixson, Prentice-Hall of India Ltd., 2006.

AECC-N100: Communicative English

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
AECC-N100.1	2	2	2	2	2	2	2	2
AECC-N100.2	2	2	2	2	2	2	2	2
AECC-N100.3	2	2	2	2	2	2	2	2
AECC-N100.4	2	2	2	2	2	2	2	2
Average	2	2	2	2	2	2	2	2

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
AECC-N100.1	2	2	2	2	2
AECC-N100.2	2	2	2	2	2
AECC-N100.3	2	2	2	2	2
AECC-N100.4	2	2	2	2	2
Average	2	2	2	2	2

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
AECC-N100.1	2	2	2	2	2	2	2	2	2	2	2	2	2
AECC-N100.2	2	2	2	2	2	2	2	2	2	2	2	2	2
AECC-N100.3	2	2	2	2	2	2	2	2	2	2	2	2	2
AECC-N100.4	2	2	2	2	2	2	2	2	2	2	2	2	2
Average	2	2	2	2	2	2	2	2	2	2	2	2	2

B-JMC-N101: Introduction to Communication

Time:3 Hrs. Total Marks: 150
Credits: 6 Theory: 75
Internal Assessment: 75

Contact hours per week: 6

Course Objectives: This course is designed to develop understanding of the basic concept and process of communication. Besides elaborating upon basic models the paper highlights the Indian concept of communication. The prime objective is to enhance communication skills by learning and practice.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-JMC-N101.1:Understand basic concept of communication including Indian (Bharatiya) concept
B-JMC-N101.2: Know about the different levels and types of communication
B-JMC-N101.3: Develop understanding of basic models of communication
B-JMC-N101.4: Develop understanding of basic theories of communication

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT-I

Evolution of Communication
Communication: concept, definition, need and scope of communication
Indian philosophy of communication
Communication: elements and process
Levels of communication

UNIT-II

Types of communication
Principles of communication
Functions of communication
Barriers of communication

UNIT-III

Models of communication- Sadharanikaran, SMR, SMCR, Berlo
Aristotle, Lasswell, Dance, New Comb, Osgood

UNIT-IV

Theories of communication:
Hypodermic Needle Theory
Two-step flow and Multi-step flow
Dependency theory, cultivation theory

Agenda Setting Theory
Use and Gratification Theory
Limited Effects Theory

Student Activity:

1. Students will watch closely two persons communicating with each other than analyze the various signs and symbols they are using for interaction. They will note their signs & symbols and discuss their meaning in class. Students will also examine if there is any noise or barrier existing in their communication. If yes, observe the effect of the noise on the communication process.
2. Students will be engaged in group communication and public speaking activities.
3. Exercises will be conducted to understand the uses of verbal and non-verbal communication.

References :

- 1.Dennis, Mcquail, Mass Communication Theory, Sage Publication, New Delhi.
- 2.Schramm, W. &Roberts,D. F.,The Process and Effects of Mass Communication, Urbana, IL: University of Illinois Press.
- 3.Rayudu. C.S., Communication, Himalaya Publishing House, Mumbai
- 4.Joshi,P.C., Communication &Nation–Building – Perspective and Policy, Publication Division, New Delhi.
- 5.Malhan P.N., Communication Media, Yesterday, Today and Tomorrow, Publication Division, New Delhi.
- 6.Agee, Warren K., Ault Philip H., Introduction to Mass Communication, Oxford &IBH Publishing Company, New Delhi

B-JMC-N101: Introduction to Communication

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-JMC-N101.1	3	3	3	2	3	3	3	3
B-JMC-N101.2	3	3	3	3	3	3	3	3
B-JMC-N101.3	3	3	3	3	3	3	3	3
B-JMC-N101.4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-JMC-N101.1	3	2	2	2	3
B-JMC-N101.2	3	3	3	3	3
B-JMC-N101.3	3	3	3	3	3
B-JMC-N101.4	3	3	3	3	3
Average	3	2.75	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-JMC-N101.1	3	3	3	2	3	3	3	3	3	2	2	2	3
B-JMC-N101.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC-N101.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC-N101.4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	2.75	2.75	2.75	3

B-JMC- N102: History of Media

Time:3 Hrs
Credits: 6

Total Marks: 150
Theory: 75
Internal Assessment: 75

Contact hours per week: 6

Course Objectives: This course will provide an overview of the glorious journey of journalism in India and will also enhance the understanding of the history and development of traditional media and electronic media and films in India.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-JMC- N102.1:Learn about the history and development of print media in India
B-JMC- N102.2:Understand the origin and development of Indian electronic media
B-JMC- N102.3: Know about the history and development of Indian Cinema
B-JMC- N102.4: Learn about various types of popular traditional media

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

nit-I

Invention of printing press
History and growth of Print Media in India
Role of Press in Indian freedom movement
Growth and Development of print media in Haryana

Unit-II

Invention of Radio
History, development and growth of radio (AM, FM and Community radio) in India
Growth of radio in Haryana
Expansion of radio in India and New trends in radio broadcasting

Unit-III

Invention of Television
History, development and growth of TV in India
Emergence and development of Private TV Channels in India
Origin of Cinema
History, development and growth of Cinema in India
Development and present status of Haryanvi Cinema

Unit-IV

Introduction to Web Channels/Over the Top Platform (OTT)
Netflix, Amazon Prime, Disney Hotstars, Zee5, Sonyliv etc.
Introduction of regional Web Channels/OTT (Stageapp and Choupal)
History of Traditional media in India
Types of Traditional Media: Folk Theatre, Folk Dance, Folk Music
Popular folk media of Haryana

Assignments

- **Prepare a series of Essay (10), choosing two from each units. (Word limit-500)**

References :

- Kumar, Keval J., Mass Communication in India. Jaico, Mumbai.
- B.D. Garga, So Many Cinemas-The Motion Picture in India, Bombay, Eminence Design Pvt. Ltd, 1996.
- Erik Barnouw and S. Krishnaswamy: Indian Films, New Delhi, Oxford, 1986
  Luthra, H.R., Indian Broadcasting, Publication Division, New Delhi.
- Nadig Krishnamurthu, India Journalism (From Asokato Nehru),University of Mysore.
- Chatterjee, P.C., Broadcasting in India, New Delhi
- Rangaswamy, Parthasaratihi, Journalism in India, Sterling Publication, New Delhi.
- Natarajan, J., History of Indian Journalism, Publication Division, New Delhi.
- Jeffrey, Robin,India's Newspaper REvolution, Oxford University Press, Delhi.
- Singh, Chandrakant, Before the Headlines : A Handbook of Television Journalism, Macmilan India Ltd. Delhi
- Singh, Devvrat, Indian Television: Content, Issues and Challenges, Har Anand Publications Delhi,
- Narayan Sunetra Sen, Globalization and Television, Oxford University Press Delhi.

B-JMC- N102: History of Media

Process CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-JMC- N102.1	3	3	3	3	3	3	2	3
B-JMC- N102.2	3	3	3	3	3	3	3	3
B-JMC- N102.3	3	3	3	3	3	3	3	3
B-JMC- N102.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-JMC- N102.1	3	2	3	3	3
B-JMC- N102.2	3	2	3	3	3
B-JMC- N102.3	3	3	3	3	3
B-JMC- N102.4	3	3	3	3	3
Average	3	2.5	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-JMC- N102.1	3	3	3	3	3	3	2	3	3	2	3	3	3
B-JMC- N102.2	3	3	3	3	3	3	3	3	3	2	3	3	3
B-JMC- N102.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC- N102.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	3	3	2.5	3	3	3

-JMC-N103: Introduction to Journalism

Time: 3 Hrs
Credits: 6

Total Marks: 150
Theory: 75
Internal Assessment: 75

Contact hours per week: 6

Course Objectives: The course is designed to introduce students to the basics of journalism, to acquaint them with elements, types and important aspects of process of Journalism and to enhance understanding of the technical terms and jargon of Journalism.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-JMC- N103.1: Understand the basic concept of journalism including Indian perspective
B-JMC- N103.2: Inculcate the knowledge of elements and types of journalism
B-JMC- N103.3: Understand the contemporary issues and important aspects of the process of journalism
B-JMC- N103.4: Enhance understanding of the technical terms and jargon of journalism

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

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Unit-I

Journalism: Concept, elements, definition, nature and scope
Indian concept of Journalism: Ancient Perspective
Functions and Skills of Journalism
Role of Journalism in Democracy
Journalistic values-Truth, objectivity, fairness, balance, diversity and plurality

Unit–II

Contemporary Issues and Debates in Journalism
Media Literacy: concept and definition
Relevance of media literacy in society
Convergence – meaning and concept

Unit–III

Alternative Journalism
Yellow Journalism
Investigative Journalism
Advocacy Journalism
Citizen Journalism
Data Journalism

Unit–IV

New technological trends in journalism, Cyber journalism
Journalism through social media
New trends in journalism, MoJo (Mobile Journalism)
Terminologies of journalism

Assignments

•Students will prepare a profile of news paper writings (types and style).
•Visit to important media centers observing their functioning and writing reports thereof.

References :

1. Kumar, KevalJ, Mass Communication in India. Jaico, Mumbai.
2. Thakur Prof. (Dr). Kiran, Handbook of Print Journalism, MLC University of Mass communication &Journalism Bhopal
3. Bhargav G.S., The Press in India: An Overview, National Book Trust New Delhi
4. Beer Arnold S.de and Merrill John C., Global Journalism: Topical Issues and Media Systems, PHI Learning Private Limited, New Delhi
5. News Papers and Magazines based on current affairs.
6. Aggarwal, Virbala, Patrakarita evam Jansanchar Margdarshika, Concept Publishing Company, New Delhi.

B-JMC-N103: Introduction to Journalism

Process CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-JMC- N103.1	3	3	3	3	3	3	2	3
B-JMC- N103.2	3	3	3	3	3	3	3	3
B-JMC- N103.3	3	3	3	3	3	3	3	3
B-JMC- N103.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-JMC- N103.1	3	2	3	3	3
B-JMC- N103.2	3	2	3	3	3
B-JMC- N103.3	3	3	3	3	3
B-JMC- N103.4	3	3	3	3	3
Average	3	2.5	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-JMC- N103.1	3	3	3	3	3	3	2	3	3	2	3	3	3
B-JMC- N103.2	3	3	3	3	3	3	3	3	3	2	3	3	3
B-JMC- N103.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC- N103.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	3	3	2.5	3	3	3

B-JMC-N104: Computer Science (Theory)

Time: 2 Hrs. Total Marks: 25
Credits: 1 Theory: 20
Internal Assessment: 5

Contact hours per week: 1

Course Objectives: This course is designed for theoretical understanding of computer system and its components, functioning and its application software exposure.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-JMC-N104.1: Understand the basic knowledge of computer system.
B-JMC -N104.2: Know about the functioning of operating systems.
B-JMC -N104.3 Understand the basic concept of Internet and computer networks .
B-JMC -N104.4: Understand the basics of Application Software.

NOTE:- The examiner will set total 10(ten) questions covering the entire syllabus. Student will attempt any five questions. All questions will carry equal marks.

Unit-I

Operating System - Definition & Functions of Operating System, Basics of Popular Operating Systems; The User Interface, Exploring Computer, Icons, taskbar, desktop, Using Menu and Menu-selection, managing files and folders, Control panel – display properties, add/remove software and hardware, Running an Application, Using help; Creating Short cuts, Basics of O.S Setup; Common utilities.

Unit-II

Word Processing: Introduction to Word Processing, Menus, Creating, Editing & Formatting Document, Spell Checking, Printing, Views, Tables, Word Art, Mail Merge, Macros.

Unit-III

Spread Sheet: Elements of Electronics Spread Sheet, Applications, Creating and Opening of Spread Sheet, Menus, Manipulation of cells: Enter texts numbers and dates, Cell Height and Widths, Copying of cells, Mathematical, Statistical and Financial function, Drawing different types of charts.

Unit-IV

Presentation Software: Creating, modifying and enhancing a presentation, Delivering a presentation, Using sound, animation and design templates in presentation.

REFERENCES BOOKS

- Help files from Apache Open Office, https://wiki.openoffice.org/wiki/Documentation
- Channelle Andy, "Beginning OpenOffice 3: From Novice to Professional", aPress Publications
- Beginning OpenOffice 3: From Novice to Professional, Andichannele, Apress.
- Microsoft Office 2016 Step by Step: MS Office 2016 Step by S_p1, By Joan Lambert, Curtis Frye
- Computer Fundamentals - By Pradeep K. Sinha, Priti Sinha, BPB Publications, 6th Edition
- Getting Started with LibreOffice 5.0, Friends of OpenDocuments Inc., Http://friendsofopendocument.com
- Documentation from LibreOffice, https://documentation.libreoffice.org/en/english-documentation/

B-JMC-N104: Computer Science (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-JMC- N104.1	3	3	3	3	3	3	3	3
B-JMC- N104.2	3	3	3	3	3	3	3	3
B-JMC- N104.3	3	3	3	3	3	3	3	3
B-JMC- N104.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-JMC- N104.1	3	3	3	3	3
B-JMC- N104.2	3	3	3	3	3
B-JMC- N104.3	3	3	3	3	3
B-JMC- N104.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-JMC- N104.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC- N104.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC- N104.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC- N104.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-JMC-N105: Computer Science (Practical)

Time: 2 Hrs. Total Marks: 25
Credits: 1 Practical: 20
Internal Assessment: 5

Contact hours per week: 2

Course Objectives: This course is designed for practical understanding of commonly used application software and its functioning to the students.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-JMC -N105.1: Use MS-Word
B-JMC -N105.2: Use MS-Excel
B-JMC -N105.3: Use PowerPoint
B-JMC -N105.4: Create Email account, compose & send emails for personal and professional communication.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Starting with basics of Operating Systems and its functionalities
Create and format word documents.
Use tables, word Art and other features in your documents.
Use macros to simplify the tasks in a document.
Use mail merge to write once for many.
Use spreadsheet for basic data handling
Apply formulas to sheet for automation.
Use if-else to make certain decisions in a sheet.
Use Charts & Shapes for better visualization of data.
Use filters and data validation controls for control of data
Prepare and format presentations.
Apply slide transitions, animations and sequencing for slides.
Apply different formatting and insert options to make presentation better.
Use rehearse and timing options for a presentation with handouts.

B-JMC-N105: Computer Science (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-JMC -N105.1	3	3	3	3	3	3	3	3
B-JMC -N105.2	3	3	3	3	3	3	3	3
B-JMC -N105.3	3	3	3	3	3	3	3	3
B-JMC -N105.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-JMC -N105.1	3	3	3	3	3
B-JMC -N105.2	3	3	3	3	3
B-JMC -N105.3	3	3	3	3	3
B-JMC -N105.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-JMC -N105.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC -N105.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC -N105.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC -N105.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-JMC-N106: Activity/Hobby

Gita-A Manual of Life (Option-i)

Course Credit: 02 Total Marks: 50 Marks

Contact Hours: 02 per week

Teaching will be based on the discussion in the class room

Note: There will be no written examinations, knowledge and understanding of Gita teachings will be assessed through discussion by the Students describing the knowledge and implementation of Gita's teachings in daily life for the betterment of our day today life.

Course Outcomes:

Unit-1: After studying the first unit of the course students will be able to understand meaning, background & relevance of Gita's teaching's in contemporary times.

Unit-II: After studying the second unit of the course students will be able to understand benefits of Karma Yoga, Bhakti Yoga and Gyana Yoga in our daily life.

Unit-1

Gita for all: Meaning, background and relevance of Gitaopdesha. Karmayoga as a way

to right knowledge; Necessity of Loksamgraha for the service of Humanity.

Unit-II

Gita for Spiritual world: Karm Yogi as an Ideal Man of Gita, Sthitaprajna as a symbol of ideal master in Gita, Swadharma and Pradharma as a secret of Blissful society, Atma Samyama Yoga; a technique for building an ideal person according to Gita.

Suggested Books:

- Swami Ramsukhdas, Gita Sadhak Sanjivani Teeka
- Hnuman Prasad Poddhar, Gita Tattvavivechni Teeka
- Gandhi Gita Matta
- Gurudatta Srimadbhagvadgita Vyakhya
- Satyavarta, Srimadbhagvadgita Vyakhya
- Swami Jyanananda, Gita Prerna
- Paramhamsa Yogananda, Srimadbhagvadgita God-Arjuna, Discoruse Aurvind, Essays on Gita.
- S. Radhakrishna, Bhagwvadgita Vyakhya
- Jyaneshwar, Jyaneshwari Gita

B-JMC-N106: Activity/Hobby

Public Speaking (Option-ii)

Course Credit: 02 Total Marks: 50 Marks

Contact Hours: 02 per week

Teaching will be based on the discussion in the class room

Note: There will be no written examinations. Understanding and art of Public speaking will be assessed through discussion and presentation by the Students in the class room.

Course Outcomes:

Unit-1: After studying the first unit of the course students will be able to understand relevance of Public speaking in their academic and professional life.

Unit-II: After studying the second unit of the course students will be able to write their own speech and analyze the intricacies of speeches of renowned speakers.

Unit-1

Public speaking: Meaning and relevance, Characteristics of an effective speaker, Power of words, Use of body language, dressing, mannerisms, Use of effective memory techniques, Overcoming the fear of public speaking- Glossophobia

Unit-II

Speech : Introduction, body and conclusion, Writing your own speeches, famous speeches of World s greatest orators, Case studies of effective public communicators like TED speakers of both Indian and foreign origin

Suggested Books:

- The Art of Public Speaking author Dale Carnegie, along with J. Berg Esenwein, Rupa Publications, India (English and Hindi)
- Speak with no fear, Mike Acker, Advantage Publishing Group
- TED Talks, Chris Anderson, Headline Publishing Group
- 50 Prernadayak Bhashan, Fingerprint Publishing

AECC-N200 : Environment Studies

Time: 3 Hrs. Total Marks: 50
Credits: 2 Theory: 25
Internal Assessment: 25

Scheme of paper: Total number of questions will be nine. Students have to attempt five questions in all. Questions no. 1 is compulsory. All questions carry equal marks. Each question is of 8 marks.

Course objectives: The aim of this course is to make the students aware about the environmental problems and current global issues related to environment. It provides knowledge about concepts of ecosystem and biodiversity and develops interest in the students about their role in conservation of environment and reducing pollution and waste generation in their surroundings. By understanding the environmental problems, their causes and solutions, the students can apply these to their daily lives.

Course Outcomes (COs) for Theory:

COs	On successful completion of the course, the students will be able to:
CO 1	Understand the concept of environmental studies, its scope and importance in the conservation of environment. Understand the concept of ecosystem and different types of natural and artificial ecosystems in the world, the biogeochemical cycling and energy flow in an ecosystem.
CO 2	Describe the various renewable and non-renewable natural resources and their over-exploitation due to increasing demands of rising population. Become aware about biodiversity, its importance and the various threats for biodiversity. Have knowledge of the endangered species and their conservation measures that are needed to be adopted at different levels.
CO 3	Have understanding about the types of pollution and how to reduce pollution levels in air, soil, water, land and from marine bodies, as to develop interest in reducing the solid waste generation as well as its management at household level. Gain knowledge of various global environmental issues like climate change, global warming and ozone depletion and also about different environmental laws implemented to conserve the environment.
CO 4	Understand the concept of population growth, disaster management, impacts of drug abuse and various environmental movements.

Course outcome for practical/field work:

CO 1	To get practical knowledge of various environmental issues through project file/assignment with case studies.

Mode of Paper Setting: Total number of questions set will be nine. Questions no. 1 is compulsory covering the entire syllabus. Two questions will be set from each unit. Students have to attempt five questions in all, one question from each unit including the compulsory question. Each question is of 5 marks. All questions carry equal marks. Final theory exam time allowed will be of 3 hours.

Unit I

Introduction to environmental studies: Multidisciplinary nature of environmental studies; Scope and importance; Concept of sustainability and sustainable development.

Ecosystems: What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems: a) Forest ecosystem, b) Grassland ecosystem, c) Desert ecosystem, d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) (8 lectures)

Unit II

Natural Resources: Renewable and Non-renewable Resources

•Land resources and landuse change; Land degradation, soil erosion and desertification.

•Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.

•Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).

•Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Biodiversity and Conservation

•Levels of biological diversity: genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots

•India as a mega-biodiversity nation; Endangered and endemic species of India

•Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

•Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value. (16 lectures)

Unit III

Environmental Pollution

•Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution

•Nuclear hazards and human health risks

•Solid waste management: Control measures of urban and industrial waste, Pollution case studies.

Environmental Policies & Practices

•Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture

•Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).

•Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

(15 lectures)

Unit IV

Human Communities and the Environment

•Human population growth: Impacts on environment, human health and welfare.

•Resettlement and rehabilitation of project affected persons; case studies.

•Disaster management: floods, earthquake, cyclones and landslides.

•Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan.

•Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.

•Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Drugs and their effects; Useful and harmful drugs; Use and abuse of drugs; Stimulant and depressant drugs. Concept of drug de-addiction. Legal position on drugs and laws related to drugs.

(6 lectures)

Practical/Field work

•Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.

•Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.

•Study of common plants, insects, birds and basic principles of identification.

•Study of simple ecosystems-pond, river, Delhi Ridge, etc. (Equal to 5 lectures)

Suggested Readings:

1.Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt.

2.Gadgil, M., & Guha, R. 1993. This Fissured Land: An Ecological History of India. Univ. of California Press.

3.Gleeson, B. and Low, N. (eds.) 1999. Global Ethics and Environment, London, Routledge.

4.Gleick, P. H. 1993. Water in Crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.

5.Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. Principles of Conservation Biology. Sunderland: Sinauer Associates, 2006.

6.Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. Science, 339: 36-37.

7.McCully, P. 1996. Rivers no more: the environmental effects of dams (pp. 29-64). Zed Books.

8.McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.

9.Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders.

10.Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.

11.Rao, M.N. & Datta, A.K. 1987. Waste Water Treatment. Oxford and IBH Publishing Co. Pvt. Ltd.

12.Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. Environment. 8th edition. John Wiley & Sons.

13.Rosencranz, A., Divan, S., & Noble, M. L. 2001. Environmental law and policy in India. Tripathi 1992.

14.Sengupta, R. 2003. Ecology and economics: An approach to sustainable development. OUP.

15.Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.

16.Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. Conservation Biology: Voices from the Tropics. John Wiley & Sons.

17.Thapar, V. 1998. Land of the Tiger: A Natural History of the Indian Subcontinent.

18.Warren, C. E. 1971. Biology and Water Pollution Control. WB Saunders.

19.Wilson, E. O. 2006. The Creation: An appeal to save life on earth. New York: Norton.

20.World Commission on Environment and Development. 1987. Our Common Future. Oxford University

B-HIN-N200 : Communicative Hindi

Time: 2 Hrs.
Credits: 2
Contact hours per week: 2

Total Marks: 50
Theory: 25
Internal assessment: 25

Course Objectives: The Paper is designed to enhance proficiency in Hindi Language. It seeks to develop the basic of Hindi Language through different modules. Each unit will enable the learner to have the communication in Hindi and to share and express ideas and experiences.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-HIN-N200.1: Develop the knowledge of basics of Hindi language.
B-HIN-N200.2: Improve vocabulary in Hindi language.
B-HIN-N200.3: : Inculcate the knowledge of grammar in Hindi language
B-HIN-N200.4: Learn correct uses of Hindi language in media writing

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit – I

Hkk"kk dh ladYiuk
Hkk"kkbZ Hksn&ekSf[kd ,oa fyf[kr
Hkk"kk dk ekudhdj.k&fLFkfr ,oa pqukSfr;k¡
Hkk"kk rFkk lekt dk ikjLifjd vUrlZcU/kA

Unit – II

fgUnh O;kdj.k 'kCn :i vkSj okD; jpuk
nsoukxjh fyfi vkSj o`fr
mPpkj.k vo;o] i;kZ;] foykse] lekukFkhZ] vusdkFkhZ 'kCn
fgUnh dh iz;ksxkRed =qfV;ka

Unit – III

fgUnh lkfgR; dk laf{kIr bfrgkl
fgUnh lkfgR; dh vk/kfud izo`fRr;ka
fgUnh dh lkfgfR;d fo/kkvksa dk ifjp;
fgUnh x| ,oa i|

Unit – IV

iz;kstu ewyd fgUnh dk vfHkizk; ,oa vko';drk
tulapkj ek/;e vkSj fgUnh Hkk"kk] ehfM;k dh Hkk"kk dh izd`fr ,oa fopyu
{ks=h; izHkko ,oa {ks=h; Hkk"kkbZ iz;ksx
eqfnzr ek/;e vkSj fgUnh

jsfM;ks ,oa Vsyhfotu dh Hkk"kk
foKkiu ,oa lks'ky ehfM;k dh Hkk"kk

Suggested Readings:

HkkfV;k] MkW- dSyk'kpUn] vuqokndyk % fl)kar vkSj iz;ksx] r{kf'kyk izdk'ku] u;h fnYyhA
'kekZ] j?kquUnu izlkn] iz;kstu ewyd fgUnh % fl)kar vkSj O;ogkj] fo'ofo|ky; izdk'ku] okjk.klhA
v;~;j] fo'oukFk] vuqokndyk] izHkkr izdk'ku] fnYyh
frokjh] HkksykukFk] fgUnhHkk"kk dh lkekftd Hkwfedk] nf{k.k Hkkjr fgUnh izpkj lfefr] enzkl
>kYVs] MkW- naxy] iz;kstu ewyd fgUnh % fl)kar vkSj iz;ksx] ok.kh izdk'ku] u;hfnYyh
xksnjs] MkW- fouksn] iz;kstu ewyd fgUnh] ok.kh izdk'ku] u;h fnYyh
jk.kk] egsUnz flag] iz;kstu ewyd fgUnh ds vk/kqfud vk;ke] g"kkZ izdk'ku] vkxjkA
dqekj pan] tulapkj ek/;eksa esa fgUnh] Dykfldy ifCyf'kax dEiuh] fnYyh

B-HIN-N200: Communicative Hindi

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-HIN-N200.1	3	3	3	3	2	2	2	3
B-HIN-N200.2	3	3	3	3	2	2	2	3
B-HIN-N200.3	3	3	3	3	2	2	2	3
B-HIN-N200.4	3	3	3	3	2	2	2	3
Average	3	3	3	3	2	2	2	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-HIN-N200.1	2	2	2	2	2
B-HIN-N200.2	2	2	2	2	2
B-HIN-N200.3	2	2	2	2	2
B-HIN-N200.4	2	2	2	2	2
Average	2	2	2	2	2

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-HIN-N200.1	3	3	3	3	2	2	2	3	2	2	2	2	2
B-HIN-N200.2	3	3	3	3	2	2	2	3	2	2	2	2	2
B-HIN-N200.3	3	3	3	3	2	2	2	3	2	2	2	2	2
B-HIN-N200.4	3	3	3	3	2	2	2	3	2	2	2	2	2
Average	3	3	3	3	2	2	2	3	2	2	2	2	2

B-JMC-N201: Basics of Reporting & Editing (Theory)

Time:3 Hrs. Total Marks: 100
Credits: 4 Theory: 50
Contact hours per week: 4 Internal Assessment: 50

Course Objectives: The course is designed to impart knowledge about the basics of reporting and editing and to familiarize the students with different skills required for reporting and editing with a focus to create understanding of specialized reporting.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-JMC-N201.1: Understand the basics of reporting
B-JMC-N201.2 Understand different types and techniques of reporting
B-JMC-N201.3: Know basic concept of editing for print
B-JMC-N201.4: Learn basics of newspaper designing

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT–I

Concept, definitions and elements of Reporting
Sources of News, News gathering, Verification and Validation of facts
Cultivation of sources, types of sources, significance of sources in news gathering
Reporting hierarchy in a Newspaper

UNIT-II

Skills required to being a reporter
Press conference, Press briefing, Meet the press and Conducting interviews
Types of beat: Political, Crime, Life style, Entertainment, Sports, Health, Education, Agriculture, Science & Technology, Business, Investigative

Unit–III

Editing: concept, definition and significance
Principles of Copy Editing
Role of News Editor, Chief Sub Editor and Copy Editor, Skills required to being a copy editor
News Editing: Copy writing, copy selection, story structure

UNIT-IV

Design: meaning and significance
Elements and principles of design
Concept and Utility of Dummy
Basic knowledge of designing softwares like Quark & Indesign

References :

1. M.V. Kamath: Professional Journalism; Vikas Publishing, New Delhi.
2. K.M. Srivastava News Reporting and Editing.
3. LynetteSheridanBurns: Understanding Journalism; Vistaar Publications.
4. Tony Harcup: Journalism:Principles and Practice; Sage.
5. Hereis the News: ReportingforMedia, SterlingPublishers.
6. Flemming and Hemmingway(2005), An Introduction to journalism, Vistaar Publications.
7. Richard, K. (2000). TheNewspaper's Handbook, RoutledgePublication.
8. Frost, C. (2001). Reporting for Journalists, Routledge, London.
9. NatarajanandChakraborty:Oyvkucatuibs(1995):DefenceReportinginIndia:The Communication Gap, Trishul Publications .
10. Trikha,N.K,Reporting,MakhanlalChaturvediRashtriyaPatrakaritaAvamSanchar Vishwavidyalaya.
11. Drone Journalism- Dr Abid Ali, Sankalp Publication
12. Dr. Ashok Kumar Samachar Lekhan avem Reporting, Shivalik Prakashan New Delhi,

B-JMC-N201: Basics of Reporting & Editing (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-JMC-N201.1	3	3	3	3	3	3	2	2
B-JMC-N201.2	3	3	3	3	3	3	3	3
B-JMC-N201.3	3	3	3	3	3	3	3	3
B-JMC-N201.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	2.75

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-JMC-N201.1	3	3	2	3	3
B-JMC-N201.2	3	3	3	2	3
B-JMC-N201.3	3	3	3	2	3
B-JMC-N201.4	3	3	3	3	3
Average	3	3	2.75	2.5	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-JMC-N201.1	3	3	3	3	3	3	2	2	3	3	2	3	3
B-JMC-N201.2	3	3	3	3	3	3	3	3	3	3	3	2	3
B-JMC-N201.3	3	3	3	3	3	3	3	3	3	3	3	2	3
B-JMC-N201.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	2.75	3	3	2.75	2.5	3

B-JMC-N202: Basics of Reporting & Editing (Practical)

Time:3 Hrs.	Total Marks: 50
Credits: 2	Practical: 25
Contact hours per week: 4	Internal Assessment: 25

Course Objectives: This paper is designed to impart the practical knowledge about reporting and editing and of designing softwares.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-JMC-N202.1: Report various types of news stories
B-JMC-N202.2: Conduct interviews as a reporter
B-JMC-N202.3: Edit copy for print
B-JMC-N202.4: Use newspaper designing softwares

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Submit 25 news reports of events in your city (of any five different beats). Five political stories, 5 crime stories, 5 sport stories, 5 lifestyle/entertainment stories, 5 stories related to health/ science ad technology
Edit at least five stories
Prepare a dummy of daily newspaper
Design front page of a daily newspaper
Conduct interviews of two famous personalities

B-JMC-N202: Basics of Reporting & Editing (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-JMC- N202.1	3	3	3	2	2	2	3	3
B-JMC- N202.2	3	3	3	2	2	2	3	3
B-JMC- N202.3	3	3	3	2	2	2	3	3
B-JMC- N202.4	3	3	3	2	2	2	3	3
Average	3	3	3	2	2	2	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-JMC- N202.1	3	2	3	3	3
B-JMC- N202.2	3	2	3	3	3
B-JMC- N202.3	3	3	2	3	3
B-JMC- N202.4	3	3	3	3	3
Average	3	2.5	2.75	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-JMC- N202.1	3	3	3	3	3	3	3	3	3	2	3	3	3
B-JMC- N202.2	3	3	3	3	3	3	3	3	3	2	3	3	3
B-JMC- N202.3	3	3	3	3	3	2	3	3	3	3	2	3	3
B-JMC- N202.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	3	3	3	2.75	2.75	3	3

B-JMC-N203: Introduction to Radio & TV Journalism (Theory)

Time:3 Hrs. Total Marks: 100
Credits: 4 Theory: 50
Contact hours per week: 4 Internal Assessment: 50

Course Objectives: The course is designed to introduce students to the basics of Radio and TV Journalism and also to make them familiarize with the working of radio and TV studio and the related equipment.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-JMC 203.1: understand basics of radio journalism and working of radio studio
B-JMC 203.2:understand functioning of radio newsroom
B-JMC 203.3:understand TV studio set up and different types of cameras
B-JMC 203.4: understand TV newsroom and its functioning

UNIT-I

Introduction to Radio Journalism
Radio Stations based on their transmission and purpose
Community radio, military radio, spiritual/religious radio
Commercial radio, private radio, pirate radio, amateur radio stations
New trends in radio broadcasting- Satellite radio, digital radio, online radio stations

UNIT –II

Set –up and functioning of a radio studio, Microphones, console, mixers and speakers
Radio Newsroom- employee and working process, Qualities of News Editor and News Reporter
Radio news bulletin: News-gathering, Elements of a radio news story, writing radio news, elements of a radio news bulletin

UNIT –III

Introduction and functions of TV Journalism
Types of TV studios, Set up and functioning of a TV studio
Introduction to Video cameras: EFP, ENG, Steady Cameras, Crane, Camera, Hexacopter,Spiders Camera

UNIT –IV

Structure and functioning of TV newsroom
TV news bulletin: News-gathering, Elements of a TV news story, Story structures- inverted pyramid, diamond, hour glass, narrative
TV news script, elements of a TV news bulletin
News anchor, presenter and reporter's roles and responsibilities
TV debates, interviews and types of interviews

Suggested Readings

1. Masani Mehra, Broadcasting & People NBT, New Delhi 1985
2. Akas Bharti, Vol. I & II Publication,Division. New Delhi
3. Broadcasting in India - S. R. Joshi, ISRO, June 1997, Ahmadabad
4. Andrew Boyd: Broadcast Journalism
5. Mitchell Stephon Holt, Broadcast News - Radio Journalism, Rineheast Winston NY 1980
6. While T. Broadcast, News writing MacMillian NY, 1984
7. Wills Edgar and Holt, Writing TV and radio programmes R & W Publication 1967.
8. Rivers Wlliams and work Alison Writing for the Media.
9. Carl Warren, Radio News Writing and Editing
10. Report L. Hillard Radio Broadcasting

B-JMC-N203: Introduction to Radio & TV Journalism (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-JMC-N203.1	3	3	3	3	3	3	2	2
B-JMC-N203.2	3	3	3	3	3	3	3	3
B-JMC-N203.3	3	3	3	3	3	3	3	3
B-JMC-N203.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	2.75

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-JMC-N203.1	3	3	2	3	3
B-JMC-N203.2	3	3	3	2	3
B-JMC-N203.3	3	3	3	2	3
B-JMC-N203.4	3	3	3	3	3
Average	3	3	2.75	2.5	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-JMC-N203.1	3	3	3	3	3	3	2	2	3	3	2	3	3
B-JMC-N203.2	3	3	3	3	3	3	3	3	3	3	3	2	3
B-JMC-N203.3	3	3	3	3	3	3	3	3	3	3	3	2	3
B-JMC-N203.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	2.75	3	3	2.75	2.5	3

B-JMC-N204: Introduction to Radio & TV Journalism (Practical)

Time:3 Hrs. Total Marks: 50
Credits: 2 Practical: 25
Internal Assessment: 25

Course Objectives: The purpose of this paper is to give practical experience of working in a radio and TV studio and preparing radio and TV news.

List of practicals
Reporting radio news stories for any five events of your city
Writing script for radio news bulletin
Reporting TV news stories for any five events of your city
TV writing for different types of visuals
Writing script for TV news bulletin
Different types of PTC

B-JMC-N204: Introduction to Radio & TV Journalism (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-JMC- N204.1	3	3	3	2	2	2	3	3
B-JMC- N204.2	3	3	3	2	2	2	3	3
B-JMC- N204.3	3	3	3	2	2	2	3	3
B-JMC- N204.4	3	3	3	2	2	2	3	3
Average	3	3	3	2	2	2	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-JMC- N204.1	3	2	3	3	3
B-JMC- N204.2	3	2	3	3	3
B-JMC- N204.3	3	3	2	3	3
B-JMC- N204.4	3	3	3	3	3
Average	3	2.5	2.75	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-JMC- N204.1	3	3	3	3	3	3	3	3	3	2	3	3	3
B-JMC- N204.2	3	3	3	3	3	3	3	3	3	2	3	3	3
B-JMC- N204.3	3	3	3	3	3	2	3	3	3	3	2	3	3
B-JMC- N204.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	3	3	3	2.75	2.75	3	3

B-JMC-N205: Writing for Media (Theory)

Time:3 Hrs. Total Marks:100
Credits: 4 Theory: 50
Contact hours per week: 4 Internal Assessment:50

Course Objectives: This paper will help the learners to understand the concept of news and basics of news writing. It will also help to understand different forms of writing including web writing.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-JMC-N205.1: Understand the concept of news
B-JMC-N205.2 :Know about the basics of news writing.
B-JMC-N205.3: Understand different writing techniques.
B-JMC-N205.4:Develop the skills for online writing.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT-I

Difference between creative and journalistic writing
Principles of good writing
News Story structure and introduction to various styles of news writing
Writing features, articles, editorials, columns, middle, letter to editor,
News analysis: backgrounder, reviews
Writing features and articles for magazines

UNIT-II

Basics of radio writing
Elements of radio script
Techniques and style of radio script writing
Radio script writing: Radio talks, features, interview, drama and other programmes

Unit-III

Basics of television writing
Different script formats
Elements of television script
Television script writing : interview, documentary, special & other programmes

Unit-IV

Copy writing for Print Advertisement
Writing for radio advertisement
Writing for television advertisement

Writing for web
Writing press releases

References:

- George,A. H. (1990). News Writing, Kanishka Publications.
- Stein,P.&Burnett(2000),Newswriter'sHandbook:AnIntroductiontoJournalism, Blackwell Publishing.
- Itule&Anderson(2002).NewsWritingandreportingfortoday'smedia,McGrawHill Publication
- Harold Evans, 'Newsman's English' William HainemannLtd, 1972.
- M.L.Stein.andSusanFPaterno,,'TheNewsWriter'sHandbook,'SurjeetPublications, New Delhi, 2003.
- George A Hough,' News Writing', Kanishka Publishers, New Delhi, 2006.
- BruceD.Itule,andDouglasA.Anderson.'NewsWritingandReportingforToday's Media', McGraw Hill, New Delhi, 2003.
- JulianHarris,KellyLeiter,Stanley,Johnson,'TheCompleteReporter',Macmillan PublishingCo, New York.
- /kwfy;k] lqHkk"k] iz/kku vkuan] lekpkj ys[ku ,oa vo/kkj.kk] Hkkjrh; tulapkj laLFkku izdk'ku] ubZ fnYyh
- Dr Madhu Deep Singh, Media Plurality and Diversity, ISBN-978-81-931528-1-2
- dqekj] v'kksd] lekpkj ys[ku ,oa fjiksfVZax] f'kokfyd izdk'ku] ubZ fnYyh A

B-JMC-N205: Writing for Media (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-JMC-N205.1	3	3	3	3	3	3	3	3
B-JMC-N205.2	3	3	3	3	3	3	3	3
B-JMC-N205.3	3	3	3	3	3	3	3	3
B-JMC-N205.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-JMC-N205.1	3	2	3	3	3
B-JMC-N205.2	3	3	3	3	3
B-JMC-N205.3	3	3	3	3	3
B-JMC-N205.4	3	3	3	3	3
Average	3	2.75	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-JMC-N205.1	3	3	3	3	3	3	3	3	3	2	3	3	3
B-JMC-N205.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC-N205.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC-N205.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	2.75	3	3	3

B-JMC-N206: Writing for Media (Practical)

Time:3 Hrs. Total Marks: 50
Credits: 2 Practical: 25
Internal Assessment: 25

Contact hours per week:4

Course Objectives: This paper will help the learners to practise news writing and develop skills required to be used in professional field.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-JMC 206.1: Write news in different styles
B-JMC 206.2 :Write headlines and intros
B-JMC 206.3: Features, articles, news analysis and backgrounders
B-JMC 206.4:Write for online platforms

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Write any five news (hard) stories for print.
Write any five news (soft) stories for print.
Write headline for 10 stories
Write intro of 5 stories
Write 2 features and 2 articles on any topic
Write news analysis and backgrounder
Create your own blog on any topic of your interest
Write one script for radio talk
Write one script each for Radio Advertisement and TV Advertisement
Write 5 press releases

B-JMC-N206: Writing for Media (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-JMC- N206.1	3	3	3	2	2	2	3	3
B-JMC- N206.2	3	3	3	2	2	2	3	3
B-JMC- N206.3	3	3	3	2	2	2	3	3
B-JMC- N206.4	3	3	3	2	2	2	3	3
Average	3	3	3	2	2	2	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-JMC- N206.1	3	2	3	3	3
B-JMC- N206.2	3	2	3	3	3
B-JMC- N206.3	3	3	2	3	3
B-JMC- N206.4	3	3	3	3	3
Average	3	2.5	2.75	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-JMC- N206.1	3	3	3	3	3	3	3	3	3	2	3	3	3
B-JMC- N206.2	3	3	3	3	3	3	3	3	3	2	3	3	3
B-JMC- N206.3	3	3	3	3	3	2	3	3	3	3	2	3	3
B-JMC- N206.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	3	3	3	2.75	2.75	3	3

B-JMC-N207: Human Values & Ethics (Theory)

Time:2 Hrs. Total Marks: 25
Credits: 1 Theory: 20
Contact hours per week: 1 Internal Assessment: 05

Course Objectives: This paper will help the learners to understand the need and significance of human values and ethics in their life.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-JMC-N207.1: correlate the need of human values to sustained happiness and prosperity- the core aspirations of human beings.
B-JMC-N207.2 : express the knowledge of human values and analyse their importance in holistic perspective for a peaceful world.

Unit -1

Human Values: Meaning and Definitions

(a) Understanding the need of human values and value education. Self-exploration, Concept of happiness and prosperity. Right understanding, understanding body as an instrument of I, Living in harmony, reaching highest potential in digital age through care & empathy balancing interests and expectations.

(b) Basic human values: Honesty, kindness, integrity, courage, co-operation, commitment, cleanliness, spirituality, understanding duties & rights.

Unit-II

Life Values and universal ethics

(a) Life Values:- Understanding of harmony in yourself family: Trust and respect, society; Co-existence & unity in diversity Nature mutually interacting units and universe.

(b) Universal Ethics-Loyalty, respect for others, adherence to the law, doing good and avoiding harm to other, accountability, sensitive towards environment. Transparency, impartiality and objectivity.

Suggested Books:-

1) Ethics. Integrity and Aptitute (3rd Edition)- M. Karthikeyan Pub: McGraw Hill,
2) A foundation course in Human Values and Professional Ethics- RR Gaur. R Sangal. GP Bagaria Pub: abe books
3) Ebook-lg- UGC (26-11-2019)

   PDF- Human Value www.uge.ac.in (available on UGC Website)
4) Patanjala Yoga Sutra- Samadhi Pada

B-JMC-N208: Human Values & Ethics (Practical)

Time:2 Hrs. Total Marks: 25
Credits: 1 Practical: 20
Contact hours per week: 2 Internal Assessment: 05

Course Objectives: This paper will help the learners to understand the need and significance of human values and ethics in their life.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-JMC-N207.1: correlate the need of human values to sustained happiness and prosperity- the core aspirations of human beings.
B-JMC-N207.2 : express the knowledge of human values and analyse their importance in holistic perspective for a peaceful world.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Write two essays on the topics suggested by the concerned faculty from the topics included in theory paper.
Make a photo feature on any one human value included in theory paper.
Make a short film depicting any one human value included in theory paper.

B-JMC-N209: Activity/Hobby

Photography (Option-i)

Course Credit: 02 Total Marks: 50 Marks

Contact Hours: 02 per week

Teaching will be based on the discussion in the class room

Note: There will be no written examinations. Understanding of the art of Photography will be assessed through discussion and practical work by the Students in the class room.

Course Outcomes:

Unit-1: After studying the first unit of the course students will be able to become familiar with camera and related accessories.

Unit-II: After studying the second unit of the course students will be able to click photographs like a professional and may take up freelance photography.

Unit-1

Photography as an art and as a technique, means of self expression and creativity, tool of capturing and recording memories, means of developing curiosity and keen observation, way of exploring the world. Camera and related accessories, different types of camera and their uses

Unit-II

How camera works, focus, shutter speed, aperture, depth of field, white balance.

Understanding lights, lighting techniques, natural vs artificial lights, direction of lights, use of key, fill and back lights. Study of award winning photographs (Pulitzer prize winners)

Suggested Books:

1. Practical Photography Digital Camera School : The Step-by-step Guide to Taking GreatPicture- By Publisher Carlton Books Ltd. (London).

2. Photography Techniques and Uses (Photography Taknik and Pryog) by Narendra SinghYadav and Published by Rajasthan Hindi Granth Academy.
3. The Beginner's Photography Guide, Chris Gatcum, DK Publishers

B-JMC-N209: Activity/Hobby

Creative Writing (Option-ii)

Course Credit: 02 Total Marks: 50 Marks

Contact Hours: 02 per week

Teaching will be based on the discussion in the class room

Note: There will be no written examinations. Understanding of the art of creative writing will be assessed through discussion and practical work by the Students in the class room.

Course Outcomes:

Unit-1: After studying the first unit of the course students will be able to become familiar with characteristics of creative writing.

Unit-II: After studying the second unit of the course students will be able to write in various genres of creative writing.

Unit-1

Creative writing: meaning and significance, Basic principles of writing, role of research in writing, understanding of language and grammar

Unit-II

Genres of creative writing: short stories, novel, poetry, drama, features, columns, satire, biography, autobiography, travelogues, diaries, blog writing

Suggested Books:

1. Creative Writing: A Beginner's Manual by Anjana Neira Dev, Anuradha Marwah and Swati Pal, Publishers: Pearson India
2. The Cambridge Companion To Creative Writing South Asian Edition Edited by David Morley and Philip Neilson, Cambridge University Press

Scheme of Examination of BA (Mass Communication) for 5th & 6th Semester under CBCS/LOCF for Institute of Mass Communication & Media Technology (IMC&MT, KUK) in phased manner w.e.f. Academic Session2020-21

Semester-V

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
BAMC 501(a)	Photography (Theory)	DSE-1	4	-	-	4	4	6	80	-	20	100	3 Hours
BAMC 502(a)	Photography (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
OR													
BAMC 501(b)	Videography (Theory)		4	-	-	4	4		80	-	20	100	3 Hours
BAMC 502(b)	Videography (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
BAMC 503(a)	Radio Anchoring (Theory)	DSE-2	4	-	-	4	4	6	80	-	20	100	3 Hours
BAMC 504(a)	Radio Anchoring (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
OR													
BAMC 503(b)	Documentary making (Theory)		4	-	-	4	4		80	-	20	100	3 Hours
BAMC 504(b)	Documentary making (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
BAMC 505	Digital Media Skills(Theory)	SEC-3	1	-	-	1	1	2	20	-	5	25	2 Hours
BAMC 506	Digital Media Skills (Practical)		-	-	-	1	1		-	20	5	25	2 Hours
BAMC 507	Entrepreneurship	GE-1	5	1	-	6	-	6	-	-	-	150	3 Hours
BAMC 508	*Internship Report							2				50	
Total Credits								**22**	**Total Marks**			**550**	

Semester-VI

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
BAMC 601(a)	TV Anchoring (Theory)	DSE-3	4	-	-	4	4	6	80	-	20	100	3 Hours
BAMC 602(a)	TV Anchoring (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
OR													
BAMC 601(b)	Newspaper Designing & Production (Theory)		4	-	-	4	4		80	-	20	100	3 Hours
BAMC 602(b)	Newspaper Designing & Production (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
BAMC 603 (a)	Internship**	DSE-4	-	-	-	-	-	6	-	-	-	150	
OR													
BAMC 603 (b)	Minor Project***		-	-	-	-	-		-	-	-	150	
BAMC 604	Media Literacy Skills (Theory)	SEC-03	1	-	-	1	1	2	20	-	5	25	2 Hours
BAMC 605	Media Literacy Skills (Practical)		-	-	-	1	1		-	20	5	25	2 Hours
BAMC 606	Media, Culture and Society	GE-2	5	1	-	6	6	6	120	-	30	150	3 Hours
Total Credits								**20**	**Total Marks**			**500**	

* Students have to complete the internship of two weeks after the examination of 4th semester and submit the report of internship in the commencement of 5th semester.

** Students have to complete four to six weeks internship after 6th semester. The report submitted by the students will be evaluated by the teachers appointed by the Director and a viva-voce will be conducted.

*** Students have to prepare a project on the topic assigned by the concerned faculty. It is to be submitted to the institute by the student within 30 days after the theory examination of the semester Viva -Voce of DSE-4 (Minor Project) is to be conducted by a panel of three examiners to be appointed by the Director of the institute.

BAMC- 501(a): Photography (Theory)

Time:3 Hrs. Total Marks: 100
Credits: 4 Theory: 80
Contact hours per week:4 Internal Assessment: 20

Course Objectives: The course is designed to introduce the students to the basic concepts of photography so as to develop creative skills in them.

Course Learning Outcomes:
After completing the Course, the students will be able to:
BAMC- 501(a).1 Learn basic concepts and importance of Photography
BAMC- 501(a).2 Work as a photo journalist
BAMC- 501(a).3: Develop self employment and creative skills
BAMC- 501(a).4: Develop interest in photo journalism

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction and Development of Photography
Photo Journalism- Role and importance
Qualities of a good photograph
Tools of Photography, types of camera
Traditional and digital camera, Part of Camera, Camera control

Unit-II

Emergence of Digital technology
Digital Photography, Mobile photography
Selecting Images,
Size, and quality
Indoor and Outdoor Photography

Unit-III

Lighting principles
Role of lighting
Different types of lighting and its uses
Role of subject, quality of photograph
Developing of different sizes of photograph

Unit-IV

Photograph Editing Techniques
Cropping, Enlarging & reducing
Clubbing/Grouping
Colour composition
Filter, length, focus, Shots
Photo feature, New trends in photography

Suggested Readings

1. Digital Photography (Hindi), Vishnu Priya Singh, Publisher- ComputechPublication Limited.
2. Digital Photography (Hindi) Hardcover (2018), Riya j Hasan, Book Enclave,Jaipur.
3. Photography Techniques and Uses (Photography Taknik aur Pryog), Narendra Singh Yadav, Rajasthan Hindi Granth Academy.
4. Practical Photography Digital Camera School : The Step-by-step Guide to Taking Great Picture, Carlton Books Ltd. (London)

BAMC- 501(a): Photography (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC-501(a).1	3	3	3	3	3	2	3	3
BAMC-501(a).2	3	3	3	3	3	3	3	3
BAMC-501(a).3	3	3	3	3	3	3	3	3
BAMC-501(a).4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	2.75	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC-501(a).1	3	2	3	2	3
BAMC-501(a).2	3	3	3	3	3
BAMC-501(a).3	3	3	3	3	3
BAMC-501(a).4	3	3	3	3	3
Average	3	2.75	3	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC-501(a).1	3	3	3	3	3	2	3	3	3	2	3	2	3
BAMC-501(a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC-501(a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC-501(a).4	3	3	3	3	3	3	2	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	2.75	3	3	2.75	3	2.75	3

BAMC- 502(a): Photography (Practical)

Time:3 Hrs. | Total Marks: 50
Credits: 2 | Practical: 40
Contact hours per week:4 | Internal Assessment: 10

Course Objectives: The course is designed to introduce the students to the basic concepts of photography so as to develop creative skills in them.

Course Learning Outcomes:
After completing the Course, the students will be able to:
BAMC- 502(a).1 Learn the use of camera and lighting
BAMC- 502(a).2 Work as a photo journalist
BAMC- 502(a).3: Develop self employment and creative skills
BAMC- 502(a).4: Develop interest in photo journalism

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

Practicals / Assignments

The students have to prepare a Digital portfolio along with print containing at least 20 photographs clicked by them. They have to develop a photo-feature on a theme selected in consultation with the concerned faculty.

BAMC- 502(a): Photography (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC-502(a).1	3	3	3	3	3	2	3	3
BAMC-502(a).2	3	3	3	3	3	3	3	3
BAMC-502(a).3	3	3	3	3	3	3	3	3
BAMC-502(a).4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	2.75	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC-502(a).1	3	2	3	2	3
BAMC-502(a).2	3	3	3	3	3
BAMC-502(a).3	3	3	3	3	3
BAMC-502(a).4	3	3	3	3	3
Average	3	2.75	3	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC-502(a).1	3	3	3	3	3	2	3	3	3	2	3	2	3
BAMC-502(a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC-502(a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC-502(a).4	3	3	3	3	3	3	2	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	2.75	3	3	2.75	3	2.75	3

BAMC 501(b): Videography (Theory)

Time:3 Hrs.	Total Marks: 100
Credits: 4	Theory: 80
Contact hours per week:4	Internal Assessment: 20

Course Objectives: The objective of this course is to teach the students a fundamental understanding of videography and its practical applications in the field of mass communication.

Course Learning Outcomes:
After completing the Course, the students will be able to:
BAMC 501(b).1:Develop understanding of various types and parts of video camera
BAMC 501(b).2:Understand types of shots, camera angles and camera movements
BAMC 501(b).3: Understand the use of lighting in videography
BAMC 501(b).4: Capture videos

Note :- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit I

Videography: meaning and significance, Introduction to Video cameras: EFP, ENG, Steady Cameras, Crane, Camera, Hexacopter,Spiders Camera, Camera parts, Camera accessories, Setting up and functioning of Video camera, framing, focus balancing

Unit-II

Camera shots: types and applications

Camera angles: types and applications

Camera movements: types and application

Unit-III

Lighting principles
Role of lighting: Natural lights, Artificial lights
Introduction to 3 point lighting- key light, fill light and back light. Bounce and diffused light.
Applications of different types of lights

Unit-IV

Single-camera shoot: features and applications
Multi-camera shoot: features and applications
New trends in videography

Suggested Readings

1. Grammar of the Shot, Second Edition, Roy Thompson, Christopher j. Bowen, Focal Press.
2. Lighting for Digital Video and Television, Third Edition, John Jakma, Focal Press.
3. The Technique of Film and Video Editing: History, Theory and Practice, Fourth Edition, Focal Press.
4. Video Production Handbook, Fourth Edition, Gerald Millerson, Focal Press.
5. How to Read a Film, Third Edition, James Monaco, Oxford University Press.

BAMC 501(b): Videography (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC 501(b).1	3	3	3	3	3	2	3	3
BAMC 501(b).2	3	3	3	3	3	3	3	3
BAMC 501(b).3	3	3	3	3	3	3	3	3
BAMC 501(b).4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	2.75	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC 501(b).1	3	2	3	2	3
BAMC 501(b).2	3	3	3	3	3
BAMC 501(b).3	3	3	3	3	3
BAMC 501(b).4	3	3	3	3	3
Average	3	2.75	3	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC 501(b).1	3	3	3	3	3	2	3	3	3	2	3	2	3
BAMC 501(b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 501(b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 501(b).4	3	3	3	3	3	3	2	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	2.75	3	3	2.75	3	2.75	3

BAMC 502(b): Videography (Practical)

Time: 3 Hrs. Total Marks: 50
Credits: 2 Practical: 40
Contact hours per week: 4 Internal Assessment: 10

Course Objectives: The objective of this course is to teach the students a fundamental understanding of videography and its practical applications in the field of mass communication.

Course Learning Outcomes:
After completing the Course, the students will be able to:
BAMC 502(b).1:Develop understanding of various types and parts of video camera
BAMC 502(b)..2:Understand types of shots, camera angles and camera movements
BAMC 502(b)..3: Understand the use of lighting in videography
BAMC 502(b)..4: Capture videos

Note: The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hard copy/soft copy to the teacher. External examiner will evaluate the work done by the student, will conduct the practical and viva-voce.

Practicals / Assignments

- Setting up of camera, focusing and framing
- Exhibiting camera shots, angles and movements
- Exhibiting use of different lights
- Videography of five important events of Institute/University

BAMC 502(b): Videography (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC 502(b).1	3	3	3	2	3	3	3	3
BAMC 502(b).2	3	3	3	3	3	3	3	3
BAMC 502(b).3	3	3	3	3	3	3	3	3
BAMC 502(b).4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC 502(b).1	3	2	2	2	3
BAMC 502(b).2	3	3	3	3	3
BAMC 502(b).3	3	3	3	3	3
BAMC 502(b).4	3	3	3	3	3
Average	3	2.75	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO 4	PO5	PO6	PO 7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC 502(b).1	3	3	3	2	3	3	3	3	3	2	2	2	3
BAMC 502(b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 502(b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 502(b).4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	2.75	2.75	2.75	3

BAMC 503(a): Radio Anchoring (Theory)

Time:3 Hrs.	Total Marks: 100
Credits: 4	Theory: 80
Contact hours per week:4	Internal Assessment: 20

Course Objectives: The objective of this course is to teach the students art of radio anchoring and make them aware of the career opportunities in anchoring.

Course Learning Outcomes:
After completing the Course, the students will be able to:
BAMC 503(a).1:Develop understanding of the qualities of a radio anchor
BAMC 503(a).2: Know Career opportunities for a radio anchor
BAMC 503(a).3: Functioning of radio studio and related equipments
BAMC 503(a).4: Plan and prepare radio programmes

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT –I

Radio Anchoring: meaning and significance. Understanding of terms like Anchor/ Announcer/Presenter/Radio Jockey (RJ), Qualities of an anchor/presenter/RJ- creative, expressive, confident, empathetic, team player, innovative, analytical, updated, having command over language, having good sense of humour, extempore speaker, technically savvy, ability to manage crisis. Basic qualities related to voice: voice modulation, stress, pause, tone, pitch, tempo, diction, pronunciation, vocabulary. Structure and set up of radio studios- On-air studio, Production studio, VOB (Voice over Booth), studio equipments

UNIT-II

Planning and conducting a radio talk, radio discussion, radio interview, radio feature, radio drama, special audience programme, phone in programmes. Planning and conducting a radio show: understanding station and show's requirements, holding discussions with programme producer and other team members, maintaining sound and personality of the show, keeping track of latest news and current affairs, understanding listeners, writing scripts for the show, interviewing celebrities and other relevant personalities related to the show, conducting OBs, coordinating for games, contests etc., using social media for the popularity of the show, maintaining PR with celebrities and other agencies

UNIT-III

Production: generate ideas, managing the clock and scheduling songs and other elements, giving voice over to promos, hosting on ground events. Softwares used in Radio industry: radio Automation Softwares, Audio Editing Softwares

UNIT-IV

Career opportunities: All India Radio, private radio stations, community radio stations, Internet radio, hosts in national and international level events/functions, commentators, voice over artists, programme director (PD) or programme producers. New trends in Radio broadcasting

Suggested Readings

1. Mitchell Stephon Holt, Broadcast News - Radio Journalism, Rineheast Winston NY 1980
2. While T. Broadcast, News writing MacMillian NY, 1984
3. Wills Edgar and Holt, Writing TV and radio programmes R & W Publication 1967.
4. Rivers Wlliams and work Alison Writing for the Media.
5. Carl Warren, Radio News Writing and Editing
6. Report L. Hillard Radio Broadcasting
7. Encyclopaedia Of Radio Jockeying And News Anchoring, 2009, Dibyanshu Kumar, Alok Publishers
8. Presenting on TV and Radio-An insider's guide by Janet Trewin, Routledge

BAMC 503(a): Radio Anchoring (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC 503(a).1	3	3	3	3	3	2	3	3
BAMC 503(a).2	3	3	3	3	3	3	3	3
BAMC 503(a).3	3	3	3	3	3	3	3	3
BAMC 503(a).4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	2.75	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC 503(a).1	3	2	3	2	3
BAMC 503(a).2	3	3	3	3	3
BAMC 503(a).3	3	3	3	3	3
BAMC 503(a).4	3	3	3	3	3
Average	3	2.75	3	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC 503(a).1	3	3	3	3	3	2	3	3	3	2	3	2	3
BAMC 503(a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 503(a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 503(a).4	3	3	3	3	3	3	2	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	2.75	3	3	2.75	3	2.75	3

BAMC 504(a): Radio Anchoring (Practical)

Time: 3 Hrs.
Credits: 2
Contact hours per week: 4

Total Marks: 50
Practical: 40
Internal Assessment: 10

Course Objectives: The objective of this course is to teach the students art of radio anchoring and make them aware of the career opportunities in anchoring.

Course Learning Outcomes:
After completing the Course, the students will be able to:
BAMC 504(a).1:Prepare a radio talk and radio interview
BAMC 504(a).2: Conduct a radio discussion
BAMC504(a).3:Conduct a radio show
BAMC504(a).4: Anchor various events and programmes

Note: The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hard copy/soft copy to the teacher. External examiner will evaluate the work done by the student, will conduct the practical and viva-voce.

Practicals / Assignments

- Writing script and recording of a radio talk on any topic
- Writing script and recording of a discussion based programme on radio on any topic
- Conduct a radio interview
- Prepare a promo
- Prepare a programme on any special day

BAMC 504(a): Radio Anchoring (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC 504(a).1	3	3	3	2	3	3	3	3
BAMC 504(a).2	3	3	3	3	3	3	3	3
BAMC 504(a).3	3	3	3	3	3	3	3	3
BAMC 504(a).4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC 504(a).1	3	2	2	2	3
BAMC 504(a).2	3	3	3	3	3
BAMC 504(a).3	3	3	3	3	3
BAMC 504(a).4	3	3	3	3	3
Average	3	2.75	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO 4	PO5	PO6	PO 7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC 504(a).1	3	3	3	2	3	3	3	3	3	2	2	2	3
BAMC 504(a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 504(a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 504(a).4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	2.75	2.75	2.75	3

BAMC 503(b): Documentary Making (Theory)

Time:3 Hrs.	Total Marks: 100
Credits: 4	Theory: 80
Contact hours per week:4	Internal Assessment: 20

Course Objectives: The objective of this course is to teach the students the process and skills of documentary making so as to help them to work with a professional organization or establish themselves as freelancers.

Course Learning Outcomes:
After completing the Course, the students will be able to:
BAMC 503(b).1:Develop understanding of features of a documentary
BAMC503(b).2: Conduct research and write script for a documentary
BAMC503(b).3: Understand the process of shooting a documentary
BAMC503(b).4: Learn process of post production

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT –I

Introduction to documentary, origin and history of documentary, features of a documentary, difference between documentary and fiction. Types of documentaries- poetic, expository, observational, participatory, reflexive, performative, Stages of production of a documentary: Pre-production, Production, Post Production

UNIT-II

Concept of Scripting, Objectives of Scripting

Selection of subject or story idea, thinking outside the box, ideas that sell, research, making a plan, writing a script

UNIT-III

Shooting the documentary: outdoor, indoor, Shooting equipments and their uses: video camera, different types of video camera, tripod, camera lights, 3-point lighting kit, light reflectors, different types of microphones and related accessories, cables, video tapes, Memory cards or DVDs, Understanding of shot, scene, sequence Camera Shots, Camera Movements, Camera Angle

UNIT-IV

Concept of Editing, Types of editing; offline, online editing, linear editing, non-linear editing. Recording voice over. Video editing process: study the footage, selecting key elements, building basic structure- beginning, middle and end, refine and re-editing. Applications of Video editing softwares, SFX and VFX. New trends in documentary making

Suggested Readings

1. Grammar of the Shot, Second Edition, Roy Thompson, Christopher j. Bowen, Focal Press.
2. Lighting for Digital Video and Television, Third Edition, John Jakma, Focal Press.
3. The Technique of Film and Video Editing: History, Theory and Practice, Fourth Edition, Focal Press.
4. Video Production Handbook, Fourth Edition, Gerald Millerson, Focal Press.
5. How to Read a Film, Third Edition, James Monaco, Oxford University Press.

BAMC 503(b): Documentary Making (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC 503(b).1	3	3	3	3	3	2	3	3
BAMC 503(b).2	3	3	3	3	3	3	3	3
BAMC 503(b).3	3	3	3	3	3	3	3	3
BAMC 503(b).4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	2.75	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC 503(b).1	3	2	3	2	3
BAMC 503(b).2	3	3	3	3	3
BAMC 503(b).3	3	3	3	3	3
BAMC 503(b).4	3	3	3	3	3
Average	3	2.75	3	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC 503(b).1	3	3	3	3	3	2	3	3	3	2	3	2	3
BAMC 503(b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 503(b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 503(b).4	3	3	3	3	3	3	2	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	2.75	3	3	2.75	3	2.75	3

BAMC 504(b): Documentary Making (Practical)

Time: 3 Hrs.
Credits: 2
Contact hours per week: 4

Total Marks: 50
Practical: 40
Internal Assessment: 10

Course Objectives: The objective of this course is to teach the students the process and skills of documentary making so as to help them to work with a professional organization or establish themselves as freelancers.

Course Learning Outcomes:
After completing the Course, the student will be able to:
BAMC 504(b).1:Develop understanding of features of a documentary
BAMC504(b).2: Conduct research and write script for a documentary
BAMC504(b).3: Shoot a documentary
BAMC504(b).4: Edit a documentary

Note: The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hard copy/soft copy to the teacher. External examiner will evaluate the work done by the student, will conduct the practical and viva-voce.

Practicals / Assignments

- Review of two famous documentaries as suggested by the concerned faculty
- Making of a documentary in consultation with the concerned faculty

BAMC 504(b): Documentary Making (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC 504(b).1	3	3	3	2	3	3	3	3
BAMC 504(b).2	3	3	3	3	3	3	3	3
BAMC 504(b).3	3	3	3	3	3	3	3	3
BAMC 504(b).4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC 504(b).1	3	2	2	2	3
BAMC 504(b).2	3	3	3	3	3
BAMC 504(b).3	3	3	3	3	3
BAMC 504(b).4	3	3	3	3	3
Average	3	2.75	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO 4	PO5	PO6	PO 7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC 504(b).1	3	3	3	2	3	3	3	3	3	2	2	2	3
BAMC 504(b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 504(b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 504(b).4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	2.75	2.75	2.75	3

BAMC 505: Digital Media Skills (Theory)

Time:2 Hrs. Total Marks: 25
Credits: 1 Theory:20
Contact hours per week:1 Internal Assessment:5

Course Objectives: This course is designed the help the students to learn the skills required to be an efficient digital media professional.

Course Learning Outcomes: After completing the course the students will be able to:
BAMC 505.1: Understand digital media landscape.
BAMC505.2: Gain proficiency in specific uses of various digital media platforms
BAMC 505.3: Learn etiquettes of social media
BAMC 505.4: Understand how to create own presence on social media professionally

Note:- The question paper will be divided into three units containing five questions. Students are required to attempt three questions in all. There will be two questions in unit I & II. The students are required to attempt one question each from unit I & II. Each question will carry 5 marks. Unit-III will have only one Compulsory question of 10 marks containing six short notes covering the entire syllabus and students are required to attempt any five.

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Unit-I

Growth and development of Internet, Digital Media: characteristics and significance
Social Media Concept, Characteristics, Usage of Social Media, Impact of Social Media, Risks and Challenges, Virality and social media (like Troll, meme)
Social media platforms,Online Communities, Social Networking sites introduction :Facebook, Instagram, Linkedin, Twitter, Instagram. News Portals

Unit-II

Digital media writing skills
News Writing for web, E-paper
Blogging: Introduction, Blog writing
Writing tweets
Writing photo captions
Writing for social media
Comparison of online writing and other forms of writing
Fact checking Tools
Digital media and business, Digital marketing

Suggested Readings

1. Online Journalism: A Basic Text, Tapas Ray, Carmbridge University Press
2. The New Media Handbook — Andrew Dewdney and Peter Ride
3. The Cyberspace Handbook — Jason Whittaker
4. Breaking News, Sunil Saxena, Tata McGraw-Hill
5. Media and Power — James Curran Media, Technology
6. New Media : A critical Introduction, Martin Lister, Jon Dovey, Seth Giddings,Ian Grant, Kieran Kelly, Routledge, Tayolor & Francis Group, 2007
7. Mapping New Media in India, Sunita Naryanan, Sage Publication, 2017

BAMC 505: Digital Media Skills (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC 505.1	3	3	3	3	3	2	3	3
BAMC 505.2	3	3	3	3	3	3	3	3
BAMC 505.3	3	3	3	3	3	3	3	3
BAMC 505.4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	2.75	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC 505.1	3	2	3	2	3
BAMC 505.2	3	3	3	3	3
BAMC 505.3	3	3	3	3	3
BAMC 505.4	3	3	3	3	3
Average	3	2.75	3	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC 505.1	3	3	3	3	3	2	3	3	3	2	3	2	3
BAMC 505.2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 505.3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 505.4	3	3	3	3	3	3	2	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	2.75	3	3	2.75	3	2.75	3

BAMC 506: Digital Media Skills (Practical)

Time:2 Hrs. Total Marks: 25
Credits:1 Theory:20
Contact hours per week:1 Internal Assessment:5

Course Objectives: This course is designed the help the students to learn the skills required to be an efficient digital media professional.

Course Learning Outcomes: After completing the course the students will be able to:
BAMC 506.1: Understand digital media landscape.
BAMC506.2: Gain proficiency in specific uses of various digital media platforms
BAMC 506.3: Learn etiquettes of social media
BAMC 506.4: Understand how to create own presence on social media professionally

Note: The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hard copy/soft copy to the teacher. External examiner will evaluate the work done by the student, will conduct the practical and viva-voce.

Practicals / Assignments

- Creating Blogs and writing
- Using Twitter for social messages
- Analysis of Professional Facebook pages
- Write any five news report for web

BAMC 506: Digital Media Skills (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC 506.1	3	3	3	2	3	3	3	3
BAMC 506.2	3	3	3	3	3	3	3	3
BAMC 506.3	3	3	3	3	3	3	3	3
BAMC 506.4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC 506.1	3	2	2	2	3
BAMC 506.2	3	3	3	3	3
BAMC 506.3	3	3	3	3	3
BAMC 506.4	3	3	3	3	3
Average	3	2.75	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO 4	PO5	PO6	PO 7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC 506.1	3	3	3	2	3	3	3	3	3	2	2	2	3
BAMC 506.2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 506.3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 506.4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	2.75	2.75	2.75	3

BAMC 507: Entrepreneurship

Time: 3 Hrs. Total Marks: 150
Credits: 2 Theory: 120
Contact hours per week: 6 Internal Assessment: 30

Course Objectives: The objective of this course is to teach the students about Entrepreneurship skills especially media Entrepreneurship to help them to start their own business or establish themselves as freelancers.

Course Learning Outcomes:
After completing the Course, the students will be able to:
BAMC 507.1:Develop understanding of the concept of Entrepreneurship, its risks and challenges
BAMC 507.2: Study famous media Entrepreneurs
BAMC 507.3: Know about Entrepreneurship opportunities in different fields of mass communication
BAMC 507.4: Develop freelancing skills

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Meaning, definition and concept of Entrepreneurship
Nature and scope of media entrepreneurship
Duties and responsibilities of the entrepreneurs
Challenges and risks in media Entrepreneurship

Unit-II

Famous Media entrepreneur in World
Famous Media entrepreneur in India
Entrepreneurship in print media
Entrepreneurship in Television and radio

Unit-III

Entrepreneurship in advertising and Public Relations-Press
Entrepreneurship in entertainment Industry
Entrepreneurship in new media

Unit-IV

Women entrepreneurship
Problems faced by women entrepreneurship
Agencies Funding Women Entrepreneurs
Strengthen your personal brand through social media and your online portfolio.
Attitudes, behaviors, knowledge, and skills required for entrepreneurship

Suggested Readings

1. Media Innovation and Entrepreneurship, Michelle Ferrier, Elizabeth Mays, Rebus Foundation 2017

2. Stuck-Up To Start-Up: A Practical Guide to Starting Your Own Venture, 2022, Neeraj Kapoor , Publisher: Penguin Portfolio

3. Entrepreneurship, 11th Edition, 2020, Robert D.Hisrich , Michael P. Peters , Dean A.Shepherd , Sabyasachi Sinha , Publisher : McGraw Hill

BAMC 507: Entrepreneurship

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC 507.1	3	3	3	2	3	3	3	3
BAMC 507.2	3	3	3	3	3	3	3	3
BAMC 507.3	3	3	3	3	3	3	3	3
BAMC 507.4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC 507.1	3	2	2	2	3
BAMC 507.2	3	3	3	3	3
BAMC 507.3	3	3	3	3	3
BAMC 507.4	3	3	3	3	3
Average	3	2.75	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO 1	PO2	PO3	PO 4	PO5	PO6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC 507.1	3	3	3	2	3	3	3	3	3	2	2	2	3
BAMC 507.2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 507.3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 507.4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	2.75	2.75	2.75	3

BAMC 601 (a): TV Anchoring (Theory)

Time:3 Hours
Credits:4
Contact hours per week: 4

Total Marks-100
Theory-80
Internal Assessment-20

Course Objectives: The objective of this course is to teach the students art of television anchoring and make them aware of the career opportunities in TV anchoring.

Course Learning Outcomes:
After completing the Course, the students will be able to:
BAMC 601(a).1:Develop understanding of qualities of a television anchor
BAMC 601(a).2: Know Career opportunities for a TV anchor
BAMC 601(a).3: Understand functioning of TV studio and related equipments
BAMC 601(a).4: Plan and prepare TV programmes

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT –I

Television Anchoring: meaning and significance. Understanding of terms like Anchor/ Presenter/Video Jockey (VJ), Qualities of an anchor- creative, expressive, confident, team player, innovative, analytical, having abundant knowledge of current political scenario and current issues, having command over language and body language, articulated, extempore speaker, technically savvy, ability to manage crisis. Basic qualities related to voice: voice modulation, stress, pause, tone, pitch, tempo, diction, pronunciation, rhythm of speech, breathing, resonance, vocabulary. Additional skills: acting and singing. Structure and set up of television studios and studio equipments

UNIT-II

Planning and conducting news based programme, discussion, interview, reality show. Writing script for different formats of television, TV show: understanding station and show's requirements, holding discussions with programme producer and other team members, doing research, keeping track of latest news and current affairs, understanding viewers, interviewing relevant personalities related to the show.

Production: stages of television programme production, basic understanding of Softwares used in TV industry: Audio-visual Editing Softwares, process of preparing news packages

UNIT-IV

Career opportunities: Doordarshan, private TV channels, hosts in national and international level events/functions, hosts of various shows like news based programmes, comedy shows, film and entertainment shows, reality shows, shows related to crime, business, sports etc., commentators, voice over artists, news reporters, producers. New trends in Television broadcasting

Suggested Readings

1. While T. Broadcast, News writing MacMillian NY, 1984
2. Wills Edgar and Holt, Writing TV and radio programmes R & W Publication 1967.
3. Rivers Wlliams and work Alison Writing for the Media
4. Telvision Production 16th Edition. Jim Owens ,2016, Asbury University, New York City.
5. Interactive Television Production, Mark Gawlinski, Focal Press, MA, 2003.
6. Encyclopaedia Of Radio Jockeying And News Anchoring, 2009, Dibyanshu Kumar, Alok Publishers
7. Presenting on TV and Radio-An insider's guide by Janet Trewin, Routledge

BAMC 601 (a): TV Anchoring (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC 601(a).1	3	3	3	3	3	2	3	3
BAMC 601(a).2	3	3	3	3	3	3	3	3
BAMC 601(a).3	3	3	3	3	3	3	3	3
BAMC 601(a).4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	2.75	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC 601(a).1	3	2	3	2	3
BAMC 601(a).2	3	3	3	3	3
BAMC 601(a).3	3	3	3	3	3
BAMC 601(a).4	3	3	3	3	3
Average	3	2.75	3	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO 1	PO2	PO3	PO4	PO 5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC 601(a).1	3	3	3	3	3	2	3	3	3	2	3	2	3
BAMC 601(a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 601(a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 601(a).4	3	3	3	3	3	3	2	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	2.75	3	3	2.75	3	2.75	3

BAMC 602 (a): TV Anchoring (Practical)

Time: 3 Hrs.	Total Marks: 50
Credits: 2	Practical: 40
Contact hours per week: 4	Internal Assessment: 10

Course Objectives: The objective of this course is to teach the students art of television anchoring and make them aware of the career opportunities in TV anchoring.

Course Learning Outcomes:
After completing the Course, the student will be able to:
BAMC 602(a).1:Develop understanding of qualities of a television anchor
BAMC 602(a).2: Know Career opportunities for a TV anchor
BAMC 602(a).3: Use TV studio and related equipments
BAMC 602(a).4: Plan and prepare TV programmes

Note: The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hard copy/soft copy to the teacher. External examiner will evaluate the work done by the student, will conduct the practical and viva-voce.

Practicals / Assignments

- Writing script and recording of a TV news bulletin
- Writing script and recording of a discussion based programme on TV on any topic
- Conduct an interview for Television
- Prepare a promo

BAMC 602 (a): TV Anchoring (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC 602(a).1	3	3	3	3	3	2	3	3
BAMC 602(a).2	3	3	3	3	3	3	3	3
BAMC 602(a).3	3	3	3	3	3	3	3	3
BAMC 602(a).4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	2.75	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC 602(a).1	3	2	3	2	3
BAMC 602(a).2	3	3	3	3	3
BAMC 602(a).3	3	3	3	3	3
BAMC 602(a).4	3	3	3	3	3
Average	3	2.75	3	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC 602(a).1	3	3	3	3	3	2	3	3	3	2	3	2	3
BAMC 602(a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 602(a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC 602(a).4	3	3	3	3	3	3	2	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	2.75	3	3	2.75	3	2.75	3

BAMC 601 (b): Newspaper designing & Production (Theory)

Time:3 Hours	Total Marks-100
Credits:4	Theory-80
Contact hours per week: 4	Internal Assessment-20

Course Objectives: The objective of this course is to teach the students art of newspaper designing and production so as to make them able to work as professionals in print media industry.

Course Learning Outcomes:
After completing the Course, the students will be able to:
BAMC 601(b).1: Learn the basic principles of designing
BAMC 601(b).2: Inculcate the knowledge of dummy and layout
BAMC 601(b).3: Understand photo-editing and photo caption writing
BAMC 601(b).4: Learn applications of newspaper designing softwares

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT –I

Design and layout: meaning, definition, elements and significance
Terms in layout planning, Stages of layout planning
Concept and Utility of Dummy
Dummy of Newspaper, Magazines
Web Journalism and Dummy
Modern Lay-out (Specialized designing)

UNIT-II

Principles of design
Basic approach to create a design
Color in design
Innovations in newspaper and magazine design

UNIT-II

Newspaper designing: newspaper size, newspaper format
Design elements: advertisements, text, headlines, pictures
Page make up – front page, editorial pages, inside pages, magazine pages

UNIT-IV

Selection Method of Photographs, Graphs, Cartoons, Charts, Diagrams and other ReferenceMaterials etc
Caption Writing, Selection Point for Caption, Sub Caption and Main Stories and Headlines
Designing tools and basic applications of newspaper designing softwares

Suggested Readings

1. Shrivastava, K.M., 'News reporting and editing', Sterling publishers Pvt. Ltd, New Delhi,2003.
2. Kamath M.V., 'Professional Journalism', Vikas publishing House, New Delhi.1980.
3. Vir Bala Aggarwal, 'Essentials of Practical Journalism', concept publishing Company,New Delhi, 2006.
4. Joseph M.K., 'Outline of Editing', Anmol Publications, New Delhi, 2002.
5. Hodgson, F. W.(1987). Sub editing: A Handbook of Modern Newspaper Editing &Production, Focal Press.
6. Click & Baird(1994). Magazine Editing &Production, WCB Brown & Benchmark.
7. Hicks& Homes,(2001). Sub-editing for Journalists, Routledge.
8. John, Marydasan (2015) Editing Today: Rules, Tools and Styles, Media House, New Delhi

BAMC 601 (b): Newspaper designing & Production (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC-601(b).1	3	3	3	3	3	2	3	3
BAMC-601(b).2	3	3	3	3	3	3	3	3
BAMC-601(b).3	3	3	3	3	3	3	3	3
BAMC-601(b).4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	2.75	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC-601(b).1	3	2	3	2	3
BAMC-601(b).2	3	3	3	3	3
BAMC-601(b).3	3	3	3	3	3
BAMC-601(b).4	3	3	3	3	3
Average	3	2.75	3	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO 1	PO2	PO3	PO4	PO 5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC-601(b).1	3	3	3	3	3	2	3	3	3	2	3	2	3
BAMC-601(b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC-601(b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC-601(b).4	3	3	3	3	3	3	2	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	2.75	3	3	2.75	3	2.75	3

BAMC 602 (b): Newspaper designing and Production (Practical)

Time: 3 Hrs.	Total Marks: 50
Credits: 2	Practical: 40
Contact hours per week: 4	Internal Assessment: 10

Course Objectives: The objective of this course is to teach the students art of newspaper designing and production so as to make them able to work as professionals in print media industry.

Course Learning Outcomes:
After completing the Course, the students will be able to:
BAMC 602(b).1: Learn the basic principles of designing
BAMC 602(b).2: Prepare dummy and layout
BAMC 602(b).3: Understand photo-editing and photo caption writing
BAMC 602(b).4: Learn applications of newspaper designing softwares

Note: The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hard copy/soft copy to the teacher. External examiner will evaluate the work done by the student, will conduct the practical and viva-voce.

Practicals / Assignments

- News selection and placement
- Preparing dummies of newspapers and magazine
- Writing Headlines for different types of news
- Intro/lead writing assignment
- Creating dummy
- Layout: Preparing the layout of the front, back and other pages of a newspaper
- Designing and production of a Lab Journal

BAMC 602 (b): Newspaper designing and Production (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC- 602(b).1	3	3	3	3	3	2	3	3
BAMC- 602(b).2	3	3	3	3	3	3	3	3
BAMC- 602(b).3	3	3	3	3	3	3	3	3
BAMC- 602(b).4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	2.75	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC- 602(b).1	3	2	3	2	3
BAMC- 602(b).2	3	3	3	3	3
BAMC- 602(b).3	3	3	3	3	3
BAMC- 602(b).4	3	3	3	3	3
Average	3	2.75	3	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC- 602(b).1	3	3	3	3	3	2	3	3	3	2	3	2	3
BAMC- 602(b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC- 602(b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC- 602(b).4	3	3	3	3	3	3	2	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	2.75	3	3	2.75	3	2.75	3

BAMC 603(a) : Internship

Total Marks : 150

Students have to complete four to six weeks internship after 6th semester. The report submitted by the students will be evaluated by the teachers appointed by the Director and a viva-voce will be conducted.

BAMC 603(b) : Minor Project

Total Marks : 150

Students have to prepare a project on the topic assigned by the concerned faculty. It is to be submitted to the institute by the student within 30 days after the theory examination of the semester Viva -Voce of DSE-4 (Minor Project) is to be conducted by a panel of three examiners to be appointed by the Director of the institute.

BAMC 604: Media Literacy Skills (Theory)

Time: 2 Hrs.	Total Marks: 25
Credits: 1	Theory: 20
Contact hours per week: 1	Internal Assessment: 5

Course Objectives: This course is designed the help the students to develop critical understanding of media and learn the skills to interpret and evaluate media messages so as to become media literate citizens.

Course Learning Outcomes: After completing the course the students will be able to:
BAMC 604.1: Understand how media messages create meaning
BAMC 604.2: Identify who creates messages and what are tools of persuasion
BAMC 604.3: Identify bias, misinformation
BAMC 604.4: Understand how to evaluate and create media messages

Note:- The question paper will be divided into three units containing five questions. Students are required to attempt three questions in all. There will be two questions in unit I & II. The students are required to attempt one question each from unit I & II. Each question will carry 5 marks. Unit-III will have only one Compulsory question of 10 marks containing six short notes covering the entire syllabus and students are required to attempt any five.

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Unit-I

Media literacy: meaning, concept, need and significance, Historical perspective: Western and Indian, Key questions of media literacy, Key concepts of media literacy, Media literacy vs. Information literacy, Digital literacy, News literacy, Media literacy and Democracy, Media Literacy and Critical thinking, Ancient Indian perspective of Critical thinking and Media literacy, Qualified citizen and Media literacy.

Unit-II

Media Literacy skills, Interpreting media messages: texts, visuals, semiotics, ideology. Media ownership patterns, media hegemony, Identifying misinformation, disinformation, fake news, Applications of fact checking tools

Suggested Readings

1. Media Literacy, W. James Potter (2012), Sage Publications
2. Mapping New Media in India, Sunita Naryanan, Sage Publication, 2017
3. Media Literacy: An essential guide to critical thinking skills for our complex digital world, Third Edition, 2021, Nick Pernisco, Publisher: Understand Media
4. Media Literacy: Keys to Interpreting Media Messages, 4th Edition, Art Silverblatt, Anubhuti Yadav, Vedabhyas Kundu, Kanishka Publishers.
5. ehfM;k fyVjslh& nwljh ijEijk] MkW iznhi dqekj] izdk'kd gfj;k.kk xzUFk vdkneh

BAMC 604: Media Literacy Skills (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-JMC-604.1	3	3	3	3	3	3	3	3
B-JMC-604.2	3	3	3	3	3	3	3	3
B-JMC-604.3	3	3	3	3	3	3	3	3
B-JMC-604.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-JMC-604.1	3	3	3	3	3
B-JMC-604.2	3	3	3	3	3
B-JMC-604.3	3	3	3	3	3
B-JMC-604.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO 1	PO2	PO3	PO 4	PO5	PO6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-JMC-604.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC-604.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC-604.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC-604.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

BAMC 605: Media Literacy Skills (Practical)

Time:2 Hrs.	Total Marks: 25
Credits: 1	Theory:20
Contact hours per week:2	Internal Assessment:5

Course Objectives: This course is designed the help the students to develop critical understanding of media and learn the skills to interpret and evaluate media messages so as to become media literate citizens.

Course Learning Outcomes: After completing the course the students will be able to:
BAMC 605.1: Understand how media messages create meaning
BAMC 605.2: Identify who creates messages and what are tools of persuasion
BAMC 605.3: Identify bias, misinformation
BAMC 605.4: Understand how to evaluate and create media messages

Note: The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hard copy/soft copy to the teacher. External examiner will evaluate the work done by the student, will conduct the practical and viva-voce.

Practicals / Assignments

- Recognizing fake news : To prepare a report on recently emerged fake news.
- Identify the bias : To prepare an assignment identifying biases applying media literacy principles.
- Becoming responsible messages producer: Students will have to submit messages produced by them on current issues.
- Message interpretation skills : Students will have to do the interpretation of various media messages.
- Digital literacy skills : Students will have to submit a report on their responsible digital media usage.

BAMC 605: Media Literacy Skills (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-JMC- 605.1	3	3	3	3	3	3	3	3
B-JMC-605.2	3	3	3	3	3	3	3	3
B-JMC-605.3	3	3	3	3	3	3	3	3
B-JMC-605.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-JMC- 605.1	3	3	3	3	3
B-JMC-605.2	3	3	3	3	3
B-JMC-605.3	3	3	3	3	3
B-JMC-605.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO 1	PO2	PO3	PO 4	PO5	PO6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-JMC- 605.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC-605.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC-605.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-JMC-605.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

BAMC 606: Media, Culture and Society

Time: 3 Hours
Credits: 6
Contact hours per week: 6

Total Marks-150
Theory-120
Internal Assessment-30

Course Objectives: The objective of this course is to teach the students relationship between media, culture and society and also help them to understand how media portrays society and culture.

Course Learning Outcomes:
After completing the Course, the students will be able to:
BAMC 606.1: understand concept of culture, cultural values and norms and related terms
BAMC 606.2: study organization of a society
BAMC 606.3: understand the role of media in society
BAMC 606.4: analyze the media portrayal of different societal and cultural aspects

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Concept of culture and society
Meaning of family, kinship, class, caste, clan, tribe
Concept of socialization, social stratification
Agents of social change, India s main social institutions

Unit-II

Characteristics of Indian culture
Cultural values, cultural norms and cultural diversity
High culture, low culture and popular culture
Global culture, Cultural diffusion, Cultural imperialism

Unit-III

Media and society: relationship
Role and importance of media in a society, social movements, national integration
Media impact on society
Social responsibility of media

Unit-IV

Media Representation of nation, caste, class and gender
Understanding and interpreting media narratives
Understanding current socio-cultural issues and their representation in media

BAMC 606: Media, Culture and Society

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
BAMC-606.1	3	3	3	3	3	2	3	3
BAMC-606.2	3	3	3	3	3	3	3	3
BAMC-606.3	3	3	3	3	3	3	3	3
BAMC-606.4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	2.75	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
BAMC-606.1	3	2	3	2	3
BAMC-606.2	3	3	3	3	3
BAMC-606.3	3	3	3	3	3
BAMC-606.4	3	3	3	3	3
Average	3	2.75	3	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO 1	PO2	PO3	PO4	PO 5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
BAMC-606.1	3	3	3	3	3	2	3	3	3	2	3	2	3
BAMC-606.2	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC-606.3	3	3	3	3	3	3	3	3	3	3	3	3	3
BAMC-606.4	3	3	3	3	3	3	2	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	2.75	3	3	2.75	3	2.75	3

Assignments:

Submit assignment of writing article on any five contemporary social issues.

Suggested Readings

1. Bauman, Zygmunt. Liquid Modernity. Wiley 2000.
2. Beck Ulrich, Risk Society: Towards A New Modernity, Sage Publications, 1992.
3. Breman Jan .Footloose Labour: Working in India's Informal Economy (Contemporary SouthAsia) Cambridge University Press, 1996.
4. Joseph, R. Gusfield. New Social Movements: From Ideology to Identity. TempleUniversity Press. 2009
5. Pushpesh, Kumar. Querying Indian Sociology A Critical Engagement CAS WORKINGPAPER SERIES Centre for the Study of Social Systems Jawaharlal Nehru University.
6. Shah Ghanshyam, Social M ovements and the State, Sage, New Delhi, 2002.
7. Surinder, S. Jodhka (ed), Community and Identities, Sage, New Delhi, 2001.
8. T.K.Oommen, Nation, Civil Society and Social Movements, Sage, Delhi, 2004
9. Media and Society, Nicholas Carah, Sage publishers, 2021
10. Representation, Stuart Hall, Jessica Evans & Sean Nixon, Sage publishers, 2013

Learning Outcomes-based Curriculum Framework (LOCF)

for

B.Sc. (Graphics & Animation)

A Four-Year Undergraduate Programme

under

New Education Policy (NEP)/Learning Outcomes-based Curriculum Framework (LOCF)

w.e.f. Academic Session 2020-21.
Eligibility: 10+2 in any discipline

Institute of Mass Communication & Media Technology
Kurukshetra University, Kurukshetra

Proposed Scheme for New Education Policy in B.Sc. Graphics & Animation Programme

Semester	CORE COURSE (CC) @ 6 Credits	Ability Enhancement Compulsory Course (AECC) @ 2 Credits	Skill Enhancement Course (SEC) @ 2 Credits	Discipline Specific Elective DSE @ 6 Credits
I	CC- 1A CC- 2A CC- 3A	(English/MIL Communication)/Environmental Studies		
II	CC- 1B CC- 2B CC- 3B	(English/MIL Communication) / Environmental Studies, Hindi		
III	CC- 9 CC- 10 CC- 11 CC- 12		SEC-1	
IV	CC- 13 CC- 14 CC- 15 CC- 16		SEC -2	
V			SEC -3/MOOC*	DSE-1 (Elective Subject)
				DSE-2 (Elective Subject)
				DSE-3 (Elective Subject)
	Internship/Industry Training **			
VI			SEC-4	DSE-4 (Elective Subject)
				DSE-5 (Elective Subject)
				DSE-6 (Elective Subject)

AECC will be offered according to the time table adjustments in the Institute/Department.

*MOOC Course from Swayam Portal.
** SEC can be offered in 3rd/4th/5th semester according to the time table adjustments in the institute.

****Internship/Industry Training** A candidate must complete industry training of 4 to 6weeks after completion of theory examination of 4th semester. The internship report will be submitted in 5th semester.

General instructions:

- One credit equivalent to 1 hour of teaching/2 hours of Practical work
- Teaching workload will be calculated on the basis of teaching contact hours of the course
- One credit (theory /Practical) equivalent to 25 marks

Total No. of Courses, Credit and Marks

Course	No. of Courses	Credits Teaching/Week	Credits Practical/ Week	Credits Tutorials/Week	Total Credits	Marks
Core Courses	16	2x5=10 14x4=56 Total=66	14x2=28	2x1=2	10+56+28 +2=96	16x150 =2400
AECC	3	3x2=6	--	--	6	3x50 =150
SEC	4	4x2=8	--	--	8	4x50 =200
DSE	6	6x4=24	6x2=12	--	24+12=36	6x150 =900
Industrial Training	--	--	--	--	2	1x50 =50
Total	**29**	**104**	**40**	**2**	**148**	**3700**

Scheme of Examination of B.Sc. (Graphics & Animation) programme in accordance with NEP 2020 (Multiple Entry-Exit, Internships and Choice Based Credit System) w.e.f. Academic Session2022-23 in phased manner

Semester-I

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
AECC-N100	Communicative English	AECC-1	2	-	-	2	2	2	25	-	25	50	2 Hours
B-GAG-N 101	Graphic Communication	CC-1A	5	1	-	6	6	6	75	-	75	150	6 Hours
B-GAG-N102	Fundamental of Animation	CC-2A	5	1	-	6	6	6	75	-	75	150	6 Hours
B-GAG-N103	Digital Art & Sketching (Theory)	CC-3A	4	-	-	4	4	6	50	-	50	100	3 Hours
B-GAG-N104	Digital Art & Sketching (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B- GAG -N105	Computer Science(Theory)	SEC-1	1	-	-	1	1	2	20	-	5	25	2 Hours
B- GAG -N106	Computer Science(Practical)		-	-	1	2	1		-	20	5	25	2 Hours
B- GAG -N107	Activity/Hobby Gita-A Manual of Life (Option-i) Public Speaking (Option-ii)							2	Satisfactory/Non satisfactory				
							Total Credits	**24**	**Total Marks**			**550**	

Semester-II

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
AECC-N200	Environmental Studies	AECC-2	2	-	-	2	2	2	25	-	25	50	2 Hours
B-HIN-N200	Communicative Hindi	AECC-3	2	-	-	2	2	2	25	-	25	50	2 Hours
B-GAG -N201	Digital Design & Raster Graphics (Theory)	CC-1B	4	-	-	4	4	6	50	-	50	100	3 Hours
B-GAG -N202	Digital Design & Raster Graphics (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-GAG -N203	Animation Techniques (Theory)	CC-2B	4	-	-	4	4	6	50	-	50	100	3 Hours
B-GAG -N204	Animation Techniques (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-GAG -N205	Comic Design & Character Anatomy (Theory)	CC-3B	4	-	-	4	4	6	50	-	50	100	3 Hours
B-GAG -N206	Comic Design & Character Anatomy (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-GAG -N207	Human values and Ethics	SEC-2	2	-	-	2	2	2	25	-	25	50	2 Hours

B-GAG -N208	Activity/Hobby						2	2	Satisfactory/Non satisfactory		
Total Credits								**26**	**Total Marks**	**600**	

List of Total Subjects in B.Sc. Graphics & Animation:

Sr. No.	Course Type	Number of Subjects
1	CC	16
2	AECC	03
3	SEC	04
4	DSE	06
	Total	**29**

	Course Type	Number of Subjects
Semester I	CC	3
	AECC	1
Semester II	CC	3
	AECC	2
Semester III	CC	4
	SEC	1
Semester IV	CC	4
	SEC	1
Semester V	SEC	1
	DSE	3
Semester VI	SEC	1
	DSE	3
Total		**29**

List of Abbreviations

L - Lecture
T- Tutorial
P- Practical
IA – Internal Assessment
CC- Core Course
AECC- Ability Enhancement Compulsory Course
SEC- Skill Enhancement Course
DSE- Discipline Specific Elective

PROGRAMME OUTCOMES

On successful completion of the programme, the student will be able to:-

PO1 Acquire knowledge related to the discipline under study.

PO2 Communicate and reflect effectively and efficiently on the issues related to the discipline.

PO3 Exhibit the professional skills and competencies acquired during the Programme of study.

PO4 Apply the knowledge and skills acquired in planning, organizing, evaluation and decision making.

PO5 Explore, analyze and provide solutions to the problems related to the discipline and life.

PO6 Develop exposure to actual working environment leading to employability and entrepreneurship.

PO7 Exhibit scientific & research capabilities in academic, professional and general life pursuits.

PO8 Recognize, appreciate and follow ethical issues relating to the discipline and society.

Programme Specific Outcomes:

After completion of under graduate programme in Graphics & Animation, the learner will be able to:

PSO1 Acquire knowledge about graphics and animation as visual communication tool.

PSO2 Develop competencies and skills needed for becoming an effective graphic designer and animation artist.

PSO3 Develop competency for employability and entrepreneurship by practicing various designing and animation applications.

PSO4 Understand the significance of good design to build the brand identity.

PSO5 Demonstrate critical & aesthetical skills through design, animation and visual effects projects.

AECC-N100: Communicative English

Time: 2 Hrs. Total Marks: 50
Credits: 2 Theory:25
Internal Assessment: 25

Contact hours per week: 2

Course objectives: The paper is designed to enhance proficiency in English Language. It seeks to develop the basics of English Language through different modules. Each unit will enable and capacitate the learner to have communication competence which is required in the present-day world. The basic knowledge of communication will enable the learners to share and enliven ideas, experience and know-how ubiquitous in the world.

Course Learning Outcomes:
After completing the Course, the student will be able to:
AECC-N100.1:Learn the rhetoric of presentation
AECC-N100.2: Learn, comment and respond to correspondence
AECC-N100.3: Learn the basics of grammar and composition
AECC-N100.4: Acquaint with verbal and non-verbal communication

Note: All questions are compulsory.

Q.1. The paper setter will set two question from unit-II. The student shall attempt one out of the given two. (05)

Q.2. This question shall be based on unit-III. The student shall attempt one out of the given two. (10)

Q.3. There will be 15 grammatical items based on unit-IV. The student shall attempt any 10 items. (10)

Internal Assessment: The students shall be required to make presentation /PPT based on unit-I.

Unit-I

Listening and speaking skills

Listening skills (Active-passive, Accent)
Speaking Skills (Accent, Stress, Intonation, Assertion, Rhetorical questions, Pause, Pitch)
Oral presentation, Debates, Elocution and Extempore

Unit-II

Writing skills

Report writing
Paragraph writing
Letter writing

Unit-III

Technical and Modern communication

Resume writing
E-mail
Blogs and comments on social media

Unit-IV

Grammar

Noun, Pronoun, Verb, Adverb, Adjective, Preposition, Conjunction and their uses
Common errors in the use of English (Noun, Pronoun, Adjective, Adverb, Conjunctions)
Correct use of verbs and Articles
Vocabulary: Homonyms, Homophones, Pair of words

References:

- Communicative English, Dr. Jimmy Sharma, ArihantParkashan Pvt. Ltd.
- Strengthen Your English, Bhaskaran and Horsburgh, Oxford University Press
- Basic Communication Skills for Technology, and area J Rutherfoord, Pearson Education Asia.
- Murphy's English Grammar with CD, Murphy, Cambridge University Press
- English Skills for Technical Students by Orient Longman
- Everyday Dialogues in English by Robert J. Dixson, Prentice-Hall of India Ltd., 2006.

AECC-N100: Communicative English

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
AECC-N100.1	2	2	2	2	2	2	2	2
AECC-N100.2	2	2	2	2	2	2	2	2
AECC-N100.3	2	2	2	2	2	2	2	2
AECC-N 100.4	2	2	2	2	2	2	2	2
Average	2	2	2	2	2	2	2	2

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
AECC-N100.1	2	2	2	2	2
AECC-N100.2	2	2	2	2	2
AECC-N100.3	2	2	2	2	2
AECC-N100.4	2	2	2	2	2
Average	2	2	2	2	2

CO-PO-PSO Mapping Matrix

CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
AECC-N100.1	2	2	2	2	2	2	2	2	2	2	2	2	2
AECC-N100.2	2	2	2	2	2	2	2	2	2	2	2	2	2
AECC-N100.3	2	2	2	2	2	2	2	2	2	2	2	2	2
AECC-N100.4	2	2	2	2	2	2	2	2	2	2	2	2	2
Average	2	2	2	2	2	2	2	2	2	2	2	2	2

B-GAG-N101: Graphic Communication

Time:3 Hrs. Total Marks: 150
Credits: 6 Theory: 75
Internal Assessment: 75

Course Objectives: The academic work in the Semester aims at an understanding of the basic elements of compositions that merge to form the language of visual communication.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-N101.1: Become aware of the principles and elements of aesthetic including Indian concept.
B-GAG-N101.2: Understand the grammar of visual narratives.
B-GAG-N101.3: Gain the ability to compose visuals and visual narratives
B-GAG-N101.4: Develop creative problem-solving skills used in communicating visually as an artist.

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction:
Communication: Concept, Process and significance
Communication Types: Verbal and Non-Verbal
Graphic Communication: Meaning and Definition
Design Theory: Gestalt Principal, Visual Perception
AIDA Model

Unit II

Basics of Art:
Meaning and Definition of Art
Elements of Art: Point, Line, Form, Shape, Space, Colour, Texture, Value,
Principles of Art: Balance, Rhythm, Harmony, Contrast, Proportion,
Dominance, Unity
Process of Designing and A-B Testing

Unit –III

Art Aesthetics:
Aesthetics of Art: Origin of Aesthetics
Meaning and definition of Aesthetics, importance of Aesthetics in arts and animation
Indian concept of Aesthetics and theory of Ras, Bhava, Shadaang, Auchitya,
Alankaar, Rasa Nispatti

Unit IV

Compositional Theories:
Golden Rules: Rule of Third, Golden Section, Golden Triangles, Spiral Section,
Diagonal, Radial,

Perspective: One Point, Two Point and Three Point
Positive & Negative space

References:

- Golombisky, K., & Hagen, R. (2017). White space is not your enemy: A beginner's guide to communicating visually through graphic, web & multimedia design. CRC Press.
- Smith, K. (2005). Handbook of visual communication: Theory, methods, and media.
- Lester, E (2000) Visual Communications: Images with Messages. Thomson Learning
- Schildgen, T (1998). Pocket Guide to color with digital applications. Thomsom Learning
- Picture this: Media Representation of Visual Arts and artists. University of Luton Press
- Palmer, Frederic: Visual Elements of Art and Design, 1989, Longman
- Porter, Tom and Goodman, Sue: Manual of Graphic Technique 2: For Architects,
- Graphic Designers, and Artists, 1982, Astragal Books. London
- Palmer. F: Visual Awareness (Batsford, 1972)

B-GAG N101: Graphic Communication (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-N101.1	3	3	3	3	3	3	3	3
B-GAG-N101.2	2	3	3	2	3	3	3	3
B-GAG-N101.3	3	3	3	3	3	3	3	3
B-GAG-N101.4	3	3	3	3	2	3	3	3
Average	3	3	3	3	2.75	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-N101.1	3	2	3	3	3
B-GAG-N101.2	3	2	3	3	3
B-GAG-N101.3	3	3	2	3	3
B-GAG-N101.4	3	3	3	3	3
Average	3	2.5	2.75	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-N101.1	3	3	3	3	3	3	3	3	3	2	3	3	3
B-GAG-N101.2	3	3	3	3	3	3	3	3	3	2	3	3	3
B-GAG-N101.3	3	3	3	3	3	2	3	3	3	3	2	3	3
B-GAG-N101.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	2.75	3	3	3	2.75	2.75	3	3

B-GAG-N102: Fundamental of Animation

Time:3 Hrs. Total Marks: 150
Credits: 6 Theory: 75
Internal Assessment: 75

Course Objectives: This course will provide an overview and study of the history of animation and its fundamentals. This subject will shed light on the early magic lantern shows of the late nineteenth century to current and emerging digital animation technologies. This will be accomplished through a series of discussions, lectures, assignments, as well as viewing and evaluating classical Animation films.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-N102.1: Know the History of Animation
B-GAG-N102.2: Know about the Animation Industry.
B-GAG-N102.3: Learn production Stages and Means of Animation
B-GAG-N102.4: Get complete knowledge of the different types of Animation

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT-I

Introduction:

- Introduction and Definitions of Animation
- Types of Animation
- Terms Used in Animation: FPS, Thumbnail, Blueprint, Pencil Test, Screenplay, Blocking and Animatics
- Working and usage of: Zoetrope, Phenakistoscope and Thaumatrope.

UNIT-II

History:

- Overview of Animation Film History: Earlier Stage and Modern Era
- Walt Disney, Dream Works, Pixar, J-Stuart Blackton, Winsor Mc Cay
- Overview of Animated Television Channels: Cartoon Network, Discovery Kids, Disney, Pogo, Disney XD and ZEEQ.
- Indian Animation Industry
- Father of Indian Animation

UNIT-III

Process of Animation

Pre-Production

- Idea Generation
- Story Writing: Structure & Genres
  Principals of Story Writing: Point of view, Characterization, Plot and Conflict.
- Script / Dialogue Writing: Types and Structure
- Model Sheet: Types and Features
- X-Sheet: Types and Features
- Storyboard: Structure & Advantages
- Sound Recording: Process and Features
- Animatics: Structure, Advantages and Process

UNIT-IV

Production

- Layout and Illustrations Designing: Process and Features
- Key-Frames: Types and Uses
- In-betweens – Cleanups: Process and Features
- Rendering: Types and Process

Post-Production

- Video Editing: Types
- Sound Mixing: Features
- Dubbing :Features
- Color Correction: Features
- Rendering Authoring

References:

- 'How to Write for Animation' by Jeffrey Scott's book
- THE TOOLS OF SCREENWRITING: A WRITER'S GUIDE TO THE CRAFT AND ELEMENTS OF A SCREENPLAY by David Howard and Edward Mobley; St. Martins/Griffin; New York; 1993.
- Storyboard Design course by Giuseppe Cristiano--- Barron's
- How to write for animation—Jeffery Scott
- The art of layout and storyboarding- Mark T. Byrne
- Egleiter, Marcie (2011) From Word to Image: Storyboarding and the Filmmaking Process. Michael
- Wiese Productions. Beiman, Nancy. (2012) Prepare to board. Focal Press.
- Animation History and Production by AparnaVats , New Delhi Publisher ,New Delhi.
- Fraioli, James O.(2000) Storyboarding 101: A Crash Course in Professional Storyboarding. Michae
- Wiese Productions. Glebas, Francis.(2008) Directing the Story. Routledge.
- Hart, John. (2007).The Art of the Storyboard: Storyboarding for Film, TV, and Animation. Focal
- Press. Simon, Mark.(2006) Storyboards: Motion In Art. Focal Press.
- Tumminello, Wendy. (2004) Exploring Storyboarding. Course Technology.

B-GAG-N102: Fundamental of Animation

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-N102.1	3	3	3	3	3	3	2	3
B-GAG-N102.2	3	3	3	3	3	3	3	3
B-GAG-N102.3	3	3	3	3	3	3	3	3
B-GAG-N102.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-N102.1	3	2	3	3	3
B-GAG-N102.2	3	2	3	3	3
B-GAG-N102.3	3	3	3	3	3
B-GAG-N102.4	3	3	3	3	3
Average	3	2.5	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-N102.1	3	3	3	3	3	3	2	3	3	2	3	3	3
B-GAG-N102.2	3	3	3	3	3	3	3	3	3	2	3	3	3
B-GAG-N102.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N102.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	3	3	2.5	3	3	3

B-GAG-N103: Digital Art & Sketching (Theory)

Time:3 Hrs. Total Marks: 100
Credits: 4 Theory: 50
Internal Assessment: 50

Course Objectives: This course enables the students to learn the different mediums of Drawing and its importance for animation. This course allows student to learn observation, visualization and visually experiencing the content. This course allows the student to learn and practice drawing for use in Animation Design.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-N103.1: Know about Art and Indian concept of Art
B-GAG-N103.2 Know about the different medium and techniques of drawing and painting
B-GAG-N103.3: Understand Light & Shadow, and surface & texture
B-GAG-N104.4: Develop knowledge of Digital Drawing In Photoshop

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT-I

Introduction:

- Define Art
- Origin of Art:
  - Study of Prehistoric Indian Art
  - Visual Arts & Its Forms & Creative Pedagogies
- Diversity of Shapes, Form, Lines, Textures
- Traditional Art Materials: Pencils, Brushes, Paper, colors
- Drawing, Sketching and Concept Drawing
- Understanding of Light and Shadow
- Landscapes and Composition

UNIT-II

Color Theory

- Perception of Color and Color Wheel
- Mixing of Primary, Secondary and tertiary Colors
- Tint, Shades, Hues, Tones.
- Warm Colors and Cool Colors.
- Different Color schemes (Complimentary, Split Complimentary, Analogous, Triadic etc.

UNIT-III

Art Work

- Pattern Design and 3D Design
- Perspectives on the Creative Process
- Anatomy & Proportions: Body Types, Poses, Facial Expression
- Painting- Water color, Pencil color
- Typography: Elements and Features
- Calligraphy : Elements and Features

UNIT-IV

Digital Tools

- Overview of Photoshop Interface
- Understanding of Pen tool, Brush Tool and Brush Panel
- Shading and Painting techniques in Photoshop
- Use of Opacity, Flow and Pattern
- Digital Panting: Object, Character and Illustration

References:

- Indian painting by Lokesh Chandra Sharma
- Indian cartoon Art by VeenaBansal
- Aesthetic of art, Krishna's publisher, Author Nupur Sharma
- Graphic design by Narender Singh Yadav

B-GAG-N103: Digital Art & Sketching (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-N103.1	3	3	3	2	3	3	3	3
B-GAG-N103.2	3	3	3	3	3	3	3	3
B-GAG-N103.3	3	3	3	3	3	3	3	3
B-GAG-N103.4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-N103.1	3	2	2	2	3
B-GAG-N103.2	3	3	3	3	3
B-GAG-N103.3	3	3	3	3	3
B-GAG-N103.4	3	3	3	3	3
Average	3	2.75	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-N103.1	3	3	3	2	3	3	3	3	3	2	2	2	3
B-GAG-N103.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N103.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N103.4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	2.75	2.75	2.75	3

B-GAG-N104: Digital Art & Sketching (Practical)

Time:3 Hrs. Total Marks: 50
Credits: 2 Practical: 25
Internal Assessment: 25

Course Objectives: This course enables the students to learn and practice the different mediums of Drawing and its importance for animation. This course allows student to practice learning through observation. This course allows the student to learn and practice drawing for use in Animation Design.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-N104.1: Know about the different medium and techniques of drawing and painting.
B-GAG-N104.2: Understand use of Light and Shadow and surface and texture
B-GAG-N104.3: Draw landscape with proper perspective sense, study to draw trees, plants, buildings, sky etc. to create the animation backgrounds
B-GAG-N104.4: Know Digital Drawing In Photoshop

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Drawing Anatomy
Pencil shading techniques
Still Life Drawing & Landscape drawing
Cartoon character sketch
Calligraphy & Typography
Analogous Colors and Color Wheel
Stone art and Mandala art
Patterns and 2D design
Textures and 3d Art
Poster Designing
Digital Illustrations (Digital Painting)

B-GAG-N104: Digital Art & Sketching (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-N103.1	3	3	3	3	3	3	3	3
B-GAG-N103.2	3	3	3	3	3	3	3	3
B-GAG-N103.3	3	3	3	3	3	3	3	3
B-GAG-N103.4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-N103.1	3	3	2	3	3
B-GAG-N103.2	3	3	3	3	3
B-GAG-N103.3	3	3	3	3	3
B-GAG-N103.4	3	3	3	2	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-N103.1	3	3	3	3	3	3	3	3	3	3	2	3	3
B-GAG-N103.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N103.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N103.4	3	3	3	3	3	3	2	3	3	3	3	2	3
Average	3	3	3	3	3	3	2.75	3	3	3	2.75	2.75	3

B-GAG-N105: Computer Science (Theory)

Time:2 Hrs. Total Marks: 25
Credits: 1 Theory: 20
Internal Assessment: 5

Course Objectives: This course is designed for theoretical understanding of computer system and its components, functioning and its application software exposure.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-N105.1: Understand the basic knowledge of computer system.
B-GAG-N105.2 Know about the functioning of operating systems.
B-GAG-N105.3: Understand the basic concept of Internet and computer networks .
B-GAG-N105.4: Understand the basics of Application Software.

NOTE:- The examiner will set total 10(ten) questions covering the entire syllabus. Student will attempt any five questions. All questions will carry equal marks.

Operating System - Definition & Functions of Operating System, Basics of Popular Operating Systems; The User Interface, Exploring Computer, Icons, taskbar, desktop, Using Menu and Menu-selection, managing files and folders, Control panel – display properties, add/remove software and hardware, Running an Application, Using help; Creating Short cuts, Basics of O.S Setup; Common utilities.

Word Processing: Introduction to Word Processing, Menus, Creating, Editing & Formatting Document, Spell Checking, Printing, Views, Tables, Word Art, Mail Merge, Macros.

Spread Sheet: Elements of Electronics Spread Sheet, Applications, Creating and Opening of Spread Sheet, Menus, Manipulation of cells: Enter texts numbers and dates, Cell Height and Widths, Copying of cells, Mathematical, Statistical and Financial function, Drawing different types of charts.

Presentation Software: Creating, modifying and enhancing a presentation, Delivering a presentation, Using sound, animation and design templates in presentation.

References:

- Help files from Apache Open Office, https://wiki.openoffice.org/wiki/Documentation
- Channelle Andy, "Beginning OpenOffice 3: From Novice to Professional", aPress Publications
- Beginning OpenOffice 3: From Novice to Professional, Andichannele, Apress.
- Microsoft Office 2016 Step by Step: MS Office 2016 Step by S_p1, By Joan Lambert, Curtis Frye
- Computer Fundamentals - By Pradeep K. Sinha, Priti Sinha, BPB Publications, 6th Edition
- Getting Started with LibreOffice 5.0, Friends of OpenDocuments Inc., Http://friendsofopendocument.com
- Documentation from LibreOffice, https://documentation.libreoffice.org/en/english-documentation/

B-GAG-N105 Computer Science (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-N105.1	3	3	3	3	3	3	3	3
B-GAG-N105.2	3	3	3	3	3	3	3	3
B-GAG-N105.3	3	3	3	3	3	3	3	3
B-GAG-N105.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-N105.1	3	3	3	3	3
B-GAG-N105.2	3	3	3	3	3
B-GAG-N105.3	3	3	3	3	3
B-GAG-N105.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-N105.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N105.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N105.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N105.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-GAG-N106: Computer Science (Practical)

Time:2 Hrs. Total Marks: 25
Credits: 1 Practical: 20
Internal Assessment: 05

Course Objectives: This course is designed for practical understanding of commonly used application software and its functioning to the students.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-N106.1: Use MS-Word
B-GAG-N106.2: Use MS-Excel
B-GAG-N106.3: Use PowerPoint
B-GAG-N106.4: Create Email account, compose & send emails for personal and professional communication.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Starting with basics of Operating Systems and its functionalities
Create and format word documents.
Use tables, word Art and other features in your documents.
Use macros to simplify the tasks in a document.
Use mail merge to write once for many.
Use spreadsheet for basic data handling
Apply formulas to sheet for automation.
Use if-else to make certain decisions in a sheet.
Use Charts & Shapes for better visualization of data.
Use filters and data validation controls for control of data
Prepare and format presentations.
Apply slide transitions, animations and sequencing for slides.
Apply different formatting and insert options to make presentation better.
Use rehearse and timing options for a presentation with handouts.

B-GAG-N106: Computer Science (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-N106.1	3	3	3	3	3	3	3	3
B-GAG-N106.2	3	3	3	3	3	3	3	3
B-GAG-N106.3	3	3	3	3	3	3	3	3
B-GAG-N106.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-N106.1	3	3	3	3	3
B-GAG-N106.2	3	3	3	3	3
B-GAG-N106.3	3	3	3	3	3
B-GAG-N106.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-N106.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N106.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N106.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N106.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-GAG -N107: Activity/Hobby

Gita-A Manual of Life (Option-i)

Course Credit: 02 Total Marks: 50 Marks

Contact Hours: 02 per week

Teaching will be based on the discussion in the class room

Note: There will be no written examinations, knowledge and understanding of Gita teachings will be assessed through discussion by the Students describing the knowledge and implementation of Gita's teachings in daily life for the betterment of our day today life.

Course Outcomes:

Unit-1: After studying the first unit of the course students will be able to understand meaning, background & relevance of Gita's teaching's in contemporary times.

Unit-II: After studying the second unit of the course students will be able to understand benefits of Karma Yoga, Bhakti Yoga and Gyana Yoga in our daily life.

Unit-1

Gita for all: Meaning, background and relevance of Gitaopdesha. Karmayoga as a way to right knowledge; Necessity of Loksamgraha for the service of Humanity.

Unit-II

Gita for Spiritual world: Karm Yogi as an Ideal Man of Gita, Sthitaprajna as a symbol of ideal master in Gita, Swadharma and Pradharma as a secret of Blissful society, Atma Samyama Yoga; a technique for building an ideal person according to Gita.

Suggested Books:

- Swami Ramsukhdas, Gita Sadhak Sanjivani Teeka
- Hnuman Prasad Poddhar, Gita Tattvavivechni Teeka
- Gandhi Gita Matta
- Gurudatta Srimadbhagvadgita Vyakhya
- Satyavarta, Srimadbhagvadgita Vyakhya
- Swami Jyanananda, Gita Prerna
- Paramhamsa Yogananda, Srimadbhagvadgita God-Arjuna, Discoruse Aurvind, Essays on Gita.
- S. Radhakrishna, Bhagwvadgita Vyakhya
- Jyaneshwar, Jyaneshwari Gita

B-GAG -N107: Activity/Hobby

Public Speaking (Option-ii)

Course Credit: 02 Total Marks: 50 Marks

Contact Hours: 02 per week

Teaching will be based on the discussion in the class room

Note: There will be no written examinations. Understanding and art of Public speaking will be assessed through discussion and presentation by the Students in the class room.

Course Outcomes:

Unit-1: After studying the first unit of the course students will be able to understand relevance of Public speaking in their academic and professional life.

Unit-II: After studying the second unit of the course students will be able to write their own speech and analyze the intricacies of speeches of renowned speakers.

Unit-1

Public speaking: Meaning and relevance, Characteristics of an effective speaker, Power of words, Use of body language, dressing, mannerisms, Use of effective memory techniques, Overcoming the fear of public speaking- Glossophobia

Unit-II

Speech : Introduction, body and conclusion, Writing your own speeches, famous speeches of World s greatest orators, Case studies of effective public communicators like TED speakers of both Indian and foreign origin

Suggested Books:

- The Art of Public Speaking author Dale Carnegie, along with J. Berg Esenwein, Rupa Publications, India (English and Hindi)
- Speak with no fear, Mike Acker, Advantage Publishing Group
- TED Talks, Chris Anderson, Headline Publishing Group
- 50 Prernadayak Bhashan, Fingerprint Publishing

AECC-N200 : Environmental Studies

Time: 3 Hrs. Total Marks: 50
Credits: 2 Theory: 25
Internal Assessment: 25

Scheme of paper: Total number of questions will be nine. Students have to attempt five questions in all. Questions no. 1 is compulsory. All questions carry equal marks. Each question is of 8 marks.

Course objectives: The aim of this course is to make the students aware about the environmental problems and current global issues related to environment. It provides knowledge about concepts of ecosystem and biodiversity and develops interest in the students about their role in conservation of environment and reducing pollution and waste generation in their surroundings. By understanding the environmental problems, their causes and solutions, the students can apply these to their daily lives.

Course Outcomes (COs) for Theory:

COs	On successful completion of the course, the students will be able to:
CO 1	Understand the concept of environmental studies, its scope and importance in the conservation of environment. Understand the concept of ecosystem and different types of natural and artificial ecosystems in the world, the biogeochemical cycling and energy flow in an ecosystem.
CO 2	Describe the various renewable and non-renewable natural resources and their over-exploitation due to increasing demands of rising population. Become aware about biodiversity, its importance and the various threats for biodiversity. Have knowledge of the endangered species and their conservation measures that are needed to be adopted at different levels.
CO 3	Have understanding about the types of pollution and how to reduce pollution levels in air, soil, water, land and from marine bodies, as to develop interest in reducing the solid waste generation as well as its management at household level. Gain knowledge of various global environmental issues like climate change, global warming and ozone depletion and also about different environmental laws implemented to conserve the environment.
CO 4	Understand the concept of population growth, disaster management, impacts of drug abuse and various environmental movements.

Course outcome for practical/field work:

CO 1	To get practical knowledge of various environmental issues through project file/assignment with case studies.

Mode of Paper Setting: Total number of questions set will be nine. Questions no. 1 is compulsory covering the entire syllabus. Two questions will be set from each unit. Students have to attempt five questions in all, one question from each unit including the compulsory question. Each question is of 5 marks. All questions carry equal marks. Final theory exam time allowed will be of 3 hours.

Unit I

Introduction to environmental studies: Multidisciplinary nature of environmental studies; Scope and importance; Concept of sustainability and sustainable development.

Ecosystems: What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems: a) Forest

ecosystem, b) Grassland ecosystem, c) Desert ecosystem, d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) (8 lectures)

Unit II

Natural Resources: Renewable and Non-renewable Resources

•Land resources and landuse change; Land degradation, soil erosion and desertification.

•Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.

•Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).

•Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Biodiversity and Conservation

•Levels of biological diversity: genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots

•India as a mega-biodiversity nation; Endangered and endemic species of India

•Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

•Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value. (16 lectures)

Unit III

Environmental Pollution

•Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution

•Nuclear hazards and human health risks

•Solid waste management: Control measures of urban and industrial waste, Pollution case studies.

Environmental Policies & Practices

•Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture

•Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).

•Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

(15 lectures)

Unit IV

Human Communities and the Environment

•Human population growth: Impacts on environment, human health and welfare.

•Resettlement and rehabilitation of project affected persons; case studies.

•Disaster management: floods, earthquake, cyclones and landslides.

•Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan.

•Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.

•Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Drugs and their effects; Useful and harmful drugs; Use and abuse of drugs; Stimulant and depressant drugs. Concept of drug de-addiction. Legal position on drugs and laws related to drugs.

(6 lectures)

Practical/Field work

•Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.

•Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.

•Study of common plants, insects, birds and basic principles of identification.

•Study of simple ecosystems-pond, river, Delhi Ridge, etc. (Equal to 5 lectures)

Suggested Readings:

1.Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt.
2.Gadgil, M., & Guha, R. 1993. This Fissured Land: An Ecological History of India. Univ. of California Press.
3.Gleeson, B. and Low, N. (eds.) 1999. Global Ethics and Environment, London, Routledge.
4.Gleick, P. H. 1993. Water in Crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5.Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. Principles of Conservation Biology. Sunderland: Sinauer Associates, 2006.
6.Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. Science, 339: 36-37.
7.McCully, P. 1996. Rivers no more: the environmental effects of dams (pp. 29-64). Zed Books.
8.McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9.Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders.
10.Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11.Rao, M.N. & Datta, A.K. 1987. Waste Water Treatment. Oxford and IBH Publishing Co. Pvt. Ltd.
12.Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. Environment. 8th edition. John Wiley & Sons.
13.Rosencranz, A., Divan, S., & Noble, M. L. 2001. Environmental law and policy in India. Tripathi 1992.
14.Sengupta, R. 2003. Ecology and economics: An approach to sustainable development. OUP.
15.Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.
16.Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. Conservation Biology: Voices from the Tropics. John Wiley & Sons.
17.Thapar, V. 1998. Land of the Tiger: A Natural History of the Indian Subcontinent.
18.Warren, C. E. 1971. Biology and Water Pollution Control. WB Saunders.
19.Wilson, E. O. 2006. The Creation: An appeal to save life on earth. New York: Norton.
1) 20.World Commission on Environment and Development. 1987. Our Common Future. Oxford University

B-HIN-N200 : Communicative Hindi

Time: 2 Hrs.
Credits: 2
Contact hours per week: 2

Total Marks: 50
Theory: 25
Internal assessment: 25

Course Objectives: The Paper is designed to enhance proficiency in Hindi Language. It seeks to develop the basic of Hindi Language through different modules. Each unit will enable the learner to have the communication in Hindi and to share and express ideas and experiences.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-HIN-N200.1: Develop the knowledge of basics of Hindi language.
B-HIN-N200.2: Improve vocabulary in Hindi language.
B-HIN-N200.3: : Inculcate the knowledge of grammar in Hindi language
B-HIN-N200.4: Learn correct uses of Hindi language in media writing

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit – I

Hkk"kk dh ladYiuk
Hkk"kkbZ Hksn&ekSf[kd ,oa fyf[kr
Hkk"kk dk ekudhdj.k&fLFkfr ,oa pqukSfr;k¡
Hkk"kk rFkk lekt dk ikjLifjd vUrlZcU/kA

Unit – II

fgUnh O;kdj.k 'kCn :i vkSj okD; jpuk
nsoukxjh fyfi vkSj o`fr
mPpkj.k vo;o] i;kZ;] foykse] lekukFkhZ] vusdkFkhZ 'kCn
fgUnh dh iz;ksxkRed =qfV;ka

Unit – III

fgUnh lkfgR; dk laf{kIr bfrgkl
fgUnh lkfgR; dh vk/kfud izo`fRr;ka
fgUnh dh lkfgfR;d fo/kkvksa dk ifjp;
fgUnh x| ,oa i|

Unit – IV

iz;kstu ewyd fgUnh dk vfHkizk; ,oa vko';drk
tulapkj ek/;e vkSj fgUnh Hkk"kk] ehfM;k dh Hkk"kk dh izd`fr ,oa fopyu
{ks=h; izHkko ,oa {ks=h; Hkk"kkbZ iz;ksx
eqfnzr ek/;e vkSj fgUnh
jsfM;ks ,oa Vsyhfotu dh Hkk"kk
foKkiu ,oa lks'ky ehfM;k dh Hkk"kk

Suggested Readings:

HkkfV;k] MkW- dSyk'kpUn] vuqokndyk % fl)kar vkSj iz;ksx] r{kf'kyk izdk'ku] u;h fnYyhA
'kekZ] j?kquUnu izlkn] iz;kstu ewyd fgUnh % fl)kar vkSj O;ogkj] fo'ofo|ky; izdk'ku] okjk.klhA
v;~;j] fo'oukFk] vuqokndyk] izHkkr izdk'ku] fnYyh
frokjh] HkksykukFk] fgUnhHkk"kk dh lkekftd Hkwfedk] nf{k.k Hkkjr fgUnh izpkj lfefr] enzkl
>kYVs] MkW- naxy] iz;kstu ewyd fgUnh % fl)kar vkSj iz;ksx] ok.kh izdk'ku] u;hfnYyh
xksnjs] MkW- fouksn] iz;kstu ewyd fgUnh] ok.kh izdk'ku] u;h fnYyh
jk.kk] egsUnz flag] iz;kstu ewyd fgUnh ds vk/kqfud vk;ke] g"kkZ izdk'ku] vkxjkA
dqekj pan] tulapkj ek/;eksa esa fgUnh] Dykfldy ifCyf'kax dEiuh] fnYyh

B-HIN-N200 : Communicative Hindi

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-HIN-N200.1	3	3	3	3	2	2	2	3
B-HIN-N200.2	3	3	3	3	2	2	2	3
B-HIN-N200.3	3	3	3	3	2	2	2	3
B-HIN-N200.4	3	3	3	3	2	2	2	3
Average	3	3	3	3	2	2	2	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-HIN-N200.1	2	2	2	2	2
B-HIN-N200.2	2	2	2	2	2
B-HIN-N200.3	2	2	2	2	2
B-HIN-N200.4	2	2	2	2	2
Average	2	2	2	2	2

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-HIN-N200.1	3	3	3	3	2	2	2	3	2	2	2	2	2
B-HIN-N200.2	3	3	3	3	2	2	2	3	2	2	2	2	2
B-HIN-N200.3	3	3	3	3	2	2	2	3	2	2	2	2	2
B-HIN-N200.4	3	3	3	3	2	2	2	3	2	2	2	2	2
Average	3	3	3	3	2	2	2	3	2	2	2	2	2

B-GAG-N201: Digital Design & Raster Graphics (Theory)

Time:3 Hrs. Total Marks: 100
Credits: 4 Theory: 50
Internal Assessment: 50

Course Objectives: The course is designed to impart the knowledge about Print, Advertising, Graphic Design and its applications.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-N201.1: Develop knowledge of software to design raster graphical images
B-GAG-N201.2 Understand the difference between different graphics and image file formats
B-GAG-N201.3: Develop knowledge of using Photoshop's various tools and techniques.
B-GAG-N201.4: Understand Image Retouching and Image Manipulation for Advertising

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT-I

Introduction to graphics:

- Define graphics & types of graphics
- Elements and Principles of graphic design
- Difference between vector and raster images.
- Fonts: Serif, San-Serif, Slab-Serif and Decorative
- Overview of Designing Industry and Designing Trends
- Common Image Formats: JPEG, PNG, SVG, TIFF and GIF

UNIT-II

Raster Graphics

- Introduction to Photoshop: Tools and Menus
- Layers & Layer styles, Opacity, Masking, Adjustment layers, Blending modes,
- Image Editing: Retouching, Color Correction, Smoothing skin & wrinkles.
- Image Manipulation, Filter Gallery
- Portrait enhancements
- Working with typography: Threading text, changing font size and Color, using styles, wrapping text, text on a path, creating Outlines, wrapping text around an object, sampling text.

UNIT-III

Techniques

- Gradient tool and Gradient Map
- Cloning / Stamping, Patch Tool
- Noise Reduce and edges sharpness
- Dodge & Burn Tool
- Page setup
- Action and Batch Render
- Effects: Orton Effect, Retro, Bokeh
- Filters: Liquify, Vanishing Point, Pattern Maker, Artistic

UNIT-IV

Designing process

- Photo Collage, Black & White images to Color, Web Banner
- Social Media: Features, Process and Sizes
- Magazine cover design: Process, Types and Sizes
- Digital Flyer Designs : Features and
- Cartoon character design
- Promotional designs
- Layout process: (create press and magazine layouts)
- Poster design: productive & social
- Newsletter design

References:

- Golombisky, K., & Hagen, R. (2017). White space is not your enemy: A beginner's guide to communicating visually through graphic, web & multimedia design. CRC Press.
- Harrington, R. (2012). Understanding Adobe Photoshop CS6: The essential techniques for imaging professionals. Peachpit Press.
- Gulbins, J. (2013). Mastering Photoshop layers: A photographer's guide. Rocky Nook.

B-GAG-N201: Digital Design & Raster Graphics (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-N201.1	3	3	3	3	3	3	2	2
B-GAG-N201.2	3	3	3	3	3	3	3	3
B-GAG-N201.3	3	3	3	3	3	3	3	3
B-GAG-N201.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	2.75

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-N201.1	3	3	2	3	3
B-GAG-N201.2	3	3	3	2	3
B-GAG-N201.3	3	3	3	2	3
B-GAG-N201.4	3	3	3	3	3
Average	3	3	2.75	2.5	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-N201.1	3	3	3	3	3	3	2	2	3	3	2	3	3
B-GAG-N201.2	3	3	3	3	3	3	3	3	3	3	3	2	3
B-GAG-N201.3	3	3	3	3	3	3	3	3	3	3	3	2	3
B-GAG-N201.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	2.75	3	3	2.75	2.5	3

B-GAG-N202: Digital Design & Raster Graphics (Practical)

Time:3 Hrs.
Credits: 2

Total Marks: 50
Practical: 25
Internal Assessment: 25

Course Objectives: The aim of the course is to impart the practical knowledge about Print, Advertising, Graphic Design and its applications.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-N202.1: Able to use Raster Graphics Software
B-GAG-N202.2: Understand the difference between different graphics and image file formats
B-GAG-N202.3: Become familiar with layer panel and tools
B-GAG-N202.4: Get practical knowledge of Image Retouching techniques

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Black & White to color conversion of image
Portrait Enhancement & Photo Retouching
Image Manipulation
Day to night conversion of Image
Effects passed exercise
Typography Designs
Social Media Designs
Web Banners
Magazine Cover page and layouts
Newsletter Design
Cartoon Character Designs

B-GAG-N202: Digital Design & Raster Graphics (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-N202.1	3	3	3	3	3	3	3	3
B-GAG-N202.2	3	3	3	3	3	3	3	3
B-GAG-N202.3	3	3	3	3	3	3	2	3
B-GAG-N202.4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	3	2.5	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-N202.1	3	3	2	2	3
B-GAG-N202.2	3	3	3	3	3
B-GAG-N202.3	3	3	3	3	3
B-GAG-N202.4	3	3	3	3	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-N202.1	3	3	3	3	3	3	3	3	3	3	2	2	3
B-GAG-N202.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N202.3	3	3	3	3	3	3	2	3	3	3	3	3	3
B-GAG-N202.4	3	3	3	3	3	3	2	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.5	3	3	3	2.75	2.75	3

B-GAG-N203: Animation Techniques

Time:3 Hrs. Total Marks: 100
Credits:4 Theory: 50
Internal Assessment: 50

Course Objectives: The course is designed to introduce various techniques and styles of Animation, to provide the students hands on experience of simple idea for animation using the materials available in the immediate surroundings, to provide knowledge of ideation and imagination of animation and to introduce procedures and steps for Material Animation as an Example.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-N203.1: Understand and apply Principals of Animation
B-GAG-N203.2: Learn various techniques and styles of Animation.
B-GAG-N203.3: Do ideation and imagination of animation
B-GAG-N203.4: Recognize and identify the power of animation which is not restricted to any medium.

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT-I

Introduction:

- Define Script, Key terms used in script (Layout of the story, Characters, Situation, Background)
- Terminology (scene, shot, Fade in and Fade out, Cut to, Scene number, EXT and INT etc.)

Classical & Traditional Animation:

- Define Animation,
- Persistence of Vision,
- Animation & Motion
- Animation Principals
- Flip Book / Flick Book

UNIT-II

Introduction to Storyboard

- Camera Shots and Compositions
- Different Layouts of Storyboard
- Parts of Storyboard
- Tools of Storyboard

Stop Motion Animation

- Define Stop Motion
- Process of Stop Motion
- Key-Framing and Timing,
- Animation Different Techniques
- Basic Lighting Techniques & Camera Setup

UNIT-III

Timing & Spacing (On Flipbook and Lightbox)

- Pendulum Animation
- Vehicle Animation
- Walk Cycle (Adolescent & Adult)
- Jump and Run
- Leaf Animation
- Water Drop & Water Splash

UNIT-IV

Developing a Short Experimental Animation Film

- Cut-Out Animation
- Mix Media Animation
- Add Sound and Audio
- Export and Authoring
- Stop Motion Animation in Animation & VFX Industry
- Student will choose a specific technique and implement his idea as a short film or gag.

References:

- Williams, R. (2012). The animator's survival kit: A manual of methods, principles and formulas for classical, computer, games, stop motion and internet animators. Macmillan.
- Animation History and Production by Aparna vats, publisher New Delhi.
- Thomas, F., & Johnston, O. (1995). The illusion of life: Disney animation. Hyperion.
- Laura Moreno (2014) THE CREATION PROCESS OF 2D ANIMATED MOVIES
- Wells, P. Understanding animation. Routledge.
- Blair, P. (1994). Cartoon animation. Walter Foster Publishing.
- Gasek, T. (2017). Frame-by-frame stop motion: The guide to non-puppet photographic animation techniques (2nd ed.). CRC Press.
- Priebe, K. A. (2011). The advanced art of stop-motion animation. Cengage Learning.

B-GAG-N203: Animation Techniques (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-N203.1	3	3	3	3	3	3	3	3
B-GAG-N203.2	3	3	3	3	3	3	2	3
B-GAG-N203.3	3	3	3	3	3	3	3	3
B-GAG-N203.4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	3	2.5	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-N203.1	3	2	3	3	3
B-GAG-N203.2	3	3	3	3	3
B-GAG-N203.3	3	3	3	3	3
B-GAG-N203.4	3	2	3	3	3
Average	3	2.5	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-N203.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N203.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N203.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N203.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-GAG-N204: Animation Techniques (Practical)

Time:3 Hrs.
Credits: 2

Total Marks: 50
Practical: 25
Internal Assessment: 25

Course Objectives: The course is designed to practice various techniques and styles of Animation, to provide the students hands on experience of simple idea for animation using the materials available in the immediate surroundings and to do ideation and imagination of animation.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-N204.1: Understand the working of flip book animation technique
B-GAG-N204.2: Able to create little animation movements by using flip book
B-GAG-N204.3: Know the process of stop motion animation by different material
B-GAG-N204.4: Develop skills to handle problem during traditional and stop motion animation production

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Animate Time on flip book
Develop a Story
Understand Time and Spacing principal by Pendulum animation
Squash and Stretch exercise with the use of ball animation
Object Weight Impact on animation
Leaf animation to understand staging rules
Normal walk cycle of cartoon character
Slow walk cycle of old age character
Animate Humans /Objects with Stop Motion Animation Techniques
Cut-out / Clay, used to produce story-based animation clip

B-GAG-N204: Animation Techniques (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-N204.1	3	3	3	3	3	3	3	3
B-GAG-N204.2	3	3	3	3	3	3	2	3
B-GAG-N204.3	3	3	3	3	3	3	2	3
B-GAG-N204.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.5	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-N204.1	3	3	3	3	3
B-GAG-N204.2	3	3	3	3	3
B-GAG-N204.3	3	3	3	3	3
B-GAG-N204.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-N204.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N204.2	3	3	3	3	3	3	2	3	3	3	3	3	3
B-GAG-N204.3	3	3	3	3	3	3	2	3	3	3	3	3	3
B-GAG-N204.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.5	3	3	3	3	3	3

B-GAG-N205: Character Anatomy & Comic Design (Theory)

Time:3 Hrs. Total Marks: 100
Credits: 4 Theory: 50
Internal Assessment: 50

Course Objectives: The Course is designed to impart the knowledge of character design and its significance. It will help the students to know about history and production process of comic book.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-N205.1: Get knowledge about different types of characters design
B-GAG-N205.2: Get knowledge of comic history
B-GAG-N205.3: Understand the anatomy of organic and non-organic characters.
B-GAG-N205.4: Understand the different comic styles along with presentation styles

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT-I

Introduction:

- Character Designing: History, Types and Process
- Caricature: Features and Types
- Concept of Model Sheet / Expression Sheet
- Comic Book: History and Development

UNIT-II

Shape Language and Design

- Cartoon Character Anatomy & Proportions
- Body Types and Poses, (Fingers, Hands, Arms, Foot and Legs)
- Eyes, Nose, Lips and Hairs: Structure and types (Realistic and Cartoonish) (Male & Female)
- Facial Expression: Anger, Disgust, Fear, Happiness, Sadness and Surprise
- Development of Character Design; Design Character with Shapes and Forms

UNIT-III

Comic Design

- Comic Book: Types & Sizes
- Study Comic Characters
- Principals of Comic Book
- Understand composition in comic

- Designing Process of Comic Book
- Elements of Comic Book

UNIT-IV

Production

- Hand Drawing and Coloring Techniques
- Splash, Explosion, Cracking, Fire
- Concept Character: Features and Scope
- Techniques and use Perspective Angles

References:

- Blair, P. (1994). Cartoon animation. Walter Foster Publishing.
- Indian painting by Lokesh Chandra sharma
- Indian cartoon Art by VeenaBansal
- Aesthetic of art, Krishna's publisher, Author Nupur Sharma
- Graphic design by Narender Singh Yadav

B-GAG-N205: Character Anatomy & Comic Design (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-N205.1	3	3	3	3	3	3	3	3
B-GAG-N205.2	3	3	2	3	3	3	3	3
B-GAG-N205.3	3	3	3	3	3	3	3	3
B-GAG-N205.4	3	3	3	3	3	3	3	3
Average	3	3	2.75	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-N205.1	3	3	3	3	3
B-GAG-N205.2	3	3	3	2	3
B-GAG-N205.3	3	3	3	3	3
B-GAG-N205.4	3	3	3	2	3
Average	3	3	3	2.5	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-N205.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N205.2	3	3	3	3	3	3	3	3	3	3	3	2	3
B-GAG-N205.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N205.4	3	3	3	3	3	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	3	3	3	3	3	3	2.5	3

B-GAG-N206 Character Anatomy & Comic Design (Practical)

Time:3 Hrs.
Credits: 2

Total Marks: 50
Practical: 25
Internal Assessment: 25

Course Objectives: The aim of the course is to impart the knowledge of character design and to teach practical use of digital tools to produce illustrations and landscapes.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-N206.1: Learn and Practice the anatomy of organic and non-organic characters
B-GAG-N206.2: Develop and produce story-based comic
B-GAG-N206.3: Able to draw different types of characterfor comics as well as animation
B-GAG-N206.4: Learn pre-production for animation

Note: - The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Human & Cartoon Character Anatomy
Design Pattern and Layout
Reviews of any Comic Book
Model Sheet & Expression Sheet
Composition in Comic
Cartoon character sketch and Conversation
Comic Book Strip
Action Sheet of Cartoon Character
Perspective Angles
Study of Comic Characters and make Slam Book
Final Output (Comic Book)

B-GAG-N206 Character Anatomy & Comic Design (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-N206.1	3	3	3	3	3	3	3	3
B-GAG-N206.2	3	3	3	3	3	3	3	3
B-GAG-N206.3	3	3	3	3	3	3	2	3
B-GAG-N206.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-N206.1	3	3	3	3	3
B-GAG-N206.2	3	3	3	3	3
B-GAG-N206.3	3	3	3	3	3
B-GAG-N206.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-N206.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N206.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N206.3	3	3	3	3	3	3	2	3	3	3	3	3	3
B-GAG-N206.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	3	3	3	3	3	3

B-GAG-N207: Human Values & Ethics (Theory)

Time:2 Hrs. Total Marks: 50
Credits: 2 Theory: 25
Contact hours per week: 2 Internal Assessment: 25

Course Objectives: This paper will help the learners to understand the need and significance of human values and ethics in their life.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-N207.1: correlate the need of human values to sustained happiness and prosperity- the core aspirations of human beings.
B-GAG-N207.2 : express the knowledge of human values and analyze their importance in holistic perspective for a peaceful world.

Unit -1

Human Values: Meaning and Definitions

(a) Understanding the need of human values and value education. Self-exploration, Concept of happiness and prosperity. Right understanding, understanding body as an instrument of I, Living in harmony, reaching highest potential in digital age through care & empathy balancing interests and expectations.

(b) Basic human values: Honesty, kindness, integrity, courage, co-operation, commitment, cleanliness, spirituality, understanding duties & rights.

Unit-II

Life Values and universal ethics

(a) Life Values:- Understanding of harmony in yourself family: Trust and respect, society; Co-existence & unity in diversity Nature mutually interacting units and universe.

(b) Universal Ethics-Loyalty, respect for others, adherence to the law, doing good and avoiding harm to other, accountability, sensitive towards environment. Transparency, impartiality and objectivity.

Suggested Books:-

1) Ethics. Integrity and Aptitute (3rd Edition)- M. Karthikeyan Pub: McGraw Hill,

2) A foundation course in Human Values and Professional Ethics- RR Gaur. R Sangal. GP Bagaria Pub: abe books

3) Ebook-lg- UGC (26-11-2019)

PDF- Human Value www.uge.ac.in (available on UGC Website)

4) Patanjala Yoga Sutra- Samadhi Pada

B-GAG-N207: Human Values & Ethics (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-N207.1	3	3	3	3	3	3	3	3
B-GAG-N207.2	3	3	3	3	3	3	3	3
B-GAG-N207.3	3	3	3	3	3	3	2	3
B-GAG-N207.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-N207.1	3	3	3	3	3
B-GAG-N207.2	3	3	3	3	3
B-GAG-N207.3	3	3	3	3	3
B-GAG-N207.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-N207.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N207.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-N207.3	3	3	3	3	3	3	2	3	3	3	3	3	3
B-GAG-N207.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	2.75	3	3	3	3	3	3

Scheme of Examination of B.Sc. (Graphics & Animation) for 5th & 6th Semester under CBCS/LOCF for Institute of Mass Communication & Media Technology (IMC&MT, KUK) in phased manner w.e.f. Academic Session2020-21

Semester-V

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
B-GAG 501 (a)	Organic Rigging & Lighting (Theory)	DSE-1	4	-	-	4	4	6	80	-	20	100	3 Hours
B-GAG 502 (a)	Organic Rigging & Lighting (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
OR													
B-GAG 501 (b)	Mechanical Rigging & Lighting (Theory)		4	-	-	4	4		80	-	20	100	3 Hours
B-GAG 502 (b)	Mechanical Rigging & Lighting (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
B-GAG 503 (a)	3D Creature Animation & Rendering (Theory)	DSE-2	4	-	-	4	4	6	80	-	20	100	3 Hours
B-GAG 504 (a)	3D Creature Animation & Rendering (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
OR													
B-GAG 503 (b)	3D Product Animation & Rendering (Theory)		4	-	-	4	4		80	-	20	100	3 Hours
B-GAG 504 (b)	3D Product Animation & Rendering (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
B-GAG 505 (a)	Commercial Design (Theory)	DSE-3	4	-	-	4	4	6	80	-	20	100	3 Hours
B-GAG 506 (a)	Commercial Design (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
OR													
B-GAG 505 (b)	Motion Design (Theory)		4	-	-	4	4		80	-	20	100	3 Hours
B-GAG 506 (b)	Motion Design (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
B-GAG 507	Product Photography (Theory)	SEC-3	1	-	-	1	1	2	20		5	25	1 Hours
B-GAG 508	Product Photography (Practical)		-	-	2	2	1		-	20	5	25	1 Hours
B-GAG 509	Internship Report*							2				50	
Total Credits								**22**	**Total Marks**			**550**	

Semester-VI

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	I A	Total	
B-GAG 601 (a)	Web Designing (Theory)	DSE-4	4	-	-	4	4	6	80	-	20	100	3 Hours
B-GAG 602 (a)	Web Designing (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
OR													
B-GAG 601 (b)	PHP (Theory)		4	-	-	4	4		80	-	20	100	3 Hours
B-GAG 602 (b)	PHP (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
B-GAG 603 (a)	Visual Effect (Theory)	DSE-5	4	-	-	4	4	6	80	-	20	100	3 Hours
B-GAG 604 (a)	Visual Effect (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
OR													
B-GAG 603 (b)	Advertisement Design (Theory)		4	-	-	4	4		80	-	20	100	3 Hours
B-GAG 604 (b)	Advertisement Design (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
B-GAG 605 (Optional) B-GAG 605 (a) B-GAG 605 (b) B-GAG 605 (c) B-GAG 605 (d) B-GAG 605 (e)	**Project** 3D Animation Clip 2D Animation Clip Documentary Graphic Design-UI MOOC	DSE-6**	-	-	-	-	6	6	-	120	30	150	6 Hours
B-GAG 606	Entrepreneurship (Theory)	SEC-4	1	-	-	1	1	2	20	-	5	25	1 Hours
B-GAG 607	Entrepreneurship (Practical)		-	-	2	2	1		-	20	5	25	1 Hours
Total Credits								**20**	**Total Marks**			**500**	

* Students have to complete the internship of four to six weeks after the examination of 4th semester and submit the report of internship in the commencement of 5th semester. The report submitted by the students will be evaluated by the teacher appointed by the Director and a viva-voce will be conducted during practical examination.

**Viva -Voce of DSE-6 (Major Project)is to be evaluated by a panel of three examiners to be appointed by the Director of the institute and it is to be submitted to the institute by the student 20 days prior to the theory examination of the semester in which the Report is supposed to be submitted.

B-GAG 501 (a): Organic Rigging & Lighting (Theory)

Time:3 Hrs. Total Marks: 100
Credits: 4 Theory: 80
Internal Assessment: 20

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete understanding about the 3D Rigging and Lighting. This course takes the students at the level of high efficiency in various aspects in Rigging and Lighting techniques.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 501 (a).1: Understanding the basics of Rigging
B-GAG 501 (a).2: Study of Skeleton & Anatomy setup
B-GAG 501 (a).3: Explore how to assemble the whole setup into a master rig
B-GAG 501 (a).4: Understanding the different types of Lighting techniques

Note: -The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction To Rigging

- Basic Human Anatomical Structure
- Group And Hierarchy
- Joints, Forward Kinematics, Inverse Kinematics
- Mirroring Joints, Reroot Skeleton, Connect/Disconnect Joints
- Joint Orientation

Unit -II

Basic Rigging

- Project Set up
- Constraints
- Deformers
- Set Driven Key, Adding Custom Attributes
- Connection Editor, Expression Editor, Reference Editor

- IK Handle Tool, IK Solvers (Rotate Plane, Single Chain, Spline), IK Controls, IK Preferred Angle, Pole Vector Constraint

Unit-III

Character Anatomy & Skinning

- Anatomy of the torso, leg, arms, hands, and fingers
- Biped skeleton
- Head Rigging
- Facial Rigging
- Skinning, Interactive/smooth Binding, Controlling skin weight
- Painting Skin weight & Editing skin weight

Unit-IV

Lighting

- Theory of Lighting
- Direct Illumination, Manipulation of Lighting(effects)
- Working on Different Types of Lighting
- Environment Lighting
- Interior n Exterior Lighting

References:

- *Animation Methods-Rigging Made Easy: Rig Your First Character in Maya: David Rodriguez*
- *Maya Character Rigging: Cheryl Cabrera*
- *Rig IS Right! Maya Animation Rigging Concepts by Tina*
- *Essential Skills in Character Rigging by Nicholas B. Zeman*

B-GAG 501 (a): Organic Rigging & Lighting (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG501 (a).1	3	3	3	2	3	3	3	3
B-GAG501 (a).2	3	3	3	3	3	3	3	3
B-GAG501 (a).3	3	3	3	3	3	3	3	3
B-GAG501 (a).4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG501 (a).1	3	3	2	2	3
B-GAG501 (a).2	3	3	3	3	3
B-GAG501 (a).3	3	3	3	3	3
B-GAG501 (a).4	3	3	3	3	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG501 (a).1	3	3	3	2	3	3	3	3	3	3	2	2	3
B-GAG501 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG501 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG501 (a).4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	3	2.75	2.75	3

B-GAG 502 (a): Organic Rigging & Lighting (Practical)

Time:3 Hrs. Total Marks: 50
Credits: 2 Practical: 40
Internal Assessment: 10

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete understanding about the 3D Rigging and Lighting. This course takes the students at the level of high efficiency in various aspects in Rigging and Lighting techniques.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 502 (a).1: Understanding the basics of Rigging
B-GAG 502 (a).2: Study of Skeleton & Anatomy setup
B-GAG 502 (a).3: Explore how to assemble the whole setup into a master rig
B-GAG 502 (a).4: Understanding the different types of Lighting techniques

Note: - The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Learn Bone Setup in Human and Cartoon Character
Create Controls with help of IK and FK
Wire Parameters
Skinning and binding
Three Point Lighting setup for object
Interior Lighting setup
Exterior Lighting
Facial Rigging Controls
Robotic Rigging
Animal Rig
Bird Wings Control Setup
Show real of rigging

B-GAG502: Organic Rigging & Lighting (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG502 (a).1	3	3	3	3	3	3	3	3
B-GAG502 (a).2	3	3	3	3	3	3	3	3
B-GAG502 (a).3	3	3	3	3	3	3	3	3
B-GAG502 (a).4	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG502 (a).1	3	3	2	3	3
B-GAG502 (a).2	3	3	3	3	3
B-GAG502 (a).3	3	3	3	3	3
B-GAG502 (a).4	3	3	3	2	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG502 (a).1	3	3	3	3	3	3	3	3	3	3	2	3	3
B-GAG502 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG502 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG502 (a).4	3	3	3	3	3	3	2	3	3	3	3	2	3
Average	3	3	3	3	3	3	2.75	3	3	3	2.75	2.75	3

B-GAG 501 (b): Mechanical Rigging & Lighting (Theory)

Time:3 Hrs. Total Marks: 100
Credits: 4 Theory: 80
Internal Assessment: 20

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete understanding about the 3D Mechanical Rigging and Lighting. It helps to learn the rudimentary techniques of Mechanical Rigging and Lighting.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 501 (b).1: Understanding the basics of Rigging
B-GAG501 (b).2: Students will be able to rig different objects
B-GAG501 (b).3: Understanding the Setup of Mechanical Rigging
B-GAG501 (b).4: Understanding the different types of Lighting of Mechanical objects.

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction To Rigging

- Rig preparation & organization
- Group And Hierarchy
- Naming of the Mechanical object
- Mirroring Joints, Reroot Skeleton, Connect/Disconnect Joints
- Joint Orientation

Unit -II

Basic Mechanical Rigging

- Structure of Machine Learning
- Designing of bones
- Constraints
- Cluster & blend shape Deformers
- Set Driven Key, Adding Custom Attributes
- Connection Editor, Expression Editor, Reference Editor

- IK Handle Tool, IK Solvers (Rotate Plane, Single Chain, Spline), IK Controls, IK Preferred Angle, Pole Vector Constraint

Unit-III

Mechanical Character Aspects

- Set up of Mechanical Rigging
- Robot Rigging
- Spider Rigging
- Skinning, Interactive/smooth Binding, Controlling skin weight
- Painting Skin weight & Editing skin weight

Unit-IV

Lighting

- Theory of Lighting
- Direct Illumination, Manipulation of Lighting(effects)
- Working on Different Types of Lighting
- Environment Lighting
- Interior n Exterior Lighting

References:

- *Animation Methods-Rigging Made Easy: Rig Your First Character in Maya: David Rodriguez*
- *Maya Character Rigging: Cheryl Cabrera*
- *Rig IS Right! Maya Animation Rigging Concepts by Tina*
- *Essential Skills in Character Rigging by Nicholas B. Zeman*

B-GAG 503: Mechanical Rigging & Lighting (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG501 (b).1	3	3	3	2	3	3	3	3
B-GAG501 (b).2	3	3	3	3	3	3	3	3
B-GAG501 (b).3	3	3	3	3	3	3	3	3
B-GAG501 (b).4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG501 (b).1	3	3	2	2	3
B-GAG501 (b).2	3	3	3	3	3
B-GAG501 (b).3	3	3	3	3	3
B-GAG501 (b).4	3	3	3	3	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG501 (b).1	3	3	3	2	3	3	3	3	3	3	2	2	3
B-GAG501 (b).2	3	3	3	3	2.75	3	3	3	3	3	3	3	2.75
B-GAG501 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG501 (b).4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	3	2.75	2.75	3

B-GAG 502 (b): Mechanical Rigging & Lighting (Practical)

Time:3 Hrs. Total Marks: 50
Credits: 3 Theory: 40
Internal Assessment: 10

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete understanding about the 3D Mechanical Rigging and Lighting. It helps to learn the rudimentary techniques of Mechanical Rigging and Lighting.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 502 (b).1: Understanding the basics of Rigging
B-GAG 502 (b).2: Students will be able to rig different objects
B-GAG 502 (b).3: Understanding the Setup of Mechanical Rigging
B-GAG 502 (b).4: Understanding the different types of Lighting of Mechanical objects.

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

List of Practical Exercises:
Learn Bone Setup in Machines
Create Controls with help of Ik and FK
Wire Parameters
Skinning and binding
Three Point Lighting setup for object
Interior Lighting setup
Exterior Lighting
Crane Rig
Automobile Rigging
Robotic Face Rigging
Robotic Arm Rig

B-GAG 502 (b) : Mechanical Rigging & Lighting (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG502 (b).1	3	3	3	2	3	3	3	3
B-GAG502 (b).2	3	3	3	3	3	3	3	3
B-GAG502 (b).3	3	3	3	3	3	3	3	3
B-GAG502 (b).4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG502 (b).1	3	3	2	2	3
B-GAG502 (b).2	3	3	3	3	3
B-GAG502 (b).3	3	3	3	3	3
B-GAG502 (b).4	3	3	3	3	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG502 (b).1	3	3	3	2	3	3	3	3	3	3	2	2	3
B-GAG502 (b).2	3	3	3	3	2.75	3	3	3	3	3	3	3	2.75
B-GAG502 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG502 (b).4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	3	2.75	2.75	3

B-GAG 503 (a) :3D Creature Animation and Rendering (Theory)

Time:3 Hrs. Total Marks: 100
Credits: 4 Theory: 80
Internal Assessment: 20

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete understanding about the 3D Mechanical Rigging and Lighting. It helps to learn the rudimentary techniques of Mechanical Rigging and Lighting.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 503 (a).1: Understanding the basics of 3d Creature Animation
B-GAG 503 (a).2: Students will be able to Animate different Creatures
B-GAG 503 (a).3: Understanding the Setup of Animation Keys and In-betweens
B-GAG 503 (a).4: Understanding the different types of Animation Techniques and able to handle the Speed of movement.

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction

- 3D Animation: Types and Techniques
- Key Frames: Add & Blocking , Move & Modify
- Key Frame Animation : Ball Bounce
- Graph for Animation: Types and features
- Dope Sheet: Setup and Edit
- Connection Editor, Expression Editor, Reference Editor
- Camera: Setup, Modify and Animation
- FPS: Add & Modify
- Time line: Elements and Controls

Unit –II

Organic Aspects

- Difference between Animation & Motion
- Mass & Weight
- Squash & Stretch: Ball, Hand, Arms and Face
- Arc: Box Bounce, Pendulum
- Timing and Spacing: Leaf Animation
- Morphing: Face Animation & Shape Morph
- Eyes Blinking and Movement

Unit-III

Basic Creature Animation

- Anticipation: Walk, and Run
- Secondary Action: Pulling Chain
- Follow Through and Overlapping Animation: Tail
- Slow in & Slow Out: Kick & Punch
- Facial Animation:
- Straight Ahead Action: Action with Sword

Unit-IV

Rendering

- Rendering: Concept & Scope
- Types of Rendering: Maya Software Render, Maya Hardware 2.0 and Arnold Rendering
- Rendering: Process & Settings
- Shadow Pass Rendering and Lighting Pass Rendering

References:

Autodesk Maya 2018 Basics Guide by Kelly L. Murdock
The Animator's Survival Kit
Understanding 3-D animation using Maya John Edgar Park
Essential Skills in Character Rigging by Nicholas B. Zeman
3D Animation Essentials (Essentials (John Wiley)
Disney Animation: The Illusion of Life
The Animator's Survival Kit by Richard E. Williams
3D Animation for the Raw Beginner Using Maya Roger King
3D Art Essentials: The Fundamentals of 3D Modeling, Texturing, and Animation by Ami Chopine
The Art of 3D: Computer Animation and Effects
Character Animation in 3D: Use Traditional Drawing Techniques to Produce Stunning CGI Animation Steve Roberts
Mastering Lumion 3D by Ciro Cardoso
Animated Performance: Bringing Imaginary Animal, Human and Fantasy Characters to Life Nancy Beiman

B-GAG 503 (a) : 3D Creature Animation and Rendering (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG503 (a).1	3	3	3	2	3	3	3	3
B-GAG503 (a).2	3	3	3	3	3	3	3	3
B-GAG503 (a).3	3	3	3	3	3	3	3	3
B-GAG503 (a).4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG503 (a).1	3	3	2	2	3
B-GAG503 (a).2	3	3	3	3	3
B-GAG503 (a).3	3	3	3	3	3
B-GAG503 (a).4	3	3	3	3	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG503 (a).1	3	3	3	2	3	3	3	3	3	3	2	2	3
B-GAG503 (a).2	3	3	3	3	2.75	3	3	3	3	3	3	3	2.75
B-GAG503 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG503 (a).4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	3	2.75	2.75	3

B-GAG 504 (a): 3D Creature Animation and Rendering (Practical)

Time:3 Hrs. Total Marks: 50
Credits: 3 Theory: 40
Internal Assessment: 10

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete understanding about the 3D Mechanical Rigging and Lighting. It helps to learn the rudimentary techniques of Mechanical Rigging and Lighting.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 504 (a).1: Understanding the basics of 3d Creature Animation
B-GAG 504 (a).2: Students will be able to Animate different Creatures
B-GAG 504 (a).3: Understanding the Setup of Animation Keys and In-betweens
B-GAG 504 (a).4: Understanding the different types of Animation Techniques and able to handle the Speed of movement.

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

List of Practical Exercises:
Rubber Ball Bounce / Iron Ball Bounce
Leaf Falling Animation
Face Expression with morph and without morph
Normal Walk Cycle / Funny Walk Cycle
Double Jump
Chain Pulling Animation
Punch Action
Action with Gadget
Frame Rendering
Sequence Rendering
Video Rendering

B- GAG 506: 3D Creature Animation and Rendering (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG 504 (a).1	3	3	3	2	3	3	3	3
B-GAG 504 (a).2	3	3	3	3	3	3	3	3
B-GAG 504 (a).3	3	3	3	3	3	3	3	3
B-GAG 504 (a).4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG 504 (a).1	3	3	2	2	3
B-GAG 504 (a).2	3	3	3	3	3
B-GAG 504 (a).3	3	3	3	3	3
B-GAG 504 (a).4	3	3	3	3	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG 504 (a).1	3	3	3	2	3	3	3	3	3	3	2	2	3
B-GAG 504 (a).2	3	3	3	3	2.75	3	3	3	3	3	3	3	2.75
B-GAG 504 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 504 (a).4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	3	2.75	2.75	3

B-GAG 503 (b) :3D Product Animation and Rendering (Theory)

Time: 3 Hrs.
Credits: 4

Total Marks: 100
Theory: 80
Internal Assessment: 20

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete understanding about the 3D Mechanical Rigging and Lighting. It helps to learn the rudimentary techniques of Mechanical Rigging and Lighting.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 503 (b).1: Understanding the basics of 3d Product Animation
B-GAG 503 (b).2: Students will be able to Animate different Object
B-GAG 503 (b).3: Understanding the Setup of Animation Keys and In-betweens
B-GAG 503 (b).4: Understanding the different types of Animation Techniques and able to handle the Speed of movement.

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction

- 3D Animation: Types and Techniques
- Key Frames: Add & Blocking , Move & Modify
- Key Frame Animation : Ball Bounce
- Graph for Animation: Types and features
- Dope Sheet: Setup and Edit
- Connection Editor, Expression Editor, Reference Editor
- Camera: Setup, Modify and Animation
- FPS: Add & Modify
- Time line: Elements and Controls

Unit –II

Animation Basic Aspects

- Difference between Animation & Motion
- Mass & Weight
- Squash & Stretch: Ball, Cylinder, Spring
- Arc: Box Bounce, Robotic Arm
- Timing and Spacing: Ship and Spaceship
- Morphing: Rectangle to Square Shape Animation & Increase Size of object in the Proposition of Composition
- Robotic Car Eyes Blinking and Movement
- Logo Animation

Unit-III

Object Animation

- Animation with Constraints
- Anticipation: Car Run and Rocket Jump
- Secondary Action: Helicopter Animation Takeoff and Landing
- Follow Through and Overlapping Animation: Vehicle Chain Animation
- Slow in & Slow Out: Crane Object Pic and Drop Animation
- Straight Ahead Action: Object Explosion and Construction
- Clock: Digital and Analog Animation

Unit-IV

Rendering

- Rendering: Concept & Scope
- Types of Rendering: Maya Software Render, Maya Hardware 2.0, IPR rendering and Arnold Rendering
- Rendering: Process & Settings
- Shadow Pass Rendering and Lighting Pass Rendering

References:

Autodesk Maya 2018 Basics Guide by Kelly L. Murdock
The Animator's Survival Kit
Understanding 3-D animation using Maya John Edgar Park
Essential Skills in Character Rigging by Nicholas B. Zeman
3D Animation Essentials (Essentials (John Wiley)
Disney Animation: The Illusion of Life
The Animator's Survival Kit by Richard E. Williams
3D Animation for the Raw Beginner Using Maya Roger King
3D Art Essentials: The Fundamentals of 3D Modeling, Texturing, and Animation by Ami Chopine
The Art of 3D: Computer Animation and Effects
Character Animation in 3D: Use Traditional Drawing Techniques to Produce Stunning CGI Animation Steve Roberts
Mastering Lumion 3D by Ciro Cardoso
Animated Performance: Bringing Imaginary Animal, Human and Fantasy Characters to Life Nancy Beiman

B-GAG 503 (b): 3D Product Animation and Rendering (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG 503 (b).1	3	3	3	2	3	3	3	3
B-GAG 503 (b).2	3	3	3	3	3	3	3	3
B-GAG 503 (b).3	3	3	3	3	3	3	3	3
B-GAG 503 (b).4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG 503 (b).1	3	3	2	2	3
B-GAG 503 (b).2	3	3	3	3	3
B-GAG 503 (b).3	3	3	3	3	3
B-GAG 503 (b).4	3	3	3	3	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG 503 (b).1	3	3	3	2	3	3	3	3	3	3	2	2	3
B-GAG 503 (b).2	3	3	3	3	2.75	3	3	3	3	3	3	3	2.75
B-GAG 503 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 503 (b).4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	3	2.75	2.75	3

B-GAG 504 (b): 3D Product Animation and Rendering (Practical)

Time: 3 Hrs. Total Marks: 50
Credits: 3 Theory: 40
Internal Assessment: 10

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete understanding about the 3D Mechanical Rigging and Lighting. It helps to learn the rudimentary techniques of Mechanical Rigging and Lighting.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 504 (b).1: Understanding the basics of 3d Product Animation
B-GAG 504 (b).2: Students will be able to Animate different Objects
B-GAG 504 (b).3: Understanding the Setup of Animation Keys and In-betweens
B-GAG 504 (b).4: Understanding the different types of Animation Techniques and able to handle the Speed of movement.

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

List of Practical Exercises:
Rubber Ball Bounce / Iron Ball Bounce
Spring Jump
Robotic Arm Activity
Object Transformation
3D Typography Animation
Logo Animation
Car Racing
Object Explosion and Construction
Frame Rendering
Sequence Rendering
Video Rendering

B-GAG 504 (b): 3D Product Animation and Rendering (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG 504 (b).1	3	3	3	2	3	3	3	3
B-GAG 504 (b).2	3	3	3	3	3	3	3	3
B-GAG 504 (b).3	3	3	3	3	3	3	3	3
B-GAG 504 (b).4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG 504 (b).1	3	3	2	2	3
B-GAG 504 (b).2	3	3	3	3	3
B-GAG 504 (b).3	3	3	3	3	3
B-GAG 504 (b).4	3	3	3	3	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG 504 (b).1	3	3	3	2	3	3	3	3	3	3	2	2	3
B-GAG 504 (b).2	3	3	3	3	2.75	3	3	3	3	3	3	3	2.75
B-GAG 504 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 504 (b).4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	3	2.75	2.75	3

B-GAG 505 (a): Commercial Design (Theory)

Time: 3 Hrs.
Credits: 4

Total Marks: 100
Theory: 80
Internal Assessment: 20

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete Commercial Design. It helps to learn the rudimentary techniques Design.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 505 (a).1: Understanding the basics of Commercial Design
B-GAG 505 (a).2: Students will be able to Design for Commercial goods
B-GAG 505 (a).3: Understanding the different kind of commercial design
B-GAG 505 (a).4: Understanding the different types of Designing Techniques.

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction

- Commercial Design: Introduction and Scope
- Brand and Branding Design
- Strategy Design Process
- Design Principal: Practice & Implement
- Layout Designing Principals

Unit –II

Typography

- Typography and Typeface Design
- Types and Features of Typefaces
- Structure and elements of Typeface
- Leading, Kerning and Tracking

Unit-III

Packaging Design

- Packaging and Designing
- Packaging Design: Process
- Packaging Design Principal
- Elements of Packaging Design
- Packaging Design: Outer Packaging , Inner Packaging and Product Packaging
- Boxes Design Packaging
- Cylindrical Design Packaging

Unit-IV

Color & Authoring

- Color Theory
- CMYK , Lab Colors and Pantone Colors
- Color Phycology
- Export and Authoring: Size Colors and Fonts

References:

- *The New Strategic Brand Management – Advanced Insights & Strategic Thinking by Jean-Noël Kapferer*
- *Building Strong Brands by David Aaker*
- *Design and Strategy A Step-by-Step Guide By Wanda Grimsgaard*

B-GAG 505 (a) : Commercial Design (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG 505 (a).1	3	3	3	2	3	3	3	3
B-GAG 505 (a).2	3	3	3	3	3	3	3	3
B-GAG 505 (a).3	3	3	3	3	3	3	3	3
B-GAG 505 (a).4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG 505 (a).1	3	3	2	2	3
B-GAG 505 (a).2	3	3	3	3	3
B-GAG 505 (a).3	3	3	3	3	3
B-GAG 505 (a).4	3	3	3	3	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG 505 (a).1	3	3	3	2	3	3	3	3	3	3	2	2	3
B-GAG 505 (a).2	3	3	3	3	2.75	3	3	3	3	3	3	3	2.75
B-GAG 505 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 505 (a).4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	3	2.75	2.75	3

B-GAG 506 (a): Commercial Design (Practical)

Time: 3 Hrs. Total Marks: 50
Credits: 3 Theory: 40
Internal Assessment: 10

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete Commercial Design. It helps to learn the rudimentary techniques Design.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 506 (a).1: Understanding the basics of Commercial Design
B-GAG 506 (a).2: Students will be able to Design for Commercial goods
B-GAG 506 (a).3: Understanding the different kind of commercial design
B-GAG 506 (a).4: Understanding the different types of Designing Techniques.

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

List of Practical Exercises:
Newspaper Design
Food Package Design
Electronic Product Package
Bottle Branding Design
Box Package Design
Special occasion based package
Typography Based package Design
Toy Package design

B-GAG 506 (a): Commercial Design (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG506 (a).1	3	3	3	2	3	3	3	3
B-GAG506 (a).1	3	3	3	3	3	3	3	3
B-GAG506 (a).1	3	3	3	3	3	3	3	3
B-GAG506 (a).1	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG506 (a).1	3	3	2	2	3
B-GAG506 (a).1	3	3	3	3	3
B-GAG506 (a).1	3	3	3	3	3
B-GAG506 (a).1	3	3	3	3	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG506 (a).1	3	3	3	2	3	3	3	3	3	3	2	2	3
B-GAG506 (a).1	3	3	3	3	2.75	3	3	3	3	3	3	3	2.75
B-GAG506 (a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG506 (a).1	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	3	2.75	2.75	3

B-GAG 505 (b): Motion Design (Theory)

Time: 3 Hrs. Total Marks: 100
Credits: 4 Theory: 80
Internal Assessment: 20

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete Motion Design. It helps to learn the rudimentary techniques Motion Design.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 505 (b).1: To Learn Techniques of Motion Graphics
B-GAG 505 (b).2: Understand the basic knowledge of Motion Production
B-GAG 505 (b).3: Know about the Techniques and function of Motion Graphics
B-GAG 505 (b).4: To Gain Knowledge of Motion Graphics Stages

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction

- Adobe After Effects: Interface, Tools and Menu
- Motion Graphics History.
- Motion Graphics and Functions and Scope
- Motion Graphics Elements: Colors, Shapes, Surfaces, Typography, and Transitions.

Unit –II

Basic Motion

- Key Frame Types: Liner, Auto Bezier, Continue Bezier, Bezier and Hold
- Key framing: Adding, Modify, Change and Move & Remove
- Graph Edition: Types and Features
- Motion: Icons and Typography
- Information Graphics Motion
- Animated Titles

Unit-III

Motion Production

- Social media Advertisements
- Logo Animation
- UI Animation
- Product Animation / Motion Advertisements
- Cinematography Motion

Unit-IV

Broadcasting Graphics

- Program Intro Graphics
- Header Graphics Ribbon Motion
- Footer Motion Graphics
- Video Package of Explainer Video

References:

- *Adobe After Effects Classroom in a Book*
- *After Effects - Visual Effects and Compositing*
- *After Effects Apprentice*
- *Design for Motion: Fundamentals and Techniques of Motion Design*
- *Design for Motion: Fundamentals and Techniques of Motion Design by Austin Shaw*
- *Motion Graphic Design: Applied History and Aesthetics by Jon Krasner*
- *Creating Motion Graphics with After Effects by Chris Meyer, Trish Meyer*
- *Motion Graphics: 100 Design Projects You Can't Miss by Shao Qiang Wang*

B-GAG 505 (b): Motion Design (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG505 (b).1	3	3	3	2	3	3	3	3
B-GAG505 (b).1	3	3	3	3	3	3	3	3
B-GAG505 (b).1	3	3	3	3	3	3	3	3
B-GAG505 (b).1	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG505 (b).1	3	3	2	2	3
B-GAG505 (b).1	3	3	3	3	3
B-GAG505 (b).1	3	3	3	3	3
B-GAG505 (b).1	3	3	3	3	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG505 (b).1	3	3	3	2	3	3	3	3	3	3	2	2	3
B-GAG505 (b).1	3	3	3	3	2.75	3	3	3	3	3	3	3	2.75
B-GAG505 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG505 (b).1	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	3	2.75	2.75	3

B-GAG 506 (b): Motion Design (Practical)

Time: 3 Hrs.
Credits: 3

Total Marks: 50
Theory: 40
Internal Assessment: 10

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete Motion Design. It helps to learn the rudimentary techniques Design.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 506 (b).1: To Learn Techniques of Motion Graphics
B-GAG 506 (b).2: Understand the basic knowledge of Motion Production
B-GAG 506 (b).3: Know about the Techniques and function of Motion Graphics
B-GAG 506 (b).4: To Gain Knowledge of Motion Graphics Stages

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

List of Practical Exercises:
Typographic Motion
Icon Based Motion
Animated Tittles
Social Media Advertisement Motion
Logo Motion
UI Motion
Cinematic Video Motion
Explainer Video
Motion Advertisements
Television Broadcaster Graphics Interface

B-GAG 506 (b): Motion Design (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG 506 (b).1	3	3	3	2	3	3	3	3
B-GAG 506 (b).1	3	3	3	3	3	3	3	3
B-GAG 506 (b).1	3	3	3	3	3	3	3	3
B-GAG 506 (b).1	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG 506 (b).1	3	3	2	2	3
B-GAG 506 (b).1	3	3	3	3	3
B-GAG 506 (b).1	3	3	3	3	3
B-GAG 506 (b).1	3	3	3	3	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG 506 (b).1	3	3	3	2	3	3	3	3	3	3	2	2	3
B-GAG 506 (b).1	3	3	3	3	2.75	3	3	3	3	3	3	3	2.75
B-GAG 506 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 506 (b).1	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	3	2.75	2.75	3

B-GAG 507: Product Photography (Theory)

Time: 1 Hrs. Total Marks: 25
Credits: 1 Theory: 20
Internal Assessment: 05

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete Product Photography.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 507.1: To Learn Techniques of Product Photography
B-GAG 507.2: Understand the basic knowledge of Product Photography
B-GAG 507.3: Know about the Techniques and function Photography
B-GAG 507.4: To Gain Knowledge of Commercial Photography

Note: - The question paper will be divided into three Units containing five questions. Students are required to attempt three questions in all. There will be two questions in each unit from I to II and students are required to attempt one question from each unit. Unit III will have only one Compulsory question containing four to six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Fundamental of Photography

- Product Photography: Types and Scope
- White balance, ISO and Shutter Speed
- Aperture and Depth of field
- Framing and Layering
- Background and Composition

Unit –II

- Product Photography Equipment's: Backdrop, Micro lens, Tripod, Reflector, Diffuser
- Lighting: Type and features
- Lighting Techniques: One Point , Two Point and Three Point
- Telling a Story with Picture

References:

- *The Art and Style of Product Photography by J. Dennis Thomas*
- *Light Science & Magic: An Introduction to Photographic Lighting (5th edition) by Fil Hunter, Steven Biver, and Paul Fuqua*
- *Masterclass: Professional Studio Photography (1st edition) by Dennis Savini*
- *The New Lighting for Product Photography: The Digital Photographer's Step-by-Step Guide to Sculpting with Light (2nd edition) by Allison Earnest*
- *Product Photography Magic (3rd edition) by Garry Edwards*
- *The Art of Photography, An Approach to Personal Expression, by Bruce Barnbaum*

B-GAG 507: Product Photography (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG507.1	3	3	3	2	3	3	3	3
B-GAG507.2	3	3	3	3	3	3	3	3
B-GAG507.3	3	3	3	3	3	3	3	3
B-GAG507.4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG507.1	3	3	2	2	3
B-GAG507.2	3	3	3	3	3
B-GAG507.3	3	3	3	3	3
B-GAG507.4	3	3	3	3	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG507.1	3	3	3	2	3	3	3	3	3	3	2	2	3
B-GAG507.2	3	3	3	3	2.75	3	3	3	3	3	3	3	2.75
B-GAG507.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG507.4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	3	2.75	2.75	3

B-GAG 508: Product Photography (Practical)

Time: 3 Hrs.
Credits: 3

Total Marks: 50
Theory: 40
Internal Assessment: 10

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete Motion Design. It helps to learn the rudimentary techniques Design.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 508.1: To Learn Techniques of Motion Graphics
B-GAG 508.2: Understand the basic knowledge of Motion Production
B-GAG 508.3: Know about the Techniques and function of Motion Graphics
B-GAG 508.4: To Gain Knowledge of Motion Graphics Stages

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

List of Practical Exercises:
Study of five product photographs
Study various platform for the purpose of product photography
Two Final Photographs of Products
One Photograph for Advertising purpose

B-GAG 508: Product Photography (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG508.1	3	3	3	2	3	3	3	3
B-GAG508.2	3	3	3	3	3	3	3	3
B-GAG508.3	3	3	3	3	3	3	3	3
B-GAG508.4	3	3	3	3	3	3	2	3
Average	3	3	3	2.75	3	3	2.75	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG508.1	3	3	2	2	3
B-GAG508.2	3	3	3	3	3
B-GAG508.3	3	3	3	3	3
B-GAG508.4	3	3	3	3	3
Average	3	3	2.75	2.75	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG508.1	3	3	3	2	3	3	3	3	3	3	2	2	3
B-GAG508.2	3	3	3	3	2.75	3	3	3	3	3	3	3	2.75
B-GAG508.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG508.4	3	3	3	3	3	3	3	2	3	3	3	3	3
Average	3	3	3	2.75	3	3	3	2.75	3	3	2.75	2.75	3

B-GAG 509: Internship Report

Credits: 2 Total Marks: 50

* Students have to complete the internship of four to six weeks after the examination of 4th semester and submit the report of internship in the commencement of 5th semester. The report submitted by the students will be evaluated by the teacher appointed by the Director and a viva-voce will be conducted during practical examination.

B-GAG 601(a): Web designing (Theory)

Time: 3 Hrs. Total Marks: 100
Credits: 4 Theory: 80
Internal assessment: 20

Course Objectives: This course is designed for understanding the process of making dynamic website and use software application tools.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT 601 (a).1: Become familiar with web design and learn how to implement web theories into practice.
B-MMT 601 (a).2: Learn the Software of the web designing using Dreamweaver and CSS.
B-MMT 601 (a).3: Use knowledge of HTML tags and CSS code to create personal and business websites following current professional and/or industry standards.
B-MMT 601 (a).4: Use critical thinking skills to design and create websites.

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit I

The Basic Dreamweaver Environment
Creating a site profile, the importance of a site profile
Organizing the files & folders, folder and file naming rules
Creating folders and webpage files

Unit II

Opening a file for editing, titling pages, creating divisions
Adding headings, Paragraph vs. line breaks, tags: logical vs. physical, lists,
linking to other websites, linking to the user files, inserting images on web pages, changing images into links, adding an Email link.

Unit III

CSS design, its types
Working of style sheet: font, margins, link colors, stylish headlines, paragraphs,
Types of images, organizing images,
Inserting and formatting tables.

Unit IV

Form elements, Head elements, Page templates
Form objects, accessible forms
Flash elements, Multimedia contents, browser compatibility testing
Uploading the website on web, uploading changes, maintaining website

References:

- Macromedia Dreamweaver 8 for Windows and Macintosh: Visual QuickStart Guide by Dori Smith; Peachpit Press. Copyright.
- Macromedia Dreamweaver 8 Unleashed by Zak Ruvalcaba; Sams Publishing. Copyright
- Macromedia Dreamweaver MX: Training from the Source, Volume 1 by Khristine Annwn Page; Macromedia Press. Copyright.
- Macromedia Dreamweaver MX Killer Tips by Joseph Lowery, Angela C. Buragli; New Riders. Copyright.
- Macromedia Dreamweaver 8: Training from the Source by Khristine Annwn Page; Prentice Hall Professional. Copyright.

B-GAG 601(a): Web designing (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG 601(a).1	3	3	3	3	3	3	3	3
B-GAG 601(a).2	3	3	3	3	3	3	3	3
B-GAG 601(a).3	3	3	3	3	3	3	3	3
B-GAG 601(a).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG 601(a).1	3	3	3	3	3
B-GAG 601(a).2	3	3	3	3	3
B-GAG 601(a).3	3	3	3	3	3
B-GAG 601(a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG 601(a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 601(a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 601(a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 601(a).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-GAG 602 (a): Web designing (Practical)

Time: 3 Hrs. Total Marks: 50
Credits: 2 Practical: 40
Internal Assessment: 10

Course Objectives: This course is designed for practical understanding of making a website using Dreamweaver software application.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 602 (a).1: Practice for creating a webpage in Dreamweaver workspace.
B-GAG 602 (a).2: Understand the various tools for creating and formatting a webpage.
B-GAG 602 (a).3: Understand the use of CSS and HTML tags in Dreamweaver.
B-GAG 602 (a).4: To learn about the linking of web pages.

Note: - The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Introduction to Dreamweaver workspace.
Page setting in Dreamweaver.
Create a dynamic web page which defines all text formatting tags of HTML.
Create a Time table using Dreamweaver.
Use flash elements on webpage.
Create webpage to include image and various options related to image.
Create link on webpage using CSS.
Create a layout of webpage.
Create employee registration form using HTML tag.
Apply style sheet in Web page (inline, embedded and link)

B-GAG 602 (a): Web designing (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG 602 (a).1	3	3	3	3	3	3	3	3
B-GAG 602 (a).2	3	3	3	3	3	3	3	3
B-GAG 602 (a).3	2	3	3	3	3	3	3	3
B-GAG 602 (a).4	3	3	3	3	3	3	3	3
Average	2.75	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG 602 (a).1	3	3	3	3	3
B-GAG 602 (a).2	3	3	3	3	3
B-GAG 602 (a).3	3	3	3	2	3
B-GAG 602 (a).4	3	3	3	2	3
Average	3	3	3	2.5	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG 602 (a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 602 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 602 (a).3	2	3	3	3	3	3	3	3	3	3	3	2	3
B-GAG 602 (a).4	3	3	3	3	3	3	3	3	3	3	3	2	3
Average	2.75	3	3	3	3	3	3	3	3	3	3	2.5	3

B-GAG 601 (b): PHP (Theory)

Time: 3 Hrs.
Credits: 4

Total Marks: 100
Theory: 80
Internal Assessment: 20

Course Objectives: This course is designed to gain the fundamental skills necessary to create the complete Motion Design. It helps to learn the rudimentary techniques Design.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 601 (b).1: Understanding the basic syntax of PHP
B-GAG 601 (b).2: Learn Various Object-Oriented Programing concept
B-GAG 601 (b).3: Understanding how server-side programing works on the web
B-GAG 601 (b).4: Learn how to connect to database

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Fundamental of PHP

- Introduction to PHP
- Language Basics: Identifier, Keywords, Data Type Operators, low Control Statement
- Function, Creating Function in PHP

Unit –II

- Strings and Arrays
- Reading Data in Web Pages: Text Fields, Text Area, Checkbox, Radio Button, List Boxes, Password Control, Hidden control, Image Map and File Uploads.

Unit –III

- Strings and Arrays
- Object Oriented Programming: Creating Class, Creating Objects, Setting access to Properties and methods, Public Access and Private Access

- Constructor and Deconstruct
- Inheritance
- Overriding Method & Overloading Methods

Unit –IV

- Working with Database
- SQL Database, Creating a MYSQL database
- Connecting to the database Server
- Connecting to the Database
- Updating Data base: Inserting New Items into a Database, Deleting Records

References:

- PHP Reference: Beginner to Intermediate PHP5 by Mario Lurig, Creative Commons
- Attribution-Noncommercial-Share Alike 3.0.
- Learning PHP, MySQL, and JavaScript: A Step-By-Step Guide to Creating by Robin
- Nixon, "O'Reilly Media, Inc.". Copyright.
- Beginning PHP and MySQL: From Novice to Professional by W. Jason Gilmore, Apress.
- Copyright
- Pro PHP Programming by Mladen Gogala, Peter MacIntyre, Brian Danchilla, Apress. Copyright

B-GAG 601 (b): PHP (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG 601 (b).1	3	3	3	3	3	3	3	3
B-GAG 601 (b).2	3	3	3	3	3	3	3	3
B-GAG 601 (b).3	3	3	3	3	3	3	3	3
B-GAG 601 (b).4	2	3	3	3	3	3	3	3
Average	2.75	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG 601 (b).1	3	3	3	3	3
B-GAG 601 (b).2	3	3	3	3	3
B-GAG 601 (b).3	3	3	3	3	3
B-GAG 601 (b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG 601 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 601 (b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 601 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 601 (b).4	2	3	3	3	3	3	3	3	3	3	3	3	3
Average	2.75	3	3	3	3	3	3	3	3	3	3	3	3

B-GAG 602 (b): PHP (Practical)

Time: 3 Hrs. Total Marks: 50
Credits: 2 Theory: 40
Internal assessment: 10

Course Objectives: This course is designed to understand various techniques of web development and will be able to design and develop a complete website.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 602 (b).1: Learn how to configure PHP and Apache Web Server.
B-GAG 602 (b).2: Learn basic PHP syntax.
B-GAG 602 (b).3: Develop basic PHP programs.
B-GAG 602 (b).4: Use object-oriented programming concepts in program.

Note: - The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Sum of two numbers.
Print prime numbers between 1 to 100.
Check number is even and odd.
Compare two strings.
Print numbers using Recursion function.
Loop through associative array.
Reverse a string.
Form Design.
OOP program.
Creating database.
Connecting to database.

B-GAG 602 (b): PHP (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG 602 (b).1	3	3	3	3	2	3	2	3
B-GAG 602 (b).2	3	3	3	3	2	3	2	3
B-GAG 602 (b).3	3	2	3	3	3	3	2	3
B-GAG 602 (b).4	3	3	3	3	2	3	2	3
Average	3	2.75	3	3	2.25	3	2	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG 602 (b).1	3	2	3	3	3
B-GAG 602 (b).2	3	2	3	3	3
B-GAG 602 (b).3	3	2	3	3	3
B-GAG 602 (b).4	3	2	2	3	3
Average	3	2	2.75	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG 602 (b).1	3	3	3	3	2	3	2	3	3	2	3	3	3
B-GAG 602 (b).2	3	3	3	3	2	3	2	3	3	2	3	3	3
B-GAG 602 (b).3	3	2	3	3	3	3	2	3	3	2	3	3	3
B-GAG 602 (b).4	3	3	3	3	2	3	2	3	3	2	2	3	3
Average	3	2.75	3	3	2.25	3	2	3	3	2	2.75	3	3

B-GAG-603 (a): VISUAL EFFECT (THEORY)

Time: 3 Hours | Total Marks-100

Credits: 4 | Theory-80

Internal Assesmen-20

Course Objectives: This course enables the students to learn Video Production skills and its importance for industry. This course allows student to learn Video Camera, Camera Techniques and Video Editing Techniques the content. This course allows the student to learn and practice Video Production.

Course Learning Outcomes:
B-GAG 603 (a).1: To Learn Techniques of Videography
B-GAG 603 (a).2: Understand the basic knowledge of Video Production
B-GAG 603 (a).3: Know about the Techniques and function of video editing
B-GAG 603 (a).4: To Gain Knowledge of Video Production Stages

Note-Students are required attend five questions in all. Question no. 1 is compulsory. Attempt 1 question from each of the units all question carry equal marks.

Instructions for Paper Setter: The paper setter will set nine questions in all besides question no.1 which is compulsory, a candidate shall attend four questions selecting 1 question each from the four units, attempting five questions in all. Question no 1 shall have four short answer type questions evenly spread over all the four units. The student shall attempt all the four questions in about 150 words each.

Unit-I

INTRODUCTION OF 3D VISULA EFFET

- Visual Effect: Concept and Scope
- Difference: 2D VFX and 3D VFX
- History and Development of VFX
- VFX In Animation, Games and Live Action
- VFX Production Pipeline

Unit-II

3D OBJECT

- 3D Objects for VFX: Concept
- 3D Modeling for VFX
- Key Setup in 3d Software and modify
- Virtual Camera: Movement and Animation
- Rendering for Compositing: Process and Types

Unit-III

Compositing:

- 3D: Layer, Text
- Null Object: Concept and Feature
- Compositing: 2D and 3D Compositing Process
- Virtual Camera: Setup, Edit and Movements
- Particles: Types and Features
- Fire, Smoke and Rain in after effect

Unit-IV

Dynamics in VFX

- Dynamics: Concept and Features
- Hair and fur: Feature
- Water, Rain and Fountain
- Fire and Explosion: Feature and Process
- Environment Effect: Types and Process

References

- Grammar of the Shot, Second Edition by Roy Thompson Christopher J. Bowen, Focal Press is an imprint of Elsevier
- Lighting for Digital Video and Television, Third Edition By John Jackma, Focal Press is an imprint of Elsevier
- Adobe Premier Pro, Classroom in a book, THE OFFICAL TRANING WORKBOOK FROM ADOBE, By Maxim Jago
- THE TECHNIQUE OF FILM AND VIDEO EDITING: HISTORY, THEORY, AND PRACTICE, Fourth Edition BY KEN DANCYGER, Focal Press is an imprint of Elsevier
- Video Production Handbook, Fourth Edition By Gerald Millerson Jim Owens, Asbury College, Focal Press is an imprint of Elsevier
- HOW TO READ A FILM The World of Movies, Media, and Multimedia, Language, History, Theory Third Edition, Completely Revised and Expanded By Jame s Monaco, New York Oxford OXFORD UNIVERSITY PRESS

B-GAG-603 (a): VISUAL EFFECT (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG 603 (a).1	3	3	3	3	3	3	3	3
B-GAG 603 (a).2	3	3	3	3	3	3	3	3
B-GAG 603 (a).3	3	3	3	3	3	3	3	3
B-GAG 603 (a).4	2	3	3	3	3	3	3	3
Average	2.75	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG 603 (a).1	3	3	3	3	3
B-GAG 603 (a).2	3	3	3	3	3
B-GAG 603 (a).3	3	3	3	3	3
B-GAG 603 (a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG 603 (a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 603 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 603 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 603 (a).4	2	3	3	3	3	3	3	3	3	3	3	3	3
Average	2.75	3	3	3	3	3	3	3	3	3	3	3	3

B-GAG 604 (a): Visual Effect (Practical)

Time: 3 Hrs. Total Marks: 50
Credits: 2 Theory: 40
Internal assessment: 10

Course Objectives: This course enables the students to learn Video Production skills and its importance for industry. This course allows student to learn Video Camera, Camera Techniques and Video Editing Techniques the content. This course allows the student to learn and practice Video Production.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 604 (a).1: Understand and Practice Different Camera Techniques
B-GAG 604 (a).2: Able to Produce Video on Particular Topic
B-GAG 604 (a).3: To know and Apply Different Editing Techniques
B-GAG 604 (a).4: Able to do live Character Compositing

Note: - The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
3D model for VFX
3D Virtual Camera movements
3D Image Compositing
Fire based VFX
Explosive concept VIDEO VFX
Environment Effect
3D object Compositing in Live Action
3D Animated Character Compositing in Live Action

B- GAG 604 (a): Visual Effect (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG 604 (a).1	3	3	3	3	2	3	2	3
B-GAG 604 (a).2	3	3	3	3	2	3	2	3
B-GAG 604 (a).3	3	2	3	3	3	3	2	3
B-GAG 604 (a).4	3	3	3	3	2	3	2	3
Average	3	2.75	3	3	2.25	3	2	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG 604 (a).1	3	2	3	3	3
B-GAG 604 (a).2	3	2	3	3	3
B-GAG 604 (a).3	3	2	3	3	3
B-GAG 604 (a).4	3	2	2	3	3
Average	3	2	2.75	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG 604 (a).1	3	3	3	3	2	3	2	3	3	2	3	3	3
B-GAG 604 (a).2	3	3	3	3	2	3	2	3	3	2	3	3	3
B-GAG 604 (a).3	3	2	3	3	3	3	2	3	3	2	3	3	3
B-GAG 604 (a).4	3	3	3	3	2	3	2	3	3	2	2	3	3
Average	3	2.75	3	3	2.25	3	2	3	3	2	2.75	3	3

B-GAG-603 (b): ADVERTISMENT DESIGN (THEORY)

Time: 3 Hours | Total Marks-100

Credits: 4 | Theory-80

Internal Assesmen-20

Course Objectives: Advertising Design serves journalism, business, art, and graphic design students interested in the creative side of advertising, especially its design aspects. The professor assumes that the students have only a modest background in art, typography, design, and production and so goes into these subjects in considerable detail. The paper will deal extensively on design, but what an ad says is what is really important, and how good it looks is secondary to how it sells.

Course Learning Outcomes:
B-GAG 603 (b).1: Applying the principles of design
B-GAG 603 (b).2: The creative process of Advertisement Design
B-GAG 603 (b).3: Layout Tools, Techniques, Stages and Formats
B-GAG 603 (b).4: Permanence in advertising design
B-GAG 603 (b).5: Working with art, type and color

Note-Students are required attend five questions in all. Question no. 1 is compulsory. Attempt 1 question from each of the units all question carry equal marks.

Instructions for Paper Setter: The paper setter will set nine questions in all besides question no.1 which is compulsory, a candidate shall attend four questions selecting 1 question each from the four units, attempting five questions in all. Question no 1 shall have four short answer type questions evenly spread over all the four units. The student shall attempt all the four questions in about 150 words each.

Unit-I

UNDERSTANDING OF ADVERTISIMENT DESIGN

Advertising: Meaning, concept and nature,
Types /Forms of Advertising
Functions of Advertising
The creative process
Fundamentals of Design: Definition. Approaches to Design
Centrality of Design, Elements of Design.

Unit-II

ADVERTISMENT LAYOUT

Principles Advertising Design; Meaning
Layout steps and design, Function of Layout,
Types of Layouts; Layout Design Principles,
Thumbnail Sketch, Story board

Unit-III

ADVERTISING MESSAGE AND ANIMATION IN ADVERTISING

Copy Writing; Types of Copy Writing
Body Copy, Headlines, Subheads, Body copy, slogans,
Radio and TV and Print advertisement script writing
Use and importance of Animation in Advertising
Tools and Techniques of Animation in Advertising

Unit-IV

ADVERTISING PRODUCTION AND PRINTING PROCESS

Conceptualization and Ideation, Translation of ideas into campaigns
Visualization; Typography, Physical structure,
Printing process; Process of production, color photography and color separation;
Desk Top Publishing (DTP)
Modern printing technologies

References

1. Sandage, Fryburger and Rotzoll(1996) Advertising Theory and Practice. AAITBS Publishers
2. Stansfied, Richard: Advertising Managers Handbook. UBBSPD Publications. Third Edition
3. Advertising Handbook: A Reference Annual on Press TV, Radio and Outdoor Advertising. Different Years ATLANTIS Publications Mohan:
4. Advertising Management: Concepts and Cases. Tata McGraw- Hill Jewler, E (1998):
5. Creative Strategy in Advertising. Thomon Learning
6. Advertising Management Jethwaney, Jaishri and Jain, Shruti (2012),
7. Advertising Management, OUP India Ogilvy, David. (2001).
8. Ogilvy on Advertising, Prion. Valladares, June A. (2000).

B-GAG-603 (b): ADVERTISMENT DESIGN (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG 603 (b).1	3	3	3	3	3	3	3	3
B-GAG 603 (b).2	3	3	3	3	3	3	3	3
B-GAG 603 (b).3	3	3	3	3	3	3	3	3
B-GAG 603 (b).4	2	3	3	3	3	3	3	3
Average	2.75	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG 603 (b).1	3	3	3	3	3
B-GAG 603 (b).2	3	3	3	3	3
B-GAG 603 (b).3	3	3	3	3	3
B-GAG 603 (b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG 603 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 603 (b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 603 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 603 (b).4	2	3	3	3	3	3	3	3	3	3	3	3	3
Average	2.75	3	3	3	3	3	3	3	3	3	3	3	3

B-GAG-604 (b): ADVERTISMENT DESIGN (Practical)

Time: 3 Hrs. Total Marks: 50
Credits: 2 Practical: 40
Internal assessment: 10

Course Objectives: This course is designed for understanding the practical concepts of Advertisement.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG 604 (b).1: Understand the concept of advertisement.
B-GAG 604 (b).2: Learn about the various multimedia components of advertisement.
B-GAG 604 (b).3: Learn about advertising slogan and logo for an organization.
B-GAG 604 (b).4: Develop audio and video advertisements for particular product.

Note: - The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva-voce.

List of Practical Exercises:
To understand the graphic design elements for making an advertisement
To select the appropriate colors to the design elements
To draw/sketch the product design
To write the appropriate slogans for product ad
To create logos for the product ad
To make a clip art text gallery
To create textures for the advertisement
To create word art gallery
To record voice overs for ad jingles
To shoot video clips for product ad
To add special effects in the video ad

B-GAG-604 (b): ADVERTISMENT DESIGN (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG 604 (b).1	3	3	3	3	3	3	3	3
B-GAG 604 (b).2	3	3	3	3	3	3	3	3
B-GAG 604 (b).3	3	3	3	3	3	3	3	3
B-GAG 604 (b).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG 604 (b).1	3	3	3	3	3
B-GAG 604 (b).2	3	3	3	3	3
B-GAG 604 (b).3	3	3	3	3	3
B-GAG 604 (b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG 604 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 604 (b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 604 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG 604 (b).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-GAG-605: Major Project

Credit:6

Total Marks: 150
Practical: 120
Internal Assessment: 30

Rationale

The main idea behind Major Project is to document the experiences of students being a team member of a desktop publishing/graphic designing

/animation/audio-video production/web designing projects in a real-life environment so that s/he could learn to recognize all minor intricacies of production work. Moreover she/he can produce and refer back to the report as and when it is needed. Nonetheless it would be helpful to authenticate the projects, he has completed.

Introduction

Each student shall be supposed to prepare a project report with CD/DVD (soft copy) content during the last semester of the course. The project work will be purely practical work. This report will be prepared in accordance with the format provided by the institute. Report should be printed both side with hard bound. Report should contain minimum 40-50 pages of text, graphics, visuals etc. One of the following topics will be selected for the project work:

B-GAG-605 (a) – 3D Animation Clip

B-GAG-605(b)- 2D Animation Clip

B-GAG-605(c)-Documentary

B-GAG-605(c)-Graphic Design-UI

B-GAG-605(e)-MOOC

Process

Each student will write his/her report according to the following format:

- Abstract of Project (Overview)
- Synopsis
    - Idea/concept of the project
    - Story and Script
    - Treatment of the project
    - Technical equipment used
    - Workflow of the project

- Final Presentation
- Project Report
  Written file with relevant content
  Pre-production work
  Final File in CD / Printed

Evaluation and Viva-Voce

During the specialization project, students will work under a supervisor to be decided by the production house. In the end of the project, supervisor will sign the report. As soon the project ends student will submit two copies of the report in the institute. The evaluation of the report will be done by the expert to be decided by the Director of the institute. Apart from evaluation of report, examiner will conduct a viva-voce for judging the knowledge of student.

B-GAG-605: Major Project

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-605.1	3	3	3	3	3	3	3	3
B-GAG-605.2	3	3	3	3	3	3	3	3
B-GAG-605.3	3	3	3	3	3	3	3	3
B-GAG-605.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-609.1	3	3	3	3	3
B-GAG-609.2	3	3	3	3	3
B-GAG-609.3	3	3	3	3	3
B-GAG-609.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-609.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-609.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-609.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-609.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-GAG-606: Entrepreneurship (Theory)

Time: 2 Hrs. Total Marks: 25
Credit: 1 Theory: 20
Internal Assessment: 05

Course Objectives: This course is designed to develop the knowledge about entrepreneurship in the growing multimedia industry.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-606.1: Introduce the fundamental terms of entrepreneurship
B-GAG-606.2: Study of market challenges and risks
B-GAG-606.3: Learn the role of multimedia industry in entrepreneurship
B-GAG-606.4: Develop the knowledge and skills for market growth

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit I

- Meaning, definition and concept of Entrepreneurship
- Nature and scope of entrepreneurship
- Duties and Responsibilities of the entrepreneurs
- Challenges and risks in Entrepreneurship
- Entrepreneurship in new media
- Entrepreneurship in advertising and Public Relations-Press
- Entrepreneurship in entertainment Industry

Unit-II

- Develop and polish a freelance pitch.
- Attitudes, behaviors, knowledge, and skills required for entrepreneurship
- Modern management theory and practice for planning, organizing, leading, and deploying human capital to maximize organizational and personal success.
- Technology behind multiple digital platforms.
- Managing budgets, vendors, workflow, production.

References

- Funding Your Startup: And Other Nightmares Paperback by Dhruv Nath , Sushanto Mitra
- The DREAM Founder: Creating a Successful Start-up Paperback by Dhruv Nath
- Zero to One: Notes on Start Ups, or How to Build the Future Paperback by Peter Thiel , Blake Masters

B-GAG-610: Entrepreneurship (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-606.1	3	3	3	3	3	3	3	3
B-GAG-606.2	3	3	3	3	3	3	3	3
B-GAG-606.3	3	3	3	3	3	3	3	3
B-GAG-606.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-606.1	3	3	3	3	3
B-GAG-606.2	3	3	3	3	3
B-GAG-606.3	3	3	3	3	3
B-GAG-606.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-606.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-606.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-606.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-606.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-GAG-607: Entrepreneurship (Practical)

Time: 2 Hrs. Total Marks: 25
Credit: 1 Practical: 20
Internal Assessment: 05

Course Objectives: This course is designed to develop the knowledge about entrepreneurship in the growing multimedia industry.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-GAG-607.1: Introduce the fundamental terms of entrepreneurship
B-GAG-607.2: Study of market challenges and risks
B-GAG-607.3: Learn the role of multimedia industry in entrepreneurship
B-GAG-607.4: Develop the knowledge and skills for market growth

Note: - The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva-voce.

List of Practical Exercises:
Students have to give a small business idea on the basis of market survey and also submit a report.

B-GAG-607: Entrepreneurship (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-GAG-607.1	3	3	3	3	3	3	3	3
B-GAG-607.2	3	3	3	3	3	3	3	3
B-GAG-607.3	3	3	3	3	3	3	3	3
B-GAG-607.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-GAG-607.1	3	3	3	3	3
B-GAG-607.2	3	3	3	3	3
B-GAG-607.3	3	3	3	3	3
B-GAG-607.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-GAG-607.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-607.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-607.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-GAG-607.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

Scheme of Examination of B.Sc. (Multimedia) programme in accordance with NEP 2020 (Multiple Entry-Exit, Internships and Choice Based Credit System) w.e.f. Academic Session2022-23 in phased manner.

Semester-I

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
AECC-N100	Communicative English	AECC-1	2	-	-	2	2	2	25	-	25	50	2 Hours
B-MMT-N101	Art & Creativity (Theory)	CC-1A	4	-	-	4	4	6	50	-	50	100	3 Hours
B-MMT-N102	Art & Creativity (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-MMT-N103	Computer Programming (Theory)	CC-2A	4	-	-	4	4	6	50	-	50	100	3 Hours
B-MMT-N104	Computer Programming (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-MMT-N105	Fundamentals of Multimedia	CC-3A	5	1	-	6	6	6	75	-	75	150	3 Hours
B-MMT-N106	Computer Science(Theory)	SEC-1	1	-	-	1	1	2	20	-	5	25	2 Hours
B-MMT-N107	Computer Science(Practical)		-	-	1	2	1		-	20	5	25	2 Hours
B-MMT-N108	Activity/Hobby Gita-A Manual of Life (Option-i) Public Speaking (Option-ii)							2	Satisfactory/Non satisfactory				
							Total Credits	**24**	**Total Marks**			**550**	

Semester-II

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
AECC-N200	Environmental Studies	AECC-2	2	-	-	2	2	2	25	-	25	50	3Hours
B-HIN-N200	Communicative Hindi	AECC-3	2	-	-	2	2	2	25	-	25	50	2 Hours
B-MMT-N201	Internet Technology and Web Design (Theory)	CC-1B	4	-	-	4	4	6	50	-	50	100	3 Hours
B-MMT-N202	Internet Technology and Web Design (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-MMT-N203	Graphic Design & DTP (Theory)	CC-2B	4	-	-	4	4	6	50	-	50	100	3 Hours
B-MMT-N204	Graphic Design & DTP (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-MMT-N205	Basics of Animation	CC-3B	5	1	-	6	6	6	75	-	75	150	3 Hours
B-MMT-N206	Human values and Ethics	SEC-2	2	-	-	2	2	2	25	-	25	50	2 Hours
B-MMT-	Activity/Hobby						2	2	Satisfactory/Non satisfactory				

N207											
Total Credits								**26**	**Total Marks**	**600**	
Internship@10 Credits(450 hours) after 2nd semester(only for Exit Option)											

AECC-N100: Communicative English

Time: 2 Hrs.
Credits: 2

Total Marks: 50
Theory:25
Internal Assessment: 25

Contact hours per week: 2

Course objectives: The paper is designed to enhance proficiency in English Language. It seeks to develop the basics of English Language through different modules. Each unit will enable and capacitate the learner to have communication competence which is required in the present-day world. The basic knowledge of communication will enable the learners to share and enliven ideas, experience and know-how ubiquitous in the world.

Course Learning Outcomes:
After completing the Course, the student will be able to:
AECC-N100.1:Learn the rhetoric of presentation
AECC-N100.2: Learn, comment and respond to correspondence
AECC-N100.3: Learn the basics of grammar and composition
AECC-N100.4: Acquaint with verbal and non-verbal communication

Note: All questions are compulsory.

Q.1. The paper setter will set two question from unit-II. The student shall attempt one out of the given two. (05)

Q.2. This question shall be based on unit-III. The student shall attempt one out of the given two. (10)

Q.3. There will be 15 grammatical items based on unit-IV. The student shall attempt any 10 items. (10)

Internal Assessment: The students shall be required to make presentation /PPT based on unit-I.

Unit-I

Listening and speaking skills

Listening skills (Active-passive, Accent)
Speaking Skills (Accent, Stress, Intonation, Assertion, Rhetorical questions, Pause, Pitch)
Oral presentation, Debates, Elocution and Extempore

Unit-II

Writing skills

Report writing
Paragraph writing
Letter writing

Unit-III

Technical and Modern communication

Resume writing
E-mail
Blogs and comments on social media

Unit-IV

Grammar

Noun, Pronoun, Verb, Adverb, Adjective, Preposition, Conjunction and their uses
Common errors in the use of English (Noun, Pronoun, Adjective, Adverb, Conjunctions)
Correct use of verbs and Articles
Vocabulary: Homonyms, Homophones, Pair of words

References:

- Communicative English, Dr. Jimmy Sharma, Arihant Parkashan Pvt. Ltd.
- Strengthen Your English, Bhaskaran and Horsburgh, Oxford University Press
- Basic Communication Skills for Technology, and area J Rutherfoord, Pearson Education Asia.
- Murphy's English Grammar with CD, Murphy, Cambridge University Press
- English Skills for Technical Students by Orient Longman
- Everyday Dialogues in English by Robert J. Dixson, Prentice-Hall of India Ltd., 2006.

AECC-N100: Communicative English

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
AECC-N100.1	2	2	2	2	2	2	2	2
AECC-N100.2	2	2	2	2	2	2	2	2
AECC-N100.3	2	2	2	2	2	2	2	2
AECC-N100.4	2	2	2	2	2	2	2	2
Average	2	2	2	2	2	2	2	2

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
AECC-N100.1	2	2	2	2	2
AECC-N100.2	2	2	2	2	2
AECC-N100.3	2	2	2	2	2
AECC-N100.4	2	2	2	2	2
Average	2	2	2	2	2

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
AECC-N100.1	2	2	2	2	2	2	2	2	2	2	2	2	2
AECC-N100.2	2	2	2	2	2	2	2	2	2	2	2	2	2
AECC-N100.3	2	2	2	2	2	2	2	2	2	2	2	2	2
AECC-N100.4	2	2	2	2	2	2	2	2	2	2	2	2	2
Average	2	2	2	2	2	2	2	2	2	2	2	2	2

B-MMT-N101: Art & Creativity (Theory)

Time:3 Hrs.	Total marks:100
Credits: 4	Theory: 50
	Internal Assessment: 50

Course Objectives: This course is designed for theoretical understanding of aesthetics of arts and creating sense of creativity, colours, and design for making artistic content for multimedia composition.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-N101.1: Understand art aesthetics including Indian concept of aesthetics.
B-MMT-N101.2: Acquire skills to create interesting and interactive components for multimedia.
B-MMT-N101.3: Develop the capacities to design, assess, enact with creative projects.
B-MMT-N101.4: Develop the ability to link art theory with using creative practices.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Art: Meaning and Definition of Art
Indian Aesthetics : Ras, Bhav, shadaang, Auchitya, Alankaar, Rasa Nispatti
Elements of Art: Point, Line, Form, Shape, Space, Colour, Texture, Value
Understanding of Light and Shadow
Perception of Color and Color Wheel

Unit II

Principles of Art: Balance, Rhythm, Harmony, Contrast, Proportion, Dominance, Unity
Perspectives on the Creative Process
Landscapes and Composition
Technique of different Art styles: Watercolor, Acrylic painting, pencil color, spray painting, pastel color

Unit –III

Design: concept, 2D shape design,
Character Designing: Creating appealing characters with a distinctive personality,
C-reating a range of characters that work together as a "Cast"
Typography and its types
Calligraphy

Unit IV

Digital Tools: Overview of Photoshop Interface

Understanding of Pen tool, Brush Tool and Brush Panel
Shading and Painting techniques in Photoshop
Use of Opacity, Flow and Pattern
Digital Panting

References:

- Jansen, Charles R. *Studying Art History*, Prentice Hall Engle word cliffs, M.J.07632, 1986
- Dhawan, A. K., Dhawan's *Hand Book of History of Art*, Tip Top Trading Co., B-N-1076, HenrySally, *Clay Modeling*,2008
- Huguette Kirby, *Crafts from Modeling Clay*,2006
- Ghertner, ed. *Layout and Composition for Animation*, Focal Press, New York Dennis, H.J., *Elementary Perspective*, BailliereTindall and Cox,
- Ghertner, ed. *Layout and Composition for Animation*, Focal Press, New York
- Srivastav, Harish Chandra, *Raag Paricha;* Sangeet Sadan Prakash*;1971*
- Fox, Dan; *Chord Progression theory and practice;*Alfred Music*;2013*

B-MMT-N101: Art & Creativity (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-N101.1	3	3	3	3	3	3	3	3
B-MMT-N101.2	2	3	3	2	3	3	3	3
B-MMT-N101.3	3	2	3	3	3	3	3	3
B-MMT-N101.4	3	3	3	3	2	3	3	3
Average	2.75	2.75	3	3	2.75	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO 5
B-MMT-N101.1	3	3	3	3	3
B-MMT-N101.2	3	3	3	3	3
B-MMT-N101.3	3	3	2	3	2
B-MMT-N101.4	3	3	3	3	3
Average	3	3	2.75	3	2.75

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-N101.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N101.2	2	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N101.3	3	2	3	3	3	3	3	3	3	3	2	3	2
B-MMT-N101.4	3	3	3	3	2	3	3	3	3	3	3	3	3
Average	2.75	2.75	3	3	2.75	3	3	3	3	3	2.75	3	2.75

B-MMT-N102: Art & Creativity (Practical)

Time:3 Hrs. Total Marks: 50
Credits: 2 Practical: 25
Internal Assessment: 25

Course Objectives: This course is designed for practical understanding of arts and creating sense towards creativity and design for making artistic contents for multimedia composition.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-N102.1: Understand Drawing anatomy and Pencil shading techniques.
B-MMT-N102.2: Understand various 2D design patterns
B-MMT-N102.3: Demonstrate about 3D textures
B-MMT-N102.4: Identify and produce different styles of calligraphy

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Drawing anatomy
Pencil shading techniques
Analogous Colors and Color Wheel
Composition in Art
Landscape drawing
Cartoon character sketch
Patterns and 2D design
Textures and 3D design
Calligraphy
living and non living objects.
Poster making
Stone art
Mandala art
Typography

B-MMT-N102: Art & Creativity (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-N102.1	3	3	3	3	2	3	2	3
B-MMT-N102.2	3	3	3	3	2	3	2	2
B-MMT-N102.3	3	2	3	3	3	3	2	2
B-MMT-N102.4	3	3	3	3	2	3	2	2
Average	3	2.75	3	3	2.25	3	2	2.25

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-N102.1	3	2	3	3	3
B-MMT-N102.2	3	2	3	3	3
B-MMT-N102.3	3	2	3	3	3
B-MMT-N102.4	3	2	2	3	3
Average	3	2	2.75	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-N102.1	3	3	3	3	2	3	2	3	3	2	3	3	3
B-MMT-N102.2	3	3	3	3	2	3	2	2	3	2	3	3	3
B-MMT-N102.3	3	2	3	3	3	3	2	2	3	2	3	3	3
B-MMT-N102.4	3	3	3	3	2	3	2	2	3	2	2	3	3
Average	3	2.75	3	3	2.25	3	2	2.25	3	2	2.75	3	3

B-MMT-N103: Computer Programming (Theory)

Total Marks: 100

Credits: 4 Theory: 50

Internal Assessment: 50

Course Objectives: This course is designed for theoretical understanding of computer programming terms and concepts for creating an interface between a computer system and users.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-N103.1: Understand the keywords and syntax of C programming.
B-MMT-N103.2: Write the C code for a given algorithm.
B-MMT-N103.3: Understand and trace the execution of programs written in C language.
B-MMT-N103.4: Write program that perform operations using various data types.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

C fundamentals: Problem definition, algorithms, flow charts and their symbols
Variables, C Expressions, C Tokens, Constant
Data Types
Standard library: Input / output

Unit-II

Operator and Expressions: Precedence of Arithmetic Operations,
Type Conversion in Expression, Operator Precedence & Associability
Managing Input and Output Operations
Decision Making Statements

Unit-III

Array: One Dimensional Array, Declaration and Initialization of One Dimensional Array, Two Dimensional Array, Multi-dimensional Array
String: Declaring and Initializing Variables, String Handling Functions,

Unit-IV

Functions: Definition of Functions, Elements of user Defined functions,
Return values and their types, Function calls, Function Declaration, Recursion
Structures and Union: Defining structures, declaring structure variables,
Accessing Structure variables, Structure initialization, union

References:

- *Kernighan, Brian; Ritchie, Dennis (1988). The C Programming Language (2 ed.). Prentice Hall.*
- *Plauger, P.J. (1992). The Standard C Library (1 ed.). Prentice Hall.*
- *Banahan, M.; Brady, D.; Doran, M. (1991). The C Book: Featuring the ANSI C Standard (2 ed.). Addison-Wesley.*
- *Harbison, Samuel; Steele Jr, Guy (2002). C: A Reference Manual (5 ed.). Pearson.*
- *King, K.N. (2008). C Programming: A Modern Approach (2 ed.). W. W. Norton.*

B-MMT-N103: Computer Programming (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-N103.1	3	3	3	3	3	3	3	3
B-MMT-N103.2	3	2	3	3	3	3	3	2
B-MMT-N103.3	3	3	2	3	3	3	3	2
B-MMT-N103.4	3	2	3	3	2	2	2	2
Average	3	2.5	2.75	3	2.75	2.75	2.75	2.25

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-N103.1	3	2	3	3	2
B-MMT-N103.2	3	2	3	3	2
B-MMT-N103.3	3	2	3	3	2
B-MMT-N103.4	3	2	3	3	2
Average	3	2	3	3	2

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-N103.1	3	3	3	3	3	3	3	3	3	2	3	3	2
B-MMT-N103.2	3	2	3	3	3	3	3	2	3	2	3	3	2
B-MMT-N103.3	3	3	2	3	3	3	3	2	3	2	3	3	2
B-MMT-N103.4	3	2	3	3	2	2	2	2	3	2	3	3	2
Average	3	2.5	2.75	3	2.75	2.75	2.75	2.25	3	2	3	3	2

B-MMT-N104: Computer Programming (Practical)

Time: 3 Hrs. Total Marks: 50
Credits: 2 Practical: 25
Internal Assessment: 25

Course Objectives: This course is designed for those who want to advance structured and procedural understanding and to improve c programming skills.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-N104.1: Implement the algorithms and draw flowcharts.
B-MMT-N104.2: Demonstrate an understanding of computer programming language concepts
B-MMT-N104.3: Define data types and use them.
B-MMT-N104.4: Use the concepts of arrays, functions and structure.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Sum of three Number
Simple interest
Find Even/odd number
Largest among two numbers
Largest among three number using control statement
Fibonacci Series.
Prime number
Factorial.
Sum of Digits.
Reverse Number.
Swap two numbers
Table of a number
Create and initialize array
Create student records using structure and union.

B-MMT-N104: Computer Programming (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-N104.1	3	3	3	3	3	3	3	3
B-MMT-N104.2	3	2	3	3	3	3	3	2
B-MMT-N104.3	3	3	2	3	3	3	3	2
B-MMT-N104.4	3	2	3	3	2	2	2	2
Average	3	2.5	2.75	3	2.75	2.75	2.75	2.25

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-N104.1	3	2	3	3	2
B-MMT-N104.2	3	2	3	3	2
B-MMT-N104.3	3	2	3	3	2
B-MMT-N104.4	3	2	3	3	2
Average	3	2	3	3	2

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-N104.1	3	3	3	3	3	3	3	3	3	2	3	3	2
B-MMT-N104.2	3	2	3	3	3	3	3	2	3	2	3	3	2
B-MMT-N104.3	3	3	2	3	3	3	3	2	3	2	3	3	2
B-MMT-N104.4	3	2	3	3	2	2	2	2	3	2	3	3	2
Average	3	2.5	2.75	3	2.75	2.75	2.75	2.25	3	2	3	3	2

B-MMT-N105: Fundamentals of Multimedia

Time: 3 Hrs. Total Marks: 150
Credits: 6 Theory: 75
Internal assessment: 75

Course objectives: This course aims to introduce the fundamental elements of multimedia. The emphasis will be on learning the representations, perceptions and applications of multimedia.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-N105.1 Understand the basic concepts of Multimedia.
B-MMT-N105.2 Differentiate the various features and capabilities of different application software.
B-MMT-N105.3 Communicate ideas and concepts by using the multimedia.
B-MMT-N105.4 Identify and describe the function of the general skill sets in the multimedia industry.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction to multimedia
Key elements of multimedia: text, audio, video, graphics, animation
Hardware and software requirements for multimedia
Multimedia equipments
Applications of multimedia

Unit-II

Desktop publishing
Basic design concepts
User interface design
Hypermedia authoring concepts

Unit-III

Process of multimedia production
Various file formats of text, audio, video, graphics and animation
File compression techniques
Creating web based multimedia

Unit-IV

Introduction to animation
Basic audio and video integration techniques
Animation effects

References:

- Multimedia Basics, Volume 1 b**y** Andreas Holzinger**,** Firewall Media.
- Fundamentals of Multimedia, Ze-Nian Li, Mark S. Drew, Pearson Prentice Hall, 2004
- Multimedia Basics, Suzanne Weixel, Jennifer Fulton, Karl Barksdale, Cheryl Morse, Bryan Morse, Thomson/Course Technology
- Malik and Agarwal, S. and A. (October 2012). "Use of Multimedia as a New Educational Technology Tool–A Study"(PDF). *International Journal of Information and Education Technology*.

B-MMT-N105: Fundamentals of Multimedia

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-N105.1	3	3	3	3	3	3	3	3
B-MMT-N105.2	3	3	3	3	3	3	3	3
B-MMT-N105.3	3	3	3	3	3	3	3	3
B-MMT-N105.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO 1	PSO2	PSO3	PSO4	PSO5
B-MMT-N105.1	3	3	3	3	3
B-MMT-N105.2	3	3	3	3	3
B-MMT-N105.3	3	3	3	3	3
B-MMT-N105.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-N105.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N105.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N105.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N105.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-N106: Computer Science (Theory)

Time: 3 Hrs. Total Marks:25
Credits: 1 Theory: 20
Internal Assessment: 5

Contact hours per week: 1

Course Objectives: This course is designed for theoretical understanding of computer system and its components, functioning and its application software exposure.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-N106.1: Understand the basic knowledge of computer system.
B-MMT-N106.2: Know about the functioning of operating systems.
B-MMT-N106.3 Understand the basic concept of Internet and computer networks .
B-MMT-N106.4: Understand the basics of Application Software.

NOTE:- The examiner will set total 10(ten) questions covering the entire syllabus. Student will attempt any five questions. All questions will carry equal marks.

Unit-I

Operating System - Definition & Functions of Operating System, Basics of Popular Operating Systems; The User Interface, Exploring Computer, Icons, taskbar, desktop, Using Menu and Menu-selection, managing files and folders, Control panel – display properties, add/remove software and hardware, Running an Application, Using help; Creating Short cuts, Basics of O.S Setup; Common utilities.

Unit-II

Word Processing: Introduction to Word Processing, Menus, Creating, Editing & Formatting Document, Spell Checking, Printing, Views, Tables, Word Art, Mail Merge, Macros.

Unit-III

Spread Sheet: Elements of Electronics Spread Sheet, Applications, Creating and Opening of Spread Sheet, Menus, Manipulation of cells: Enter texts numbers and dates, Cell Height and Widths, Copying of cells, Mathematical, Statistical and Financial function, Drawing different types of charts.

Unit-IV

Presentation Software: Creating, modifying and enhancing a presentation, Delivering a presentation, Using sound, animation and design templates in presentation.

REFERENCES BOOKS

- Help files from Apache Open Office, https://wiki.openoffice.org/wiki/Documentation
- Channelle Andy, "Beginning OpenOffice 3: From Novice to Professional", aPress Publications
- Beginning OpenOffice 3: From Novice to Professional, Andichannele, Apress.
- Microsoft Office 2016 Step by Step: MS Office 2016 Step by S_p1, By Joan Lambert, Curtis Frye
- Computer Fundamentals - By Pradeep K. Sinha, Priti Sinha, BPB Publications, 6th Edition
- Getting Started with LibreOffice 5.0, Friends of OpenDocuments Inc., Http://friendsofopendocument.com
- Documentation from LibreOffice, https://documentation.libreoffice.org/en/english-documentation/

B-MMT-N106: Computer Science (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-N106.1	3	3	3	3	3	3	3	3
B-MMT-N106.2	3	3	3	3	3	3	3	3
B-MMT-N106.3	3	3	3	3	3	3	3	3
B-MMT-N106.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-N106.1	3	3	3	3	3
B-MMT-N106.2	3	3	3	3	3
B-MMT-N106.3	3	3	3	3	3
B-MMT-N106.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-N106.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N106.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N106.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N106.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-N107: Computer Science (Practical)

Time: 2 Hrs.
Credits: 1

Total Marks: 25
Practical: 20
Internal Assessment: 5

Contact hours per week: 2

Course Objectives: This course is designed for practical understanding of commonly used application software and its functioning to the students.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-N107.1: Use MS-Word
B-MMT-N107.2: Use MS-Excel
B-MMT-N107.3: Use PowerPoint
B-MMT-N107.4: Create Email account, compose & send emails for personal and professional communication.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Starting with basics of Operating Systems and its functionalities
Create and format word documents.
Use tables, word Art and other features in your documents.
Use macros to simplify the tasks in a document.
Use mail merge to write once for many.
Use spreadsheet for basic data handling
Apply formulas to sheet for automation.
Use if-else to make certain decisions in a sheet.
Use Charts & Shapes for better visualization of data.
Use filters and data validation controls for control of data
Prepare and format presentations.
Apply slide transitions, animations and sequencing for slides.
Apply different formatting and insert options to make presentation better.
Use rehearse and timing options for a presentation with handouts.

B-MMT-N107: Computer Science (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-N107.1	3	3	3	3	3	3	3	3
B-MMT-N107.2	3	3	3	3	3	3	3	3
B-MMT-N107.3	3	3	3	3	3	3	3	3
B-MMT-N107.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-N107.1	3	3	3	3	3
B-MMT-N107.2	3	3	3	3	3
B-MMT-N107.3	3	3	3	3	3
B-MMT-N107.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-N107.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N107.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N107.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N107.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-N108: Activity/Hobby

Gita-A Manual of Life (Option-i)

Course Credit: 02 Total Marks: 50 Marks

Contact Hours: 02 per week

Teaching will be based on the discussion in the class room

Note: There will be no written examinations, knowledge and understanding of Gita teachings will be assessed through discussion by the Students describing the knowledge and implementation of Gita's teachings in daily life for the betterment of our day today life.

Course Outcomes:

Unit-1: After studying the first unit of the course students will be able to understand meaning, background & relevance of Gita's teaching's in contemporary times.

Unit-II: After studying the second unit of the course students will be able to understand benefits of Karma Yoga, Bhakti Yoga and Gyana Yoga in our daily life.

Unit-1

Gita for all: Meaning, background and relevance of Gitaopdesha. Karmayoga as a way

to right knowledge; Necessity of Loksamgraha for the service of Humanity.

Unit-II

Gita for Spiritual world: Karm Yogi as an Ideal Man of Gita, Sthitaprajna as a symbol of ideal master in Gita, Swadharma and Pradharma as a secret of Blissful society, Atma Samyama Yoga; a technique for building an ideal person according to Gita.

Suggested Books:

- Swami Ramsukhdas, Gita Sadhak Sanjivani Teeka
- Hnuman Prasad Poddhar, Gita Tattvavivechni Teeka
- Gandhi Gita Matta
- Gurudatta Srimadbhagvadgita Vyakhya
- Satyavarta, Srimadbhagvadgita Vyakhya
- Swami Jyanananda, Gita Prerna
- Paramhamsa Yogananda, Srimadbhagvadgita God-Arjuna, Discoruse Aurvind, Essays on Gita.
- S. Radhakrishna, Bhagwvadgita Vyakhya
- Jyaneshwar, Jyaneshwari Gita

B-MMT-N108: Activity/Hobby

Public Speaking (Option-ii)

Course Credit: 02 Total Marks: 50 Marks

Contact Hours: 02 per week

Teaching will be based on the discussion in the class room

Note: There will be no written examinations. Understanding and art of Public speaking will be assessed through discussion and presentation by the Students in the class room.

Course Outcomes:

Unit-1: After studying the first unit of the course students will be able to understand relevance of Public speaking in their academic and professional life.

Unit-II: After studying the second unit of the course students will be able to write their own speech and analyze the intricacies of speeches of renowned speakers.

Unit-1

Public speaking: Meaning and relevance, Characteristics of an effective speaker, Power of words, Use of body language, dressing, mannerisms, Use of effective memory techniques, Overcoming the fear of public speaking- Glossophobia

Unit-II

Speech : Introduction, body and conclusion, Writing your own speeches, famous speeches of World s greatest orators, Case studies of effective public communicators like TED speakers of both Indian and foreign origin

Suggested Books:

- The Art of Public Speaking author Dale Carnegie, along with J. Berg Esenwein, Rupa Publications, India (English and Hindi)
- Speak with no fear, Mike Acker, Advantage Publishing Group
- TED Talks, Chris Anderson, Headline Publishing Group
- 50 Prernadayak Bhashan, Fingerprint Publishing

AECC-N200 : Environment Studies

Time: 3 Hrs. Total Marks: 50
Credits: 2 Theory: 25
Internal Assessment: 25

Scheme of paper: Total number of questions will be nine. Students have to attempt five questions in all. Questions no. 1 is compulsory. All questions carry equal marks. Each question is of 8 marks.

Course objectives: The aim of this course is to make the students aware about the environmental problems and current global issues related to environment. It provides knowledge about concepts of ecosystem and biodiversity and develops interest in the students about their role in conservation of environment and reducing pollution and waste generation in their surroundings. By understanding the environmental problems, their causes and solutions, the students can apply these to their daily lives.

Course Outcomes (COs) for Theory:

COs	On successful completion of the course, the students will be able to:
CO 1	Understand the concept of environmental studies, its scope and importance in the conservation of environment. Understand the concept of ecosystem and different types of natural and artificial ecosystems in the world, the biogeochemical cycling and energy flow in an ecosystem.
CO 2	Describe the various renewable and non-renewable natural resources and their over-exploitation due to increasing demands of rising population. Become aware about biodiversity, its importance and the various threats for biodiversity. Have knowledge of the endangered species and their conservation measures that are needed to be adopted at different levels.
CO 3	Have understanding about the types of pollution and how to reduce pollution levels in air, soil, water, land and from marine bodies, as to develop interest in reducing the solid waste generation as well as its management at household level. Gain knowledge of various global environmental issues like climate change, global warming and ozone depletion and also about different environmental laws implemented to conserve the environment.
CO 4	Understand the concept of population growth, disaster management, impacts of drug abuse and various environmental movements.

Course outcome for practical/field work:

CO 1	To get practical knowledge of various environmental issues through project file/assignment with case studies.

Mode of Paper Setting: Total number of questions set will be nine. Questions no. 1 is compulsory covering the entire syllabus. Two questions will be set from each unit. Students have to attempt five questions in all, one question from each unit including the compulsory question. Each question is of 5 marks. All questions carry equal marks. Final theory exam time allowed will be of 3 hours.

Unit I

Introduction to environmental studies: Multidisciplinary nature of environmental studies; Scope and importance; Concept of sustainability and sustainable development.

Ecosystems: What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems: a) Forest ecosystem, b) Grassland ecosystem, c) Desert ecosystem, d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) (8 lectures)

Unit II

Natural Resources: Renewable and Non-renewable Resources

•Land resources and landuse change; Land degradation, soil erosion and desertification.
•Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
•Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
•Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Biodiversity and Conservation
•Levels of biological diversity: genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
•India as a mega-biodiversity nation; Endangered and endemic species of India
•Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.
•Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value. (16 lectures)

Unit III

Environmental Pollution
•Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution
•Nuclear hazards and human health risks
•Solid waste management: Control measures of urban and industrial waste, Pollution case studies.

Environmental Policies & Practices
•Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
•Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
•Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.
(15 lectures)

Unit IV

Human Communities and the Environment
•Human population growth: Impacts on environment, human health and welfare.
•Resettlement and rehabilitation of project affected persons; case studies.
•Disaster management: floods, earthquake, cyclones and landslides.
•Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan.
•Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
•Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).
Drugs and their effects; Useful and harmful drugs; Use and abuse of drugs; Stimulant and depressant drugs. Concept of drug de-addiction. Legal position on drugs and laws related to drugs.
(6 lectures)

Practical/Field work

•Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
•Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
•Study of common plants, insects, birds and basic principles of identification.
•Study of simple ecosystems-pond, river, Delhi Ridge, etc. (Equal to 5 lectures)

Suggested Readings:

1.Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt.
2.Gadgil, M., & Guha, R. 1993. This Fissured Land: An Ecological History of India. Univ. of California Press.
3.Gleeson, B. and Low, N. (eds.) 1999. Global Ethics and Environment, London, Routledge.
4.Gleick, P. H. 1993. Water in Crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5.Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. Principles of Conservation Biology. Sunderland: Sinauer Associates, 2006.
6.Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. Science, 339: 36-37.
7.McCully, P. 1996. Rivers no more: the environmental effects of dams (pp. 29-64). Zed Books.
8.McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9.Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders.
10.Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11.Rao, M.N. & Datta, A.K. 1987. Waste Water Treatment. Oxford and IBH Publishing Co. Pvt. Ltd.
12.Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. Environment. 8th edition. John Wiley & Sons.
13.Rosencranz, A., Divan, S., & Noble, M. L. 2001. Environmental law and policy in India. Tripathi 1992.
14.Sengupta, R. 2003. Ecology and economics: An approach to sustainable development. OUP.
15.Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.
16.Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. Conservation Biology: Voices from the Tropics. John Wiley & Sons.
17.Thapar, V. 1998. Land of the Tiger: A Natural History of the Indian Subcontinent.
18.Warren, C. E. 1971. Biology and Water Pollution Control. WB Saunders.
19.Wilson, E. O. 2006. The Creation: An appeal to save life on earth. New York: Norton.
1) 20.World Commission on Environment and Development. 1987. Our Common Future. Oxford University

B-HIN-N200 : Communicative Hindi

Time: 2 Hrs. Total Marks: 50
Credits: 2 Theory: 25
Contact hours per week: 2 Internal assessment: 25

Course Objectives: The Paper is designed to enhance proficiency in Hindi Language. It seeks to develop the basic of Hindi Language through different modules. Each unit will enable the learner to have the communication in Hindi and to share and express ideas and experiences.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-HIN-N200.1: Develop the knowledge of basics of Hindi language.
B-HIN-N200.2: Improve vocabulary in Hindi language.
B-HIN-N200.3: : Inculcate the knowledge of grammar in Hindi language
B-HIN-N200.4: Learn correct uses of Hindi language in media writing

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit – I

Hkk"kk dh ladYiuk
Hkk"kkbZ Hksn&ekSf[kd ,oa fyf[kr
Hkk"kk dk ekudhdj.k&fLFkfr ,oa pqukSfr;k¡
Hkk"kk rFkk lekt dk ikjLifjd vUrlZcU/kA

Unit – II

fgUnh O;kdj.k 'kCn :i vkSj okD; jpuk
nsoukxjh fyfi vkSj o`fr
mPpkj.k vo;o] i;kZ;] foykse] lekukFkhZ] vusdkFkhZ 'kCn
fgUnh dh iz;ksxkRed =qfV;ka

Unit – III

fgUnh lkfgR; dk laf{kIr bfrgkl
fgUnh lkfgR; dh vk/kfud izo`fRr;ka
fgUnh dh lkfgfR;d fo/kkvksa dk ifjp;
fgUnh x| ,oa i|

Unit – IV

iz;kstu ewyd fgUnh dk vfHkizk; ,oa vko';drk
tulapkj ek/;e vkSj fgUnh Hkk"kk] ehfM;k dh Hkk"kk dh izd`fr ,oa fopyu
{ks=h; izHkko ,oa {ks=h; Hkk"kkbZ iz;ksx
eqfnzr ek/;e vkSj fgUnh
jsfM;ks ,oa Vsyhfotu dh Hkk"kk

foKkiu ,oa lks'ky ehfM;k dh Hkk"kk

Suggested Readings:

HkkfV;k] MkW- dSyk'kpUn] vuqokndyk % fl)kar vkSj iz;ksx] r{kf'kyk izdk'ku] u;h fnYyhA
'kekZ] j?kquUnu izlkn] iz;kstu ewyd fgUnh % fl)kar vkSj O;ogkj] fo'ofo|ky; izdk'ku] okjk.klhA
v;~;j] fo'oukFk] vuqokndyk] izHkkr izdk'ku] fnYyh
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>kYVs] MkW- naxy] iz;kstu ewyd fgUnh % fl)kar vkSj iz;ksx] ok.kh izdk'ku] u;hfnYyh
xksnjs] MkW- fouksn] iz;kstu ewyd fgUnh] ok.kh izdk'ku] u;h fnYyh
jk.kk] egsUnz flag] iz;kstu ewyd fgUnh ds vk/kqfud vk;ke] g"kkZ izdk'ku] vkxjkA
dqekj pan] tulapkj ek/;eksa esa fgUnh] Dykfldy ifCyf'kax dEiuh] fnYyh

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-HIN-N200.1	3	3	3	3	2	2	2	3
B-HIN-N200.2	3	3	3	3	2	2	2	3
B-HIN-N200.3	3	3	3	3	2	2	2	3
B-HIN-N200.4	3	3	3	3	2	2	2	3
Average	3	3	3	3	2	2	2	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-HIN-N200.1	2	2	2	2	2
B-HIN-N200.2	2	2	2	2	2
B-HIN-N200.3	2	2	2	2	2
B-HIN-N200.4	2	2	2	2	2
Average	2	2	2	2	2

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-HIN-N200.1	3	3	3	3	2	2	2	3	2	2	2	2	2
B-HIN-N200.2	3	3	3	3	2	2	2	3	2	2	2	2	2
B-HIN-N200.3	3	3	3	3	2	2	2	3	2	2	2	2	2
B-HIN-N200.4	3	3	3	3	2	2	2	3	2	2	2	2	2
Average	3	3	3	3	2	2	2	3	2	2	2	2	2

B-MMT-N201: Internet Technology and web design (Theory)

Time: 3 Hrs. Total Marks: 100
Credits: 4 Theory: 50
Internal assessment: 50

Course Objectives: This course is designed for understanding the process of static website making and creating software application tools like lists, tables, hyperlinks etc. using html tags.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-N201.1: Become familiar with web design and learn how to implement web theories into practice.
B-MMT-N201.2: Learn the language of the web using HTML tags and CSS.
B-MMT-N201.3:Use knowledge of HTML and CSS code and HTML editor to create personal and business websites following current professional and/or industry standards.
B-MMT-N201.4: Use critical thinking skills to design and create websites.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit I

Introduction to Internet, History and Its applications
Browser, Search Engine, FTP, URL
Email and Blog
Introduction to Network- LAN, WAN, MAN,
Network Topologies-Ring, Bus, Star, Mesh and Tree topologies
Hardware requirements for Network

Unit II

Process of static web designing
Basic elements of web page
HTML: introduction and basic elements;
Tags and functions
Head, title and body elements

Unit III

Block and text level elements
Layout designing of a webpage
Links, images, fonts, colour, style sheet and character entities
Text formatting
Interface between HTML and other coding languages

Unit IV

HTML tables and frames

Creating Page Structure with HTML Tables
Diagramming an HTML Table
Web browser support for HTML

References:

"An Introduction to HTML and JavaScript: for Scientists and Engineers" **By David R. Brooks, Springer, 2007**

"Head First HTML and CSS" **By Elisabeth Robson, Eric Freeman, O'Reilly Media Inc.**

"Schism's Easy Outline HTML" **By David Mercer, Mcgraw Hill Professional**

Matthew MacDonald, "HTML 5 - The Missing Manual", 3rd ed, 2015, O'Reilly

David Sawyer McFarland, "CSS 3 - The Missing Manual", 3rd ed, 2013, O'Reilly

W3School HTML/CSS Tutorials, References and Examples, http://www.w3schools.com

B-MMT-N201: Internet Technology and web Design (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-N201.1	3	3	3	3	3	3	3	3
B-MMT-N201.2	3	3	3	3	3	3	3	3
B-MMT-N201.3	3	3	3	3	3	3	3	3
B-MMT-N201.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO 5
B-MMT-N201.1	3	3	3	3	3
B-MMT-N201.2	3	3	3	3	3
B-MMT-N201.3	3	3	3	3	3
B-MMT-N201.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-N201.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N201.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N201.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N201.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-N202: Internet Technology and Web Design (Practical)

Time: 3 Hrs. Total Marks: 50
Credits: 2 Practical: 25
Internal Assessment: 25

Course Objectives: This course is designed for practical understanding of static website making and creating software application tools like lists, tables, hyperlinks etc. using html tags.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-N202.1: Insert graphic elements within a webpage.
B-MMT-N202.2: Create a link/hyperlink with in a webpage.
B-MMT-N202.3: Insert table, headings, ordered list, unordered list with in a
B-MMT-N202.4: Use Cascading style sheet (CSS) with in a web page.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Introduction to HTML. Create a basic HTML file
Create a static web page which defines all text formatting tags of HTML
Create a Time table using table tags of HTML
Create webpage using list tags of HTML(ordered, unordered, definition list)
Create webpage to include image using HTML tag
Create link using HTML tag
Create a layout of webpage using HTML tag
Create employee registration form using HTML tag
Apply style sheet in Web page (inline, embedded and link)
Create a static website using HTML tags according to their own interest

B-MMT-N202: Internet Technology and Web Design (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-N202.1	3	3	3	3	3	3	3	3
B-MMT-N202.2	3	3	3	3	3	3	3	3
B-MMT-N202.3	3	3	3	3	3	3	3	3
B-MMT-N202.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-N202.1	3	3	3	3	3
B-MMT-N202.2	3	3	3	3	3
B-MMT-N202.3	3	3	3	3	3
B-MMT-N202.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-N202.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N202.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N202.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N202.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-N203: Graphic Design & DTP (Theory)

Time:3 Hrs. Total Marks: 100
Credits: 4 Theory: 50
Internal assessment: 50

Course Objectives: This course is designed for thorough understanding of computer graphic designing software concepts and their user interface and for learning the graphic tools using that interface.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-N203.1: Understand the basic concepts of graphic elements
B-MMT-N203.2: Know the functioning of basic colour aesthetics
B-MMT-N203.3: : Develop the capacities to elaborate the process of graphic design
B-MMT-N203.4: Develop ability to merge and design text and images for publishing various desktop publishing modules.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction to graphics, tools of graphics
Uses & Types of graphics, Presentation graphics
Elements and principles of graphic design
Study of vector images- its advantage and application areas,
Difference between vector and raster images

Unit-II

Introduction to Photoshop workspace, tools and menus
Layers and blending modes
Color theory; saturation, tint, shades, tones, hue
Color modes, colour palette, editing a Swatch, using patterns, colour wheel

Unit-III

Introduction to Logo: types, elements and purpose of logo
Process of logo designing
Introduction to poster and types
Page layout and page design
Designing Pamphlets, ad banners, photo collage

Unit-IV

Introduction to desktop publishing (DTP)
Hardware requirements
Desktop Publishing Softwares
Publication media, E-books and digital library management

Publishing as a business, Economics of E-Publishing

References:

- Computer Graphics, C Version **By Hearn & Becker, Pearson Education, India**
- Computer Graphics by Sinha & Udai, Tata McGraw Hill, India
- Fundamentals of Computer Graphics **By Peter Shirley, Michael Ashikhmin, Steve Marschner, CRC Press**
- Fundamentals of Computer Graphics And Multimedia **by D. P. Mukherjee,** PHI Learning Pvt. Ltd.
- Graphic Designers : Occupational Outlook Handbook:U.S. Bureau of Labor Statistics
- *Sarkar, N.N.*; Art and Print Production; Oxford University Press;2013.
- Eckhardt, C. Robert, Weibel Bob and Nace, Ted *Desktop Publishing Secrets,* Peachpit Press Berkeley, California, 1992.
- *Bear, Jacci Howard*. "What's Involved in Desktop Publishing?". *Lifewire*. Retrieved 2019-05-02.
- *Amanda Presley* (2010-01-28). "What Distinguishes Desktop Publishing From Word Processing?". *Bright Hub*. Retrieved 2019-05-02
- *Ruiter, Maurice M. de* (1988-04-29). *Advances in Computer Graphics III*. Springer Science & Business Media. ISBN 9783540187882

B-MMT-N203: Graphic Design & DTP (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-N203.1	3	3	3	3	3	3	3	3
B-MMT-N203.2	3	3	3	3	3	3	3	3
B-MMT-N203.3	3	3	3	3	3	3	3	3
B-MMT-N203.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-N203.1	3	3	3	3	3
B-MMT-N203.2	3	3	3	3	3
B-MMT-N203.3	3	3	3	3	3
B-MMT-N203.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-N203.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N203.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N203.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N203.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-N204: Graphics Design & DTP (Practical)

Time:3 Hrs. Total Marks: 50
Credits: 2 Practical: 25
Internal Assessment: 25

Course Objectives: This course is designed for practical understanding of graphic designing and menus, tools and its applications and production formats.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-N204.1: Make use of graphic elements
B-MMT-N204.2: Demonstrate the concept of image retouching, smoothing.
B-MMT-N204.3: Design ad banners for websites and digital campaigning banners.
B-MMT-N204.4:Design various desktop publishing elements such as logos, newsletters, pamphlets, calendars, book and magazine covers etc.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Selection and cutting of objects
Creating backgrounds and textures
Image retouching, Smoothing skin & wrinkles
Photo Manipulation
Working with texts and paragraph styles
Creating of logo
Working with colours
Designing ad banners for websites
Creating digital campaigning banners
To create a newspaper page in page design software
To create a magazine cover using page designing software
To create a flex banner advertisement
To edit the image using layers
To retouch and refurnish the image files
To study the paper selection for print outputs
To create a graphic ad banner for a portal

B-MMT-N204: Graphic Design (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-N204.1	3	3	3	3	3	3	3	3
B-MMT-N204.2	3	3	3	3	3	3	3	3
B-MMT-N204.3	3	3	3	3	3	3	3	3
B-MMT-N204.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-N204.1	3	3	3	3	3
B-MMT-N204.2	3	3	3	3	3
B-MMT-N204.3	3	3	3	3	3
B-MMT-N204.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-N204.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N204.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N204.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N204.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-N205: Basics of Animation (Theory)

Time: 3 Hrs. Total Marks: 150
Credits: 6 Theory: 75
Internal assessment: 75

Course Objectives: This course is designed to teach the students very fundamentals of Animation. They will get to learn all the principles which will help them to learn and understand how actual animation works

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-N205.1: Familiarize with various approaches, methods and techniques of Animation Technology.
B-MMT-N205.2: Explore different approaches in computer animation.
B-MMT-N205.3:Get knowledge about Flipbook, Storyboarding.
B-MMT-N205.4: Get knowledge about production stages of animation.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction to Animation
Definition and types of animation
Terms used in animation
Overview of animation Film History: Earlier stage and Modern Era
Indian Animation Industry

Unit-II

Basic Principles of animation
Role of computer in animation
Animation production process: preproduction stage,
Production and post-production stage.

Unit-III

Story writing/script writing
Model sheets and its types
Flipbook animation
Storyboard and types of Storyboard

Unit-IV

Keyframes ,Inbetweens –cleanups
Layouts and backgrounds,Illustrations
X-sheets,Animatics
Sound mixing, special effects, rendering

B-MMT-N205: Basics of Animation (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-N205.1	3	3	3	3	3	3	3	3
B-MMT-N205.2	3	3	3	3	3	3	3	3
B-MMT-N205.3	3	3	3	3	3	3	3	3
B-MMT-N205.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO 5
B-MMT-N205.1	3	3	3	3	3
B-MMT-N205.2	3	3	3	3	3
B-MMT-N205.3	3	3	3	3	3
B-MMT-N205.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-N205.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N205.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N205.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N205.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-N206: Human values and Ethics

Time:2 Hrs. Total Marks: 50
Credits: 2 Theory: 25
Contact hours per week: 2 Internal Assessment: 25

Course Objectives: This paper will help the learners to understand the need and significance of human values and ethics in their life.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-JMC-N207.1: correlate the need of human values to sustained happiness and prosperity- the core aspirations of human beings.
B-JMC-N207.2 : express the knowledge of human values and analyse their importance in holistic perspective for a peaceful world.

Unit -1

Human Values: Meaning and Definitions

(a) Understanding the need of human values and value education. Self-exploration, Concept of happiness and prosperity. Right understanding, understanding body as an instrument of I, Living in harmony, reaching highest potential in digital age through care & empathy balancing interests and expectations.

(b) Basic human values: Honesty, kindness, integrity, courage, co-operation, commitment, cleanliness, spirituality, understanding duties & rights.

Unit-II

Life Values and universal ethics

(a) Life Values:- Understanding of harmony in yourself family: Trust and respect, society; Co-existence & unity in diversity Nature mutually interacting units and universe.

(b) Universal Ethics-Loyalty, respect for others, adherence to the law, doing good and avoiding harm to other, accountability, sensitive towards environment. Transparency, impartiality and objectivity.

Suggested Books:-

1) Ethics. Integrity and Aptitute (3rd Edition)- M. Karthikeyan Pub: McGraw Hill,
2) A foundation course in Human Values and Professional Ethics- RR Gaur. R Sangal. GP Bagaria Pub: abe books
3) Ebook-lg- UGC (26-11-2019)

   PDF- Human Value www.uge.ac.in (available on UGC Website)
4) Patanjala Yoga Sutra- Samadhi Pada

B-MMT-N206: Human values and Ethics

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-N206.1	3	3	3	3	3	3	3	3
B-MMT-N206.2	3	3	3	3	3	3	3	3
B-MMT-N206.3	3	3	3	3	3	3	3	3
B-MMT-N206.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-N206.1	3	3	3	3	3
B-MMT-N206.2	3	3	3	3	3
B-MMT-N206.3	3	3	3	3	3
B-MMT-N206.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-N206.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N206.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N206.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-N206.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

Scheme of Examination of B.Sc. (Multimedia) for 5th& 6th Semester under CBCS/LOCF for Institute of Mass Communication & Media Technology (IMC&MT, KUK) in phased manner w.e.f. Academic Session2020-21.

Semester-V

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
B-MMT-501 (a)	Interactive Courseware Designing OR Information Security	DSE-1	5	1	-	6	6	6	120	-	30	150	3 Hours
B-MMT-501(b)			5	1	-	6	6		120	-	30	150	3 Hours
B-MMT-502(a)	Communication Technologies OR Lighting Techniques	DSE-2	5	1	-	6	6	6	120	-	30	150	3 Hours
B-MMT-502 (b)			5	1	-	6	6		120	-	30	150	3 Hours
B-MMT-503 (a)	Mobile Computing OR Social Media Marketing	DSE-3	5	1	-	6	6	6	120	-	30	150	3 Hours
B-MMT-503 (b)			5	1	-	6	6		120	-	30	150	3 Hours
B-MMT-504	SFX and VFX (Theory)	SEC-3	1	-	-	1	1	2	20	-	5	25	2 Hours
B-MMT-505	SFX and VFX (Practical)		-	-	1	2	1		-	20	5	25	2 Hours
B-MMT-506	*Internship Report							2				50	
Total Credits								**22**	**Total Marks**			**550**	

Semester-VI

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
B-MMT-601 (a)	Multimedia Management and Research OR	DSE-4	5	1	-	6	6	6	120	-	30	150	3 Hours
B-MMT-601 (b)	Organization Portfolio		5	1	-	6	6		120	-	30	150	3 Hours
B-MMT-602 (a)	3D Animation (Theory)	DSE-5	4	-	-	4	4	6	80	-	20	100	3 Hours
B-MMT-603	3D Animation (Practical) OR		-	-	2	4	2		-	40	10	50	3 Hours
B-MMT-602 (b)	Web Technologies		5	1	-	6	6		120	-	30	150	3 Hours
B-MMT-604 (Optional)	**Project**	DSE-6**	-	-	-	6	6	6	-	120	30	150	3 Hours
B-MMT-604 (i)	Web Production(Multimedia Website)												
B-MMT-604 (ii)	Advertisement Production(ad campaign)												
B-MMT-604 (iii)	Animation production(Animation Film)												
B-MMT-604(iv)	Video production (Short Film)												
B-MMT-605	Entrepreneurship (Theory)	SEC-4	1	-	-	1	1	2	-	20	5	25	2 Hours
B-MM9T-606	Entrepreneurship (Practical)		-	-	1	2	1		20	-	5	25	2hours
Total Credits								**20**	**Total Marks**			**500**	

*Students have to complete the internship of four to six weeks after the examination of 4th semester and submit the report of internship in the commencement of 5th semester. The report submitted by the students will be evaluated by the teacher appointed by the Director and a viva-voce will be conducted during practical examination.

**Viva -Voceof DSE-6 (Project)isto beevaluatedbyapanelofthreeexaminerstobe appointed by the Director of the institute and it is to be submitted to the institute by thestudent20days priortothetheoryexaminationof thesemesterinwhich theReportissupposedtobesubmitted.

B-MMT- 501 (a) : Interactive Courseware Designing

Time:3 Hrs.
Credits: 6

Total Marks: 150
Theory: 120
Internal Assessment: 30

Course Objectives: This course is design to make students capable to create educational communication software tools for the future e-learning days using learning models and multimedia tools.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT 501 (a).1: Understand the learning principles.
B-MMT 501 (a).2: Study the learning models for courseware designing.
B-MMT 501 (a).3: Learn the design process of courseware content for e-learning.
B-MMT 501 (a).4: Evaluate the courseware content and learning system.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Coursework – introduction need and Structure
Components of multimedia Instructional materialDale'sCone of Learning
Principles,methodsandtypesoflearning
ADDIEModel&Process

UnitII

Coursewaredesignknowledgeandskills
Selectingsubjectsforthe interactivecourseware
PreparingsynopsisforacoursewareSequencingoflearningpoints
Roleandresponsibilitiesofteammembers

UnitIII

Courseware development life cycle
Hypermediaauthoringandpublishing
Adding audio-visual contents
Creating self check exercises
Evaluatingthe qualityofCourseware

UnitIV

Features of Smart Classroom
Computer aided learning-process, types, pros and cons
Future of computer aided learning :ICT, m-learning, flipped learning, virtual university
Learning Management System(LMS): Moodles, clickers, Massive Open online Course(MOOCs)

References:

- InteractiveMultimediainEducationandTrainingeditedbySanjayaMishra,RameshC.Sharma;IdeaGroupInc (IGI).Copyright.
- e-LearningbyDesignby WilliamHorton;JohnWiley&Sons.Copyright.
- How to Plan and Manage an E-learning Programme by Roger Lewis, Quentin A. Whitlock;GowerPublishing,Ltd.. Copyright.
- Integrated E-Learning: Implications for Pedagogy, Technology and Organization edited byWimJochems,RobKoper,JeroenVanMerrienboer;Routledge.Copyright.
- The Design and Production of Self-instructional Materials by Fred Lockwood; PsychologyPress.Copyright.

B-MMT- 501 (a): Interactive Courseware Designing

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-501 (a).1	3	3	3	3	3	3	3	3
B-MMT-501 (a).2	3	3	3	3	3	3	3	3
B-MMT-501 (a).3	3	3	3	3	3	3	3	3
B-MMT-501 (a).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-501 (a).1	3	3	3	3	3
B-MMT-501 (a).2	3	3	3	3	3
B-MMT-501 (a).3	3	3	3	3	3
B-MMT-501 (a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-501 (a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-501 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-501 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-501 (a).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-501 (b) : Information Security

Time: 3 Hrs.
Credits: 6

Total Marks: 150
Theory: 120
Internal Assessment: 30

Course Objectives: The objective of this course is to secure the privacy, authentication integration, validation and rights of the information that will be used for major multimedia application areas.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-501 (b).1: Define what information is and appreciate the value of information .
B-MMT-501 (b).2: Understand the CIA triad of Confidentiality, Integrity and Availability
B-MMT-501 (b).3:Analyze and resolve security issues in networks and computer systems
B-MMT-501 (b).4 Understanding of security, cryptography, system attacks and defences against them.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction: Basicconcepts:threats,vulnerabilities,controls;risk;confidentiality,integrity,availability;securitypolicies,securitymechanisms;assurance;prevention,detection,deterrence

Basic cryptography: Basic cryptographic terms, Historical background, Symmetric cryptoprimitives,Modesofoperation,Cryptographichashfunctions,Asymmetriccryptoprimitives

Unit-II

Program security: Flaws: Malicious code: viruses, Trojan horses, worms; Program flaws:bufferoverflows,time-of-checktotime-of-useflaws,incompletemediation;Defenses:Softwaredevelopmentcontrols,testingtechniques

Securityinconventionaloperatingsystems: Memory,time,file,objectprotectionrequirementsandtechniques,Protectionincontemporaryoperatingsystems

Unit-III

Identificationandauthentication: Identificationgoals,Authenticationrequirements,Humanauthentication,Machineauthentication

Trustedoperatingsystems:Assurance,trust,designprinciples,evaluation,criteria,Evaluationprocess

Databasemanagementsystemssecurity: Databaseintegrity,Databasesecrecy,Inferencecontrol,multileveldatabases

Unit-IV

Networksecurity: Networkthreats:eavesdropping,spoofing,modification,denialofserviceattacks;Introductiontonetworksecuritytechniques:firewalls,virtualprivatenetworks,intrusiondetection,

Managementofsecurity: Securitypolicies,Riskanalysis,Physicalthreatsandcontrols Legalaspectsofsecurity,Privacyandethics

References:

- InformationSecurity:TheCompleteReference,SecondEdition;MarkRhodes-OusleyMcGrawHillProfessional,03-Apr-2013
- Fundamentals of Information Security: A Complete Go-to Guide for Beginners to Understand All the Aspects of Information Security by Sanil Nadkarni
- INFORMATION SECURITY (English, Paperback, Dr. Bhavana S. Karmore)
- Information Security by Pankaj Sharma, S.K. Kataria & Sons

B-MMT-501 (b): Information Security

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-501 (b).1	3	3	3	3	3	3	3	3
B-MMT-501 (b).2	3	3	3	3	3	3	3	3
B-MMT-501 (b).3	3	3	3	3	3	3	3	3
B-MMT-501 (b).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-501 (b).1	3	3	3	3	3
B-MMT-501 (b).2	3	3	3	3	3
B-MMT-501 (b).3	3	3	3	3	3
B-MMT-501 (b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-501 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-501 (b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-501 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-501 (b).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-502 (a): Communication Technologies

Time: 3 Hrs.
Credits: 6

Total Marks: 150
Theory: 120
Internal Assessment: 30

Course Objectives: This course will enable the knowledge of orthodox communicational technologies as well as current trending communication devices and techniques which will be responsible for multimedia communication.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-502 (a).1:Compare the emergence, diffusion, and evolution of communication technologies.
B-MMT-502 (a).2: Learn various TV standards and Radio frequency.
B-MMT-502 (a).3: Evaluate the characteristics of current communication technologies.
B-MMT-502 (a).4 Learn about the satellite broadcasting.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Briefintroductiontomasscommunicationtechnologies:
Printing,Photography,Audiography, Videography, Cinematography
Communicationsatellites: types,structure and functioning
Theprocessofradio,televisionandwebbroadcasting

Unit-II

WirelessNetworks:WirelessNetworkArchitecture,wirelessswitching techniques,
WirelessCommunicationproblem,wirelessnetworkreferencemodel
Wireless networking issues & standards
Bluetooth:UserScenarios,Architecture

Unit III

Radiobandsandfrequencies
Satellite radio and web radio
InfraredVsradiotransmission
InfrastructureandAd-hocNetwork

Unit IV

Television standards: NTSC, PAL and SECAM
Interactive television,HDTV, IPTV,
Displaytechnology:CRT, plasma, LCD&LED,
DirecttoHome (DTH), Fiberoptics

References:

- Communication Technology **By Everett M. Rogers**
- **Communication and Educational Technology, by Sharma Suresh**
- Information and Communication Technologies and Real-Life Learning:**by Arthur Tatnall**
- Communication systems by Sanjay Sharma

B-MMT-502 (a): Communication Technologies

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-502 (a).1	3	3	3	3	3	3	3	3
B-MMT-502 (a).2	3	3	3	3	3	3	3	3
B-MMT-502 (a).3	3	3	3	3	3	3	3	3
B-MMT-502 (a).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-502 (a).1	3	3	3	3	3
B-MMT-502 (a).2	3	3	3	3	3
B-MMT-502 (a).3	3	3	3	3	3
B-MMT-502 (a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-502 (a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-502 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-502 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-502 (a).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-502 (b): Lighting Techniques

Time:3 Hrs.
Credits: 6

Total Marks: 150
Theory: 120
Internal Assessment: 30

Course Objectives: This course is design to deliver knowledge of a very important aspect of video production and animation i.e lighting, through the demonstration and working of various lighting equipments.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-502(b).1: Learn the importance of light and different types of light.
B-MMT-502(b).2: Describe the various lighting techniques.
B-MMT-502(b).3: Explain the lighting equipments.
B-MMT-502(b).4 Learn about different lighting techniques used in film and TV industry.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction to lights and define different types of light
Introduction to Lighting Techniques
Lighting controls and functions, Principles of three-point lighting

Unit-II

Lighting Theories and Techniques, Discuss about Light Source, Light Source Intensity, Light Quality, Hard Light and Soft Light, Key Light, Color Effects, Fill Lights, Background Light, Separation Lights.

Unit- III

Introduction to lighting equipment, handling and safety, Redheads, Dedo, Fluoro bank.
Low-Intensity Reflections, the Gradational Reflection, Skimmed Reflections, the Apex Reflection, Foreground Reflections, Colored Reflectors, Shadows, Theory of 3-dimensional contrast,
Elements of 3-dimensional contrast

Unit –IV

Specialized lighting in Fashion Photography, Studio Portrait Photography, Film and TV
Use of diffusers and filters, camera control and Lighting
Creating perspective and depth through lighting, Continuity of lighting
Hands on lighting exercises and Creating Lighting effects

References:

- The architecture of light: architectural lighting design concepts and techniques. A textbook of procedures and practices for the architect, interior designer and lighting designer; Sage Russell, 337 Pages · 2012
- Set Lighting Technician's Handbook: Film Lighting Equipment, Practice, and Electrical Distribution; by Harry Box; Focal Press; 585 Pages; 2003
- Stage Lighting Technician Handbook; 207 Pages · 2005
- Lights, Camera, Capture: Creative Lighting Techniques for Digital Photographers; by Bob Davis;243 Pages · 2010
- Lighting for Animation: The Art of Visual Storytelling; by Jasmine Katatikarn & Michael Tanzillo; 273 Pages · 2016

B-MMT- 502: Lighting Techniques

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-502(b).1	3	3	3	3	3	3	3	3
B-MMT-502(b).2	3	3	3	3	3	3	3	3
B-MMT-502(b).3	3	3	3	3	3	3	3	3
B-MMT-502(b).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-502(b).1	3	3	3	3	3
B-MMT-502(b).2	3	3	3	3	3
B-MMT-502(b).3	3	3	3	3	3
B-MMT-502(b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-502(b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-502(b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-502(b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-502(b).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-503 (a): Mobile Computing

Time:3 Hrs.
Credits: 6

Total Marks: 150
Theory: 120
Internal Assessment: 30

Course Objectives: This course is designed to develop the understanding of the ways that mobile technologies can be used for teaching and learning. They will also consider the impact of mobile computing on the field of education.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-503 (a).1: Explain the basics of mobile Computing.
B-MMT-503 (a).2: Describe the functionality of Mobile IP and Transport Layer
B-MMT-503 (a).3: Classify different types of mobile telecommunication systems
B-MMT-503 (a).4 Understand IP and TCP layers of Mobile Communication.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Mobile Computing: Mobile communication, Mobile computing, Mobile computing architecture, Mobile Devices, Mobile System Networks, Mobility Management

Unit-II

Global Systems for Mobile Communications (GSM): Mobile Services, System architecture, Protocols, Localization & Calling, Handover, Security. GPRS: GPRS System Architecture, UMTS: UMTS System Architecture. LTE: Long Term Evolution

Unit-III

Mobile IP: Goals, Assumptions, Entities and Terminology, IP Packet Delivery, Agent Discovery, Registration, Tunneling and Encapsulation, Optimizations, Dynamic Host Configuration Protocol (DHCP)

Unit-IV

Mobile Transport Layer: Traditional TCP, Indirect TCP, Snooping TCP, Mobile TCP, Fast retransmit/fast recovery, Transmission /time-out freezing, Selective retransmission, Transaction oriented TCP, TCP over 2.5G/3G Wireless Networks.

References:

- AsokeKTalukder,etal,"MobileComputing",TataMcGrawHill,2008.
- MatthewS.Gast,"802.11WirelessNetworks",SPDO'Reilly.
- IvanStojmenovic,"HandbookofWirelessNetworksandMobileComputing",Wiley,2007.
- KumkumGarg,"MobileComputing",Pearson.
- HandbookofSecurityofNetworks,YangXiao,FrankHLi,HuiChen,WorldScientific,2011.

B-MMT-503 (a): Mobile Computing

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-503 (a).1	3	3	3	3	3	3	3	3
B-MMT-503 (a).2	3	3	3	3	3	3	3	3
B-MMT-503 (a).3	3	3	3	3	3	3	3	3
B-MMT-503 (a).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-503 (a).1	3	3	3	3	3
B-MMT-503 (a).2	3	3	3	3	3
B-MMT-503 (a).3	3	3	3	3	3
B-MMT-503 (a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-503 (a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-503 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-503 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-503 (a).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-503 (b): Social Media Marketing

Time:3 Hrs. Total Marks: 150
Credit:6 Theory: 120
Internal Assessment: 30

Course Objectives: This course is designed to develop an overall understanding of digital marketing / online marketing platforms, mainly web analytics, social media tools, marketing through search engines, search engine optimization, email marketing.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-503 (b).1: Understand the basic fundamentals of digital marketing
B-MMT-503 (b).2: Understand the role of web media and search engines in marketing.
B-MMT-503 (b).3: Implement the SEO and social media marketing.
B-MMT-503 (b).4 Develop and execute a marketing plan, incorporating all elements of the marketing mix.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction to digital marketing
Planning and creating a website
Domain registration and hosting
Creation of pages and menu
Blog page design
Difference between post and pages

Unit-II

Introduction to SEO
On-page SEO Vs Off-page SEO
Use of keywords
Keywords research and planning
Site map, Social bookmarking

Unit-III

Social Media Optimization
Social media marketing and tools
Use of different social media platforms
Blogging
Video creation and sharing
Content creation

Unit-IV

Web Analytics
Google AdSense
Google Adwords
E-mail marketing
Facebook marketing
Twitter marketing
Youtube marketing

References:

- Social Media Marketing (English, Paperback, Williams Richard)
- Social Media Marketing Step By Step Instructions For Advertising Your Business On Facebook by Noah Gray , Pluto King Publishing
- Digital Marketing Essentials You Always Wanted to Know Paperback by Vibrant Publishers
- Social Media Marketing (Paperback) By: Liana Li Evans Publisher: Pearson Education

B-MMT- 503 (b): Social Media Marketing

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-503 (b).1	3	3	3	3	3	3	3	3
B-MMT-503 (b).2	3	3	3	3	3	3	3	3
B-MMT-503 (b).3	3	3	3	3	3	3	3	3
B-MMT-503 (b).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-503 (b).1	3	3	3	3	3
B-MMT-503 (b).2	3	3	3	3	3
B-MMT-503 (b).3	3	3	3	3	3
B-MMT-503 (b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-503 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-503 (b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-503 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-501 (b).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-504: SFX and VFX (Theory)

Time: 2 Hrs. Total Marks: 25
Credits: 1 Theory: 20
Internal assessment: 5

Course Objectives: This course will develop the creativity level to design and furnish the post-production stage of audio-video production with the addition of several special effects using audio and video effects software.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-504.1: Understand the sound fundamentals and visual tools.
B-MMT-504.2: Learn how to plan and visualize a special effect in sound and video.
B-MMT-504.3: Develop basic skills in the creation of special effects make-up.
B-MMT-504.4: Produce creative and technical skills in various domains of cinema, gaming, vfx and multimedia.

Note:- The question paper will be divided into three Units containing five questions. Students are required to attempt three questions in all. There will be two questions in Unit I & II. The students are required to attempt one question each from Unit I & II. Each question will carry 5 marks. Unit-III will have only one Compulsory question of 10 marks containing six short notes covering the entire syllabus and students are required to attempt any five.

Unit I

Audio and Acoustics Fundamentals, Digital Recording and Editing Systems; Mixing, metering and signal levels, Signal Processing and Effects, Digital Audio Interfaces and Networking; MIDI and Musical Instrument Control; Synchronization
Creating seamless audio loops; Equalization: Meaning, Types & Process; Filters: Meaning & Types; Process of Voice Over, Dubbing

Unit II

Introduction to VFX, Use of VFX, Importance of VFX, Feature of VFX
After effects : Workspace of After Effect, Tools and Menu, Tracking (Motion tracking with one point and multiple point tracking of a live footage), Over view to user interface of after effects, Lighting in after effects; Keying, keying with the use of plugging, Chroma Keying, Stabilize, Particle, Colour Correction, Morphing, Wire Removing, Rotoscoping, Motion graphics, Texturing and rendering

Reference:

1. Sound Design: The Expressive Power of Music, Voice and Sound Effects in Cinema, by David Sonnenschein; Wiese, Michael Productions; ISBN-10: 0941188264, ISBN-13: 9780941188265;10/25/2001
2. Sound and Recording- Applications and Theory, *By Francis Rumsey*, Copyright Year 2021; ISBN 9780367553029, Published July 30, 2021 by Routledge, 618 Pages 423 B/W Illustrations
3. VFX Fundamentals (English, Paperback, Jackson Wallace)
4. Why I Do VFX: The Untold Truths About Working in Visual Effects :by Vicki Lau
5. VFX Fundamentals Visual Special Effects Using Fusion 8.0 2016 Edition by Wallace Jackson , Apress
6. VFX: How They Do It: by Abhishek Kange
7. The Visual Effects Producer (English, Paperback, Finance Charles)

B-MMT 504: SFX and VFX (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-504.1	3	3	3	3	3	3	3	3
B-MMT-504.2	3	3	3	3	3	3	3	3
B-MMT-504.3	3	3	3	3	3	3	3	3
B-MMT-504.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-504.1	3	3	3	3	3
B-MMT-504.2	3	3	3	3	3
B-MMT-504.3	3	3	3	3	3
B-MMT-504.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-504.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-504.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-504.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-504.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-505: SFX and VFX (Practical)

Time: 2 Hrs. Total Marks: 25

Credits: 1 Practical: 20

Internal assessment: 5

Course Objectives: This course will develop the practical skills to apply the sound effects as well as video effects during the post production stage of films and animation movie.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-505.1: Perform the process of sound creation, mixing, synchronization.
B-MMT-505.2: Applying filters and effects using appropriate audio software
B-MMT-505.3: Carry out industry oriented new technologies and new trends in animation and graphics.
B-MMT-505.4: Apply technical knowledge and methodologies from animation software in order to conduct research in various fields of 3d animation and vfx simulations.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
1. Video shooting, practicing the craft of film making
2. Editing of video clippings and footage by using Adobe Premiere and Adobe After Effects
3. Addition of captions, sequence, titles, audio timeline
4. Refining sequence, practice with transition
5. Saving in different video formats
6. Creating and using compositions, applying special effect.
7. Practice on Animate transformations, rotoscoping
8. Recording voice-overs, editing and mixing sound
9. Creating audio loops
10. Applying audio filters and sound effects

B-MMT-505: SFX and VFX (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-505.1	3	3	3	3	3	3	3	3
B-MMT-505.2	3	3	3	3	3	3	3	3
B-MMT-505.3	3	3	3	3	3	3	3	3
B-MMT-505.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-505.1	3	3	3	3	3
B-MMT-505.2	3	3	3	3	3
B-MMT-505.3	3	3	3	3	3
B-MMT-505.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-505.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-505.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-505.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-505.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-506: Internship Report

Credits: 2 Total Marks: 50

*Students have to complete the internship of four to six weeks after the examination of 4th semester and submit the report of internship in the commencement of 5th semester. The report submitted by the students will be evaluated by the teacher appointed by the Director and a viva-voce will be conducted during practical examination.

B-MMT-601 (a): Multimedia Management and Research

Time:3 Hrs. Total Marks: 150
Credit:6 Theory: 120
Internal Assessment: 30

Course Objectives:

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-601 (a).1: Understand the basic fundamentals of marketing
B-MMT-601 (a).2: learn the new trends of multimedia marketing
B-MMT-601 (a).3: understand the product life cycle and branding methods
B-MMT-601 (a).4: learn about the multimedia research process, methods and strategies.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit I

Marketing: meaning and scope, concept of multimedia marketing, tools and elements of multimedia marketing, benefits of multimedia marketing, multimedia marketing environment, marketing ethics

Unit II

New trends in marketing: globalization and consumerism, green marketing, direct marketing, network marketing, event marketing.
Product decisions: new product development, product mix, product life cycle, branding and packaging; pricing methods and strategies
Promotion decisions: promotion mix, advertising, sales promotion, publicity and personal selling

Unit III

Research: meaning, objective and types
Introduction to various research approaches
Significance of research, elements of good research

Unit IV

Research process: define research problem, research design,
Research methodologies: survey method, content analysis, case studies
Methods of data collection, processing and analyzing the data
Uses of research in multimedia production

Reference:

- Multimedia Marketing for Design Firms, Curtis B. Charles, Karen M. Brown, Good B; Publisher : New York: John Wiley and Sons, 1996; ISBN: 094711460999
- Online Multimedia Advertising: Techniques and Technologies; Xian-Sheng Hua, A. Hanjalic, Tao Mei; IGI Global, 31-Dec-2010 - Computers - 352 pages
- Making Money With Multimedia, by Rosen; Addison Wesley; 8 March 1995; ISBN-10: 0201822830, ISBN-13: 978-0201822830; 216 pages
- The multimedia marketing experience; by Gillian Roberts; Glasgow Caledonian University, Dept. of Learning & Educational Development (January 1, 2001); ISBN-10 : : 1903661153, ISBN-13-978 1903661154; 20 pages
- Research Methodology : Methods And Techniques; C.R. Kothari andGaurav Garg; ISBN-10: 9386649225, ISBN-13: 978-9386649225; Fourth Edition; New Age International Publishers
- Media Research Methods - Understanding Metric and Interpretive Approaches; James A. Anderson - University of Utah, USA; June 2013; 464 pages; SAGE Publications, Inc.
- Frontiers of Multimedia Research; Shih-Fu Chang; Morgan & Claypool Publishers; □ ISBN-10 : 1970001046,ISBN-13 : 978-1970001044; Paperback – Import, 3 January 2018

B-MMT- 601 (a): Multimedia Management and Research

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-601 (a).1	3	3	3	3	3	3	3	3
B-MMT-601 (a).2	3	3	3	3	3	3	3	3
B-MMT-601 (a).3	3	3	3	3	3	3	3	3
B-MMT-601 (a).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-601 (a).1	3	3	3	3	3
B-MMT-601 (a).2	3	3	3	3	3
B-MMT-601 (a).3	3	3	3	3	3
B-MMT-601 (a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-601 (a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-601 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-601 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-601 (a).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-601 (b): Organization Portfolio

Time: 3 Hrs. Total Marks: 150
Credit: 6 Theory: 120
Internal Assessment: 30

Course Objectives: This course is designed for students to showcase their artifacts so that they can present themselves in front of the employer.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-601 (b).1: Define use of portfolio in marketing.
B-MMT-601 (b).2: Understand the use of multimedia in portfolio development
B-MMT-601 (b).3: create learning points for the portfolio designing
B-MMT-601 (b).4: Learn industry based standards and skills

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit-I

Introduction to Portfolio: Identification of definition and purposes
Making a conceptual framework Portfolio process and
Utilization Portfolio assessment process
Steps of development: plan, gather artifacts, update references, creating support material, assembling portfolio, and use in interviews

Unit-II

Electronic portfolio development
Benefits of an electronic portfolio
Designing an electronic portfolio
Portfolio designing software
Portfolio websites

Unit-III

Identifying types of learning
Gathering of supporting documentation
Portfolio building and submission
Portfolio evaluation

Unit-IV

Use of a portfolio in the graphic arts
Industry Preparation and presentation techniques
Industry standards for portfolios Time management and multitasking
Diversity of media

References

- Herbert, E. (2001). The power of portfolios: what children have taught us about learning and assessment. San Francisco: Jossey-Bass.
- Williams, A. G. & Hall, K. J. (2001). Creating your career portfolio: at a glance guide for students. New Jersey: Prentice-Hall, Inc.
- Williams, A. G., Hall, K. J., Shadix, K., & Stokes, D.M. (2005). Creating your career portfolio: at a glance guide for dietitians. New Jersey: Pearson Education, Inc.

B-MMT-601 (b): Organization Portfolio

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-601 (b).1	3	3	3	3	3	3	3	3
B-MMT-601 (b).2	3	3	3	3	3	3	3	3
B-MMT-601 (b).3	3	3	3	3	3	3	3	3
B-MMT-601 (b).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-601 (b).1	3	3	3	3	3
B-MMT-601 (b).2	3	3	3	3	3
B-MMT-601 (b).3	3	3	3	3	3
B-MMT-601 (b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-601 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-601 (b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-601 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-601 (b).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-602 (a): 3D Animation (Theory)

Time:3 Hrs. Total Marks: 100
Credit:4 Theory: 80
Internal Assessment: 20

Course Objectives: The course provides students the fundamental skills to animate effectively with simple objects and characters necessary for work in 3D Animation

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-602 (a).1: Develop their skills using key-frame animation and the graph editor.
B-MMT-602 (a).2:Learn tools and techniques of character and hard body modelling with Maya.
B-MMT-602 (a).3:Execute creative concepts and ideas through a variety and combination of techniques including hand drawn, computer generated, 2D and 3D storyboards and animatics.
B-MMT-602 (a).4: Apply 3D techniques that demonstrate characters with realistic motion and a full range of emotion in animated characters.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UnitI

- Introduction to Maya
- Maya user interface
- Difference between EP and CV curve tool
- Curve editing tools
- Types of surface(loft , revolve)

UNIT-II

- Basics of Modeling Nurbs modelling (chess board)
- Introduction to polygon modeling
- Simple objects(Props) modeling using polygons
- Sub div modeling

UNIT-III

- Polygon Modeling Architectural modeling
- Car modeling
- Face modeling
- Character modeling

UNIT-IV

- Texturing Introduction to hypershade
- Texturing and mapping
- UV mapping
- Lighting

References

- Understanding 3D Animation Using Maya; ISBN: 9780387269047, 0387269045;Publisher:Springer New York;Author:John Edgar Park
- 3D Animation for the Raw Beginner Using Maya;ISBN: 9781482249248, 1482249243;Publisher:CRC Press;Author:Roger King
- Getting Started in 3D with Maya Create a Project from Start to Finish—Model, Texture, Rig, Animate, and Render in Maya;ISBN:9781136147098, 1136147098;Publisher:CRC Press; Author:Adam Watkins
- Exploring 3D Modeling With Maya 7 2006 Edition by Patricia Beckmann, Scott Wells , Cengage

B-MMT- 602 (a): 3D Animation (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-602 (a).1	3	3	3	3	3	3	3	3
B-MMT-602 (a).2	3	3	3	3	3	3	3	3
B-MMT-602 (a).3	3	3	3	3	3	3	3	3
B-MMT-602 (a).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-602 (a).1	3	3	3	3	3
B-MMT-602 (a).2	3	3	3	3	3
B-MMT-602 (a).3	3	3	3	3	3
B-MMT-602 (a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-602 (a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-602 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-602 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-602 (a).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-603: 3D Animation (Practical)

Time:3 Hrs. Total Marks: 50
Credit:2 Practical: 40
Internal Assessment: 10

Course Objectives: The course provides students the fundamental skills to animate effectively with simple objects and characters necessary for work in 3D Animation

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT- 603.1: Develop their skills using key-frame animation and the graph editor.
B-MMT-603.2:Learn tools and techniques of character and hard body modelling with Maya.
B-MMT-603.3:Execute creative concepts and ideas through a variety and combination of techniques including hand drawn, computer generated, 2D and 3D storyboards and animatics.
B-MMT-603.4: Apply 3D techniques that demonstrate characters with realistic motion and a full range of emotion in animated characters.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva-voce.

List of Practical Exercises:
Object Modeling and Texturing
Environment and Scenes Modeling
Environment and Scenes Texturing
Human Body Parts Modeling and Texturing
Lower Body Modeling of Character
Upper Body Modeling of Character
Face and Head Modeling
Cloth and Hair Modeling
Skin Texturing
Concept Character Modeling

B-MMT- 603: 3D Animation (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-603.1	3	3	3	3	3	3	3	3
B-MMT-603.2	3	3	3	3	3	3	3	3
B-MMT-603.3	3	3	3	3	3	3	3	3
B-MMT-603.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-603.1	3	3	3	3	3
B-MMT-603.2	3	3	3	3	3
B-MMT-603.3	3	3	3	3	3
B-MMT-603.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-603.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-603.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-603.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-603.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-602 (b): Web Technologies

Time:3 Hrs. Total Marks: 150
Credit:6 Theory: 120
Internal Assessment: 30

Course Objectives: This course is based on the World Wide Web as a platform for interactive applications, content publishing and social services.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-602 (b).1: learn the website designing and development
B-MMT-602 (b).2: understand the semantic web concepts and techniques
B-MMT-602 (b).3: to learn the interactive online web content and applications
B-MMT-602 (b).4: understand the social media network concepts

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UnitI

Planning and designing a website, maintaining view state, connecting and hosting database,choosingawebserverforhosting,domainnameregistration,configurationandoptimizationsettings,promotionandmaintenanceofwebsite
UniformResourceLocators(URLs)&WebBrowsers

UnitII

SemanticWebapplicationsandservices,SemanticSearch,e-learning,SemanticBioinformatics,Knowledge Base, XML Based Web Services, Creating an OWL-S Ontology for Web Services,Semantic SearchTechnology,WebSearchAgents andSemantic Methods

Unit III

Webtechnologies:Terminology&Applications;ActiveXComponents,XML,Chatapplets,Ajax,Servlet,Java Beans,J2ME,SQL,Ftp
Android:IcecreamSandwich, JellybeanPeertoPeerandCloudNetwork

UnitIV

SocialNetworkAnalysis,developmentofthesocialnetworksanalysis,
Electronic Sources for Network Analysis – Electronic Discussion networks, Blogs and OnlineCommunities, Web Based Networks. Building Semantic Web Applications with social networkfeatures.

References:

1. SemanticWebTechnologies,TrendsandResearchinOntologyBasedSystems,J.Davies,R.Stu der,P.Warren,JohnWiley&Sons.
2. Semantic WebandSemanticWebServices-LiyangLu,ChapmanandHall/CRCPublishers,(Taylor&Francis Group)
3. InformationSharingonthesemanticWeb-HeinerStuckenschmidt;FrankVanHarmelen,SpringerPublications.
4. ProgrammingtheSemanticWeb,T.Segaran,C.Evans,J.Taylor,O'Reilly,SPD

B-MMT-603: Web Technologies

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-602 (b).1	3	3	3	3	3	3	3	3
B-MMT-602 (b).2	3	3	3	3	3	3	3	3
B-MMT-602 (b).3	3	3	3	3	3	3	3	3
B-MMT-602 (b).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-602 (b).1	3	3	3	3	3
B-MMT-602 (b).2	3	3	3	3	3
B-MMT-602 (b).3	3	3	3	3	3
B-MMT-602 (b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-602 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-602 (b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-602 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-602 (b).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-604: Major Project

Credit:6

Total Marks: 150
Practical: 120
Internal Assessment: 30

Rationale

The main idea behind Major Project is to document the experiences ofstudentsbeingateammemberofadesktoppublishing/graphicdesigning

/animation/audio-videoproduction/webdesigningprojectsinareallifeenvironmentsothats/hecouldlearn torecognizeallminorintricaciesofproduction work. Moreover she/he can produce and refer back to the report as andwhen it is needed. Nonetheless it would be helpful to authenticate the projects, hehascompleted.

Introduction

Each student shall be supposed to prepare a project report with CD/DVD (softcopy) content during the last semester of the course. The project work will bepurely practical work. This report will be prepared in accordance with the formatprovided by the institute. Report should be printed both side with hard bound.Report should contain minimum 40-50 pages of text, graphics, visuals etc. One ofthefollowingtopics willbe selectedforthe projectwork:

B-MMT-604(i) – 9Web Production (Multimedia Website)

B-MMT-604(ii)-AdvertisementProduction(AdCampaign)

B-MMT-604iii)-Animation Production (Animation Film)

B-MMT-604(iv)-VideoProduction(ShortFilm)

Process

Eachstudentwillwritehis/herreportaccordingtothefollowingformat:

- Idea/conceptoftheproject
- Treatment oftheproject
- Technicalequipmentused
- Workflowoftheproject
- Contributionofthe student
- Mainobservationsduringthetraining
- Keypointsoflearning

Evaluation andViva-Voce

During the specialization project, students will work under a supervisor to bedecided by the production house. In the end of the project, supervisor will sign thereport. As soon the project ends student will submit two copies of the report in theinstitute. The evaluation of the report will be done by the expert to bedecided by the Director of the institute. Apart from evaluation of report, examinerwillconductaviva-voceforjudging theknowledge ofstudent.

B-MMT-604: Major Project

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-604.1	3	3	3	3	3	3	3	3
B-MMT-604.2	3	3	3	3	3	3	3	3
B-MMT-604.3	3	3	3	3	3	3	3	3
B-MMT-604.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-604.1	3	3	3	3	3
B-MMT-604.2	3	3	3	3	3
B-MMT-604.3	3	3	3	3	3
B-MMT-604.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-604.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-604.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-604.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-604.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-605: Entrepreneurship (Theory)

Time: 2 Hrs. Total Marks: 25
Credit: 1 Theory: 20
Internal Assessment: 05

Course Objectives: This course is designed to develop the knowledge about entrpreneurship in the growing multimedia industry.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-605.1:Introduce the fundamental terms of entrepreneurship
B-MMT-605.2: Study of market challenges and risks
B-MMT-605.3: Learn the role of multimedia industry in entrepreneurship
B-MMT-605.4: Develop the knowledge and skills for market growth

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit I

- Meaning, definition and concept of Entrepreneurship
- Nature and scope of entrepreneurship
- Duties and Responsibilities of the entrepreneurs
- Challenges and risks in Entrepreneurship
- Entrepreneurship in new media
- Entrepreneurship in advertising and Public Relations-Press
- Entrepreneurship in entertainment Industry

Unit-II

- Develop and polish a freelance pitch.
- Attitudes, behaviors, knowledge, and skills required for entrepreneurship
- Modern management theory and practice for planning, organizing, leading, and deploying human capital to maximize organizational and personal success.
- Technology behind multiple digital platforms.
- Managing budgets, vendors, workflow, production.

References

- Funding Your Startup: And Other Nightmares Paperback by Dhruv Nath , Sushanto Mitra
- The DREAM Founder: Creating a Successful Start-up Paperback by Dhruv Nath
- Zero to One: Notes on Start Ups, or How to Build the Future Paperback by Peter Thiel , Blake Masters

B-MMT-605: Entrepreneurship (Theory)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-605.1	3	3	3	3	3	3	3	3
B-MMT-605.2	3	3	3	3	3	3	3	3
B-MMT-605.3	3	3	3	3	3	3	3	3
B-MMT-605.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-605.1	3	3	3	3	3
B-MMT-605.2	3	3	3	3	3
B-MMT-605.3	3	3	3	3	3
B-MMT-605.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-605.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-605.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-605.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-605.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-MMT-606: Entrepreneurship (Practical)

Time: 2 Hrs. Total Marks: 25
Credit: 1 Practical: 20
Internal Assessment: 05

Course Objectives: This course is designed to develop the knowledge about entrepreneurship in the growing multimedia industry.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-MMT-606.1:Introduce the fundamental terms of entrepreneurship
B-MMT-606.2: Study of market challenges and risks
B-MMT-606.3: Learn the role of multimedia industry in entrepreneurship
B-MMT-606.4: Develop the knowledge and skills for market growth

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva-voce.

List of Practical Exercises:
Students have to give a small business idea on the basis of market survey and also submit a report.

B-MMT-606: Entrepreneurship (Practical)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-MMT-606.1	3	3	3	3	3	3	3	3
B-MMT-606.2	3	3	3	3	3	3	3	3
B-MMT-606.3	3	3	3	3	3	3	3	3
B-MMT-606.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-MMT-606.1	3	3	3	3	3
B-MMT-606.2	3	3	3	3	3
B-MMT-606.3	3	3	3	3	3
B-MMT-606.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-MMT-606.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-606.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-606.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-MMT-606.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B.Sc. (Printing & Packaging Technology)

Choice Based Credit System (CBCS)/Learning Outcomes-based Curriculum Framework(LOCF) under NEP 2020

w.e.f. Academic Session 2022-23.

Eligibility: 10+2 in any discipline

Institute of Mass Communication & Media Technology
Kurukshetra University, Kurukshetra

Proposed scheme for Choice Based Credit System in B.Sc. (Printing, Graphics & Packaging Technology) Programme

Semester	CORE COURSE (CC) @ 6 Credits Subject -1	CORE COURSE (CC) @ 6 Credits Subject -2	CORE COURSE (CC) @ 6 Credits Subject -3	Ability Enhancement Compulsory Course (AECC) @ 2 Credits	Skill Enhancement Course (SEC) @ 2-6Credits	Discipline Specific Elective (DSE) @ 6 Credits	Activity/Hobby@ 2 Credits(Audit)	Total Credits	Exit Option
I Level-5	CC- 1A	CC- 2A	CC- 3A	(Language Communication)/ Environmental studies	SEC-1 Human values and Ethics/Computer Science Level-1@ 2 credits	X	2	24	Certificate in Arts, Science/ commerce @ 58 Credits
II Level-5	CC- 1B	CC- 2B	CC- 3B	(Language Communication)/ Environmental studies	SEC-1 Human values and Ethics/Computer Science Level-1@ 2 credit	X	2	24	
Internship @ 10 credits(450 hours) after 2nd semester(only for exit option)									
Semester	**CORE COURSE (CC) @ 6 Credits Subject -1**	**CORE COURSE (CC) @ 6 Credits Subject -2**	**CORE COURSE (CC) @ 6 Credits Subject -3**	**General Elective* Course @ Credits**	**Skill Enhancement Course (SEC) @ 2-6Credits**	**Discipline Specific Elective (DSE) @ 6 Credits**	**Activity/Hobby@ 2 Credits(Audit)**	**Total Credits**	**Exit Option**
III Level-6	CC- 1C	CC- 2C	CC- 3C	GE-1*@ 6 Credits of Level -5	SEC-3-Community Development/Personality Development/MOOC**	X	2	22+6*	Diploma in Arts,Science/ commerce @ 102 Credits
IV Level-6	CC- 1D	CC- 2D	CC- 3D	GE-2*@ 6 Credits of Level -5	SEC-4-Community Development/Personality Development/MOOC**	X	2	22+6*	
Internship @ 10 credits(450 hours) after 4th semester(Compulsory for All)									
Semester	**CORE COURSE (CC) @ 6**	**CORE COURSE (CC) @ 6 Credits**	**CORE COURSE (CC) @ 6**	**General Elective* Course @ Credits**	**Skill Enhancement Course (SEC) @ 2-6Credits**	**Discipline Specific Elective (DSE) @ 6**	**Activity/Hobby@ 2 Credits**	**Total Credits**	**Exit Option**

	Credits Subject -1	**Subject - 2**	**Credits Subject -3**			**Credits**	**(Audit)**		
V Level-7	CC-1H1	X	X	GE-3*@ 6 Credits of Level -5/6	SEC - 5(Major Subject-1)@ 6 credits	DSE-1 (Major Subject-1) DSE-2 (Major Subject-2)	2	20+ 10of internshi p+6 H+6 *	Graduation in Arts/ Science/commerce @142 credits/honors in Subject@154 Credits
VI Level -7	CC-1H2	X	X	GE-4*@ 6 Credits of Level -5/6	SEC -6(Major Subject-2)@ 6 credits	DSE-3 (Major Subject-1) DSE-4 (Major Subject-2)	2	20 +6 H+6 *	
Semester	**CORE COURSES @ 6 Credits**	**Research Ability Enhancement Courses(RAEC) and Thesis**			**Research Progression Seminars**			**Credits**	**Exit**
VII Level -8	CC-1H1 and CC-1H2(off level 7 to be completed by graduate students without honors	Research Ethics @4 credits Research Methodology @4 credits			Review of Literature general seminar @ 4 credits Synopsis writing and seminar @ 4 credits			16	Graduation in subject (Honors and Research) @ 194 credits
VIII Level -8		Dissertation/Thesis Preparation/Writing @ 20 credits			**Mid term seminar @ 2 credits** **Pre submission Seminar @ 2 credits**			**24**	

AECC will be offered according to the time table adjustments in the Institute/Department.
*MOOC Course from Swayam Portal.
** SEC can be offered in all semester according to the time table adjustments in the institute.
****Internship/Industry Training** A candidate must complete one time industrial training of 3 weeks before exit from 1/2/3 year. The internship report will be submitted in 2/4/6th semester.
General instructions:

- One credit equivalent to 1 hour of teaching/2 hours of Practical work
- Teaching workload will be calculated on the basis of teaching contact hours of the course
- One credit (theory /Practical) equivalent to 25 marks

Total No. of Courses, Credit and Marks

Course	No. of Courses	Credits Teaching/Week	Credits Practical/ Week	Credits Tutorials/Week	Total Credits	Marks
Core Courses	16	16x4=64	16x2=32	--	64+32=96	16x150 =2400
AECC	2	2x2=4	--	--	4	2x50=100
SEC	6	6x4=24	--	--	24	6x50 =300
DSE	4	4x4=16	4x2=8	--	16+8=24	4x150 =600
Industrial Training	--	--	--	--	10	1x50 =50
Research Ability Enhancement Courses(RAEC) and Thesis	--	--	--	--	16	
Research Progression Seminars	--	--	--	--	24	
Total	**29**	**102**	**44**	**-**	**158**	**3450**

Scheme of Examination of B.Sc. (Printing & Packaging Technology) programme in accordance with NEP 2020 (Multiple Entry-Exit, Internships and Choice Based Credit System) w.e.f. Academic Session2022-23 in phased manner.

Semester-I

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
AECC-N100	Communicative English	AECC-1	2	-	-	2	2	2	25	-	25	50	2 Hours
B-PPT-N101	Printing Process (Theory)	CC-1A	4	-	-	4	4	6	50	-	50	100	3 Hours
B-PPT-N102	Printing Process (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-PPT-N103	Typography (Theory)	CC-2A	4	-	-	4	4	6	50	-	50	100	3 Hours
B-PPT-N104	Typography (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-PPT-N105	Fundamentals of Packaging (Theory)	CC-3A	4	-	-	4	4	6	50	-	50	100	3 Hours
B-PPT-N106	Fundamentals of Packaging (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-PPT-N107	Computer Science (Theory)	SEC-1	1	-	-	1	1	2	20	-	5	25	2 Hours
B-PPT-N108	Software Lab				1	2	1			20	5	25	2 Hours
B-PPT-N109	Activity/Hobby Gita-A Manual of Life (Option-i) Public Speaking (Option-ii)						2	2	Satisfactory/Non Satisfactory				
Total Credits								**24**	**Total Marks**			**550**	

Semester-II

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
AECC-N200	Environmental Studies	AECC-2	2	-	-	2	2	2	25	-	25	50	3 Hours
B-HIN-N200	Communicative Hindi	AECC-3	2	-	-	2	2	2	25	-	25	50	2 Hours
B-PPT-N201	Food Packaging (Theory)	CC-1B	4	-	-	4	4	6	50	-	50	100	3 Hours
B-PPT-N202	Food Packaging (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-PPT-N203	Graphic Design (Theory)	CC-2B	4	-	-	4	4	6	50	-	50	100	3 Hours
B-PPT-N204	Graphic Design (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-PPT-N205	Sheet fed Offset Technology (Theory)	CC-3B	4	-	-	4	4	6	50	-	50	100	3 Hours
B-PPT-N206	Sheet fed Offset Technology (Practical)		-	-	2	4	2		-	25	25	50	3 Hours
B-PPT-N207	Human Value & Ethics	SEC-2	2	-	-	2	2	2	25	-	25	50	2 Hours
B-PPT-N208	Activity/Hobby						2	2	Satisfactory/Non Satisfactory				
Total Credits								**26**	**Total Marks**			**600**	

List of Total Subjects in B.Sc. (Printing & Packaging Technology):

Sr. No.	Course Type	Number of Subjects
1	CC	16
2	AECC	02
3	SEC	06
4	DSE	04
	Total	**28**

	Course Type	Number of Subjects
Semester I	CC	3
	AECC	1
	SEC	1
Semester II	CC	3
	AECC	1
	SEC	1
Semester III	CC	3
	SEC	1
	GE	1
Semester IV	CC	3
	SEC	1
	GE	1
Semester V	CC	1
	SEC	1
	GE	1
	DSE	2
Semester VI	CC	1
	SEC	1
	GE	1
	DSE	2
Total		**35**

List of Abbreviations

L -Lecture
T- Tutorial
P- Practical
IA – Internal Assessment
CC- Core Course
AECC- Ability Enhancement Compulsory Course
SEC- Skill Enhancement Course
DSE- Discipline Specific Elective
GE-General Elective

PROGRAMME OUTCOMES

On successful completion of the programme, the student will be able to:-

PO1 Acquire knowledge related to the discipline under study.

PO2 Communicate and reflect effectively and efficiently on the issues related to the discipline.

PO3 Exhibit the professional skills and competencies acquired during the Programme of study.

PO4 Apply the knowledge and skills acquired in planning, organizing, evaluation and decision making.

PO5 Explore, analyze and provide solutions to the problems related to the discipline and life.

PO6 Develop exposure to actual working environment leading to employability and entrepreneurship.

PO7 Exhibit scientific & research capabilities in academic, professional and general life pursuits.

PO8 Recognize, appreciate and follow ethical issues relating to the discipline and society.

Programme Specific Outcomes:

After completion of under graduate programme in Printing & Packaging Technology, the learner will be able to :

PSO1 Acquire fundamental knowledge of Printing and packaging Technology as an academic discipline.

PSO 2 Display the knowledge of appropriate theory, practices and tools for the specification, design and implementation

PSO3 Develop competency for employability and Entrepreneurship by practicing techniques and tools for innovative Printing & Packaging applications.

PSO 4 Demonstrate Printing & Packaging skills by undertaking projects.

PSO 5 Link knowledge of Printing and packaging with other chosen auxiliary disciplines of study.

AECC-N100: Communicative English

Time: 2 Hrs. Total Marks: 50
Credits: 2 Theory:25
Internal Assessment: 25

Contact hours per week: 2

Course objectives: The paper is designed to enhance proficiency in English Language. It seeks to develop the basics of English Language through different modules. Each unit will enable and capacitate the learner to have communication competence which is required in the present-day world. The basic knowledge of communication will enable the learners to share and enliven ideas, experience and know-how ubiquitous in the world.

Course Learning Outcomes:
After completing the Course, the student will be able to:
AECC-N100.1:Learn the rhetoric of presentation
AECC-N100.2: Learn, comment and respond to correspondence
AECC-N100.3: Learn the basics of grammar and composition
AECC-N100.4: Acquaint with verbal and non-verbal communication

Note: All questions are compulsory.

Q.1. The paper setter will set two question from unit-II. The student shall attempt one out of the given two. (05)

Q.2. This question shall be based on unit-III. The student shall attempt one out of the given two. (10)

Q.3. There will be 15 grammatical items based on unit-IV. The student shall attempt any 10 items. (10)

Internal Assessment: The students shall be required to make presentation /PPT based on unit-I.

Unit-I

Listening and speaking skills

Listening skills (Active-passive, Accent)
Speaking Skills (Accent, Stress, Intonation, Assertion, Rhetorical questions, Pause, Pitch)
Oral presentation, Debates, Elocution and Extempore

Unit-II

Writing skills

Report writing
Paragraph writing
Letter writing

Unit-III

Technical and Modern communication

Resume writing
E-mail
Blogs and comments on social media

Unit-IV

Grammar

Noun, Pronoun, Verb, Adverb, Adjective, Preposition, Conjunction and their uses
Common errors in the use of English (Noun, Pronoun, Adjective, Adverb, Conjunctions)
Correct use of verbs and Articles
Vocabulary: Homonyms, Homophones, Pair of words

References:

- Communicative English, Dr. Jimmy Sharma, Arihant Parkashan Pvt. Ltd.
- Strengthen Your English, Bhaskaran and Horsburgh, Oxford University Press
- Basic Communication Skills for Technology, and area J Rutherfoord, Pearson Education Asia.
- Murphy's English Grammar with CD, Murphy, Cambridge University Press
- English Skills for Technical Students by Orient Longman
- Everyday Dialogues in English by Robert J. Dixson, Prentice-Hall of India Ltd., 2006.

AECC-100: COMMUNICATIVE ENGLISH

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
AECC-N100.1	2	2	2	2	2	2	2	2
AECC-N100.2	2	2	2	2	2	2	2	2
AECC-N100.3	2	2	2	2	2	2	2	2
AECC-N100.4	2	2	2	2	2	2	2	2
Average	2	2	2	2	2	2	2	2

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
AECC-N100.1	2	2	2	2	2
AECC-N100.2	2	2	2	2	2
AECC-N100.3	2	2	2	2	2
AECC-N100.4	2	2	2	2	2
Average	2	2	2	2	2

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
AECC-N100.1	2	2	2	2	2	2	2	2	2	2	2	2	2
AECC-N100.2	2	2	2	2	2	2	2	2	2	2	2	2	2
AECC-N100.3	2	2	2	2	2	2	2	2	2	2	2	2	2
AECC-N100.4	2	2	2	2	2	2	2	2	2	2	2	2	2
Average	2	2	2	2	2	2	2	2	2	2	2	2	2

B-PPT-N101: PRINTING PROCESS (THEORY)

Time: 3 Hrs. Total Marks: 100
Credits : 4 Theory : 50
Internal Assessment: 50

Course Objectives: This course is designed for theoretical understanding of basic Printing process, its history and development from ancient to the modern world. It also provides the technical ability to understand pre-press, press, and post press operations in printing press.

Course Learning Outcomes:
The students learned about the Printing process and the student will be able to:
B-PPT-N101.1:Acquire knowledge about development in Indian Printing Industry
B-PPT-N101.2:Know about historical development of printing
B-PPT-N101.3:Develop the knowledge about the different printing processes
B-PPT-N101.4:Know the basic operations in printing – Pre-press, Press & Post Press

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT –I

History of printing: History of Printing, Scope of Indian Printing Industry, Applications of printing Industry, Indian printing Industry- An emerging market, size of the industry, total contribution to the economy, employment opportunity, Recent trends in Printing.

UNIT –II

Printing Processes: Introduction to conventional printing processes- Relief, Planography, Intaglio, Screen. On Demand printing, Electrostatic, Digital and Mini Offset. Specialized printing -Thermography, Die Stamping, Hot foil stamping, Hologram printing. Suitability & limitations and applications of various printing Processes

UNIT –III

Basic operations in printing- Pre -Press, Press and Post –press section,: Basic concepts, Typesetting of text matter, formatting the text pagination and arranging the pictures and graphics, Film outputting of text and visual elements particularly color separation, assembly of film and plate making. press: Pre make ready, make-ready operations , Finishing operations

UNIT –IV

Letterpress and Screen printing machines - Classification of letterpress printing machines, types of platen, cylinder and rotary machines with their mechanical and operational features. Screen Printing Machines: Manual, semiautomatic and fully automatic screen printing machines. Rotary screen printing Machines .

Running Defects of different printing process: Common printing defects comes in various printing processes, causes and their remedies.

References :

1. Letter Press Printing Part 1, 2, By C.S. Misra
2. Printing Technology By Adams, Faux, Rieber
3. Screen Printing Review ByBabett Magee
4. Screen Printing By John Stephens
5. Art and Print Production By N.N. Sarkar

B-PPT-N 101: PRINTING PROCESS (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT-N101.1	3	3	3	3	3	3	3	3
B-PPT-N101.2	3	3	3	3	3	3	3	3
B-PPT-N101.3	3	3	3	3	3	3	3	3
B-PPT-N101.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT-N101.1	3	3	3	3	3
B-PPT-N101.2	3	3	3	3	3
B-PPT-N101.3	3	3	3	3	3
B-PPT-N101.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT-N101.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N101.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N101.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N101.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT-N102: PRINTING PROCESS (PRACTICAL)

Time: 3 Hrs. Total Marks: 50
Credits :2 Practical: 25
Internal Assessment : 25

Course Objectives: This course is designed for practical understanding of basic Printing process, It also provides the technical ability to understand pre-press, press, and post press operations in printing press.

Course Learning Outcomes:
The students learned about the Printing process and the student will be able to:
B-PPT-N102.1:Enhance practical knowledge about printing processes.
B-PPT-N102.2:Know about the tools and equipment used for printing.
B-PPT-N102.3:Get technical knowledge about operations of letterpress printing machine.
B-PPT-N102.4:Know about operations in printing – Pre-press, Press & Post Press

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

LIST OF PRACTICALS

1. Identification of different tools &equipment used in letterpress.
2. Schematic diagram of different Printing Processes.
3. Printing of line & half tone block in single & multi color.
4. Operational and mechanical features of different letter press Printing Machines.
5. Study of Running & printing faults on letter press machine.
6. Identification of different printing processes

B-PPT-N 102: PRINTING PROCESS (PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT-N102.1	3	3	3	3	3	3	3	3
B-PPT-N102.2	3	3	3	3	3	3	3	3
B-PPT-N102.3	3	3	3	3	3	3	3	3
B-PPT-N102.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT-N102.1	3	3	3	3	3
B-PPT-N102.2	3	3	3	3	3
B-PPT-N102.3	3	3	3	3	3
B-PPT-N102.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT-N102.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N102.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N102.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N102.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT-N103: TYPOGRAPHY (THEORY)

Time: 3 Hrs. Total Marks: 100
Credits :4 Theory: 50
Internal Assessment : 50

Course Objectives: The students will learn about the Typographical Process and will be able to enhance knowledge about Type, Letters ,Characters, Symbols ,Classification of Printing Type and develop the knowledge about the Typesetting department, Tools and Material used in Typesetting department.

Course Learning Outcomes: Upon successful completion of this course, the student will be able to:
B-PPT-N103.1: Demonstrate the proper use of type as a design tool.
B-PPT-N103.2: Create letterforms as part of a consistent alphabet.
B-PPT-N103.3: Understand typographic rules and measurements to composition.
B-PPT-N103.4: Recognize different type styles and categories.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit - I

Introduction to Typography - definition, concept and scope, Printing type - Two Dimensional and Three-Dimensional structure their characteristics, Printers Measurement and Systems: Point System, other units of measurements and application. Design features and principles of printing types, fundamental and finishing strokes of types.

Unit – II

Classification of printing types based on serifs, point sizes, cases, faces, series, families etc. type font and sorts, principles of size and design identification, Suitability of different types for different processes and publications, typesetting Calculations relating to type sizes and dimensions of printing pages.

Unit – III

Typesetting Department:-Work and role of the type-setting, department with in a printing press, Photo Type -setting., Proofing and Proofing Reader's marks; word breaks; proofing stages. Composing Tools and Equipment, Basic composing tools for hand composition, spacing material; locking- up devices; proofing presses, kinds of rules.

Unit –IV

Composition Imposition, Sheet work, Half-sheet work, Work and tumble & Work and twist. The regular schemes up to 32 pages (upright and landscape), Planning of composition department, Floor plan and arrangement of equipment, Paper and its calculation.

References:

1	Theory & practice of composition	-	By A.C. Goel
2	Composing & Typography Today	-	By B.D. Mehandirutta.
3.	Letter Press Printing Part I, II	-	By C.S. Mishra
4.	Printing Technology		By Adams,Faux,Riber
5.	Art & Production		By N.N. Sarkar

B-PPT-N 103: TYPOGRAPHY (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT-N103.1	3	3	3	3	3	3	3	3
B-PPT-N103.2	3	3	3	3	3	3	3	3
B-PPT-N103.3	3	3	3	3	3	3	3	3
B-PPT-N103.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT-N103.1	3	3	3	3	3
B-PPT-N103.2	3	3	3	3	3
B-PPT-N103.3	3	3	3	3	3
B-PPT-N103.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT-N103.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N103.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N103.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N103.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT-N104: TYPOGRAPHY (PRACTICAL)

Time: 3 Hrs. Total Marks: 50
Credits : 2 Practical: 25
Internal Assessment : 25

Course Objectives: This course is designed for practical understanding of Mechanical Type. It provides the technical ability to understand fundamental and finishing strokes of the types.

Course Learning Outcomes:
The students learned about the Printing process and the student will be able to:
B-PPT-N104.1: Use of Block Letters & Numbering
B-PPT-N104.2:Demnostrate the physical structure of mechanical type and its composition
B-PPT-N104.3:Use of Various types of fonts
B-PPT-N104.4:Use of Fundamental and finishing strokes.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

LIST OF PRACTICALS

1. Block Lettering & Numbering (Normal Types).
2. Four-line Principle (Drawing).
3. Physical (Features) parts of the type (Structural Diagram).
4. Fundamental strokes.
5. Finishing strokes & their identification.
6. Introduction to various fonts & their drawing characteristics.

B-PPT-N 104: TYPOGRAPHY (PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT-N104.1	3	3	3	3	3	3	3	3
B-PPT-N104.2	3	3	3	3	3	3	3	3
B-PPT-N104.3	3	3	3	3	3	3	3	3
B-PPT-N104.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT-N104.1	3	3	3	3	3
B-PPT-N104.2	3	3	3	3	3
B-PPT-N104.3	3	3	3	3	3
B-PPT-N104.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT-N104.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N104.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N104.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N104.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT-N105: FUNDAMENTALS OF PACKAGING (THEORY)

Time: 3 Hrs. Total Marks: 100
Credits :4 Theory: 50
Internal Assessment : 50

Course Objectives: This course is designed for theoretical understanding of Packaging Technology, various packaging application, design of package and for creating sense of understanding the various types of packaging.

Course Learning Outcomes: Upon successful completion of this course, the students learned about the Packaging Technology and the student will be able to:
B-PPT-N105.1: Develop the knowledge of Packaging Technology to understand the Packaging Industry.
B-PPT-N105.2: Know about the various applications and classifications of packaging.
B-PPT-N105.3: Understand the function of package, types of package and elements of package design.
B-PPT-N105.4: Develop the knowledge of folding Carton production process and finishing operations.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit - I

Basics of Packaging:

Packaging Introduction, Classifications of Packaging - Flexible packaging and rigid packaging, Function of a package, Types of package, Factors influencing design of a package, Elements of Package Design, Hazard on the package - mechanical, climatic, biological and other hazards.

Unit – II

Folding Carton Production & Innovative Packaging Techniques

Folding cartons production process, types of folding carton, Paperboard, types of paperboard used in carton making, components in a corrugated board, Vacuum packaging, shrink packaging, stretch wrapping, blister packaging, Aerosol packaging, Blow Molding - Extrusion blow Molding, Injection blow molding.

Unit – III

Packaging Distribution & logistics

Introduction to logistics, element of logistics, distribution of channels, Packaging Cycle, Product life curve, classification of pallets, material handling techniques-warehousing & storage, Markings on Package - Handling marks, routing marks, information marks, shelf life,

Unit -I V

Future Trends and Finishing operations

Futuristic trends in packaging, adhesive tapes - fabric tapes, paper tapes, film tapes, foil tapes, foam tapes, two faced tapes. Labels- designing, manufacturing and applications, Packaging finishing operations – coating, lamination, hot & cold foil stamping, die-cutting, embossing & de-embossing, liner and folding & gluing.

References :

Packaging design and performance - **Frank Paine**

Advances in plastic packaging technology - **John Briston**.

Packaging design an introduction - **Laszlo Roth**.

Packaging Technology - Volume I, II, III - IIP

B-PPT-N 105: FUNDAMENTALS OF PACKAGING (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT-N 105.1	3	3	3	3	3	3	3	3
B-PPT-N 105.2	3	3	3	3	3	3	3	3
B-PPT-N 105.3	3	3	3	3	3	3	3	3
B-PPT-N 105.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT-N 105.1	3	3	3	3	3
B-PPT-N 105.2	3	3	3	3	3
B-PPT-N 105.3	3	3	3	3	3
B-PPT-N 105.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT-N 105.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 105.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 105.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 105.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT-N106: FUNDAMENTALS OF PACKAGING (PRATICAL)

Time: 3 Hrs. Total Marks: 50
Credits :2 Practical : 25
Internal Assessment : 25

Course Objectives : This course is designed for practical understanding of Packaging Technology classification, packaging machines, materials used in packaging, design of package and its application

Course Learning Outcomes:
The students learned about the Packaging Technology and the student will be able to:
B-PPT-N106.1:Design flexible packages
B-PPT-N106.2:Design rigid packaging
B-PPT-N106.3:Test raw different types material
B-PPT-N106.4:Prepare various of package design

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

LIST OF PRACTICALS

1. Designing and preparation of various flexible packages.
2. Designing and preparation of various rigid packages.
3. Study and operation of various packaging machines.
4. Designing & preparation of various designs of paper bags.
5. Testing of raw materials like- paper, paperboard, plastic and ink.
6. Drop test, Vibration test, inclined impact test, Compression test.

B-PPT-N106: FUNDAMENTALS OF PACKAGING (PRATICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT-N106.1	3	3	3	3	3	3	3	3
B-PPT-N106.2	3	3	3	3	3	3	3	3
B-PPT-N106.3	3	3	3	3	3	3	3	3
B-PPT-N106.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT-N 106.1	3	3	3	3	3
B-PPT-N 106.2	3	3	3	3	3
B-PPT-N 106.3	3	3	3	3	3
B-PPT-N 106.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT-N 106.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 106.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 106.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 106.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT-N107: COMPUTER SCIENCE (THEORY)

Time: 2 Hrs. Total Marks: 25
Credits: 1 Theory: 20
Internal Assessment: 5

Contact hours per week: 1

Course Objectives: This course is designed for theoretical understanding of computer system and its components, functioning and its application software exposure.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-PPT-N107.1: Understand the basic knowledge of computer system.
B-PPT-N107.2: Know about the functioning of operating systems.
B-PPT-N107.3 Understand the basic concept of Internet and computer networks .
B-PPT-N107.4: Understand the basics of Application Software.

NOTE:- The examiner will set total 10(ten) questions covering the entire syllabus. Student will attempt any five questions. All questions will carry equal marks.

Unit-I

Operating System - Definition & Functions of Operating System, Basics of Popular Operating Systems; The User Interface, Exploring Computer, Icons, taskbar, desktop, Using Menu and Menu-selection, managing files and folders, Control panel – display properties, add/remove software and hardware, Running an Application, Using help; Creating Short cuts, Basics of O.S Setup; Common utilities.

Unit-II

Word Processing: Introduction to Word Processing, Menus, Creating, Editing & Formatting Document, Spell Checking, Printing, Views, Tables, Word Art, Mail Merge, Macros.

Unit-III

Spread Sheet: Elements of Electronics Spread Sheet, Applications, Creating and Opening of Spread Sheet, Menus, Manipulation of cells: Enter texts numbers and dates, Cell Height and Widths, Copying of cells, Mathematical, Statistical and Financial function, Drawing different types of charts.

Unit-IV

Presentation Software: Creating, modifying and enhancing a presentation, Delivering a presentation, Using sound, animation and design templates in presentation.

REFERENCES BOOKS

- Help files from Apache Open Office, https://wiki.openoffice.org/wiki/Documentation
- Channelle Andy, "Beginning OpenOffice 3: From Novice to Professional", aPress Publications
- Beginning OpenOffice 3: From Novice to Professional, Andichannele, Apress.
- Microsoft Office 2016 Step by Step: MS Office 2016 Step by S_p1, By Joan Lambert, Curtis Frye
- Computer Fundamentals - By Pradeep K. Sinha, Priti Sinha, BPB Publications, 6th Edition
- Getting Started with LibreOffice 5.0, Friends of OpenDocuments Inc., Http://friendsofopendocument.com
- Documentation from LibreOffice, https://documentation.libreoffice.org/en/english-documentation/

B-PPT-N107: COMPUTER SCIENCE (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT-N107.1	3	3	3	3	3	3	3	3
B-PPT-N107.2	3	3	3	3	3	3	3	3
B-PPT-N107.3	3	3	3	3	3	3	3	3
B-PPT-N107.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT-N 107.1	3	3	3	3	3
B-PPT-N 107.2	3	3	3	3	3
B-PPT-N 107.3	3	3	3	3	3
B-PPT-N 107.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT-N 107.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 107.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 107.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 107.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT-N108: COMPUTER SCIENCE (PRACTICAL)

Time: 2 Hrs. Total Marks: 25
Credits: 1 Practical: 20
Internal Assessment: 5

Contact hours per week: 2

Course Objectives: This course is designed for practical understanding of commonly used application software and its functioning to the students.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-PPT-N108.1: Use MS-Word
B-PPT-N108.2: Use MS-Excel
B-PPT-N108.3: Use PowerPoint
B-PPT-N108.4: Create Email account, compose & send emails for personal and professional communication.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Practical Exercises:
Starting with basics of Operating Systems and its functionalities
Create and format word documents.
Use tables, word Art and other features in your documents.
Use macros to simplify the tasks in a document.
Use mail merge to write once for many.
Use spreadsheet for basic data handling
Apply formulas to sheet for automation.
Use if-else to make certain decisions in a sheet.
Use Charts & Shapes for better visualization of data.
Use filters and data validation controls for control of data
Prepare and format presentations.
Apply slide transitions, animations and sequencing for slides.
Apply different formatting and insert options to make presentation better.
Use rehearse and timing options for a presentation with handouts.

B-PPT-108: FUNDAMENTALS OF COMPUTER (PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT-N108.1	3	3	3	3	3	3	3	3
B-PPT-N108.2	3	3	3	3	3	3	3	3
B-PPT-N108.3	3	3	3	3	3	3	3	3
B-PPT-N108.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT-N 108.1	3	3	3	3	3
B-PPT-N 108.2	3	3	3	3	3
B-PPT-N 108.3	3	3	3	3	3
B-PPT-N 108.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT-N 108.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 108.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 108.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 108.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT-109: ACTIVITY/HOBBY

Gita-A Manual of Life (Option-i)

Course Credit: 02 Total Marks: 50 Marks

Contact Hours: 02 per week

Teaching will be based on the discussion in the class room

Note: There will be no written examinations, knowledge and understanding of Gita teachings will be assessed through discussion by the Students describing the knowledge and implementation of Gita's teachings in daily life for the betterment of our day today life.

Course Outcomes:

Unit-1: After studying the first unit of the course students will be able to understand meaning, background & relevance of Gita's teaching's in contemporary times.

Unit-II: After studying the second unit of the course students will be able to understand benefits of Karma Yoga, Bhakti Yoga and Gyana Yoga in our daily life.

Unit-1

Gita for all: Meaning, background and relevance of Gitaopdesha. Karmayoga as a way

to right knowledge; Necessity of Loksamgraha for the service of Humanity.

Unit-II

Gita for Spiritual world: Karm Yogi as an Ideal Man of Gita, Sthitaprajna as a symbol of ideal master in Gita, Swadharma and Pradharma as a secret of Blissful society, Atma Samyama Yoga; a technique for building an ideal person according to Gita.

Suggested Books:

- Swami Ramsukhdas, Gita Sadhak Sanjivani Teeka
- Hnuman Prasad Poddhar, Gita Tattvavivechni Teeka
- Gandhi Gita Matta
- Gurudatta Srimadbhagvadgita Vyakhya
- Satyavarta, Srimadbhagvadgita Vyakhya
- Swami Jyanananda, Gita Prerna
- Paramhamsa Yogananda, Srimadbhagvadgita God-Arjuna, Discoruse Aurvind, Essays on Gita.
- S. Radhakrishna, Bhagwvadgita Vyakhya
- Jyaneshwar, Jyaneshwari Gita

B-PPT-109: ACTIVITY/HOBBY

Public Speaking (Option-ii)

Course Credit: 02 Total Marks: 50 Marks

Contact Hours: 02 per week

Teaching will be based on the discussion in the class room

Note: There will be no written examinations. Understanding and art of Public speaking will be assessed through discussion and presentation by the Students in the class room.

Course Outcomes:

Unit-1: After studying the first unit of the course students will be able to understand relevance of Public speaking in their academic and professional life.

Unit-II: After studying the second unit of the course students will be able to write their own speech and analyze the intricacies of speeches of renowned speakers.

Unit-1

Public speaking: Meaning and relevance, Characteristics of an effective speaker, Power of words, Use of body language, dressing, mannerisms, Use of effective memory techniques, Overcoming the fear of public speaking- Glossophobia

Unit-II

Speech : Introduction, body and conclusion, Writing your own speeches, famous speeches of World s greatest orators, Case studies of effective public communicators like TED speakers of both Indian and foreign origin

Suggested Books:

- The Art of Public Speaking author Dale Carnegie, along with J. Berg Esenwein, Rupa Publications, India (English and Hindi)
- Speak with no fear, Mike Acker, Advantage Publishing Group
- TED Talks, Chris Anderson, Headline Publishing Group
- 50 Prernadayak Bhashan, Fingerprint Publishing

AECC-N200 : Environmental Studies

Time: 3 Hrs. Total Marks: 50
Credits: 2 Theory: 25
Internal Assessment: 25

Scheme of paper: Total number of questions will be nine. Students have to attempt five questions in all. Questions no. 1 is compulsory. All questions carry equal marks. Each question is of 8 marks.

Course objectives: The aim of this course is to make the students aware about the environmental problems and current global issues related to environment. It provides knowledge about concepts of ecosystem and biodiversity and develops interest in the students about their role in conservation of environment and reducing pollution and waste generation in their surroundings. By understanding the environmental problems, their causes and solutions, the students can apply these to their daily lives.

Course Outcomes (COs) for Theory:

COs	On successful completion of the course, the students will be able to:
CO 1	Understand the concept of environmental studies, its scope and importance in the conservation of environment. Understand the concept of ecosystem and different types of natural and artificial ecosystems in the world, the biogeochemical cycling and energy flow in an ecosystem.
CO 2	Describe the various renewable and non-renewable natural resources and their over-exploitation due to increasing demands of rising population. Become aware about biodiversity, its importance and the various threats for biodiversity. Have knowledge of the endangered species and their conservation measures that are needed to be adopted at different levels.
CO 3	Have understanding about the types of pollution and how to reduce pollution levels in air, soil, water, land and from marine bodies, as to develop interest in reducing the solid waste generation as well as its management at household level. Gain knowledge of various global environmental issues like climate change, global warming and ozone depletion and also about different environmental laws implemented to conserve the environment.
CO 4	Understand the concept of population growth, disaster management, impacts of drug abuse and various environmental movements.

Course outcome for practical/field work:

CO 1	To get practical knowledge of various environmental issues through project file/assignment with case studies.

Mode of Paper Setting: Total number of questions set will be nine. Questions no. 1 is compulsory covering the entire syllabus. Two questions will be set from each unit. Students have to attempt five questions in all, one question from each unit including the compulsory question. Each question is of 5 marks. All questions carry equal marks. Final theory exam time allowed will be of 3 hours.

Unit I

Introduction to environmental studies: Multidisciplinary nature of environmental studies; Scope and importance; Concept of sustainability and sustainable development.

Ecosystems: What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems: a) Forest ecosystem, b) Grassland ecosystem, c) Desert ecosystem, d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) (8 lectures)

Unit II

Natural Resources: Renewable and Non-renewable Resources

•Land resources and landuse change; Land degradation, soil erosion and desertification.

•Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.

•Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).

•Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Biodiversity and Conservation

•Levels of biological diversity: genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots

•India as a mega-biodiversity nation; Endangered and endemic species of India

•Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

•Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value. (16 lectures)

Unit III

Environmental Pollution

•Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution

•Nuclear hazards and human health risks

•Solid waste management: Control measures of urban and industrial waste, Pollution case studies.

Environmental Policies & Practices

•Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture

•Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).

•Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

(15 lectures)

Unit IV

Human Communities and the Environment

•Human population growth: Impacts on environment, human health and welfare.

•Resettlement and rehabilitation of project affected persons; case studies.

•Disaster management: floods, earthquake, cyclones and landslides.

•Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan.

•Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.

•Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Drugs and their effects; Useful and harmful drugs; Use and abuse of drugs; Stimulant and depressant drugs. Concept of drug de-addiction. Legal position on drugs and laws related to drugs.

(6 lectures)

Practical/Field work

•Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
•Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
•Study of common plants, insects, birds and basic principles of identification.
•Study of simple ecosystems-pond, river, Delhi Ridge, etc. (Equal to 5 lectures)

Suggested Readings:

1.Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt.
2.Gadgil, M., & Guha, R. 1993. This Fissured Land: An Ecological History of India. Univ. of California Press.
3.Gleeson, B. and Low, N. (eds.) 1999. Global Ethics and Environment, London, Routledge.
4.Gleick, P. H. 1993. Water in Crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5.Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. Principles of Conservation Biology. Sunderland: Sinauer Associates, 2006.
6.Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. Science, 339: 36-37.
7.McCully, P. 1996. Rivers no more: the environmental effects of dams (pp. 29-64). Zed Books.
8.McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.
9.Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders.
10.Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
11.Rao, M.N. & Datta, A.K. 1987. Waste Water Treatment. Oxford and IBH Publishing Co. Pvt. Ltd.
12.Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. Environment. 8th edition. John Wiley & Sons.
13.Rosencranz, A., Divan, S., & Noble, M. L. 2001. Environmental law and policy in India. Tripathi 1992.
14.Sengupta, R. 2003. Ecology and economics: An approach to sustainable development. OUP.
15.Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.
16.Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. Conservation Biology: Voices from the Tropics. John Wiley & Sons.
17.Thapar, V. 1998. Land of the Tiger: A Natural History of the Indian Subcontinent.
18.Warren, C. E. 1971. Biology and Water Pollution Control. WB Saunders.
19.Wilson, E. O. 2006. The Creation: An appeal to save life on earth. New York: Norton.
1) 20.World Commission on Environment and Development. 1987. Our Common Future. Oxford University

B-HIN-N200 : Communicative Hindi

Time: 2 Hrs. Total Marks: 50
Credits: 2 Theory: 25
Contact hours per week: 2 Internal assessment: 25

Course Objectives: The Paper is designed to enhance proficiency in Hindi Language. It seeks to develop the basic of Hindi Language through different modules. Each unit will enable the learner to have the communication in Hindi and to share and express ideas and experiences.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-HIN-N200.1: Develop the knowledge of basics of Hindi language.
B-HIN-N200.2: Improve vocabulary in Hindi language.
B-HIN-N200.3: : Inculcate the knowledge of grammar in Hindi language
B-HIN-N200.4: Learn correct uses of Hindi language in media writing

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

Unit – I

Hkk"kk dh ladYiuk
Hkk"kkbZ Hksn&ekSf[kd ,oa fyf[kr
Hkk"kk dk ekudhdj.k&fLFkfr ,oa pqukSfr;k¡
Hkk"kk rFkk lekt dk ikjLifjd vUrlZcU/kA

Unit – II

fgUnh O;kdj.k 'kCn :i vkSj okD; jpuk
nsoukxjh fyfi vkSj o`fr
mPpkj.k vo;o] i;kZ;] foykse] lekukFkhZ] vusdkFkhZ 'kCn
fgUnh dh iz;ksxkRed =qfV;ka

Unit – III

fgUnh lkfgR; dk laf{kIr bfrgkl
fgUnh lkfgR; dh vk/kfud izo`fRr;ka
fgUnh dh lkfgfR;d fo/kkvksa dk ifjp;
fgUnh x| ,oa i|

Unit – IV

iz;kstu ewyd fgUnh dk vfHkizk; ,oa vko';drk
tulapkj ek/;e vkSj fgUnh Hkk"kk] ehfM;k dh Hkk"kk dh izd`fr ,oa fopyu
{ks=h; izHkko ,oa {ks=h; Hkk"kkbZ iz;ksx
eqfnzr ek/;e vkSj fgUnh
jsfM;ks ,oa Vsyhfotu dh Hkk"kk

foKkiu ,oa lks'ky ehfM;k dh Hkk"kk

Suggested Readings:

HkkfV;k] MkW- dSyk'kpUn] vuqokndyk % fl)kar vkSj iz;ksx] r{kf'kyk izdk'ku] u;h fnYyhA
'kekZ] j?kquUnu izlkn] iz;kstu ewyd fgUnh % fl)kar vkSj O;ogkj] fo'ofo|ky; izdk'ku] okjk.klhA
v;~;j] fo'oukFk] vuqokndyk] izHkkr izdk'ku] fnYyh
frokjh] HkksykukFk] fgUnhHkk"kk dh lkekftd Hkwfedk] nf{k.k Hkkjr fgUnh izpkj lfefr] enzkl
>kYVs] MkW- naxy] iz;kstu ewyd fgUnh % fl)kar vkSj iz;ksx] ok.kh izdk'ku] u;hfnYyh
xksnjs] MkW- fouksn] iz;kstu ewyd fgUnh] ok.kh izdk'ku] u;h fnYyh
jk.kk] egsUnz flag] iz;kstu ewyd fgUnh ds vk/kqfud vk;ke] g"kkZ izdk'ku] vkxjkA
dqekj pan] tulapkj ek/;eksa esa fgUnh] Dykfldy ifCyf'kax dEiuh] fnYyh

B-HIN-N200 : Communicative Hindi

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-HIN-N200.1	3	3	3	3	2	2	2	3
B-HIN-N200.2	3	3	3	3	2	2	2	3
B-HIN-N200.3	3	3	3	3	2	2	2	3
B-HIN-N200.4	3	3	3	3	2	2	2	3
Average	3	3	3	3	2	2	2	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-HIN-N200.1	2	2	2	2	2
B-HIN-N200.2	2	2	2	2	2
B-HIN-N200.3	2	2	2	2	2
B-HIN-N200.4	2	2	2	2	2
Average	2	2	2	2	2

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-HIN-N200.1	3	3	3	3	2	2	2	3	2	2	2	2	2
B-HIN-N200.2	3	3	3	3	2	2	2	3	2	2	2	2	2
B-HIN-N200.3	3	3	3	3	2	2	2	3	2	2	2	2	2
B-HIN-N200.4	3	3	3	3	2	2	2	3	2	2	2	2	2
Average	3	3	3	3	2	2	2	3	2	2	2	2	2

B-PPT-N201– FOOD PACKAGING (THEORY)

Time: 3 Hrs. Total Marks: 100
Credits :4 Theory: 50
Internal Assessment : 50

Course objectives: This course is designed for theoretical understanding of food packaging, its type, utilization and innovative technique used for development of food packaging.

Course Learning Outcomes: Upon successful completion of this course, the students learned about the Food Packaging Technology and the student will be able to:
B-PPT-N201.1: Develop the knowledge of Food Packaging
B-PPT-N201.2: Understand the function of food package, types of food packaging.
B-PPT-N201.3: Develop the knowledge of sterilization
B-PPT-N201.4: Recognize the Innovative Packaging Techniques.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT-1

Introduction

- Food packaging: Definition,
- Functions of food packaging,
- Need of food packaging
- Role of packaging in extending shelf life of foods
- Safety assessment of food packaging materials
- Different forms of packaging.
- Rigid, semi-rigid, flexible forms of packaging in food industries..
- Different packaging system for-Dehydrated foods, Frozen foods, Dairy products, Fresh fruits, Vegetables, Meat, Poultry, Sea foods.

UNIT 2

Aseptic packaging of foods

- Principles of sterilization,
- sterilization of packaging material,
- verification of sterilization processes,
- aseptic packaging systems: carton systems, can systems,
- bottle systems, sachet and pouch systems, cup systems

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UNIT 3

Active and Smart packaging

- Definition
- Smart packaging systems
- intelligent packaging systems: Quality Indicators, Time-temperature
- indicators, gas concentration indicators, RFID;
- Safety and Regulatory issues

UNIT 4

Properties & selection of packaging materials

- Tensile strength, bursting strength, tearing resistance, puncture
- resistance, impact strength, tear strength,
- Barrier properties of packaging materials,,
- prediction of shelf life of foods,

References :

Gordon L. Robertson, Food Packaging: Principles and Practice, Third Edition,2013.

Gordon L. Robertson, Food Packaging and Shelf Life: A Practical Guide,2010.

Ruben Hernandez, Susan E. MSelke, John Culter, John D. Culter,

Plastics Packaging: Properties,Processing, Applications, and Regulations,2000.

Walter Soroka, Fundamentals of Packaging Technology-Fourth Edition,

B-PPT-N201: FOOD PACKAGING(THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT-N201.1	3	3	3	3	3	3	3	3
B-PPT-N201.2	3	3	3	3	3	3	3	3
B-PPT-N201.3	3	3	3	3	3	3	3	3
B-PPT-N201.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT-N201.1	3	3	3	3	3
B-PPT-N201.2	3	3	3	3	3
B-PPT-N201.3	3	3	3	3	3
B-PPT-N201.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT-N201.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N201.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N201.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N201.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT-N202– FOOD PACKAGING (PRACTICAL)

Time: 3 Hrs. **Total Marks: 50**
Credits: 2 **Practical : 25**
Internal Assessment : 25

Course objectives: This course is designed for Practical understanding of food packaging material, testing and development.

Course Learning Outcomes: After completing the Course, the student will be able to:
B-PPT-N 202.1: Identify various food packaging material.
B-PPT-N 202.2: Check the strength of packaging material with various testing instrument.
B-PPT-N 202.3: Enhance the practical knowledge about packaging industry.
B-PPT-N 202.4: Use innovative Packaging Techniques.

Note: - The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

LIST OF EXPERIMENTS

1. Identification of different types of packaging and packaging materials

2. Determination of tensile strength of given material

3. Determination of tearing strength of paper

4. Determination of bursting strength of packaging material

6. Determination of drop test of food package

7. Visit to relevant industries

8 Introducing the students with the latest trends in packaging consulting the web sites and magazines

B-PPT-N 202: FOOD PACKAGING(PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT-N 202.1	3	3	3	3	3	3	3	3
B-PPT-N 202.2	3	3	3	3	3	3	3	3
B-PPT-N 202.3	3	3	3	3	3	3	3	3
B-PPT-N 202.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT-N 202.1	3	3	3	3	3
B-PPT-N 202.2	3	3	3	3	3
B-PPT-N 202.3	3	3	3	3	3
B-PPT-N 202.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT-N 202.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 202.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 202.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 202.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT-N203: GRAPHIC DESIGN (THEORY)

Time: 3 Hrs. Total Marks: 100
Credits :4 Theory: 50
Internal Assessment : 50

Course objectives: This course is designed for thorough understanding of graphic designing concepts and their application in printing & packaging.

Course Learning Outcomes:
Course outcomes: After completing the Course, the student will be able to:
B-PPT-N 203.1: Understand about the basic concepts of graphic elements
B-PPT-N 203.2: Know the functioning of basic colour aesthetics
B-PPT-N 203.3: Develop the capacities to elaborate the process of graphic design
B-PPT-N 203.4: Design various real world graphic applications

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing six short notes covering the entire syllabus and students are required to attempt any four. All questions will carry equal marks.

UNIT –I

INTRODUCTION

Graphic Design, Visual Art, Communication Art, Graphic Art, Components of Graphic Communication, Functions of Graphic Communication

Elements of design: point line, shape, size, tone, value, weight, texture space, etc. Principles of design-balances, proportion, rhythm, unity, contrast.

UNIT –II

Types of Letterforms: Typography- Structure Design and Function, Typefaces, Type families, Function of Type Composition.

Visual Images: Functions, Categories of Visuals, Originals, Visuals on Printed page, Editing of Illustrations

Layout Planning: Thumbnail Sketches, Rough Layout, Comprehensive Layout

UNIT –III

Colour in Design: Introduction, Functions of Colour, Colour Vision. Colour Combination, Colour Schemes, Colour Perspective, Reproduction of Colour: Fake colours, Spot Colours, Process Colours

Copy for Printing: Verbal Copy,Copy Marking, Copy Fitting,Typesetting Proofreading

Visual Copy: Cropping and Scaling,,Sizing and Marking,Reproduction of Illustrations

UNIT –IV

DESKTOP PUBLISHING

Capabilities, Users of Desktop Publishing System,Equipment Required for Desktop Publishing,Features of Some Specific Software Programmes:Corel Draw,Photoshop,PageMaker,QuarkXpress

Design management: Definitions in advertising art, modern art abstract art, applied art, advertising, publicity, public relations, sale promotion, sales manager

References:

1. The Designer's Handbook by Alistair Campbell
2. Design & Technology by Van No strand
3. Handbook of Advertising Art Production by schelmmer.
4. Art & Production by Sarkar.
5. Advertising, Art & Production by J. Nath.

B-PPT-N 203: GRAPHIC DESIGN (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT-N 203.1	3	3	3	3	3	3	3	3
B-PPT-N 203.2	3	3	3	3	3	3	3	3
B-PPT-N 203.3	3	3	3	3	3	3	3	3
B-PPT-N 203.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT-N 203.1	3	3	3	3	3
B-PPT-N 203.2	3	3	3	3	3
B-PPT-N 203.3	3	3	3	3	3
B-PPT-N 203.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT-N 203.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 203.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 203.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 203.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT-N 204: GRAPHIC DESIGN (PRACTICAL)

Time: 3 Hrs. Total Marks: 50
Credits :2 Theory: 25
Internal Assessment : 25

Course objectives : This course is designed for practical understanding of graphic designing and menus, tools and its applications and production formats.

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Course Learning Outcomes:
After completing the Course, the student will be able to:
B-PPT-N 204.1: Understand the use of graphic elements
B-PPT-N 204.2: Demonstrate the concept of image retouching, smoothing.
B-PPT-N 204.3 Design ad banners for websites and digital campaigning banners.
B-PPT-N 204.4: Design different logos.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

LIST OF PRACTICALS

1. Introduction to computers, various software used for designing purpose – Demonstration (Manipulation of same design)
2. Logo designing
3. Color wheel
4. Designing of visiting card. Letterhead,
5. Envelop, Bill form, Receipt, Invitation card, Posters,
6. Title page of a Book, Magazine Cover page.

B-PPT-N204: GRAPHIC DESIGN (PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT-N 204.1	3	3	3	3	3	3	3	3
B-PPT-N 204.2	3	3	3	3	3	3	3	3
B-PPT-N 204.3	3	3	3	3	3	3	3	3
B-PPT-N 204.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT-N 204.1	3	3	3	3	3
B-PPT-N 204.2	3	3	3	3	3
B-PPT-N 204.3	3	3	3	3	3
B-PPT-N 204.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT-N 204.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 204.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 204.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 204.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT-N 205: SHEET FED OFFSET TECHNOLOGY (THEORY)

Time: 3 Hrs. Total Marks: 100
Credits :4 Theory: 50
Internal Assessment : 50

Course objectives :This course is designed for theoretical understanding of Sheet fed offset machine with various components and controlling devices.

Course Outcomes: Upon successful completion of this course, the students learned about the sheet fed offset printing process and the student will be able to:
B-PPT-N 205.1: Know about the Sheet Fed Offset Printing Process in printing industry.
B-PPT-N 205.2:Develop the basic knowledge of Sheet fed Offset printing machine various mechanisms.
B-PPT-N 205.3 Understand the Feeding units different parts -pile table, pile board, Sucker, separator and double sheet detector,
B-PPT-N 205.4 Understand the Printing unit different parts- Plate cylinder, Blanket cylinder and Impression cylinder.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

Unit – I

Basic principles in planography printing:
Lithography and Offset Printing Process, History, Principle, advantages, limitations, types and their uses. Press configurations. Various Required and auxiliary elements, Requirements and Needs of production room

Unit - II

Infeed unit –
Function of feeding unit, pile table, air blast nozzles, Sucker, separator brushes & fingers. Sheet control devices-conveyor assemblies, conveyor tape, hold down rods, Sheet feeding system, Sheet register- Front lay & Side lay, Sheet detectors

Unit - III

Printing unit
Plate Cylinder- parts of plate cylinder, plate punching & mounting Blanket cylinder- Types of blanket cylinder, Care of blanket, blanket cleaning device, Impression cylinder, inking system-Introduction, types of inking system, Dampening system, Types of dampening system, Ingredients of fountain solution, Ph& Conductivity of dampening system,.

Unit - IV

Delivery unit-
Gripper, Types of gripper, Sheet transfer, Delivery unit components, Anti set-off spray equipment. Extended pile delivery, Continuous pile delivery. Pre make ready, make ready, Sheet control devices.

References:

Manual For Lithographic Press Operation - **A. S. Porter**
Modern Lithography Introduction to Printing Technology - **Hugh M Speirs**.
Sheetfed Press Operation-**GATF**.
Offset Technology – **C.S.Mishra**.
Lithographers Manual Lithographic Technology - **Erwin A Dennis, Olusegun Odesina**.

B-PPT-N205: SHEET FED OFFSET TECHNOLOGY (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT-N 205.1	3	3	3	3	3	3	3	3
B-PPT-N 205.2	3	3	3	3	3	3	3	3
B-PPT-N 205.3	3	3	3	3	3	3	3	3
B-PPT-N 205.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT-N 205.1	3	3	3	3	3
B-PPT-N 205.2	3	3	3	3	3
B-PPT-N 205.3	3	3	3	3	3
B-PPT-N 205.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT-N 205.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 205.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 205.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 205.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT-N206: SHEET FED OFFSET TECHNOLOGY (PRACTICAL)

Time: 3 Hrs. Total Marks: 50
Credits :2 Practical : 25
Internal Assessment: 25

Course Objectives: This course is designed for practical demonstration of Sheet fed offset machine with various components and controlling devices.

Course Learning Outcomes: Upon successful completion of this course, the students learned about the sheet fed offset printing process and the student will be able to:
B-PPT-N206.1: Understand the Delivery units and different components of delivery unit.
B-PPT-N206.2: Develop the practical skill of Sheet fed Offset printing machine.
B-PPT-N206.3: Identify various printing defects
B-PPT-N206.4: Learn various components parts used in sheet-fed offset machine

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

LIST OF PRACTICALS

1. One colour printing.
2. Four colour printing.
3. Study of the various mechanisms.
4. Study of the fountain solution ingredients
5. Study of the lubrication system.
6. Setting the feeder, feed board, lays and delivery.
7. Identification of printing faults in the given samples-reasons and remedial actions.

B-PPT-N206: SHEET FED OFFSET TECHNOLOGY (PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT-N 206.1	3	3	3	3	3	3	3	3
B-PPT-N 206.2	3	3	3	3	3	3	3	3
B-PPT-N 206.3	3	3	3	3	3	3	3	3
B-PPT-N 206.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT-N 206.1	3	3	3	3	3
B-PPT-N 206.2	3	3	3	3	3
B-PPT-N 206.3	3	3	3	3	3
B-PPT-N 206.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT-N 206.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 206.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 206.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT-N 206.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT-N207: Human Values & Ethics (Theory)

Time:2 Hrs.	Total Marks: 50
Credits: 1	Theory: 25
Contact hours per week:2	Internal Assessment: 25

Course Objectives: This paper will help the learners to understand the need and significance of human values and ethics in their life.

Course Learning Outcomes:
After completing the Course, the student will be able to:
B-PPT-N207.1: correlate the need of human values to sustained happiness and prosperity- the core aspirations of human beings.
B-PPT-N207.2 : express the knowledge of human values and analyse their importance in holistic perspective for a peaceful world.

Unit -1

Human Values: Meaning and Definitions

(a) Understanding the need of human values and value education. Self-exploration, Concept of happiness and prosperity. Right understanding, understanding body as an instrument of I, Living in harmony, reaching highest potential in digital age through care & empathy balancing interests and expectations.

(b) Basic human values: Honesty, kindness, integrity, courage, co-operation, commitment, cleanliness, spirituality, understanding duties & rights.

Unit-II

Life Values and universal ethics

(a) Life Values:- Understanding of harmony in yourself family: Trust and respect, society; Co-existence & unity in diversity Nature mutually interacting units and universe.

(b) Universal Ethics-Loyalty, respect for others, adherence to the law, doing good and avoiding harm to other, accountability, sensitive towards environment. Transparency, impartiality and objectivity.

Suggested Books:-

1) Ethics. Integrity and Aptitute (3rd Edition)- M. Karthikeyan Pub: McGraw Hill,
2) A foundation course in Human Values and Professional Ethics- RR Gaur. R Sangal. GP Bagaria Pub: abe books
3) Ebook-lg- UGC (26-11-2019)

   PDF- Human Value www.uge.ac.in (available on UGC Website)
4) Patanjala Yoga Sutra- Samadhi Pada

B-PPT-N208: Activity/Hobby

Photography (Option-i)

Course Credit: 02 Total Marks: 50 Marks

Contact Hours: 02 per week

Teaching will be based on the discussion in the class room

Note: There will be no written examinations. Understanding of the art of Photography will be assessed through discussion and practical work by the Students in the class room.

Course Outcomes:

Unit-1: After studying the first unit of the course students will be able to become familiar with camera and related accessories.

Unit-II: After studying the second unit of the course students will be able to click photographs like a professional and may take up freelance photography.

Unit-1

Photography as an art and as a technique, means of self expression and creativity, tool of capturing and recording memories, means of developing curiosity and keen observation, way of exploring the world. Camera and related accessories, different types of camera and their uses

Unit-II

How camera works, focus, shutter speed, aperture, depth of field, white balance.

Understanding lights, lighting techniques, natural vs artificial lights, direction of lights, use of key, fill and back lights. Study of award winning photographs (Pulitzer prize winners)

Suggested Books:

1. Practical Photography Digital Camera School : The Step-by-step Guide to Taking GreatPicture- By Publisher Carlton Books Ltd. (London).

2. Photography Techniques and Uses (Photography Taknik and Pryog) by Narendra SinghYadav and Published by Rajasthan Hindi Granth Academy.
3. The Beginner's Photography Guide, Chris Gatcum, DK Publishers

B-PPT-N208: Activity/Hobby

Creative Writing (Option-ii)

Course Credit: 02 Total Marks: 50 Marks

Contact Hours: 02 per week

Teaching will be based on the discussion in the class room

Note: There will be no written examinations. Understanding of the art of creative writing will be assessed through discussion and practical work by the Students in the class room.

Course Outcomes:

Unit-1: After studying the first unit of the course students will be able to become familiar with characteristics of creative writing.

Unit-II: After studying the second unit of the course students will be able to write in various genres of creative writing.

Unit-1

Creative writing: meaning and significance, Basic principles of writing, role of research in writing, understanding of language and grammar

Unit-II

Genres of creative writing: short stories, novel, poetry, drama, features, columns, satire, biography, autobiography, travelogues, diaries, blog writing

Suggested Books:

1. Creative Writing: A Beginner's Manual by Anjana Neira Dev, Anuradha Marwah and Swati Pal, Publishers: Pearson India
2. The Cambridge Companion To Creative Writing South Asian Edition Edited by David Morley and Philip Neilson, Cambridge University Press

Learning Outcomes-based Curriculum Framework (LOCF)

for

B.Sc. (Printing & Packaging Technology)

A Three Year Bachelor Degree Programme

under

Choice Based Credit System (CBCS)/Learning Outcomes-based Curriculum Framework(LOCF)

w.e.f. Academic Session 2020-21.

Eligibility: 10+2 in any discipline

Institute of Mass Communication & Media Technology
Kurukshetra University, Kurukshetra

Proposed scheme for Choice Based Credit System in B.Sc. (Printing & Packaging Technology) Programme

Semester	CORE COURSE (CC) @ 6 Credits	Ability Enhancement Compulsory Course (AECC) @ 2 Credits	Skill Enhancement Course (SEC) @ 2 Credits	Discipline Specific Elective DSE @ 6 Credits
I	CC- 1 CC- 2 CC- 3 CC- 4	(English/MIL Communication)/Environmental Studies		
II	CC- 5 CC- 6 CC- 7 CC- 8	(English/MIL Communication) / Environmental Studies, Hindi		
III	CC- 9 CC- 10 CC- 11 CC- 12		SEC-1	
IV	CC- 13 CC- 14 CC- 15 CC- 16		SEC -2	
V			SEC -3/MOOC*	DSE-1 (Elective Subject)
				DSE-2 (Elective Subject)
				DSE-3 (Elective Subject)
	Internship/Industry Training **			
VI			SEC-4	DSE-4 (Elective Subject)
				DSE-5 (Elective Subject)
				DSE-6 (Elective Subject)

AECC will be offered according to the time table adjustments in the Institute/Department.

*MOOC Course from Swayam Portal.

** SEC can be offered in 3rd/4th/5th semester according to the time table adjustments in the institute.

****Internship/Industry Training** A candidate must complete industry training of 4 to 6weeks after completion of theory examination of 4th semester. The internship report will be submitted in 5th semester.

General instructions:

- One credit equivalent to 1 hour of teaching/2 hours of Practical work
- Teaching workload will be calculated on the basis of teaching contact hours of the course
- One credit (theory /Practical) equivalent to 25 marks

Total No. of Courses, Credit and Marks

Course	No. of Courses	Credits Teaching/Week	Credits Practical/ Week	Credits Tutorials/Week	Total Credits	Marks
Core Courses	16	16x4=64	16x2=32	--	64+32=96	16x150 =2400
AECC	3	3x2=6	--	--	6	3x50=150
SEC	4	4x2=8	--	--	8	4x50 =200
DSE	6	6x4=24	6x2=12	--	24+12=36	6x150 =900
Industrial Training	--	--	--	--	2	1x50 =50
Total	**29**	**102**	**44**	**-**	**148**	**3700**

Scheme of Examination of B.Sc.(Printing & Packaging Technology) for 5th & 6th Semester under CBCS/LOCF for Institute of Mass Communication & Media Technology (IMC&MT, KUK) in phased manner w.e.f. Academic Session2020-21

Semester-V

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
B-PPT-501 (a)	Binding and Finishing Technology(Theory)	DSE-1	4	-	-	4	4	6	80	-	20	100	3 Hours
B-PPT-502 (a)	Binding and Finishing Technology(Practical)		-	-	2	4	2		-	40	10	50	3 Hours
B-PPT-501(b)	OR Plastics in Packaging (Theory)		4	-	-	4	4		80	-	20	100	3 Hours
B-PPT-502 (b)	Plastics in Packaging (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
B-PPT-503(a)	Book and Newspaper Publishing(Theory)	DSE-2	4	-	-	4	4	6	80	-	20	100	3 Hours
B-PPT-504(a)	Book and Newspaper Publishing(Practical)		-	-	2	4	2		-	40	10	50	3 Hours
B-PPT-503 (b)	OR Package Design and Development (Theory)		4	-	-	4	4		80	-	20	100	3 Hours
B-PPT-504 (b)	Package Design and Development (Practical)		-	-	2	4	2		-	40	10	50	3 Hours
B-PPT-505(a)	Quality control in Printing and Packaging(Theory)	DSE-3	4	-	-	4	4	6	80	-	20	100	3 Hours
B-PPT-506(a)	Quality control in Printing and Packaging(Practical)		-	-	2	4	2		-	40	10	50	3 Hours
B-PPT-505(b)	OR Advanced Packaging Technology(Theory)		4	-	-	4	4		80	-	20	100	3 Hours
B-PPT-506(b)	Advanced Packaging Technology(Practical)		-	-	2	4	2		-	40	10	50	3 Hours
B-PPT-507	Costing and Estimating(Theory)	SEC-3	2	-	-	2	2	2	40	-	10	50	2 Hours
B-PPT-508	Internship Report*							2				50	
							Total Credits	**22**	**Total Marks**			**550**	

Semester-VI

Course Code	Course Title	Course Type	Contact Hours per Week				Credits	Total Credits	Marks				Duration of Exam
			L	T	P	Total			T	P	IA	Total	
B-PPT-601(a)	Digital Printing(Theory)	DSE-4	4	-	-	4	4	6	80	-	20	100	3 Hours
B-PPT-602(a)	Digital Printing(Practical)		-	-	2	4	2		-	40	10	50	3 Hours
	OR												
B-PPT-601(b)	Security Printing(Theory)		4	-	-	4	4		80	-	20	100	3 Hours
B-PPT-602(b)	Security Printing(Practical)		-	-	2	4	2		-	40	10	50	3 Hours
B-PPT-603	Print Management(Theory)	DSE-5	5	1	-	6	6	6	120	-	30	150	3 Hours
	OR		5	1	-	6	6		120	-	30	150	3 Hours
B-PPT-604	Entrepreneurship (Theory)												
B-PPT-605 (Optional)	**Project**	DSE-6**	5	1	-	6	6	6	-	120	30	150	3 Hours
B-PPT-605(i)	Pre Press Technology												
B-PPT-605(ii)	Press Production												
B-PPT605iii)	Post Press Operation												
B-PPT-605(iv)	Package Development												
B-PPT-605(v)	Eco Friendly Printing and Packaging												
B-PPT-606	Computer Graphics (Theory)	SEC-4	1	-	-	1	1	2	20	-	5	25	2 Hours
B-PPT-607	Computer Graphics (Practical)		-	-	1	2	1		-	20	5	25	2hours
Total Credits								**20**	**Total Marks**			**500**	

* Students have to complete the internship of four to six weeks after the examination of 4th semester and submit the report of internship in the commencement of 5th semester. The report submitted by the students will be evaluated by the teacher appointed by the Director and a viva-voce will be conducted during practical examination.

**Viva -Voce of DSE-6 (Major Project)is to be evaluated by a panel of three examiners to be appointed by the Director of the institute and it is to be submitted to the institute by the student 20 days prior to the theory examination of the semester in which the Report is supposed to be submitted.

B-PPT 501(a) : BINDING AND FINISHING TECHNOLOGY (THEORY)

Time: 3 Hrs. **Total Marks: 100**
Total Credit-04 **Theory Marks: 80**
Internal Assessment: 20

Course Objectives: This course is designed for theoretical understanding of principles, applications and material used in binding and finishing technology. It provides the technical ability to understand various production operations used in binding and finishing technology.

Course Learning Outcomes: The students learned about the binding and finishing technique and the student will be able to:
B-PPT501 (a).1: Enhance knowledge about binding and finishing operations in post press section.
B-PPT501 (a).2:Learn about the machine used in binding
B-PPT501 (a).3:Knowledge increase about the decoration techniques of binding
B-PPT501 (a).4:Know about the different types of binding tools and equipments.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

UNIT-I

Introduction to the terms 'Binding ' and 'Finishing'. List of major operations performed in binding and finishing Pre-forwarding, Forwarding, Finishing. Tools and equipment's used for binding, binder's aids and or marks. Material used in Binding and Finishing .Paper, Study of different types applications of board used in binding and finishing work. Securing materials. Covering materials- Study of properties and applications of different types of adhesives

UNIT-II

Structure Of A Book: Physical Parts Of a Hard Bound Book. Operations Of Ideal full Cloth Binding Production-Pre-Forwarding Operations, Forwarding Operations, Finishing Operations. Advantages & Limitations Of Hand Folding. Machine Folding - Knife Principles, Buckle Principle, Combination Of Knife & Buckle. Folding & Machine Direction. Gathering - Single Sheet Gathering, Collating - Collating Marks. Insetting , Inserting.

UNIT-III

Securing Methods:Wire Stitching - Saddle Stitching, Side Stitching, Stabbing. Thread Sewing - Letterpress Binding, & Stationery Binding. Saddle Sewing,. Adhesive Binding/Perfect Binding. Mechanical Binding. End Papers: Purposes, Kinds of end Rapers, Quality of Paper Required for Pasting End Papers. Pressing, Gluing The Spine, Smashing the Spine, trimming the Book Edges, Rounding- Rounding M/C. Backing - Backing M/C. Lining - Method Of Attaching Head & Tail Bands. Covering - Covering Styles. Pasting Down, Pressing, Inspection.

UNIT-IV

Finishing Operations:

Cover Decoration & Other Processes. Print Finishing Operations - Embossing &Debossing, Blind Embossing, Gold Blocking /Foil Stamping. Die Printing. Thermography, Velvet Printing, Marbling, Varnishing, Graining, Laminating, Gumming, Gluing, Punching, Perforating, Drilling. Label Puching, Appliqué. Edge Decoration - Requirement, Colouring. The Edges, Marbling Edges, Edge Guilding. Round Corner Cutting. Laminating, Blocking, Numbering, Perforation, Creasing, Die cutting, Edge decoration, Index cutting, Foil stamping, graining, varnishing.

Binding & Finishing Machines:
Study of Various Modern Machines. Modern Guillotines – Single Knife Guillotines. Three Knife Trimmers. Knife Grinding M/C. Gold Blocking/Foil Stamping M/C. Wire Stitching M/C. Straw Board Cutter. Laminating M/C – Small Laminating M/C. Pouch Laminating M/C. Tunnel Laminating M/C. Tipping M/C. Smashing M/C. Back Gluing M/C. Roller Gliding M/C. Inline Rounding M/C. Lining M/C. Modern Lining M/C. Cloth Cutting M/C. Foil Blocking M/C. Rotary Blocking M/ C. Casing In M/C. Case Making M/C. Box Waste Disposal Process. Adhesive binding machine.

Recommended Books :-

Binding And Finishing - Ralph Lyman Binding And Finishing Part-1 - B.D.Mendiratta

Binding Finishing Mailing - T.J.Tedesco Introduction to Printing & Finishing - Hugh Speirs

Finishing Process in Printing - A.G.Martin.

B-PPT 501(a) : BINDING AND FINISHING TECHNOLOGY (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT501 (a).1	3	3	3	3	3	3	3	3
B-PPT501 (a).2	3	3	3	3	3	3	3	3
B-PPT501 (a).3	3	3	3	3	3	3	3	3
B-PPT501 (a).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT501 (a).1	3	3	3	3	3
B-PPT501 (a).2	3	3	3	3	3
B-PPT501 (a).3	3	3	3	3	3
B-PPT501 (a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT501 (a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT501 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT501 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT501 (a).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 502 (a): BINDING AND FINISHING TECHNOLOGY (PRACTICAL)

Time: 3 Hrs. **Total Marks: 50**
Total Credit-02 **Practical Marks: 40**
Internal Assessment: 10

Course Objectives: This course is designed for practical understanding of tools and equipments used in binding and finishing technology.

Course Learning Outcomes: The students learned about the binding tools and techniques also the student will be able to:
B-PPT502(a).1: Enhance knowledge about binding and finishing operations in post press section.
B-PPT502 (a).2: Learn about the machine used in binding.
B-PPT502 (a).3: Knowledge increase about the decoration techniques of binding.
B-PPT502 (a).4: Know about the different types of binding tools and equipments.

Note:-The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

LIST OF PRACTICALS

1. Preparation of Quarter, Half and Full bound books using, French sewing method / Tape sewing method / Cord sewing method / Saddle sewing method / Side sewing meth
2. Preparation of following type of Mechanical binding - Spiral wire binding, Wire 'O' binding, Ring binding.
3. Preparation of these types of End papers - Single End paper, Double or Inserted End paper, Made end paper, Cloth joint end paper, Zig Zag end paper, Cloth joint Zig Zag end paper.
4. Preparation of telephone directory with Indexes and Tabs.
5. Study of various controls, operations and mechanisms of the following machines: Folding machine, Guillotine machine, Cutter and Creaser, Varnishing machine, Laminating machine, Sewing & Stitching machine, miscellaneous machine.
6. Print finishing operation to be conducted - Gold blocking, Embossing, Edge decoration,

   Thermography, Marbling, Velvet printing, Rubber printing, Die printing, Pouch lamination.

B-PPT 502(a): BINDING AND FINISHING TECHNOLOGY (PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 502 (a).1	3	3	3	3	3	3	3	3
B-PPT 502 (a).2	3	3	3	3	3	3	3	3
B-PPT 502 (a).3	3	3	3	3	3	3	3	3
B-PPT 502 (a).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 502 (a).1	3	3	3	3	3
B-PPT 502 (a).2	3	3	3	3	3
B-PPT 502 (a).3	3	3	3	3	3
B-PPT 502 (a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 502 (a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 502 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 502 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 502 (a).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 501 (b) : PLASTIC IN PACKAGING (THEORY)

Time: 3 Hrs. **Total Marks: 100**
Total Credit-04 **Theory Marks: 80**
Internal Assessment: 20

Course Objectives: This course is designed for theoretical understanding of basic about plastics and its classifications and recycling of packaging.. It also provides the technical ability to understand various classification of plastics comes in various Printing and Packaging industries.

Course Learning Outcomes: The students learned about the plastics used in Printing and Packaging Industries. The student will be able to:
B-PPT501 (b).1: Enhance knowledge about development in plastics in pring and packaging industry..
B-PPT501 (b).2: Know about classification of plastics in printing and packaging .
B-PPT501 (b).3: Develop the knowledge about the different plastics and polymers used in various printing processes.
B-PPT501 (b).4: Know about the basic knowledge of various testing and recycling of plastics.

Note: - The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

Unit I

Plastic Introduction

Packaging, Types of packaging,Purposes of packaging.Plastic-introduction, Classification of synthetic polymer. Techniques of polymerization, Distinction between Plastic, Fibres and Elastomers. Application of plastic in packaging

Unit II

Classification of Plastic

Miscellaneous plastics - polycarbonate, nylon , Low-Density Polyethylene (LDPE), Linear low-density polyethylene (LLDPE) High-Density Polyethylene (HDPE) High molecular high density Polyethylene(HM HDPE)Polyethylene Terephthalate (PETE or PET), Polyvinyl Chloride (PVC) - Introduction, properties and applications.

Unit III

Environment and pollution in plastic industry

Plastic Industry effects on environment and its components; water, soil, air and living things, Storage and handling of plastics, Pollution and Hazards related to Plastics, Plastic Waste

Management- Public awareness regarding hazards caused by indiscriminate use of plastics, proper disposal of plastics. Alternate Packaging material.

Unit IV

Testing and Recycling of plastic

Introduction, Process, Solubility test, Lenition test, Dry distillation test, Chemical color identification test, Pyrolysis test, Refractive index. Recycling of plastic-Processes–Thermal depolymerization, distributed recycling, plastic identification code

RECOMMENDED BOOKS

1. Handbook of Plastics, Elastomers and Composites by Charles A. Harper; Published by McGraw Hill Company, New Delhi
2. Plastic Waste Management by Nabil Mustufa; Marcel Dekker
3. Introduction to Environmental Engineering and Science by Gilbert M Masters; Prentice Hall of India, New Delhi
4. Recycling and Recovering of Plastics by Brandrup (Hanser Publications)

B-PPT 501 (b) : PLASTIC IN PACKAGING (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 501 (b).1	3	3	3	3	3	3	3	3
B-PPT 501 (b).2	3	3	3	3	3	3	3	3
B-PPT 501 (b).3	3	3	3	3	3	3	3	3
B-PPT 501 (b).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 501 (b).1	3	3	3	3	3
B-PPT 501 (b).2	3	3	3	3	3
B-PPT 501 (b).3	3	3	3	3	3
B-PPT 501 (b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO 1	PO2	PO3	PO 4	PO5	PO6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 501 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 501 (b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 501 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 501 (b).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 502 (b) : PLASTIC IN PACKAGING (PRACTICAL)

Time: 3 Hrs. **Total Marks: 50**
Total Credit-02 **Practical Marks: 40**
Internal Assessment: 10

Course Objectives: This course is designed for practical understanding of plastics in printing and packaging industry.. It also provides the technical ability to understand various plastics in printing and packaging industry com

Course Learning Outcomes: The students learned about the plastics in printing and packaging and the student will be able to:
B-PPT502 (b).1:Enhance knowledge about various plastics in printing and packaging industry.
B-PPT502 (b).2:Knowledge about the tools and equipment used for plastics .
B-PPT502 (b).3:Technical knowledge about different types of plastics testing in printing and packaging industry.
B-PPT502 (b).4:Know about the basic knowledge of various plastics samples .

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

LIST OF PRACTICALS:

1. Identification of plastics.

2. Solubilty Test.

3. Ignition Test.

4. Dry Distillation Test

5.Chemical colour identification test.

6.Test for Individual Plastics-acrylic plastics ,butyl rubber, neoprene ,nylon,polyethylene.

B-PPT 502 (a) (b) : PLASTIC IN PACKAGING (PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 502 (b).1	3	3	3	3	3	3	3	3
B-PPT 502 (b).2	3	3	3	3	3	3	3	3
B-PPT 502 (b).3	3	3	3	3	3	3	3	3
B-PPT 502 (b).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 502 (b).1	3	3	3	3	3
B-PPT 502 (b).2	3	3	3	3	3
B-PPT 502 (b).3	3	3	3	3	3
B-PPT 502 (b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO 1	PO2	PO3	PO 4	PO5	PO6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 502 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 502 (b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 502 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 502 (b).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 503 (a) : BOOK AND NEWSPAPER PUBLISHING (THEORY)

Time:3 Hrs. **Total Marks: 100**
Credits: 4 **Theory:80**
Internal Assessment:20

Course Objectives: This course is designed for theoretical understanding of basic Book Publishing and Newspaper Publishing. It provides the technical ability to understand various production operations used in books and newspaper publishing. It develops the basic knowledge of editorial department in book and newspaper publishing.

Course Learning Outcomes: The students learned about the Book and Newspaper Publishing and the student will be able to:
B-PPT503 (a).1: Enhance knowledge about the process of book publishing and newspaper publishing
B-PPT503 (a).2: Technical aspects of production from receipt of manuscript to completion of book.
B-PPT503 (a).3: Develop and exhibit the skills of editorial department in newspaper publishing.
B-PPT503 (a).4: Learned about work flow and organizational structure in a newspaper printing press.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

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UNIT-I

Book Publishing -Introduction, Parts of a book, Basic steps in book publishing, Areas of publishing - general publishing, educational publishing, professional publishing and reference publishing, Editorial organization, the role of commissioning editor, the desk editor, Relationship of the Editor with the manuscript, Types of agreement between author and the publishers.

UNIT-II

Technical and Management concept-Technical aspects of production from receipt of manuscript to completion of book, Work flow and organizational structure in a commercial printing press., Management- The production manager, The marketing manager, Financial Manager, Advertisement departments, International book trade and barriers. Subsidy and it processes in book publishing.

UNIT-III

Introduction to Newspaper organization - Sources of news, printing of newspaper, Editorial organization - the role of copy editors, city editors, news editors, editorial cartoonist, Sunday editors, sports editor, business editor, journalist & reporters, Information to a printer by editor.

UNIT-IV

Distribution and Design layout-Distribution channels, Types of distribution channels, Work flow and organizational structure in a newspaper printing press. The various type of layout, Functions of headlines, kickers, and blurbs, Graphics/diagrams and illustrations and their importance.

Recommended Books : News Reporting and writing - Melvin Mecher The Journalist; Handbook - M. V. Kamath Editing; A Handbook for Journalists - TJS George Editing; A Handbook for Journalists - TJS George, Indian Institute of Mass communication, Delhi. Telling Stories, Taking Risks - Klement/Mataline Journalism in India - R. Parthasarathy Headlines and Deadlines - Baskette, Floyd

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B-PPT 503 (a) : BOOK AND NEWSPAPER PUBLISHING (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 503 (a).1	3	3	3	3	3	3	2	3
B-PPT 503 (a).2	3	3	3	3	3	3	3	3
B-PPT 503 (a).3	3	3	3	3	3	3	3	3
B-PPT 503 (a).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 503 (a).1	3	2	3	3	3
B-PPT 503 (a).2	3	2	3	3	3
B-PPT 503 (a).3	3	3	3	3	3
B-PPT 503 (a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 503 (a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 503 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 503 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 503 (a).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 504 (a) : BOOK AND NEWSPAPER PUBLISHING (PRACTICAL)

Time: 3 Hrs. **Total Marks: 50**
Credits:2 **Practical :40**
Internal Assessment:10

Course Objectives: This course is designed for the students to enhance their skills in Book Publishing and Newspaper Publishing. It updated the students as per the industry requirements and also provides the technical ability to understand the process of Book Publishing and Newspaper Publishing.

Course Learning Outcomes:
B-PPT 504 (a).1: Develop the practical knowledge of web presses used in book publishing and newspaper publishing.
B-PPT 504 (a).2: Enhance knowledge about the various pre-make ready and make-ready operations of book publishing and Newspaper Publishing.
B-PPT 504 (a).3 Develop the knowledge about the layout and design of newspaper.
B-PPT 504 (a).4: Know about the basic knowledge of Book and Newspaper production operations.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

LIST OF EXPERIMENTS

1. Study of various parts of a book.
2. Introduction to type of Web Presses as per the configuration & end products.
3. Study of various Book printing machines, units & their setting.
4. Study of various pre-make ready operations.
5. Preparation of a multi-colour book cover page
6. Study of various make-ready operations for Newspaper printing press.
7. Printing single & multicolour jobs in Newspaper organization.

B-PPT 504 (a) : BOOK AND NEWSPAPER PUBLISHING (PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 504 (a).1	3	3	3	3	3	3	3	3
B-PPT 504 (a).2	3	3	3	3	3	3	3	3
B-PPT 504 (a).3	3	3	3	3	3	3	3	3
B-PPT 504 (a).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 504 (a).1	3	3	3	3	3
B-PPT 504 (a).2	3	3	3	3	3
B-PPT 504 (a).3	3	3	3	3	3
B-PPT 504 (a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO 1	PO2	PO3	PO 4	PO5	PO6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 504 (a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 504 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 504 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 504 (a).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 503 (b) : PACKAGE DESIGN AND DEVELOPMENT (THEORY)

Time: 3 Hrs. **Total Marks: 100**
Total Credit-04 **Theory Marks: 80**
Internal Assessment: 20

Course Objectives: This course is designed for theoretical understanding of Packaging and it's designing in the today's world. It also provides the technical ability to understand various software used in its manufacturing.

Course Learning Outcomes: The students learned about Packaging designing and the student will be able to:
B-PPT503 (b).1: Enhance knowledge about package design and its development.
B-PPT503 (b).2: Know about Layout techniques.
B-PPT503 (b).3: Develop the knowledge about techniques and tools used in software designing.
B-PPT503 (b).4: Know about the knowledge of new trends in Packaging.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

UNIT-I

INTRODUCTION TO PACKAGE DESIGN: Introduction to Computer based Design Patterns, Requirement for Design of Package Designing Tools, Visualizing, Multi-dimensional Packaging, Design Basics, Types of design. Dummy preparation**.**

UNIT-II

DESIGN FOR PACKAGING: Introduction to Design for Packaging,. Elements for Packages, Die lines and its placements through computer design. Introduction to various types of Packages and their Die lines concepts (cutting and creasing) - for Food Packaging, FMCG Packaging, Medicine packaging, Cosmetics Packaging, Innovative Packaging.

VARIABLE DATA IN PACKAGING DESIGN: Barcodes – 2D, 3D Barcodes, QR Codes, Data Metric, Personalized QR Code etc. customization and personalization in Packaging. 3-D modeling in Packaging design

UNIT-III

SOFTWARE FOR GRAPHIC DESIGN: Introduction and Understanding of various Graphic Designing software for Package, and their Uses, Application, specialty, Advantages and Limitations.

SOFTWAREFOR PACKAGE DESIGN: Introduction and Understanding of various Package Designing software for Packaging, and their Uses, Application, specialty, Advantages and Limitations. Introduction and Understanding of various software for Step and Repeat Pattern used for Designing, Cutting, Creasing, Finishing and Value Addition, and their Uses, Application, specialty, Advantages and Limitations. Introduction and Understanding of various Die-cutting/Die-making software's for Packaging, and their Uses, Application, specialty, Advantages and Limitations. UNDERSTANDING ELECTRONIC COLOURS: Color models, Color gamut, Halftone, duotone and tritons.

UNIT-IV

NEW TRENDS IN PACKAGE DESIGN: Design for Organic Electronic Printing in Packaging applications, New Packaging Design Trends and their features, Value Addition application in Packaging through designing for augmented reality in Packaging. Recent developments in package designing.

Recommended Books :

Printing Technology – Adams, Faux, Rieber.

B-PPT 503 (b) : PACKAGE DESIGN AND DEVELOPMENT (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT503 (b).1	3	3	3	3	3	3	3	3
B-PPT503 (b).2	3	3	3	3	3	3	3	3
B-PPT503 (b).3	3	3	3	3	3	3	3	3
B-PPT503 (b).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT503 (b).1	3	3	3	3	3
B-PPT503 (b).2	3	3	3	3	3
B-PPT503 (b).3	3	3	3	3	3
B-PPT503 (b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT503 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT503 (b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT503 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT503 (b).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 504 (b): PACKAGE DESIGN AND DEVELOPMENT (PRACTICAL)

Time: 3 Hrs. **Total Marks: 50**
Total Credit-02 **Practical Marks: 40**
Internal Assessment: 10

Course Objectives: This course is designed for theoretical understanding of Packaging and it's designing in the today's world. It also provides the technical ability to understand various software used in Package Designing.

Course Learning Outcomes: The students learned about Packaging designing and the student will be able to:
B-PPT504 (b).1: Enhance knowledge about package design and its development .
B-PPT504 (b).2: Know about Layout techniques.
B-PPT504 (b).3: Develop the knowledge about techniques tools used in software desiging.
B-PPT504 (b).4: Know about the knowledge of new trends in Packaging.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

List of Experiments -

1. Study of Various Package designs for cartons, Corrugations, cosmetics, Pharmaceuticals & flexible food items.
2. Study & collection of Innovative package designs.
3. Study of Software of Package Designs, Die-cutting/ Die-making software.
4. Study & Sampling Value editions of Package Designing.
5. Study of Designing with colours.

B-PPT 504 (b) : PACKAGE DESIGN AND DEVELOPMENT (PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT504 (b).1	3	3	3	3	3	3	3	3
B-PPT504 (b).2	3	3	3	3	3	3	3	3
B-PPT504 (b).3	3	3	3	3	3	3	3	3
B-PPT504 (b).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT504 (b).1	3	3	3	3	3
B-PPT504 (b).2	3	3	3	3	3
B-PPT504 (b).3	3	3	3	3	3
B-PPT504 (b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT504 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT504 (b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT504 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT504 (b).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 505 (a) : QUALITY CONTROL IN PRINTING & PACKAGING (THEORY)

Time: 3 Hrs. **Total Marks: 100**
Total Credit-04 **Theory Marks: 80**
Internal Assessment: 20

Course Objectives: This course is designed for understand the concept of Quality and its control in various sections of a printing and Packaging organization. The various quality control methods and testing instruments utilization helps in controlling the quality of materials and processes.

Course Learning Outcomes: The students learned about the Quality control and the student will be able to:
B-PPT505 (a).1: Enhance knowledge about Quality control procedures.
B-PPT505 (a).2: Know about Various instruments and equipments used to control the quality of production.
B-PPT505 (a).3: Develop the knowledge about the ISO certification.
B-PPT505 (a).4: Know about role of management in quality control.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

UNIT-I

Introduction: Definition of Quality, Quality control, its meaning and purpose setting up a Quality Control Programme, and establishing necessary System and procedures, economic consideration.

UNIT-II

Management Consideration: Quality Control as an attitude and management tool, management's responsibility, organization and personnel functions, getting everybody involved. Total Quality Control. Quality Control procedures and methods. Different shapes of quality control.

UNIT-III

Materials Control: Establishing clear specifications and standardization of materials to be purchased - particularly paper, ink, plates, blankets and rollers, Inspection and testing of incoming materials as part of quality control; importance of proper handling and maintaining records of performance of materials Sampling and sampling plans.

Establishing Quality control programme in different departments of Printing organization.

UNIT-IV

Quality Control Instrumentation: Paper and paper board testing instruments for testing printability, print quality and end-use requirements, Ink testing instruments for testing optical and working properties and end-use requirements Process control instruments, devices and aids used in the galley and dark-room, striping department, plateroom and press room for specific processes and for general purposes Press sheet control devices used for production of multicolour printing jobs Basic principles of these instruments and devices how they function and what they measure, minimum instrumentation necessary to produce a product consistent with the appropriate quality level.

Introduction to ISO:9000 and ISO:14000 series.

Recommended Books:

1. W.H. Banks, Inks, Plates and Print Quality, Pergamon Press

2. Quality Control for quality printing, Graphic Arts, Technical Foundations.

B-PPT 505 (a): QUALITY CONTROL IN PRINTING & PACKAGING (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 505 (a).1	3	3	3	3	3	3	3	3
B-PPT 505 (a).2	3	3	3	3	3	3	3	3
B-PPT 505 (a).3	3	3	3	3	3	3	3	3
B-PPT 505 (a).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 505 (a).1	3	3	3	3	3
B-PPT 505 (a).2	3	3	3	3	3
B-PPT 505 (a).3	3	3	3	3	3
B-PPT 505 (a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 505 (a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 505 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 505 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 505 (a).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 506 (a): QUALITY CONTROL IN PRINTING & PACKAGING (PRACTICAL)

Time: 3 Hrs. **Total Marks: 50**
Total Credit-02 **Practical Marks: 40**
Internal Assessment: 10

Course Objectives: This course is designed for practical understanding of testing procedure of various material ,tools and equipments used for quality control . The students can understand the various characteristics of material and machine by using quality control instruments for controlling the process of production.

Course Learning Outcomes: The students learned about the quality control tools and equipments with their testing procedures.
B-PPT506 (a).1: understand about paper gsm,grain direction, bursting strength etc..
B-PPT506 (a).2: Knowledge about the cob test and tearing test of paper.
B-PPT506 (a).3: Technical knowledge about operations of various quality control instruments and procedures.
B-PPT506 (a).4: Understand about ink testing instruments like viscometer, tacometer etc..

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

LIST OF PRACTICALS

1. Paper testing checking grain direction.
2. Tensile strength of paper, burst strength of paper.
3. Substance, caliper, porosity test, cobb sizing value test.
4. Tearing testing of paper, brightness test of paper.
5. Operating test, gloss test, lighting color filter sensor.
6. G.S.M.testing, folding endurance.
7. Moisture contents test, ash contents test.
8. Pick strength, humidity control test, room temp testing.
9. Ink film thickness test.
10. Measurement of visocity, tack measurement.
11. Measurement of ink film thickness

B-PPT 506 (a): QUALITY CONTROL IN PRINTING & PACKAGING (PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 506 (a).1	3	3	3	3	3	3	3	3
B-PPT 506 (a).2	3	3	3	3	3	3	3	3
B-PPT 506 (a).3	3	3	3	3	3	3	3	3
B-PPT 506 (a).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 506 (a).1	3	3	3	3	3
B-PPT 506 (a).2	3	3	3	3	3
B-PPT 506 (a).3	3	3	3	3	3
B-PPT 506 (a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 506 (a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 506 (a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 506 (a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 506 (a).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 505 (b): ADVANCE PACKAGING TECHNOLOGY (THEORY)

Time: 3 Hrs. **Total Marks: 100**
Total Credit-04 **Theory Marks: 80**
Internal Assessment: 20

Course Objectives: This course is designed for understand the concept of Advance Packaging in various sections of a printing and Packaging organization. The various products produce through Advance Packaging.and their process of packaging.

Course Learning Outcomes: The students learned about the advance packaging.
B-PPT505 (b).1: Enhance knowledge about advance packaging..
B-PPT505 (b).2: Know about various products produce through commercial packaging
B-PPT505 (b).3: Develop the knowledge about cold storage..
B-PPT505 (b).4: Know about role of packaging material. .

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

Unit-I

Packaging of Food Products

(a) Agriculture produce
(b) Processed and dehydrated food
(c) Milk and Milk Products
(d) Meat and poultry products
(e) Marine products-Shrimps
(f) Spices
(g)

Unit-II

Packaging of other specific items

(a) Pharmaceuticals
(b) Tea
(c) Cosmetics and perfumery
(d) Soaps, detergents and shampoos
(e) Chemicals and fertilizers
(f) Petroleum products
(g) Pesticides

(h) Light engineering goods and domestic appliances
(i) Heavy machinery and equipments
(j) Textiles and garments
(k) handicrafts

Unit-III

Method of storage

(a) Cold storage, and deep freezing method of storage, their design and usage
(b) Irradiation, preservation of perishables and semi perishables

Unit-IV

(a) For packaging material- physical, physico-chemical properties, resistance to light, insect and mould

(b) For packaged goods- Unit package : compatibility studies, shelflife studies-with reference to flexible, rigid packs, different types of seals, closured etc. Bulk packages-Evaluation of transport worthiness of filled packages-physical and climatic hazards.

Recommended Books:

1. Packaging technology educational volume -1
2. . Packaging technology educational volume -2

B-PPT 505 (b): ADVANCE PACKAGING TECHNOLOGY (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 505 (b).1	3	3	3	3	3	3	3	3
B-PPT 505 (b).2	3	3	3	3	3	3	3	3
B-PPT 505 (b).3	3	3	3	3	3	3	3	3
B-PPT 505 (b).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 505 (b).1	3	3	3	3	3
B-PPT 505 (b).2	3	3	3	3	3
B-PPT 505 (b).3	3	3	3	3	3
B-PPT 505 (b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 505 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 505 (b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 505 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 505 (b).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 506 (b) : ADVANCE PACKAGING TECHNOLOGY (PRACTICAL)

Time: 3 Hrs. **Total Marks: 50**
Total Credit-02 **Practical Marks: 40**
Internal Assessment: 10

Course Objectives: This course is designed for practical understanding of basic principal of Advance Packaging.

Course Learning Outcomes: The students learned about the Packaging process and the student will be able to:
B-PPT506 (b).1: understand about flexible packages..
B-PPT506 (b).2: Knowledge about thestudy operations of various packaging machines.
B-PPT506 (b).3: Technical knowledge about operations of manufacturing carton and corrugated board.
B-PPT506 (b).4: Understand about designing of paper board.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

LIST OF PRACTICALS

1. Designing and preparation of various flexible packages.

2. Designing and preparation of various rigid packages.

3. Study and operation of various packaging machines.

4. Manufacturing of various types of corrugated boards.

5. Designing & preparation of various designs of paper bags.

6. Testing of raw materials like wood, paper, plastic.

7. Drop test, Vibration test, Inclined impact test, Compression test.

B-PPT 506 (b): ADVANCE PACKAGING TECHNOLOGY (PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 506 (b).1	3	3	3	3	3	3	3	3
B-PPT 506 (b).2	3	3	3	3	3	3	3	3
B-PPT 506 (b).3	3	3	3	3	3	3	3	3
B-PPT 506 (b).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 506 (b).1	3	3	3	3	3
B-PPT 506 (b).2	3	3	3	3	3
B-PPT 506 (b).3	3	3	3	3	3
B-PPT 506 (b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 506 (b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 506 (b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 506 (b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 506 (b).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 507: COSTING AND ESTIMATING (THEORY)

Time: 2 Hrs. **Total Marks: 50**
Total Credit-02 **Theory Marks: 40**
Internal Assessment: 10

Course Objectives: This course is designed for understanding of terms cost ,price and profit in context of various printing organizations. Elements of cost ,objectives and methods of costing understand by students.

Course Learning Outcomes: The students learned about costing and estimating with various techniques and procedures.
B-PPT507.1: Enhance knowledge about performas and specimens used in printing and packaging organizations.
B-PPT507.2: Know about role of management in costing and estimation.
B-PPT507.3: Develop the knowledge about techniques and tools used in estimating a job.
B-PPT507.4: Know about the knowledge of new trends in estimating.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

UNIT-I

Printing Company Organization:

Printing management, principles, functions, Organizational criteria, Skills requirements, Types of business, Printing company management structures, Management team responsibilities, Business plan, Management styles, Management decisions, Communications, Print marketing and sales - marketing, sales.

UNIT-II

Human Resource Management Concepts:

HRM for printing, employment policy, evaluation of skills requirements for printing occupations, recruitment, job evaluation, staff appraisal, motivation training, human resources factors that limit productivity, staff flexibility. Manning and training requirements, States of industry, Analysis and development of human resources strategy. Management personal skills and development, job satisfaction through involvement.

UNIT-III

Estimating:

Purpose and functions of estimating from printer point of view &customers point of view. Difference between costing & estimating. Qualifications of an estimator, working environment, estimators tools, estimating paper - selection of paper, allowance for waste, allowance for trimming, weight of loose sheets, weight of a reel of paper. Estimating Ink - Ink consumption formula, Ink allowance for spoilage. Estimating binding materials - Board requirement, estimating covering materials, estimating sewing thread, estimating stitching wire, estimating adhesives. Terms and conditions-approved by AIFMD. Estimate Form and Computer Aided Estimating.

UNIT-IV

Costing:

Job costing, its need and procedures. Elements of cost and their method of recovery. Cost sheet. Daily Docket. Work Instruction Ticket and their importance in costing.

Recommended Books :

Principles of Accounting - B. S. Raman

Fundamentals of Financial Management - Prasanna Chandra.

Cost Accounting - B. R. Bhar

Print Management - Derek Porter

Printer's Costing & Estimating - B. D. Mendiratta

Management Aspect of Printing Industry - T. A. Saifuddin.

Estimating Methods and Cost Analysis for Printers - K. S. Venkataraman, K. S. Balaraman.

Printing Estimating Principle & Practice - Philip Kent Ruggles

Print Production Management - Gray G. Field

Principles of Applied Costing for Printing Industry - K. S. Venkataraman.

B-PPT 507: COSTING AND ESTIMATING (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 507.1	3	3	3	3	3	3	3	3
B-PPT 507.2	3	3	3	3	3	3	3	3
B-PPT 507.3	3	3	3	3	3	3	3	3
B-PPT 507.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 507.1	3	3	3	3	3
B-PPT 507.2	3	3	3	3	3
B-PPT 507.3	3	3	3	3	3
B-PPT 507.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 507.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 507.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 507.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 507.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 508: Internship Report

Credits : 2 **Total Marks : 50**

* Students have to complete the internship of four to six weeks after the examination of 4th semester and submit the report of internship in the commencement of 5th semester. The report submitted by the students will be evaluated by the teacher appointed by the Director and a viva-voce will be conducted during practical examination.

B-PPT 601(a) : DIGITAL PRINTING (THEORY)

Time: 3 Hrs. **Total Marks: 100**
Total Credit-04 **Theory Marks: 80**
Internal Assessment: 20

Course Objectives: This course is designed for theoretical understanding of principles, applications used in Digital Printing. It provides the technical ability to understand various production operations used in Digital Printing.

Course Learning Outcomes: The students learned about the digital printing and networking system used in digital printing the student will be able to:
B-PPT601(a).1: Enhance knowledge about various digital printing techniques.
B-PPT601(a).2:Know about electrophotography, ionography & magnetography process
B-PPT601(a).3: Develop the knowledge about networking and its uses in digital printing.
B-PPT601(a).4: Know about the basic knowledge of ink jet & nanographic printing.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

UNIT I

PRINCIPLES AND BASIC COMPONENTS -Variable Data Printing; Print on Demand; Evolution – Computer to Press, Computer to Print;, Non-Impact Printing Technologies - Overview, Process characteristics, economics, job suitability; Computer to Print systems – Digital Front Engine, Components, Architecture, Inline Print Finishing; ISO Standards

UNIT II

ELECTROPHOTOGRAPHY, IONOGRAPHY & MAGNETOGRAPHY - Principle of Electrophotography, Imaging Systems, Inking Unit (Developing Unit) and Toner Fixing and Cleaning, Conception of the Printing Unit, Ionography, Printing Unit, Imaging System and the Principle of Ionography, Printing Unit Concepts and Printing Systems based on Ionography; Principle of Magnetography, Imaging System for Magnetography, Examples of Applications/Printing Systems

UNIT III

INK JET & NANOGRAPHIC PRINTING - Overview of Ink Jet Technologies and Processes, Continuous Ink Jet, Drop on Demand Ink Jet Technologies, Structure of Ink Jet Arrays, Printing Systems based on Ink Jet Technology for Multicolour Printing (Selection); Nanographic printing – Principle, Inks, Press configuration; Thermography and Electrography ,Overview of Thermography, Technologies, Thermal Transfer Printing Systems, Thermal Sublimation Printing Systems, Electrography, Photography, "X"-Graphy, TonerJet Printing Technology, Elcography, Direct Imaging Printing Technology, Assessment of New Types of NIP Technologies.

UNIT V

Networking: Networks for printing. Networks for publishing. Networks for Inhouse. WAN (Wide Area Net works). APPLICATIONS -Hybrid Printing Systems – Configuration, Integration, Applications; Printed Electronics, Photography, Coding, Display and Signages, Textiles, Security Printing – Inks, Substrates, Digital Press configurations, Major manufacturers;

Recommended Books :

Digital Printing -

On Demand Printing - Howard M. Fenten, Frank J. Romano

TEXT BOOKS: 1. Harald Johnson, Mastering Digital Printing, Cengage Learning PTR; 2 edition, 2004 2. Mitchell Rosen, Noboru Ohta, Colour Desktop Printer Technology, CRC Press, 2006 REFERENCE: 1. Helmut Kipphan, Handbook of Print Media, Springer Verlag, 2001

B-PPT 601(a): DIGITAL PRINTING (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 601(a).1	3	3	3	3	3	3	3	3
B-PPT 601(a).2	3	3	3	3	3	3	3	3
B-PPT 601(a).3	3	3	3	3	3	3	3	3
B-PPT 601(a).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 601(a).1	3	3	3	3	3
B-PPT 601(a).2	3	3	3	3	3
B-PPT 601(a).3	3	3	3	3	3
B-PPT 601(a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 601(a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 601(a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 601(a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 601(a).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 602(a): DIGITAL PRINTING (PRACTICAL)

Time: 3 Hrs. **Total Marks: 50**
Total Credit-02 **Practical Marks: 40**
Internal Assessment: 10

Course Objectives: This course is designed for theoretical understanding of principles, applications used in Digital Printing. It provides the technical ability to understand various production operations used in Digital Printing.

Course Learning Outcomes: The students learned about the Pre-press section of printing and packaging industry and the student will be able to:
B-PPT602(a).1: Enhance knowledge about various digital printing techniques.
B-PPT602(a).2:Know about electro photography, iono-graphy & magneto graphy process
B-PPT602(a).3: Develop the knowledge about networking and its uses in digital printing.
B-PPT602(a).4: Know about the basic knowledge of ink jet & nano graphic printing.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

LIST OF EXPERIMENTS

1) Colour Reproduction
2) File format TIFF,EPS,JPEG converting
3) Study of various output printing equipments
4) Page layout
5) Page formation
6) Digital work flow
7) Work flow for on demand printing

B-PPT 602(a): DIGITAL PRINTING (PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 602(a).1	3	3	3	3	3	3	3	3
B-PPT 602(a).2	3	3	3	3	3	3	3	3
B-PPT 602(a).3	3	3	3	3	3	3	3	3
B-PPT 602(a).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 602(a).1	3	3	3	3	3
B-PPT 602(a).2	3	3	3	3	3
B-PPT 602(a).3	3	3	3	3	3
B-PPT 602(a).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 602(a).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 602(a).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 602(a).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 602(a).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 601 (b): SECURITY PRINTING (THEORY)

Time: 3 Hrs. **Total Marks: 100**
Total Credit-04 **Theory Marks: 80**
Internal Assessment: 20

Course Objectives: This course is designed for theoretical understanding of Security printing process. In this course student learn about the development of the Security Printing with different components and their working. Students technically understood about the security printing process and its working procedure.

Course Learning Outcomes: The students learned about Security printing process and the student will be able to:
B-PPT601(b).1:Enhance knowledge about development of Security printing process from earlier time to modern world
B-PPT601(b).2:Technical understanding of different components of security printing.
B-PPT601(b).3:Understand about the role of security products produce through security printing.
B-PPT601(b).4:Know about the basic knowledge about the currency printing .

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

Unit-I

Introduction:
Security Printing its definition and requirement, currency printing, Introduction to Security Printing, Optical document security, importance of security printing of bank note papers and boards, passports and government documents., rainbow printing, numbering, , stamp embossing, hot-foil-embossing, embossing / punching, fibers, hologram, solvent colour, multi colour UV-fluorescence stitching thread, holographic foil or lamination of a page, Digital Watermark.

Unit-II

Inks and Brand Security Inks:
Invisible inks, Specialist security printers inks; such as thermo chromic, UV fluorescing, water fugitive, solvent sensitive inks, combifuge, photo chromic, Fluorescent Inks, Watermarks, Testing, Deterrent measures Brand Security: First line inspection of documents using optical elements such as Holograms, optical variable graphics, diffraction structures, liquid crystal materials, optical security in laminates etc., invisible document security and Brand protection**.**

Unit-III

Security Products:
Credit Cards, Smart cards, club cards, credit / debit cards, Plastic ID cards, Water mark cards, RFID technology, Bar codes, Printers used for bar codes, Cheques and their value documents,

MICR/OCR/Cheque printing technology Counterfeit, fraud prevention, Cheque fraud prevention, method and arrangement for processing negotiable instruments.

Unit-IV

Applications

Security design and processes for various print products: Barcodes, Holograms, cheque printing- MICR cheques and Reserve Bank of India (RBI) specifications, finishing, paper specifications- Manufacturing process of – Bank Notes – Business forms – Certificates Passports – Packaging - Card printing. Different types of machines used for producing various security products. Recent trends and developments in security printing.

Recommended Books :

Forms for the 80"s. How to design and produce them - Gar Raines.

TEXT BOOKS: 1. Richard D. Warner, Richard M. Adams, "Introduction to Security Printing", PIA/GATF Press, 2005 REFERENCES: 1. A.S. Bhaskar Raj, Barcode Technology and Implementation, McGraw Hill, 2007. 2. Developments in Security Labels and Tags, Rudie Lion, Pria International Ltd. 3. Martin Monestics, The Art of Paper Currency, Quarlet Books Ltd.,1983.Stochastic Screening - Kelvin Tritton.

B-PPT 601(b): SECURITY PRINTING (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 601(b).1	3	3	3	3	3	3	3	3
B-PPT 601(b).2	3	3	3	3	3	3	3	3
B-PPT 601(b).3	3	3	3	3	3	3	3	3
B-PPT 601(b).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 601(b).1	3	3	3	3	3
B-PPT 601(b).2	3	3	3	3	3
B-PPT 601(b).3	3	3	3	3	3
B-PPT 601(b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 601(b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 601(b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 601(b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 601(b).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 602(b): SECURITY PRINTING (PRACTICAL)

Time: 3 Hrs. **Total Marks: 50**
Total Credit-02 **Practical Marks: 40**
Internal Assessment: 10

Course Objectives: This course is designed for practical understanding Security Printing process, It also provides the technical ability to understand different components security printing with their specification and working.

Course Learning Outcomes: The students learned about security Printing press and the student will be able to:
B-PPT602(b).1: Enhance knowledge about Currency printing.
B-PPT602(b).2: Knowledge about the security products..
B-PPT602(b).3: Technical knowledge of colour sequence in security printing
B-PPT602(b).4: Know about the setting procedure of rollers and folder for Security printing.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

LIST OF EXPERIMENTS

1. Design of fan fold forms computer letter & mailers
2. Design of computer envelops and snap-out-forms
3. Various types of web offset printing
4. Processes use for packaging and dispatch
5. Study of collators
6. Dot loss and dot gain in film imaging
7. Plate making
8. Colour sequence for security printing

B-PPT 602(b): SECURITY PRINTING (PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 602(b).1	3	3	3	3	3	3	3	3
B-PPT 602(b).2	3	3	3	3	3	3	3	3
B-PPT 602(b).3	3	3	3	3	3	3	3	3
B-PPT 602(b).4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 602(b).1	3	3	3	3	3
B-PPT 602(b).2	3	3	3	3	3
B-PPT 602(b).3	3	3	3	3	3
B-PPT 602(b).4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 602(b).1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 602(b).2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 602(b).3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 602(b).4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 603: PRINT MANAGEMENT (THEORY)

Time: 3 Hrs. **Total Marks: 150**
Total Credit-06 **Theory Marks: 120**
Internal Assessment: 30

Course Objectives: This course aims to provide students a clear understanding about the basic concepts of management, basic accounting, planning in organization and technique involved in managing human resources.

Course Learning Outcomes: The students learned about the Print management process and the student will be able to:
B-PPT603.1: Enhance knowledge about management system in Printing Industry
B-PPT603.2: Know about basic concept of accounting
B-PPT603.3: Develop the knowledge about the human resource management in printing and packaging industry.
B-PPT603.4: Know about the basic planning knowledge in printing organization

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

UNIT-I

Print Management Introduction – Printing Industry in India & Abroad, Impact of globalization on printing industry, Concept of Management, Management – Nature, scope and importance of Management, Functions of Management, Qualities and characteristics of managers, Social responsibility of managers.

UNIT-II

.

Print Organization and Layout- Production and operations Management – Locations and Layout of plant, Maintenance management, Total quality management (TQM), Marketing

management – Marketing and its functions, distribution channels, types of distribution channels, salesmanship and advertising.

UNIT-III

Human resource management: Manpower planning – recruitment, selection, Training performance appraisal Wage and salary administration. Financial Management- Nature of Financial Management, Scope of Financial Management, objectives of Financial Management and functions of Financial Management.

UNIT-IV

Planning and Organizing - Concept of planning, Classification of planning: Strategic plan, Tactical plan and Operational plan, Organizing - Defining organizing, Process of organizing, Types of organizational structure, Work flow and organizational structure in a printing press.

. **Recommended Books :-**

1. T.A. Saifuddin – Management aspects of printing industry by NirmalSadanadn Publishers, Mumbai, Ist edition.
2. G.G. Field- Printing Production Management by Graphic Arts Publishing, 1996.
3. Balaraman – PMCA by Ramaya Features & publications, 1987.
4. Mendiratta B.D. – Estimating & Costing by Print Trade Publications, 1999-2000.
5. Ruggles – Printing Estimating Principles and Practices by Delmer Publication 1985.
   (a.) Maintenance Engineering Handbook
   (b.) Lindley R. Higging, McGraw Hill International Edition.
   (c.) Operator's Manually by GATF.

B-PPT 603: PRINT MANAGEMENT (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 603.1	3	3	3	3	3	3	3	3
B-PPT 603.2	3	3	3	3	3	3	3	3
B-PPT 603.3	3	3	3	3	3	3	3	3
B-PPT 603.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 603.1	3	3	3	3	3
B-PPT 603.2	3	3	3	3	3
B-PPT 603.3	3	3	3	3	3
B-PPT 603.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 603.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 603.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 603.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 603.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 604: ENTREPRENEURSHIP (THEORY)

Time: 3 Hrs. **Total Marks: 150**
Total Credit-06 **Theory Marks: 120**
Internal Assessment: 30

Course Objectives: This course aims to provide students a clear understanding about the concepts, types, methods, and techniques involved, in **Entrepreneurship Process and** Govt. support to new enterprise.

Course Learning Outcomes: The students learned about the **Entrepreneurship Process** and the student will be able to:
B-PPT604.1: Enhance knowledge about Printing And Packaging **Entrepreneurship**.
B-PPT604.2: Knowledge about Methods and Procedures to start and expand one's own business
B-PPT604.3:Enhance knowledge about Different forms of ownership
B-PPT604.4: Know about the basic knowledge of Small business/enterprise.

Note:- The question paper will be divided into five Units containing nine questions. Students are required to attempt five questions in all. There will be two questions in each unit from I to IV and students are required to attempt one question from each unit. Unit V will have only one Compulsory question containing short notes covering the entire syllabus. All questions carry equal marks.

Entrepreneurship:

A Perspective: Recognition of the need for entrepreneurship and self-employment development, Entrepreneurship spirits, Significance of entrepreneur in Economic Development, Scope and trends of small enterprises, Small business/enterprise-the driving force for national growth, Types of small enterprises, Economic, social and psychological need for entrepreneurship, characterization, qualities and pre-requisites of entrepreneur, Selection of a potential entrepreneur, Identifying & Evaluating Business opportunities.

UNIT-II

Quick Start Method:

Methods and Procedures to start and expand one's own business, life cycle of new business, Franchises, creating your own franchise, Multilevel marketing schemes, Buying an existing business. Business Planning Process: Why is a good business plan required? Business Plan-the major benefits, sub plan, Business plan-blue print to success and financing, Small manufactures business plan, Feasibility Study, Preparation of Feasibility Reports, Project Reports.

UNIT-III

Forms of Ownership:

Different forms of ownership-sole proprietysuip, partnership, joint stock company, Selling, Selling your venture, planning for succession, Valuation of a business, Responsibility of a good employer, Risk management, What risks does your business face?

UNIT-IV

Instructional Models:

Govt. support to new enterprise, incentives, sources of finance, Entrepreneurship Development Centre, Role of Govt. and promotional agencies in entrepreneurship development, Entrepreneurship development programmes, Role of various institutions in developing entrepreneurship in India

Recommended Books :- 1. T.A. Saifuddin – Management aspects of printing industry by NirmalSadanadn Publishers, Mumbai, Ist edition. 2. G.G. Field- Printing Production Management by Graphic Arts Publishing, 1996. 3. Balaraman – PMCA by Ramaya Features & publications, 1987.

B-PPT 604: ENTREPRENEURSHIP (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 604.1	3	3	3	3	3	3	3	3
B-PPT 604.2	3	3	3	3	3	3	3	3
B-PPT 604.3	3	3	3	3	3	3	3	3
B-PPT 604.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 604.1	3	3	3	3	3
B-PPT 604.2	3	3	3	3	3
B-PPT 604.3	3	3	3	3	3
B-PPT 604.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 604.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 604.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 604.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 604.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 605: PROJECT

Time: 3 Hrs. **Total Marks: 100**
Total Credit-04 **Theory Marks: 80**
Internal Assessment: 20

Course Objectives: This course is designed for Practical various technical project of printing and packaging

Course Learning Outcomes: The students learned about the Packaging machines and the student will be able to:
B-PPT605.1:Enhance knowledge about uses of different types of packaging machines used in packaging Industry.
B-PPT605.2:Know about various plates and pre press procedures used in printing.
B-PPT605.3:Develop the knowledge about the binding and finishing operations.
B-PPT605.4:Know about the basic knowledge of eco friendly printing and packaging.

B-PPT-605(i) – Pre- Press Technology

B-PPT-605(ii) - Press Production

B-PPT-605(iii) - Post Press Operation

B-PPT-605(iv) - Package Development

B-PPT-605(v) - Eco Friendly Printing and Packaging

B-PPT 605 PROJECT

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 605.1	3	3	3	3	3	3	3	3
B-PPT 605.2	3	3	3	3	3	3	3	3
B-PPT 605.3	3	3	3	3	3	3	3	3
B-PPT 605.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 605.1	3	3	3	3	3
B-PPT 605.2	3	3	3	3	3
B-PPT 605.3	3	3	3	3	3
B-PPT 605.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 605.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 605.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 605.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 605.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 606: COMPUTER GRAPHICS (THEORY)

Time: 2 Hrs. **Total Marks: 25**
Total Credit-01 **Theory Marks: 20**
Internal Assessment:5

Course Objectives: The objective of this course is to provide students with a fundamental understanding of computer graphics

Course Learning Outcomes: The students learned about the computer graphic and the student will be able to:
B-PPT606.1: understand about various computer display devices.
B-PPT606.2: To understand the concept of cathode ray tube
B-PPT606.3: To familiarize with the concept of digital image processing
B-PPT606.4: Enhance the knowledge of color model and its application.

Note:- The question paper will be divided into three units containing five questions. Students are required to attempt three questions in all. There will be two questions in unit I & II. The students are required to attempt one question each from unit I & II. Each question will carry 5 marks. Unit-III will have only one Compulsory question of 10 marks containing six short notes covering the entire syllabus and students are required to attempt any five.

UNIT-1

Basic Concept: Introduction, The origin of computer graphics, Working of interactive - graphics display, New display devices, General purpose graphics software, The user-interface, Display of solid objects, Line drawing displays - Display devices and controllers, Display devices,

UNIT-II

The CRT-Electron guns, Deflection system, Phosphors, Beam penetration CRT, Shadow mask CRT. Inherent-memory, devices - Direct view storage tube, Plasma panel, Laser-scan display, The storage-tube display, The refresh line - drawing display. Two dimensional transformations, Transformation principles, CAD, Animation, Simulation. Techniques for achieving realism

UNIT-III

Fundamental concepts of digital image processing - introduction, objectives, visual perception - structure of human eye, image formation in the eye, brightness adaptation and discrimination. Digital image representation, basic steps of image processing, elements of image processing system - image acquisition, storage, processing, communication, display.

UNIT-IV

Color model and color applications – Properties of light, standard primaries and the chromaticity diagramme XYZ color model, CIE chromaticity diagram, RGB color model, CMY color model, color selection and application,

Illumination model and surface rendering method—Light sources, basic illumination models, ambient light, diffuse reflection, displaying continuous tone images, halftone pattern and dithering technique.

Recommended Books:

Computer graphics principles & practice 2nd edition - **Van Dam, Foley, Fiener Hughes**.
Principle of Interactive Computer Graphics 2nd edition - **William N. Newman, Robert S.Sproull**.
Computer graphics - **Hearn & Backer**.
Procedural elements for computer graphics - **David F. Rogers**.Digital imaging techniques (Block I)
Digital Imaging techniques (Block II)
Digital image processing - **Gonzalez, Woods, Chanda**,
Digital image processing and analysis –**Majumdar**
Digital image processing and computing- **Schalkoff**

B-PPT 606: COMPUTER GRAPHICS (THEORY)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 606.1	3	3	3	3	3	3	3	3
B-PPT 606.2	3	3	3	3	3	3	3	3
B-PPT 606.3	3	3	3	3	3	3	3	3
B-PPT 606.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 606.1	3	3	3	3	3
B-PPT 606.2	3	3	3	3	3
B-PPT 606.3	3	3	3	3	3
B-PPT 606.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 606.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 606.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 606.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 606.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

B-PPT 607- COMPUTER GRAPHICS (PRACTICAL)

Time:2 Hrs. **Total Marks: 25**
Credits:1 **Practical :20**
Internal Assessment:5

Course Objectives: The objective of this practical course is to provide students with a fundamental understanding of computer graphic.

Course Learning Outcomes:
B-PPT 607.1: Students will be able to learn software used in graphics
B-PPT 607.2: Students will be able to implement the tools of graphic software in designing.
B-PPT 607.3: Students will be able to understand image editing.
B-PPT 607.4: Students will be able to understand the software used in newspaper,books production.

Note:- The students will do practical assignments assigned by the concerned teacher throughout the whole semester and will submit them in the form of hardcopy/softcopy to the teacher. External Examiner will evaluate the work done by the student, will conduct the practical and viva voce.

LIST OF EXPERIMENTS

1. Introduction to computer graphics, scope and limitations.
2. CorelDraw, different facilities available, working in CorelDraw environment.
3. Introduction to illustrator-simple lines, stylish lines, drawing and filling of images, gradation tools, blenders pattern with a difference, filling rectangular and non rectangular shapes of pallets and colour, system matrices, justifying text and application of path finder's.
4. Introduction to Photoshop-how you can differentiate it from illustrator, different types of the formats, their compatibility to different software, introduction of tool box, uses of different filters, masking and working on images, creating a presentation using software.
5. Quark express: PageMaker up, formatting and editing in the software.

B-PPT 607: COMPUTER GRAPHICS (PRACTICAL)

CO-PO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
B-PPT 607.1	3	3	3	3	3	3	3	3
B-PPT 607.2	3	3	3	3	3	3	3	3
B-PPT 607.3	3	3	3	3	3	3	3	3
B-PPT 607.4	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3

CO-PSO Mapping Matrix

CO	PSO1	PSO2	PSO3	PSO4	PSO5
B-PPT 607.1	3	3	3	3	3
B-PPT 607.2	3	3	3	3	3
B-PPT 607.3	3	3	3	3	3
B-PPT 607.4	3	3	3	3	3
Average	3	3	3	3	3

CO-PO-PSO Mapping Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
B-PPT 607.1	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 607.2	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 607.3	3	3	3	3	3	3	3	3	3	3	3	3	3
B-PPT 607.4	3	3	3	3	3	3	3	3	3	3	3	3	3
Average	3	3	3	3	3	3	3	3	3	3	3	3	3

DEPARTMENT OF PHYSICAL EDUCATION
KURUKSHERTRA UNIVERSITY KURUKSHETRA
SCHEME OF EXAMINATION
B.A. Health and Physical Education according to CBCS & LOCF
W.E.F. Session 2020-21 in Phased Manner

1 credit =25 marks , 1 lecture = 1credit, 1Tutorial=1 credit , 2 Practical =1 credit

Semester	Papers Category	Paper Code	Nomenclature of paper	Credit			Contact Hours per week			Examination Scheme				Total
										Theory		Practical		
				Theory	Practical	Total	Theory	Practical	Total	External Evaluation	Internal Assessment	External Evaluation	Internal Assessment	
1st	Core Elective	BAHPHY - 101	Health and Physical Education	04	02	06	04	04	08	80	20	50	00	150
2nd	Core Elective	BAHPHY - 202	Health and Physical Education	04	02	06	04	04	08	80	20	50	00	150
3rd	Core Elective	BAHPHY - 303	Health and Physical Education	04	02	06	04	04	08	80	20	50	00	150
4th	Core Elective	BAHPHY - 404	Health and Physical Education	04	02	06	04	04	08	80	20	50	00	150
5th	Discipline specific Elective (DSE)	BAHPHY - 404 (Elective)	Health and Physical Education	04	02	06	04	04	08	80	20	50	00	150
6th	Core Elective	BAHPHY - 604	Health and Physical Education	04	02	06	04	04	08	80	20	50	00	150

B.A. -1st Semester (Health & Physical Education)
Theory Syllabus according to CBCS & LOCF
w.e.f. Session 2020-21

Max. Marks: 100 (External – 80 Marks + Internal Assessment- 20 Marks) Time- 3 hours

Instructions for Paper- Setter:

The question paper will consist of five Units I, II, III, IV and V. Units I, II, III & IV will have two questions from their respective Units of the Syllabus and will carry 15 marks each. Unit Vth will consists of 10 short answer type questions, which will cover the entire syllabus and will carry 2 marks for each question**.**

Instructions for Candidates

Candidates are required to attempt one question each from Unit I, II, III and IV. Unit - V is compulsory for all.

Course Objectives:

To provide the student knowledge about Physical Education and make him familiarize with its aims, objectives and scope. To develop understanding about Health, Hygiene and personal Hygiene. To Provide knowledge about Yoga and Paranayam. Student will acquire the basic knowledge of the anatomy, physiology and of the human body. They will develop understanding about the cells of human body.

Course Learning Outcomes:

After completing this course, the students will be able to:

- Describe the Aims, Objectives and scope of Physical Education.
- Illustrate the significance of health & hygiene. And process of personal hygiene.
- Describe the concept and benefits of Yoga and pranayam.
- Explain terms Anatomy, physiology, Cell, Tissue and Organ. cells of human body

Course Contents

Unit - 1: Introduction to Physical Education-

1. Meaning, definition and scope of Physical Education.
2. Relationship of Physical Education with General Education

3. Aim, Objectives and Importance of Physical Education in modern society.
4. Misconceptions regarding Physical Education

Unit- II: Health & Hygiene

1. Meaning, definition and importance of Health.
2. Factors influencing Health.
3. Meaning and importance of Personal Hygiene
4. Hygiene of various body parts and Factors influencing Personal Hygiene

Unit- III: Introduction to Yoga

1. Yoga - Meaning, Concept and Historical development
2. Types of Yoga
3. Importance of yoga in healthy living
4. Pranayam - Meaning, types and their benefits.

Unit- IV: Introduction to Human Anatomy and Physiology

1. Meaning and definition of Human Anatomy and Physiology
2. Importance of Human Anatomy and Physiology in Physical Education
3. Definition of Cell, Tissue, Organ and System
4. Structure and Properties of Cell

Text Books and References

- Singh Ajmer et.al. "Modern Text Book of Physical Education, Health and Sports", Kalyani Publishers, Ludhiana,(2010).
- Sharma, V.K, "Health & Physical Education" Saraswati House Pvt. Ltd . Daryagani, New Delhi. (2013).
- Kang G.S. Deol N.S. "An introduction to Health and Physical Education 21st century" Patiala (2008).
- Singh Ajmer et. al. "Olympic Movement" Kalyani Publishers, Ludhiana, (2000).
- Sharma, V.K., '' YogShiksha'' Saraswati House Pvt.Ltd. Daryaganj, New Delhi (2011)
- Kamlesh&Sangral, "Principles & History of Physical Education", Parkash Brothers, Ludhiana.(2000)
- Avelin C. Pearce., "Anatomy and Physiology for Nurses"Oxford University Press.New Delhi, (2003). .
- Iyengar, B.K.S. "Light on life" Oxford, Pan Macmillan Ltd. (2005).
- Iyengar, B.K.S. "The Tree of Yoga" New Delhi, Harper Collins. (2009).
- Verma, K.K., "Health & Physical Education" Parkash Brothers, Ludhiana.(2005).

B.A. -1st Semester (Health & Physical Education)
Practical Syllabus according to CBCS & LOCF
w.e.f. Session 2020-21

Max. Marks: 50

Practical Objectives:

To give basic knowledge about the ground specifications, rules and regulations of kho - kho Badminton and shotput.To impart the basic knowledge about the basic skill of kho – kho, Badminton and shot-put.To give basic knowledge about the basic Asana, Surya Namaskar and Three Pranayams.

Practical Learning Outcomes

After completing this course, the students will be able to:

- Describe the ground specifications, rules and regulations of kho–kho, Badminton and shotput. And perform basic skills of kho - kho Badminton and shotput.
- Perform basic Asana, Surya Namaskar and Pranayams

1. Any one game **10 Marks**

(With ground specifications, general rules and general skills)

1. kho - kho 2. Badminton

2. Ten basic Asana, Surya Namaskar and Three Pranayams **10 Marks**

3. Athletics: **10 Marks**

Shot Put (Measurements & Basic Techniques)

4. Viva – Voce and Practical File **10+10 Marks**

B.A. -2nd Semester (Health & Physical Education)
Theory Syllabus according to CBCS & LOCF
w.e.f. Session 2020 – 21

Max. Marks: 100 (External – 80 Marks + Internal Assessment- 20 Marks) Time- 3 hours

Instructions for Paper- Setter:

The question paper will consist of five Units I, II, III, IV and V. Units I, II, III & IV will have two questions from their respective Units of the Syllabus and will carry 15 marks each. Unit Vth will consists of 10 short answer type questions, which will cover the entire syllabus and will carry 2 marks for each question**.**

Instructions for Candidates

Candidates are required to attempt one question each from Unit I, II, III and IV. Unit - V is compulsory for all.

Course Objectives:

To provide the student knowledge about Heath Education and make him familiarize with its aims, objectives and scope. To develop understanding about First Aid in detail. Student will acquire the basic knowledge of the historical development of physical Education and sports policies. To equipped the students with knowledge of components and principles of physical fitness. They will develop understanding about the various bones and joints of human body.

COURSE LEARNING OUTCOME

After completing this course, the students will be able to:

- Describe the Aims, Objectives and scope of Heath Education and Illustrate the significance and methods of first aid for various conditions
- Describe the historical development of physical education and significance of important sports institutions and organization. Explain the state and national sports polices.
- Explain components and principles of Physical Fitness in detail.
- Describe the various bones and types of joints present in the human body.

Course Contents

Unit – I Introduction to Health Education

1. Definition, Aim, Objectives and Scope of Health Education.
2. Importance of Health Education in modern society

3. First Aid: Meaning, Aim, Objectives and General Principles of First Aid.
4. First Aid for Common injuries - Bleeding, Burns, Electric Shock, Drowning and Snake Bite.

Unit –II Historical Prospects of Physical Education

1. Pre-independence and Post – independence historical development of Physical Education in India.
2. Role of IOA, SAI, NSNIS and YMCA in the development of Physical Education and Sports in India.
3. Sports Policy of Haryana State
4. National Sports Policy

Unit II Introduction to Physical Fitness

1. Meaning, definition and importance Physical Fitness
2. Components and Principles of Physical Fitness
3. Factors influencing of Physical Fitness.
4. Meaning of Isometric, Isotonic and Isokinetic exercises

Unit IV Introduction to Human Anatomy and Physiology

1. Anatomy of Human Bone
2. Types and Function of bones in Human Body
3. Meaning and types of joints in Human Body.
4. Types of synovial joints in Human Body

Text Books and References

- Sharma, V.K, "Health & Physical Education" Saraswati House Pvt. Ltd . Daryagani, New Delhi.(2013).
- Kamlesh&Sangral,'' Methods in Physical Education" Parkash Brothers, Ludhiana(2000).
- Bucher Olsen and Willgoose; "The Foundation of Health" Prentice Hall inc.EnglewoodFliffs,New Jersey,(1976).
- Turner S and Smith "School Health and Health Education" The C.V. Mos by Company St.Loius (1961).
- Singh Ajmer et.al. "Modern Text Book of Physical Education, Health and Sports", Kalyani Publishers, Ludhiana,(2010).
- Kang G.S. Deol N.S. "An introduction to Health and Physical Education 21st century" Patiala (2008).
- Singh Ajmer et. al. "Olympic Movement" Kalyani Publishers, Ludhiana, (2000).

- Kamlesh&Sangral, “Principles & History of Physical Education”, Parkash Brothers, Ludhiana.(2000)
- Avelin C. Pearce., “Anatomy and Physiology for Nurses”Oxford University Press.New Delhi, (2003). .
- Verma, K.K., “Health & Physical Education” Parkash Brothers, Ludhiana.(2005).

B.A. -2nd Semester (Health & Physical Education)
Practical Syllabus according to CBCS & LOCF
w.e.f. Session 2020-21

Max. Marks: 50

Practical Objectives:

To give basic knowledge about the ground specifications, rules and regulations of Cricket and Table Tennis.To impart the basic knowledge about the basic skill of Cricket and Table Tennis.To give basic knowledge about the basic banes and joints of human body. To impart basic knowledge about the types starts.

Practical Learning Outcomes

After completing this course, the students will be able to:

- Describe the ground specifications, rules and regulations of Cricket and table Tennis. And perform basic skills of Cricket, Table Tennis and starts.
- Identify the various bones and joints of human body.

1. Any one game **10 Marks**

(With ground specifications, general rules and general skills)

1. Cricket 2. Table Tennis

2. Name and identification of bones in Human Body **10 Marks**

3. Athletics: **10 Marks**

Types of Starts - Crouch Start and standing starts (Basic Technique)

4. Viva – Voce and Practical File **10+10 Marks**

B.A. -3rd Semester (Health & Physical Education)
Theory Syllabus according to CBCS & LOCF
w.e.f. Session 2021-22

Max. Marks: 100 (External – 80 Marks + Internal Assessment- 20 Marks) Time- 3 hours

Instructions for Paper- Setter:

The question paper will consist of five Units I, II, III, IV and V. Units I, II, III & IV will have two questions from their respective Units of the Syllabus and will carry 15 marks each. Unit Vth will consists of 10 short answer type questions, which will cover the entire syllabus and will carry 2 marks for each question**.**

Instructions for Candidates

Candidates are required to attempt one question each from Unit I, II, III and IV. Unit - V is compulsory for all.

Course Objectives:

The students will get idea about the concepts of safety embedded with methods, measures and prevention of sports injuries. To develop understanding about the common diseases and it's mode of transmission. It offers the concepts of balanced diet focusing the essence of health parameters and comprehends the anatomy and physiology of the heart.

Course Learning Outcomes:

After completing this course, the students will be able to:

- Understand the basic concept of safety in respect to sports
- Identify and discuss the common diseases.
- Acquaint with key concepts of balanced diet and their relevance to health.
- Identify and discuss the structure and functions of Heart and its responses to exercise.

Course Contents

Unit- 1 Concept of Safety Education

1. Meaning, need and importance of Safety Education
2. Sports Injuries: Types and causes
3. Principles for prevention of sports Injuries.
4. General treatment for common sports injuriesi.e Abrasion, Contusion, Sprain , Strain, Fracture and Dislocation of joints

Unit –II Common Diseases

1.Meaning ofCommunicable and Non – Communicable diseases

2. Modes of transmission, prevention and control of communicable diseases.

3. Common diseases: HIV/ AIDS, Hepatitis,Dengue, Typhoid, Malaria and Influenza.

4. Allergy related diseases: Asthma and Sinuses

Unit – III Concept of Balanced Diet

1. Balanced Diet: Meaning and importance
2. Components of balanced diet and their sources
3. Factors affecting balanced diet
4. Harmful effects of Junk Food

Unit –IV Anatomy and Physiology of Body System

1. Circulatory System: Structure of Heart
2. Functioning of Heart
3. Types of Circulation: Systemic and Pulmonary
4. Effects of exercise on Circulatory System.

Text Books and References:

- Mathews D.K.& Fox D.K "The Physiological basis of Physical Education and Sprots,2nd .Philadelphia.K.B.Sanuders& Co.,(1996).
- Sharma, V.K, "Health & Physical Education" Saraswati House Pvt. Ltd . Daryagani, New Delhi.(2013).
- Kang G.S. Deol N.S. "An introduction to Health and Physical Education 21st century" Patiala (2008).
- Singh Ajmer et. al. "Olympic Movement" Kalyani Publishers, Ludhiana, (2000).
- Kamlesh&Sangral, "Principles & History of Physical Education", Parkash Brothers, Ludhiana.(2000).
- Bucher Olsen and Willgoose "The Foundation of Health" Prentice Hall inc.EnglewoodFliffs,New Jersey,(1976).
- Turner S and Smith "School Health and Health Education" The C.V. Mos by Company St.Loius (1961).
- Singh Ajmer et.al. "Modern Text Book of Physical Education, Health and Sports", Kalyani Publishers, Ludhiana (2010).
- Avelin C. Pearce., "Anatomy and Physiology for Nurses"Oxford University Press. New Delhi (2003). .
- Verma K.K., "Health & Physical Education" Parkash Brothers, Ludhiana (2005).

B.A. -3rd Semester (Health & Physical Education)
Practical Syllabus according to CBCS & LOCF
w.e.f. Session 2021-22

Max. Marks: 50

Practical Objectives:

To give basic knowledge about the ground specifications, rules and regulations ofBasketball and Football.To impart the basic knowledge about the basic skill of Basketball, Football and long jump.To give basic knowledge about the Blood pressure and heart rate measurement.

Practical Learning Outcomes

After completing this course, the students will be able to:

- Describe the ground specifications, rules and regulations of Basketball, Football and long jump. And perform basic skills of Basketball, Football and long jump.
- Understand and Perform Blood pressure and heart rate measures.

1. Any one game **10 Marks**

(With ground specifications, general rules and general skills)

1. Basketball 2. Football

2. Methods to measure Blood Pressure, Heart rate (Resting and maximum) from different body segments **10 Marks**

3. Athletics: **10 Marks**

Long Jump (Measurements & Basic Techniques)

4. Viva – Voce and Practical File **10+10 Marks**

B.A. -4th Semester (Health & Physical Education)
Theory Syllabus according to CBCS & LOCF
w.e.f. Session 2021-22

Max. Marks: 100 (External – 80 Marks + Internal Assessment- 20 Marks) Time- 3 hours

Instructions for Paper- Setter:

The question paper will consist of five Units I, II, III, IV and V. Units I, II, III & IV will have two questions from their respective Units of the Syllabus and will carry 15 marks each. Unit Vth will consists of 10 short answer type questions, which will cover the entire syllabus and will carry 2 marks for each question**.**

Instructions for Candidates

Candidates are required to attempt one question each from Unit I, II, III and IV. Unit - V is compulsory for all.

Course Objectives:

To propagate knowledge and proficiency related to warming up and cooling down. Enable the students to understand the role of psychology in physical education focusing over learning aspects. The students will get idea about the major sports events. Further, to provide the basic knowledge about anatomy and physiology of respiratory system.

Course Learning Outcomes:

After completing this course, the students will be able to:

- Understand and apply practices of warming up and cooling down
- Recognize and interpret psychological aspects and relevance of learning in physical education.
- Understand and adhere the major sports events.
- Identify and discuss the structure and functions of respiratory system and its responses to exercise.

Course Contents

Unit-1 Warming Up and Cooling Down:

1. Meaning, types and significance of warming up
2. Meaning, types and significance of cooling down.

3. Methods of warming up and cooling down.
4. Physiological aspects of warming up and cooling down

Unit –II Psychological aspects of Physical Education:

1. Meaning of Psychology and sports Psychology
2. Need and importance of sports psychology
3. Learning: meaning and laws
4. Learning curve and its implications in sports

Unit –III Major Sports Events

1. Ancient Olympic Games:
2. Modern Olympic Games
3. Asian Games
4. Common Wealth Games

Unit - IV Anatomy and Physiology of Human Body System

1. Structure of Respiratory Organs.
2. Physiology of respiratory System.
3. Effect of exercise on respiratory System
4. Meaning of Terminologies used in respiration in respect to various lung capacities and volumes.

Text Books and References

- H.H. Clark & D.H. Clark: Development and adopted physical education, Englewood cliffs, New Jersey, Prentice Hall, 1987.
- Mathews D.K. & Fox D.K "The Physiological basis of Physical Education and Sprots, 2nd .Philadelphia. K .B. Sanuders& Co., (1996).
- Sharma, V.K, "Health & Physical Education" Saraswati House Pvt. Ltd. Daryagani, New Delhi. (2013).
- Kang G.S. Deol N.S. "An introduction to Health and Physical Education 21st century" Patiala (2008).
- Singh, Ajmer et. Al.'' Olympic Movement"Kalyani Publishers, Ludhiana, (2000).
- Kamlesh&Sangral, "Principles & History of Physical Education", Parkash Brothers, Ludhiana (2000).
- Mangal, S.K.,"Psychology for Physical Education" Parkash Brothers, Ludhiana (2008).
- Kamlesh&Sangral,'' Methods in Physical Education" Parkash Brothers, Ludhiana (2007).
- Jensen Fisher:9 "Scientific Basis of Athletic Conditioning" Philadelphia, Lee and Febiger (1975).

B.A. -4th Semester (Health & Physical Education)
Practical Syllabus according to CBCS & LOCF
w.e.f. Session 2021-22

Max. Marks: 50

Practical Objectives:

To give basic knowledge about the ground specifications, rules and regulations ofKabaddi and Lawn Tennis.To impart the basic knowledge about the basic skill of Kabaddi, Lawn Tennis and Discuss Throw.To give basic knowledge about the various lung capacities and volumes measurement.

Practical Learning Outcomes

After completing this course, the students will be able to:

- Describe the ground specifications, rules and regulations of Kabaddi, Lawn Tennis and Discuss Throw. And perform basic skills of Kabaddi, Lawn Tennis and Discuss Throw.
- Understand and perform measures of various lung capacities and volumes.

1. Any one game **10 Marks**

(With ground specifications, general rules and general skills)

1. Kabaddi 2. Lawn Tennis

2. Methods to measure various lung capacities and volumes. **10 Marks**

3. Athletics: **10 Marks**

Discuss Throw (Measurements & Basic Techniques)

4. Viva – Voce and Practical File **10+10 Marks**

B.A. -5th Semester (Health & Physical Education)
Theory Syllabus according to CBCS & LOCF
w.e.f. Session 2022-23

Max. Marks: 100 (External – 80 Marks + Internal Assessment- 20 Marks) Time- 3 hours

Instructions for Paper- Setter:

The question paper will consist of five Units I, II, III, IV and V. Units I, II, III & IV will have two questions from their respective Units of the Syllabus and will carry 15 marks each. Unit Vth will consists of 10 short answer type questions, which will cover the entire syllabus and will carry 2 marks for each question**.**

Instructions for Candidates

Candidates are required to attempt one question each from Unit I, II, III and IV. Unit - V is compulsory for all.

Course Objectives:

This course will enable students to develop understanding about the general characteristics of growth and development. To develop an overall perspective for sports organization and administration and to carry out Intramural and Extramural activities.To develop understanding about the concept of posture, muscular system and blood.

Course Learning Outcomes:

After completing this course, the students will be able to:

- Interpret the basic concept of growth and development,
- Demonstrate the concept and generate ideas about sports organization and administration.
- Identify and analyze the concept of posture and assessing the deformities.
- Identify and discuss the structure and functions of muscular system and blood.

Unit –I Growth & Development

1. Meaning and definition of Growth and Development
2. Stages of Growth and Development.
3. Principles and factors influencing growth and development
4. Age and sex difference in relation to physical activities and sports

Unit – II Concept of Sports Organization and Administration

1. Meaning and importance of organization and administration in Physical Education and Sports
2. Principles of sports organization and administration
3. Organization and administration of Intramural and Extramural activities
4. Tournaments and their types (League and Knock out)

Unit – III Concept of Posture

1. Meaning of posture and importance of good posture
2. Causes of poor posture
3. Symptoms and causes of Postural Deformities: Lordosis, Kyphosis, Scoliosis, Flat Feet, Knock Knee and Blow Legs.
4. Precautions and Remedies for postural deformities

Unit-IV Anatomy and Physiology

1. Gross Anatomy of muscle, Types of Muscles in human body
2. Effects of exercise on Muscular System
3. Composition of Human Blood
4. Functions of Blood

Text Books and References

- Kamlesh&Sangral, "Principles & History of Physical Education", Parkash Brothers, Ludhiana. (2000).
- Bucher Olsen and Willgoose "The Foundation of Health" Prentice Hall inc.EnglewoodFliffs,New Jersey,(1976).
- Turner S and Smith "School Health and Health Education" The C.V. Mos by Company St.Loius (1961).
- Singh Ajmer et.al. "Modern Text Book of Physical Education, Health and Sports", Kalyani Publishers, Ludhiana (2010).
- Avelin C. Pearce., "Anatomy and Physiology for Nurses"Oxford University Press. New Delhi (2003). .
- Verma K.K., "Health & Physical Education" Parkash Brothers, Ludhiana (2005).
- Mathews D.K. & Fox D.K "The Physiological basis of Physical Education and Sprots, 2nd .Philadelphia.K.B.Sanuders& Co., (1996).
- Sharma, V.K, "Health & Physical Education" Saraswati House Pvt. Ltd. Daryagani, New Delhi. (2013).
- Kang G.S. Deol N.S. "An introduction to Health and Physical Education 21st century" Patiala (2008).
- Singh Ajmer et. al. "Olympic Movement" Kalyani Publishers, Ludhiana, (2000).

B.A. -5th Semester (Health & Physical Education)
Practical Syllabus according to CBCS & LOCF
w.e.f. Session 2022-23

Max. Marks: 50 (External – 25 Marks + Internal Assessment- 25 Marks)

Practical Objectives:

To give basic knowledge about the ground specifications, rules and regulations ofVolleyball and Hockey.To impart the basic knowledge about the basic skill of Volleyball, Hockey and Javeline Throw. To give basic knowledge about the Body Mass Index measurement.

Practical Learning Outcomes

After completing this course, the students will be able to:

- Describe the ground specifications, rules and regulations of Volleyball, Hockey and Javeline Throw. And perform basic skills of Volleyball, Hockey and Javeline Throw.
- Understand and measures Body Mass Index.

1. Any one game **10 Marks**

(With ground specifications, general rules and general skills)

1. Volleyball 2. Hockey

2. Measurement of Body Mass Index **10 Marks**

(Normal range of BMI for children, women & men)

3. Athletics: **10 Marks**

Javelin Throw (Measurements & Basic Techniques)

4. Viva – Voce and Practical File **10+10 Marks**

B.A. -6th Semester (Health & Physical Education)
Theory Syllabus according to CBCS & LOCF
w.e.f. Session 2022-23

Max. Marks: 100 (External – 80 Marks + Internal Assessment- 20 Marks) Time- 3 hours

Instructions for Paper- Setter:

The question paper will consist of five Units I, II, III, IV and V. Units I, II, III & IV will have two questions from their respective Units of the Syllabus and will carry 15 marks each. Unit Vth will consists of 10 short answer type questions, which will cover the entire syllabus and will carry 2 marks for each question**.**

Instructions for Candidates

Candidates are required to attempt one question each from Unit I, II, III and IV. Unit - V is compulsory for all.

Course Objectives:

To familiarize the students with fundamental concepts of motivation and socialization and its relevance in the area of sports. To equipped with specialized functional technical concept of Sports Training and will enhance the awareness towards doping. To develop critical understanding of biomechanical fundamental concepts and digestive system.

Course Learning Outcomes:

After completing this course, the students will be able to:

- Understand motivation and socialization through participation in Physical Education and sports activities
- Acquaint with key concepts of Sports training and doping and their relevance to health
- Develop biomechanical perspective and knowledge.
- Identify and discuss the structure and functions of digestive system.

Unit-1 Concept of Motivation and Socialization

1. Meaning and definition of motivation.
2. Types of motivation and importance of motivation in sports.
3. Meaning of Socialization and Socialization through sports.
4. Effect of social behavior on performance of sports person.

Unit- II Concept of Sports Training and Doping

1. Meaning and definition of sports training
2. Factors affecting sports training
3. Types of sports training: Circuit training, Interval Training and Continuous Training
4. Doping: Meaning, types and its effects on health.

Unit – III Concept of Sports Biomechanics

1. Meaning and definition of sports biomechanics
2. Importance of Biomechanics in Sports
3. Newton's Laws of motion and their application in sports
4. Levers: Meaning, types and their application in Sports

Unit – IV Anatomy and Physiology

1.Organs of Digestive System

2. Structure of Digestive System
3. Mechanism of food digestion
4. Effects of exercise on Digestive System.

Text Books and References

- Kamlesh&Sangral, "Principles & History of Physical Education", Parkash Brothers, Ludhiana. (2000).
- Dick F "Sports Training Principles" .London Lepus Book, (1980).
- Desch and Burk "knesiology and applied Anatomy", 2nd ed.lee and Febiger, (1963).
- Show D, "Kinesiology' Friends Publications, New Delhi, (2001).
- Singh Ajmer et.al. "Modern Text Book of Physical Education, Health and Sports", Kalyani Publishers, Ludhiana (2010).
- Avelin C. Pearce., "Anatomy and Physiology for Nurses"Oxford University Press. New Delhi (2003). .
- Verma K.K., "Health & Physical Education" Parkash Brothers, Ludhiana (2005).
- Mathews D.K. & Fox D.K "The Physiological basis of Physical Education and Sprots, 2nd .Philadelphia.K.B.Sanuders& Co., (1996).
- Sharma, V.K, "Health & Physical Education" Saraswati House Pvt. Ltd. Daryagani, New Delhi. (2013).
- Kang G.S. Deol N.S. "An introduction to Health and Physical Education 21st century" Patiala (2008).
- Singh Ajmer et. al. "Olympic Movement" Kalyani Publishers, Ludhiana, (2000).

B.A. -6th Semester (Health & Physical Education)
Practical Syllabus according to CBCS & LOCF
w.e.f. Session 2022-23

Max. Marks: 50 (External – 25 Marks + Internal Assessment- 25 Marks)

Practical Objectives:

To give basic knowledge about the ground specifications, rules and regulations ofJudo and Boxing. To impart the basic knowledge about the basic skill of Judo, Boxing,Relay races and baton exchange. To give basic knowledge about the First Aidtechniques.

Practical Learning Outcomes

After completing this course, the students will be able to:

- Describe the ground specifications, rules and regulations of Judo and Boxing. And perform basic skills of Judo, Boxing, Relay races and baton exchange.
- Understand and apply First Aid measures.

1. Any one game **10 Marks**

(With ground specifications, general rules and general skills)

1. Judo& Boxing 2. Self Defense Tactics

2. First Aid **10 Marks**

(First aid for different injuries and circumstances, itemsof First aid box and their uses)

3. Athletics: **10 Marks**

Relay races and baton exchange

4. Viva – Voce and Practical File **10+10 Marks**

Kurukshetra University, Kurukshetra

Scheme of Examination and Syllabus for Undergraduate Programme
Under
(Multiple Entry-Exit, Internship and CBCS-LOCF) NEP w.e.f 2023-24

Course: Electronics

Semester	Course	Paper No.	Nomenclature of paper	Credits	Internal marks	End Term Marks	Total	Duration of Exam.
III	CC-3	B-ELE-N301	Op-amp and Linear Integrated Circuits	2	25	25	50	3 hours
		B-ELE-N302	Combinational and Sequential Circuits	2	25	25	50	3 hours
		B-ELE-N303	Practical -III	2	25	25	50	3 hours
IV	CC-4	B-ELE-N401	Sinusoidal Oscillators and Multivibrators	2	25	25	50	3 hours
		B-ELE-N402	Advanced Digital Electronics	2	25	25	50	3 hours
		B-ELE-N403	Practical -IV	2	25	25	50	3 hours

Instructions for the Examiners

1. Syllabus in each Theory Paper in each semester is divided in 4 units.
   i. A student is required to attempt 5 questions in all.
   ii. Question No 1 is compulsory, consisting of short answer type questions based on all the 4 units.
   iii. Two questions will be set from each unit. A student is required to attempt one question from each unit.
   iv. All questions carry equal marks.
2. Use of scientific calculator is permissible.
   i. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
3. Distribution of Marks: 25*+25*.
   Each theory question paper will be of 25 marks of 3 hours duration and 25 marks in each theory paper are to be awarded through internal assessment in each semester.
4. Work load – two hours per week per theory paper.
5. Practical classes to be conducted during odd as well as even semester.
6. The Practical examination will be held at the end of each semester in one sitting of 3 hours.
7. A candidate is required to perform minimum 6 experiments out of the list provided during course of study in each semester.
8. Distribution of Marks: 25*+25*
   Each practical examination in each semester will be of 25marks of 3 hours duration and 25 marks in each practical paper are to be awarded through internal assessment in each semester.
9. Maximum 10 students in one group of practical during course of study and also in examination.

Note: Each credit equals one hour/week for theory teaching load.

Each credit equals two hours/week for practical teaching load.

Programme Outcomes (POs) for UG Programme

(Course: Electronics)

PO1	Knowledge	Capable of demonstrating comprehensive disciplinary knowledge gained during course of study
PO2	Communication	Ability to communicate effectively on general and scientific topics with the scientific community and with society at large
PO3	Problem Solving	Capability of applying knowledge to solve scientific and other problems
PO4	Individual and Team Work	Capable to learn and work effectively as an individual, and as a member or leader in diverse teams, in multidisciplinary settings'
PO5	Investigation of Problems	Ability of critical thinking, analytical reasoning and research based knowledge including design of experiments, analysis and interpretation of data to provide conclusions
PO6	Modern Tool usage	Ability to use and learn techniques, skills and modern tools for scientific practices
PO7	Science and Society	Ability to apply reasoning to assess the different issues related to society and the consequent responsibilities relevant to the professional scientific practices
PO8	Life-Long Learning	Aptitude to apply knowledge and skills that are necessary for participating in learning activities throughout the life
PO9	Environment and Sustainability	Ability to design and develop modern systems which are environmentally sensitive and to understand the importance of sustainable development.
PO10	Ethics	Apply ethical principles and professional responsibilities in scientific practices
PO11	Project Management	Ability to demonstrate knowledge and understanding of the scientific principles and apply these to manage projects

Programme Specific Outcomes (PSOs) for UG Programme
(Course: Electronics)

PSO1	Students will be able to acquire the basic understanding of the electronic components, principles, working and applications of the electronic devices.
PSO2	Explore technical knowledge in diverse areas of Electronics and experience an environment conducive in cultivating skills for successful career, entrepreneurship and higher studies.
PSO3	Students will acquire experimental skills, research aptitude in the area of electronics that will make them capable of contributing to the academic as well as industrial growth of the country.

Semester-III

CC-3
Paper No: -B-ELE-N301
Op-amp and Linear Integrated Circuits

Credits: 2
Total Marks: 50
Internal Assessment: 25
End Term Exam: 25
End term examination time: 3 hours

Course Objective: The objectives of teaching this paper are

1. To make the students familiar with operational amplifier.
2. To acquaint the students with basic differential amplifier and their applications.
3. To make the students familiar with instrumentation amplifier and active filters.
4. Tounderstand the working principle of various regulated power supplies and their applications.

Course Outcome: After the end of this paper, the students will be able

1. To know internal circuit of operational amplifier and its different configurations.
2. To know the applications of operational amplifier to perform different operations.
3. To understand applications of operational amplifier and active filters using op-amp.
4. To understand the principle of regulated power supply and various regulated power supply used in electronic equipments.

Mapping of Course Outcomes to Program Outcomes:

CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	3	2	3	3	3	3	--	--	--	3	3	3	2
CO2	3	3	2	3	3	3	3	--	--	--	3	3	3	2
CO3	3	3	2	3	3	3	3	--	--	--	3	3	3	2
CO4	3	3	2	3	3	3	3	--	--	--	3	3	3	2

Unit-I

Operational Amplifier- I:

Ideal operational amplifier,Op-amp internal circuit (Emitter Coupled Differential amplifier, level translator, output stage),Use of Current Mirror as Constant Current Source, Op-amp as Inverting Amplifier, Non-inverting amplifier, Differential Amplifier, CMRR,Voltage follower.

Unit-II

Operational Amplifier- II:

Practical Op-Amp : Input Offset Voltages, input bias Current, input offset current, thermal drift, effect of error sources,summing amplifier, subtractor, Integrator, Differentiator circuit,Log and Antilog Amplifier, Divider and Multiplier.

Unit-III

Operational Amplifier- III:

Instrumentation Amplifier, current to Voltage converter, Voltage to current converter,sample & hold circuit, First-Order Active Filters: Low-pass, High-pass, Bandpass, Band reject.

Unit-lV

Regulated Power Supply:

Principle of voltage regulation, Zener diode shunt regulator, BJT shunt regulator and BJT series voltage regulator, power supply regulation using op-amp, load regulation, short circuit protection, current regulation using operational amplifier, Block Diagram of three terminal IC regulator (78xx, 79xx), Boosted power supply.

Reference Books:

1. Electronics for Scientist & Engineers by Vishwanathan, Mehta
2. Op-amp and Linear Integrated Circuit by Ramakant A Gayakward
3. Integrated Electronics by Millman&Halkias
4. Electronic Devices and Circuits Discrete and Integrated by Y N Bapat.
5. Linear Integrated Circuits by D. Roy Choudhury, Shail B. Jain.

Semester-III
CC-3

B-ELE-N302
Combinational and Sequential Circuits

Credits: 2
Total Marks: 50
Internal Assessment: 25
End Term Exam: 25
End term examination time: 3 hours

Course Objective: The objectives of teaching this paper are

1. To make the students familiar with various combinational and sequential circuits.
2. To acquaint the students with various types of counters and registers.

Course Outcome: After the end of this paper, the students will be able

1. To design various combinational circuits used for many applications in digital system.
2. To understand various sequential circuits used for many applications in digital system.
3. To design any counter circuit for a specific use.
4. To understand various types of registers and the applications of registers to store the digital data.

Mapping of Course Outcomes to Program Outcomes:

CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	3	2	3	3	3	3	--	--	--	3	3	3	2
CO2	3	3	2	3	3	3	3	--	--	--	3	3	3	2
CO3	3	3	2	3	3	3	3	--	--	--	3	3	3	2
CO4	3	3	2	3	3	3	3	--	--	--	3	3	3	2

UNIT -I

Combinational Circuits: Multiplexers, Demultiplexer, Decoder, Encoder, Parity bit generator and checker, Code Converter: BCD to Seven Segment, BCD to Cyclic Code, Binary to Decimal, Binary to Gray, Binary to Excess-3, Application of combinational circuit: adder circuit using Multiplexers, Boolean expression implementation using Multiplexer, Boolean expression implementation using Demultiplexer

UNIT -II

Sequential Circuits:Basic Sequential circuit, Asynchronous and Synchronous circuits, RS FF and JK Flip Flop, Race Around Condition, Master Slave JK flip flop, T and D Flip Flop, Excitation Table, Conversion of Flip Flop, State Diagram.

UNIT -III

Counters: Asynchronous Binary Counters, Asynchronous Mod-N Counter, Synchronous counter: Design principle of Modulo- N Counters, UP-Down counters, Decade Counter, BCD Counter.

Unit IV

Registers: Shift Registers, Serial-in serial out (SISO), Serial-in-parallel out (SIPO), parallel-in-serial-out (PISO) parallel-in-parallel-out (PIPO), Bi-directional shift register, Applications of shift register:Ring counter, Johnson Counter, Time delay, Sequence Generator

Reference Books:

1. Digital E1ectronics &Micro computers - R. K. Gaur (4th edition)
2. Modern Digital Electronics - R.P. Jain (4th edition)
3. Digital Principles and Applications by Leach Donald, Malvino AP (6th Edition)
4. Digital fundamentals by R.P. Jain & Floyd.

Semester-III
CC-3
B-ELE-N303
Practical-III

Credits: 2
Total Marks: 50
Internal Assessment: 25
End Term Exam: 25
End term examination time: 3 hours

Course Objectives

The objective of teaching this practical paper is

1. To learn the use of various ICs used in digital and analog circuits.
2. To design various combinational and sequential circuits on bread board using ICs.
3. To learn the functioning of operational amplifier.
4. To Analyze and interpret experimental data.

Course Outcome

After the end of this paper, the students will be able

1. To implement various combinational and sequential circuits.
2. To implement application oriented circuits using Op-amp IC 741.
3. To present the experimental results and conclusions in the form of written report in clear and concise manner.

Mapping of Course Outcomes to Program Outcomes:

CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	3	2	3	3	3	3	--	--	2	3	3	3	3
CO2	3	3	2	3	3	3	3	--	--	2	3	3	3	2
CO3	3	3	2	3	3	3	3	--	--	3	3	3	3	2

Note: A candidate is required to perform minimum 6 experiments out of the list provided during course of study in this semester.

1. Study of different type of analog and digital IC's: functions, pin diagram, block diagram of 741, 7400, 7402, 7404,7408,7432,7474,7476,7490,74153,74155.
2. Operational amplifier as (1) Unity gain buffer (2) Inverting amplifier (3) Non-inverting amplifier.
3. Operational amplifier as: (1) Summing amplifier (2) Difference amplifier.
4. Measurement of offset voltage, bias currents & CMRR of an operational amplifier.
5. To design a Schmitt Trigger circuit using Operational Amplifier.
6. Study and design of an integrating circuit using op-amp IC 741.
7. To study a 4:1 Multiplexer.
8. To study a 1:4 De- Multiplexer.
9. Code Converter.
10. To verify the functionality of J-K , D and T Flip-Flops using 7400 and 7476 ICs.
11. Ripple Binary Counter
12. MOD-N Counter (Synch/Asynch)
13. Up-Down Counter (Synch/Asynch)

Semester-IV
CC-4
B-ELE-N401
Sinusoidal Oscillators and Multivibrators

Credits: 2
Total Marks: 50
Internal Assessment: 25
End Term Exam: 25
End term examination time: 3 hours

Course Objective: The objectives of teaching this paper are

1. To make the student familiar with classification of amplifiers and feedback concept.
2. To make the students familiar with various amplifiers and their efficiency.
3. To acquaint the students withthe design concepts of oscillators and multivibrators.

Course Outcome: After the end of this paper, the students will be able

1. To use the feedback concept as per the requirement of the circuit.
2. To understand various types of amplifiers and their applications.
3. To use oscillators in various applications depending on frequency.
4. To use multivibrators in various applications depending on frequency and shape of waveforms.

Mapping of Course Outcomes to Program Outcomes:

CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	3	2	3	3	3	3	--	--	--	3	3	3	2
CO2	3	3	2	3	3	3	3	--	--	--	3	3	3	2
CO3	3	3	2	3	3	3	3	--	--	--	3	3	3	2
CO4	3	3	2	3	3	3	3	--	--	--	3	3	3	2

Unit-I

Amplifiers & Feedback: Classification of Amplifiers (voltage, current, Transconductance, Transresistance amplifier), Feedback concept, calculation of transfer gain in degenerative and regenerative feedbacks, Feedback topologies, Effect of negative feedback on gain, Non-linear distortion, Frequency response, Effect of negative voltage shunt feedback on inputand output resistance, Effect of negative voltage series feedback on input and output resistance, Effect of negative current shunt feedback on input and output resistance, Effect of negative current series feedback on input and output resistance.

Unit-II

Power Amplifiers: Basic Circuit and working only of: Class A large scale amplifier, push pull amplifier, transformer coupled amplifier, Class B amplifier, Class AB amplifier, Darlington-pair, efficiency.

Unit-III

Oscillators: Principle of oscillations, condition for sustained oscillation (Barkhausen criterion), stability of oscillator, Principle, working and frequency calculation of RF oscillators (Hartley oscillator, Colpitts oscillator, crystal oscillator) and AF Oscillators (Wien Bridge oscillator, R-C Phase-shift oscillator)

Unit- IV

Multivibrators: AstableMultivibrator, BistableMultivibrator, MonostableMultivibrator using BJT, Silicon controlled Rectifier (SCR), Triac, Diac, Triangular waveform generator, Schmitt Trigger, 555 Timer: Block diagram of 555 and its application as Astable&MonostableMultivibrator.

Reference Books:

1. Basic Electronics Solid state by B.L. Theraja.
2. Opamp and linear circuits by Ramakant A Gayakward.
3. Electronics for Scientist & Engineers by Vishvanathan& Mehta.

Semester-IV
CC-4
B-ELE-N402
Advance Digital Electronics

Credits: 2
Total Marks: 50
Internal Assessment: 25
End Term Exam: 25
End term examination time: 3 hours

Course Objective: The objectives of teaching this paper are

1. To make the student familiar with Digital to analog conversion and analog to digital conversion.
2. To make the students familiar with various memory and their parameters.
3. To acquaint the students withthe design concepts ofProgrammable Logic devices.

Course Outcome: After the end of this paper, the students will be able

1. To use the DAC as per the requirement of the circuit.
2. To use the ADC as per the requirement of the circuit.
3. To understand various types of memory and their applications.
4. To understand and implement different types of digital electronic circuits using programmable logic devices and FPGA.

Mapping of Course Outcomes to Program Outcomes:

CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	3	2	3	3	3	3	--	--	--	3	3	3	2
CO2	3	3	2	3	3	3	3	--	--	--	3	3	3	2
CO3	3	3	2	3	3	3	3	--	--	--	3	3	3	2
CO4	3	3	2	3	3	3	3	--	--	--	3	3	3	2

Unit -I

Digital to Analog conversion: DAC conversion, Types of DAC conversion, Weighted Resistor Type DAC, R-2R Ladder Type DAC, The Switched Current source type DAC, The Switched Capacitor type DAC, DAC accuracy and resolution

Unit II

Analog to Digital Conversion: ADC conversion, Types of ADC conversion, The Counter Type ADC, The Tracking type ADC, Flash type ADC, The Successive Approximation ADC, ADC accuracy and resolution

Unit III

Memories: Parameters of memory**,** Volatile and non volatile memories, Memory organization & operation, ROM, PROM, EPROM, EEPROM, RAM (Static and dynamic), Expanding the size of memory, Content addressable memory/ associative memory,

Unit IV

Programmable Logic Devices (PLDs): Introduction, ROM as a PLD, Programmable Logic Array(PLA), Programmable Array Logic(PAL), Features of PLD, Complex Programmable Logic Devices(CPLDs), Field Programmable Gate Array(FPGA).

Reference Books:

1. Modern Digital Electronics - R.P. Jain
2. Digital Principles and Applications by Leach Donald, Malvino AP (6 th Edition)

Semester-IV

CC-4

B-ELE-N403

Practical-IV

Credits: 2
Total Marks: 50
Internal Assessment: 25
End Term Exam: 25
End term examination time: 3 hours

Course Objectives

The objective of teaching this practical paper is

1. To learn the use of various ICs used in digital and analog circuits.
2. To design various oscillators and DAC circuits on bread board using ICs.
3. To learn the functioning of oscillators and multivibrators.
4. To Analyze and interpret experimental data.

Course Outcome

After the end of this paper, the students will be able

1. To design various low frequency and high frequency oscillator circuits.
2. To implement application oriented circuits using timer IC 555.
3. To implement DAC and analyse its characteristics.
4. To present the experimental results and conclusions in the form of written report in clear and concise manner.

Mapping of Course Outcomes to Program Outcomes:

CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	3	2	3	3	3	3	--	--	2	3	3	3	2
CO2	3	3	2	3	3	3	3	--	--	2	3	3	3	2
CO3	3	3	2	3	3	3	3	--	--	2	3	3	3	2
CO4	3	3	2	3	2	3	3			3	3	3	3	3

Note: A candidate is required to perform minimum 6 experiments out of the list provided during course of study in this semester.

1. Study of different type of analog and digital IC's: functions, pin diagram, block diagram of 555, 7476,4001,4011,4081,4071,4077,4009.
2. To study the design of Hartley oscillator & measure its frequency.
3. To study the design of Colpitt's oscillator & measure its frequency.
4. To study the design of Phase shift oscillator & measure its frequency.
5. To study the design of Wein bridge oscillator & measure its frequency.
6. To study and design Astablemultivibrator using IC 555.
7. To study and design Monostable multi vibrator using IC 555.
8. To design a transistorized astablemultivibrator and measure its frequency.
9. Study of characteristic of UJT.
10. To design saw tooth wave generator using UJT.
11. To design a 4-bit weighted type DAC and measure its resolution.
12. To design a 4-bit ladder type DAC and measure its resolution.

Kurukshetra University, Kurukshetra

Scheme of Examination and Syllabus for Undergraduate Programme
Under
(Multiple Entry-Exit, Internship and CBCS-LOCF) NEP w.e.f 2023-24

Course: Electronic Equipment & Maintenance

Semester	Course	Paper	Nomenclature of paper	Credits	Internal marks	End Term Marks	Total	Duration of Exam
3	CC-3	B-EEM-N301	Electronic Instrumentation, Transducers& Operational Amplifier	2	25	25	50	3 hours
		B-EEM-N302	Microprocessor & Interfacing	2	25	25	50	3 hours
		B-EEM-N303	Practical-III	2	25	25	50	3 hours
4	CC-4	B-EEM-N401	Digital Electronics-II	2	25	25	50	3 hours
		B-EEM-N402	Microcontroller 8051: Programming & Applications	2	25	25	50	3 hours
		B-EEM-N403	Practical-IV	2	25	25	50	3 hours

Programme Outcomes (POs) for UG Programme

Course: Electronic Equipment & Maintenance

PO1	Knowledge	Capable of demonstrating comprehensive disciplinary knowledge gained during course of study
PO2	Communication	Ability to communicate effectively on general and scientific topics with the scientific community and with society at large
PO3	Problem Solving	Capability of applying knowledge to solve scientific and other problems
PO4	Individual and Team Work	Capable to learn and work effectively as an individual, and as a member or leader in diverse teams, in multidisciplinary settings'
PO5	Investigation of Problems	Ability of critical thinking, analytical reasoning and research based knowledge including design of experiments, analysis and interpretation of data to provide conclusions
PO6	Modern Tool usage	Ability to use and learn techniques, skills and modern tools for scientific practices
PO7	Science and Society	Ability to apply reasoning to assess the different issues related to society and the consequent responsibilities relevant to the professional scientific practices
PO8	Life-Long Learning	Aptitude to apply knowledge and skills that are necessary for participating in learning activities throughout the life
PO9	Environment and Sustainability	Ability to design and develop modern systems which are environmentally sensitive and to understand the importance of sustainable development.
PO10	Ethics	Apply ethical principles and professional responsibilities in scientific practices
PO11	Project Management	Ability to demonstrate knowledge and understanding of the scientific principles and apply these to manage projects

Programme Specific Outcomes (PSOs) for UG Programme

Course: Electronic Equipment & Maintenance

PSO1	Students will be able to acquire the basic understanding of the electronic components, principles, working and applications of the electronic devices.
PSO2	Explore technical knowledge in diverse areas of Electronics and experience an environment conducive in cultivating skills for successful career, entrepreneurship and higher studies.
PSO3	Students will acquire experimental skills, research aptitude in the area of electronics that will make them capable of contributing to the academic as well as industrial growth of the country.

Instruction for the Examiners

1. Syllabus in each Theory Paper in each semester is divided in 4 units.
    i. A student is required to attempt 5 questions in all.
    ii. Question No 1 is compulsory, consisting of short answer type questions based on all the 4 units.
    iii. Two questions will be set from each unit. A student is required to attempt one question from each unit.
    iv. All questions carry equal marks.
2. Use of scientific calculator is permissible.
    i. Instructions should be imparted using SI system of units. Familiarity with CGS system of units should also be ensured.
3. Distribution of Marks: 25*+25*.
   Each theory question paper will be of 25 marks of 3 hours duration and 25 marks in each theory paper are to be awarded through internal assessment in each semester.
4. Work load – two hours per week per theory paper.
5. Practical classes to be conducted during odd as well as even semester.
6. The Practical examination will be held at the end of each semester in one sitting of 3 hours.
7. A candidate is required to perform minimum 6 experiments out of the list provided during course of study in each semester.
8. Distribution of Marks: 25*+25*
   Each practical examination in each semester will be of 25marks of 3 hours duration and 25 marks in each practical paper are to be awarded through internal assessment in each semester.
9. Maximum 10 students in one group of practical during course of study and also in examination.

Note: Each credit equals one hour/week for theory teaching load.

Each credit equals two hours/week for practical teaching load.

Semester – III

CC-3

Paper: B-EEM-N301

ELECTRONIC INSTRUMENTATION, TRANSDUCERS& OPERATIONAL AMPLIFIER

Credits: 2
Total Marks: 50
Internal Assessment: 25
End Term Exam: 25
End term examination time: 3 hr

Aims & Objectives

The aim of this course is to understand the basic concepts of Instrumentation, Transducers andworking mechanism of operational amplifier having following objectives: -

- familiarize with the basic concepts of instrumentation.
- familiarize with the basic concepts of transducers and sensors.
- working of operational Amplifier
- Understand the basic applications of operational amplifier.

CO1: Familiarize and understand the basic concepts of Instrumentation and Measurement Systems
CO2: Understand the different types of Sensors and Transducers for different parameters
CO3:Understand the basic working principle of Operational Amplifier and its different configurations
CO4: Learn and understand the different applications of an Operational Amplifier in implementing circuits like Integrator, Differentiator, Filters etc.

CO-PO Mapping Matrix for Course Code: CC-B-EEM-N301											
COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	3	3	2	2	2	2	3	2
CO2	3	2	3	3	3	2	2	2	2	2	2
CO3	3	3	2	3	3	2	2	2	2	3	2
CO4	3	2	3	3	3	2	2	2	2	2	2

CO-PSO Mapping Matrix for Course Code: CC-B-EEM-N301			
COs	**PSO1**	**PSO2**	**PSO3**
CO1	3	3	2
CO2	2	3	3
CO3	3	3	2
CO4	2	3	3

Unit-I

Basic concepts of Instrumentation: Generalized instrumentation systems block diagram representation, Measurement system parameters: accuracy, sensitivity, linearity, precision, resolution, threshold, range, hysteresis, dead band, backlash, drift, fidelity, speed of response, dynamic error
Transducers and Sensors-I: Classification, Active and Passive, Primary and secondary. Mechanical and Electrical. Selection of Transducers, Principle and working of following types: Displacement transducers - Resistive (Potentiometric, Strain Gauges–Types, Gauge Factor)

Unit-II

Transducers and Sensors-II: Capacitive (diaphragm), Inductive (LVDT-Principle and characteristics, Temperature (electrical and non-electrical), Piezoelectric (Element and their properties, Piezoelectric coefficients. Equivalent circuit and frequency response of P.E. Transducers)

Sensors: Classification, Basic Concept of Different Types of Sensors: Temperature, Proximity, IR sensor, Pressure, Light, Touch, Humidity, Microphone, Ultrasonic, Smoke and Gas.

Unit-III

Operational Amplifier-I: Double ended differential Amplifier, differential gain, Common-mode gain, CMRR, ideal operational amplifier, Inverting & non-inverting configuration, unity-gain configuration, Summing amplifier, Scaling amplifier, Difference amplifier

Unit-IV

Operational Amplifier-II: Error sources in OP-Amp: Offset Voltages, input bias Current, input offset current, Division and Multiplication, integrating circuit, differentiating circuit, 1st order active filter using op-amp: LPF, HPF, Band Pass Filter.

References:

1. Modern Electronic Instrumentation and Measurement Techniques by Albert D Helfrick and William D Cooper, PHI Pvt. Ltd.
2. A course in Electrical and Electronic measurements and Instrumentation by A k Sawhney, Dhanpat Rai and Co.
3. Op-Amps and Linear Integrated Circuits by Ramakant A Gayakwad, Pearson Education

Semester – III

CC-3

Paper: B-EEM-N302

MICROPROCESSOR & INTERFACING

Credits: 2
Total Marks: 50
Internal Assessment: 25
End Term Exam: 25
End term examination time: 3 hr

Aims & Objectives

The aim of this course is to introduce with 8085 microprocessor and its programming with following objectives: -

- 8085 microprocessorarchitecture, instruction sets, addressing modes& programming exercises
- stacks and stack operations
- interfacing 8085 microprocessor with input/output devices,memory devices
- interfacing programmable peripheral devices

CO1: Understand the basic architecture and Instruction set of 8085

CO2: Learn and familiarize with the different programming techniques of 8085 and working principle of stacks and subroutines

CO3: Understand the basic concept of Interrupts and Direct Memory Access in microprocessor

CO4: Understand the different programmable peripheral devices and their interfacing with 8085

Outcome

To be able to learn programming techniques of 8085 microprocessor alongwith its interfacing with various peripherals through interfacing devices.

CO-PO Mapping Matrix for Course Code: CC-B-EEM-N302											
COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	3	3	2	2	2	2	3	2
CO2	3	2	3	3	3	2	2	2	2	2	2
CO3	3	3	2	3	3	2	2	2	2	3	2
CO4	3	2	3	3	3	2	2	2	2	2	2

CO-PSO Mapping Matrix for Course Code: CC-B-EEM-N302			
COs	**PSO1**	**PSO2**	**PSO3**

CO1	3	3	2
CO2	2	3	3
CO3	3	3	2
CO4	2	3	3

Unit-I

Microprocessor Architecture: Microprocessor Architecture and its Operations, Fetching, decoding and execution of an Instruction, concept of Peripheral I/O and Memory Mapped I/O.
Instruction Set of 8085: 8085 Programming Model, Instruction Classification, Instruction and Data Format, Addressing Modes. Data Transfer Operations, Arithmetic Operations, Logic Operations, BranchOperations

Unit-II

Programming Techniques: Looping, Counting and Indexing, Additional Data Transfer and 16-bit Arithmetic Instructions, Arithmetic Operation related to Memory, Logic Operations: Rotate, Compare, Counters and Time Delays with few examples.
Stacks and Subroutines: Stack, Subroutine, Restart, conditional call and return instructions; BCD Addition, BCD Subtraction.

Unit-III

Interrupts & Interrupt Controller: 8085 Interrupt, 8085 Vectored Interrupts, Direct Memory Access, 8259 Programmable Interrupt Controller (block diagram, interrupt operation and features).

Unit-IV

Programmable Interface Devices: 8255 programmable peripheral interface (block diagram, modes), 8253/8254 Programmable Interval Timer (block diagram, programming 8253),

References:

1. Microprocessor Architecture, Programming & Applications with 8085 by Ramesh Gaonkar
2. Introduction to Microprocessors by A.P.Mathur

Semester – III
CC-3
Paper: B-EEM-N303
Practical - III

Credits: 2
Max. Marks: 50
Internal Assessment: 25
End Term Exam: 25
End term examination time: 3 h (one session)

Course Objectives

The objective of teaching this practical paper is

1. To learn the use of various electronic equipment used for analysis of basic analog circuits.
2. To learn the operation of multimeter, CRO and function generator.
3. To designvarious circuits on bread boardusing desecrate components.
4. To learn the functioning of wave shaping circuits.
5. To analyze and interpret experimental data.

Course Outcome

After the end of this paper, the students will be able

1. Tooperate various equipment used in the design and analysis of basic electronic circuits.
2. To design electronics circuits based on semiconductor devices and passive components.
3. To design combinational circuits using IC.
4. To present the experimental results and conclusions in the form of written report in clear and concise manner.

Mapping of Course Outcomes to Program Outcomes:

CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	3	2	3	3	3	3	--	--	2	3	3	3	2
CO2	3	3	2	3	3	3	3	--	--	--	3	3	3	3
CO3	3	3	2	3	3	3	2	--	--	3	3	2	3	3
CO4	3	3	2	3	3	3	3	--	--	3	3	3	3	2

Note:A candidate is required to perform minimum 6 experiments out of the list provided during course of study in this semester.

List of Experiments:

1. Familiarization with 8085 based microprocessor trainer kit by identifying different IC chips and their utilities. Understanding various functions of the kit, like, insertion, deletion, block-move, block-fill, examining registers/memory, single step, etc. by writing and executing simple programs for addition/subtraction of single and multibyte numbers.
2. Writing 8085 program for multiplication and division of two numbers.
3. Write 8085 program for arranging an array of data in ascending/descending order.

4. Write 8085 program for the generation of time delays of the order of 1-5 seconds and its testing by interfacing LED's to make them glow in a givensequence.
5. Study the IC Tester application on 8085 µPkit.
6. Study the Traffic Light Controller application of 8085 µPkit.
7. To design the circuit of Schmitt Trigger using Op-amp IC 741 and plot its voltage waveforms.
8. To Study op-amp as an Inverting, Non-inverting and Unity gain amplifier using IC 741
9. To study op-amp as a summing and difference amplifier using IC 741
10. Calculate offset voltage, bias current and CMRR of an op-amp using IC 741
11. To study op-amp as an Integrator
12. To study op-amp as a Differentiator

Semester – IV
CC-4
Paper: B-EEM-N401
DIGITAL ELECTRONICS-II

Credits: 2
Total Marks: 50
Internal Assessment: 25
End Term Exam: 25
End term examination time: 3 hr

Aims & Objectives

The aim of this course is to familiarize with some advanced concepts of digital electronics having following objectives:-

- familiarize with advanced sequential circuits, viz., counters and shift registers
- Application of timing circuits and circuits to generate various types of timing pulses/waveforms implemented in digital circuits.
- concepts and structure of various types of memories.
- Importance of PLA and familiarize with its basic design concepts.
- Various types of A/D and D/A converters and their accuracy and resolution.

CO1: Understand the basic concepts of Flip-Flops and their application in sequential circuits like counters
CO2: Understand the different types of Shift registers and their applications in advanced digital circuits
CO3: Understand the operation and classification of different types of memories
CO4: Understand the implementation and working principle of various types of A/D converters and D/A Converters

Outcome

To be able to learn minimization techniques in simplifying the hardware requirements of digital circuits and understand the working mechanism and design guidelines of different combinational and sequential circuits for their role in digital system design.

CO-PO Mapping Matrix for Course Code: CC-B-EEM-N401											
COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	3	3	2	2	2	2	3	2
CO2	3	2	3	3	3	2	2	2	2	2	2
CO3	3	3	2	3	3	2	2	2	2	3	2
CO4	3	2	3	3	3	2	2	2	2	2	2

CO-PSO Mapping Matrix for Course Code: CC-B-EEM-N401			
COs	**PSO1**	**PSO2**	**PSO3**
CO1	3	3	2

CO2	2	3	3
CO3	3	3	2
CO4	2	3	3

Unit-I

Basic Sequential circuit: Asynchronous and Synchronous circuits, RS Flip-Flop, JK Flip Flop, Race Around Condition, Master Slave JK flip flop, T and D Flip Flop, Excitation Table, Conversion of Flip Flop.

Counters: Asynchronous Binary Counters, Asynchronous Mod-N Counter, Synchronous counter: Design principle of Modulo-NCounters, UP-Down counters, Decade Counter, skipping state counter.

Unit-II

Shift Registers: SISO, SIPO, PISO,PIPO, Bidirectional Shift register, Universal Shift register Applications of shift register: Ring counter, Johnson Counter, Time delay generation.

Unit-III

Memories: Memory Organization and Operation, Expanding Memory Size, Classification and Characteristics of Memories, Read Only Memory (ROM Organization, Programming Mechanisms, Read and Write Memory (Static and Dynamic), Bipolar RAM Cell, MOS RAMs, Charge Couple Device Memory (Basic concept of CCD, Operation of CCD)

Unit-IV

A/D and D/A Converters: D/A Converters (Specifications, Weighted Resister, R-2R Ladder), Sample and Hold Circuit, A/D Converters (Quantization and Encoding, Specifications, Parallel Comparator, Successive Approximation, Dual Slope)

References:

1. Modern Digital Electronics by R. P. Jain
2. Integrated Electronics by Millman & Halkias
3. Digital Computer Electronics by A. P. Malvino

Semester – IV
CC-4
Paper: B-EEM-N402

MICROCONTROLLER 8051: PROGRAMMING & APPLICATIONS

Credits: 2
Total Marks: 50
Internal Assessment: 25
End Term Exam: 25
End term examination time: 3 hr

Aims & Objectives

The aim of this course is to teach the concepts of microcontroller 8051 and its programming with following objectives:-

- basic concepts of microcontroller 8051 based system.
- study of instruction set and programming techniques of 8051 microcontroller.
- design of interfacing circuits with 8051 microcontroller.

CO1: Understand and familiarize the basic architecture of 8051
CO2: Learn the different types of Interrupts, addressing modes and Instruction set of 8051
CO3: Understand and Implement the programming of 8051 in C Language
CO4: Understand and Implement the basic interfacing of 8051 microcontroller with Keyboard, seven segment displays, stepper motor, DAC, ADC etc.

Outcome

To be able to learn about microcontroller 8051 circuits and its programming techniques and the design of basic applications being interfaced with the microcontroller.

CO-PO Mapping Matrix for Course Code: CC-B-EEM-402											
COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**
CO1	3	3	2	3	3	2	2	2	2	3	2
CO2	3	2	3	3	3	2	2	2	2	2	2
CO3	3	3	2	3	3	2	2	2	2	3	2
CO4	3	2	3	3	3	2	2	2	2	2	2

CO-PSO Mapping Matrix for Course Code: CC-B-EEM-402			
COs	**PSO1**	**PSO2**	**PSO3**
CO1	3	3	2
CO2	2	3	3
CO3	3	3	2

CO4	2	3	3

Unit-I

Microcontroller 8051: Introduction and block diagram of 8051 microcontroller,architectureof 8051 family (in brief), memory organization, Internal RAM/ROM memory,General purpose data memory, special purpose/function registers, external memory. Counters and timers – 8051 oscillator and clock, program counter, TCON, TMOD, timer counter interrupts, timer modes of operation. Input/output ports and circuits/configurations, serial data input/output – SCON, PCON, serial data transmission modes.

Unit-II

8051- Interrupts, addressing modes and Instruction set: Interrupts – IE, IP, time flag interrupts, serial port interrupt, external interrupts, reset, interrupt control, interrupt priority, interrupt destinations & software generated interrupts. Addressing modes, Data transfer instructions, Push and Pop and data exchange instructions, Logical Instructions,Arithmetic Instructions, simple programs in assembly language.

Unit-III

8051 programming in C: Jump and call instructions – jump and call program range, jumps, calls and subroutines, interrupts and returns, simple example programs in assembly language. 8051 programming using C– Data types and time delays in 8051 C, I/O programming, logic operations, data conversion programs, accessing code ROM space and data serialization. Timer/Counter Programming in 8051–Programming 8051 timers, counter programming, programming timers 0 and 1 in 8051 C.

Unit-IV

Interfacing with 8051: Basic interfacing concepts and interrupts, Programming 8051 interrupts, programming Timer interrupts, programming the external hardware interrupts. Schematic diagrams and basic concepts of Interfacing of 8051 to keyboard, seven segment display, stepper motor, DAC, ADC and traffic light controller circuits.

References:

1. 8051Microcontroller&EmbeddedSystemsbyM.A.Mazidi, J.G.Mazidi&R.D.McKinlay.
1. The 8051 Microcontroller, architecture, programming and applications by K.J.Ayala.

Semester – IV

Paper: B-EEM-N403

Practical - IV

Credits: 2
Max. Marks: 50
Internal Assessment: 25
End Term Exam: 25
End term examination time: 3 hr (one session)

Course Objectives

The objective of teaching this practical paper is

- To learn the use of various electronic equipment used for analysis of basic analog circuits.
- To learn the operation of multimeter, CRO and function generator.
- To designvarious circuits on bread boardusing desecrate components.
- To learn the functioning of wave shaping circuits.
- To analyze and interpret experimental data.

Course Outcome

After the end of this paper, the students will be able

1. To operate various equipment used in the design and analysis of basic electronic circuits.
2. To design electronics circuits based on semiconductor devices and passive components.
3. To design combinational circuits using IC.
4. To present the experimental results and conclusions in the form of written report in clear and concise manner.

Mapping of Course Outcomes to Program Outcomes:

CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1	3	3	2	3	3	3	3	--	--	2	3	3	3	2
CO2	3	3	2	3	3	3	3	--	--	--	3	3	3	3
CO3	3	3	2	3	3	3	2	--	--	3	3	2	3	3
CO4	3	3	2	3	3	3	3	--	--	3	3	3	3	2

Note:A candidate is required to perform minimum 6 experiments out of the list provided during course of study in this semester.

List of Experiments:

1. Familiarization with 8051 based microcontroller trainer kit. Practice in entering and executing simpleprograms, likeaddition/subtraction/smallest/largest of N 8-bit numbers.
2. Write a program on 8051 microcontroller kit to find that the given numbers is prime or not.
3. Write a program on 8051 microcontroller kit to glow the first four LEDs then next four using Timer application.
4. Use one of the four ports of 8051 for output interfaced to eight LED's. Simulatebinary counter (8 bit) on LED's.
5. Design a square wave of varying duty cycles on 8051 based microcontroller trainerkit.
6. Interface stepper motor with 8051 microcontroller and write a program to move the

motorthrough a given angle in clock wise or counter clockwise direction.

7. Study JK, D and T type flip flops
8. Design a 4-bit Ripple counter
9. Design an asynchronous decade counter
10. Design a Ring counter
11. Design a SISO shift register
12. To design Digital to Analog (D/A) Converter by binary weighted resistors & R-2R ladder arrangement.

KURUKSHETRA UNIVERSITY KURUKSHETRA

MASTER OF ZOOLOGY
FACULTY OF LIFE SCIENCES

SCHEME AND SYLLABUS
(Semester I to IV)
(For affiliated colleges of KUK)
(Effective from Session 2022-23)

DEPARTMENT OF ZOOLOGY
KURUKSHETRA UNIVERSITY, KURUKSHETRA
(SESSION 2022-23)

Scheme of Examination of M.Sc. Zoology (Semester system) for affiliated colleges of KUK to be implemented w.e.f. session 2022-2023

Paper No.	Title of the Paper	Nature of paper	Contact hours per week T + S + P	Total Marks (T+IA)	Exam duration (Hours)
Semester I					
M-Z-101	Cell Biology	Core	4 + 0 + 0	80+20	3
M-Z-102	Biochemistry and Bio-techniques	Core	4 + 0 + 0	80+20	3
M-Z-103	Biosystematics and Biostatistics	Core	4 + 0 + 0	80+20	3
M-Z-104	Biology of Invertebrates	Core	4 + 0 + 0	80+20	3
M-Z-105	Practical (Based on Papers M-Z-101 & M-Z-102)	Core	0 + 0 + 8	80+20	4
M-Z-106	Practical (Based on Papers M-Z-103 &M-Z-104)	Core	0 + 0 + 8	80+20	4
Total			**16 + 0 + 16**	**480+120=600**	
Semester II					
M-Z-201	Population and Community Ecology	Core	4 + 0 + 0	80+20	3
M-Z-202	Comparative Physiology	Core	4 + 0 + 0	80+20	3
M-Z-203	Population Genetics & Evolution	Core	4 + 0 + 0	80+20	3
M-Z-204	Biology of Vertebrates	Core	4 + 0 + 0	80+20	3
M-Z-205	Seminar	Core	0 + 1 + 0	25	-
M-Z-206	Practical (Based on Papers M-Z-201 & M- Z-202)	Core	0 + 0 + 8	80+20	4
M-Z-207	Practical (Based on Papers M-Z-203 & M- Z-204)	Core	0 + 0 + 8	80+20	4
Total			**16 + 1 + 16**	**505+120=625**	

Scheme of Examination of M.Sc. Zoology (Semester system) for affiliated colleges of KUK to be implemented w.e.f. session 2022-2023

Semester III						
M-Z-301	Molecular Biology		Core	4 + 0 + 0	80+20	3
M-Z-302	Molecular Endocrinology		Core	4 + 0 + 0	80+20	3
M-Z-303	Applied Zoology		Core	4 + 0 + 0	80+20	3
M-Z-304	Molecular Reproduction-I	Any one from M-Z-304 to M-Z-306	Elective	4 + 0 + 0	80+20	3
M-Z-305	Animal Behaviour & Wildlife Conservation – I					
M-Z-306	Fish, Fisheries and Aquaculture – I					
M-Z-307	Seminar		Core	0 + 1 + 0	25	-
M-Z-308	Practical (Based on Papers M-Z-301 to M-Z-303)		Core	0 + 0 + 8	80+20	4
M-Z-309	Practical (Based on Papers M-Z-304/M-Z-305/M-Z-306)		Elective	0 + 0 + 8	80+20	4
Total				**16 + 1 + 16**	**505+120=625**	
Semester IV						
M-Z-401	Developmental Biology		Core	4 + 0 + 0	80+20	3
M-Z-402	Vertebrate Immunology		Core	4 + 0 + 0	80+20	3
M-Z-403	Environmental Toxicology		Core	4 + 0 + 0	80+20	3
M-Z-404	Molecular Reproduction– II	Any one from M-Z-404 to M-Z-406	Elective	4 + 0 + 0	80+20	3
M-Z-405	Animal Behaviour & Wildlife Conservation – II					
M-Z-406	Fish, Fisheries and Aquaculture – II					
M-Z-407	Practical (Based on Papers M-Z-401 to M-Z-403)		Core	0 + 0 + 8	80+20	4
M-Z-408	Practical (Based on Papers M-Z-404 /M-Z-405/M-Z-406)		Elective	0 + 0 + 8	80+20	4
Total				**16 + 2 + 16**	**480+120=600**	
				Grand Total	**2450**	

T – Theory; S– Seminar; P– Practical

SEMESTER – I

Paper: M-Z-101 (Core)
Cell Biology
Total Marks: 100
Theory Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more selecting one questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.i

UNIT- I

1. Biomembranes

1.1 Molecular composition and arrangement, functional consequences
1.2 Cellular Transport – Recapitulation of the plasma membrane; diffusion, active transport and pumps, uniports, symports and antiports.
1.3 Donnan equilibrium; ion movements and cell function: acidification of cell organelles
1.4 Maintenance of cellular pH; cell excitation; bulk transport; Receptor mediated endocytosis
1.5 Transepithelial transport

2 Cytoskeleton and cell movement

2.1 Introduction to cytoskeleton and its role
2.2 Molecular structure of Actin, myosin and their organisation
2.3 Structure and dynamic organizations of microtubules and microfilaments
2.4 Microtubule motors and movement
2.5 Intermediate filaments
2.6 Role of Centrioles and basal bodies
2.7 Structure and functions of Cilia and flagella

UNIT –II

3 The Extra Cellular Matrix and Cell interactions

3.1 Cell walls
3.2 The ECM and cell-matrix interactions
3.3 Cell-cell interactions: adhesion junctions, tight junctions, gap junctions, plasmodesmata
3.4 Ca^{++} dependent and Ca^{++} independent Homophilic cell-cell adhesion

4 Cell matrix adhesion

4.1 Integrins
4.2 Collagen
4.3 Non-collagen components
4.4 Auxin and cell expansion
4.5 Cellulose fibril synthesis and orientation

5 **Protein sorting and transport**

5.1 Protein uptake into the ER
5.2 Membrane proteins and Golgi sorting
5.3 Mechanism of vesicular transport
5.4 Lysosomes
5.5 Molecular mechanism of secretory pathway

UNIT-III

6 Cell cycle

6.1 Eukaryotic cell cycle
6.2 Regulators of cell cycle progression
6.3 Role of Meiosis in Genetic Variation

7 Cell – Cell signaling

7.1 Signaling molecules and their receptors
7.2 Pathways of intracellular signal transduction

8 Biology of Cancer

8.1 The development and causes of cancer
8.2 Oncogenes
8.3 Tumor suppressor genes
8.4 Molecular approaches to cancer treatment

UNIT-IV

9 Genome organization

9.1 Chromosomal organization of genes
9.2 Transposons in prokaryotes and eukaryotes
9.3 Morphological and functional elements of eukaryotic chromosomes

10 Cell Death

10.1 Necrosis and Programmed cell death
10.2 Molecular Mechanism
10.3 Applications and Significance

11 Biology of Ageing

11.1 Morphological, Physiological and Functional changes during Ageing
11.2 Telomeres and Ageing
11.3 Theories of Ageing

Suggested Reading Material:

1. Molecular Cell, Biology, J. Darnell, H. Lodish and D. Baltimore Scientific American Book, Inc., USA.
2. Molecular Biology of the Cell, B. Alberts, D. Bray, J. Lewis, M. Raff, K. Roberts and J.D. Watson. Garland Publishing Inc., New York.
3. Cell and molecular biology Phillip Sheeler, Donald E. Bianchi Wiley, 1987
4. Life: The Science of Biology by David Sadava
5. Cell and Molecular Biology by De Robertis
6. Cell Biology by A.K. Berry, EMKAY Publlications
7. Molecular Cell Biology, Lodishet al., W.H. Freeman and Company (8th Ed. 2016)
8. Molecular Biology, Weaver R. F., McGraw-Hill Education (5th Ed. 2011)

SEMESTER – I

Paper: M-Z-102 (Core)
Biochemistry and Bio-techniques
Total Marks: 100
Theory Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each unit (I to IV). The candidate will be required to attempt question No. 1 and four more selecting one question from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT – I

1.0 **General Principles of Biochemistry and chemical composition of life**
- 1.1 General Introduction to Biomolecules

2.0 **Protein Biology:**
- 2.1 Primary, Secondary, tertiary and quaternary structure of proteins: i) Domain, ii) Reverse turn of Ramachandran plot and its significance

3.0 **Enzyme:**
- 3.1 Classification and nomenclature,
- 3.2 Co-enzymes and Cofactors
- 3.3 Induced fit and Molecular Mechanism of Enzyme action,
- 3.4 Enzyme feedback mechanism, Isozymes.

4.0 **Nucleic acids: Structure and Functions**
- 4.1 DNAstructure and functions
- 4.2 RNA structure and functions,
- 4.3 DNA choreography
- 4.4 Qualitative and quantitative estimation of DNA

UNIT - II

5.0 **Metabolism:**
- 5.1 Glycolysis, citric acid cycles its regulation and role as metabolic hub.
- 5.2 Hexose monophosphate pathway its regulation and significance.
- 5.3 Cholesterol biosynthesis, its metabolism and steroidogenesis.
- 5.4 Bile acids and their metabolism
- 5.5 Saturated and unsaturated fatty acid and their metabolism.

UNIT - III

6.0 Chemical and Biological assays (*invitro* and *in vivo* assays).

7.0 Principles and uses of analytical instruments:
- 7.1 Microscopes and imaging
- 7.2 Spectrophotometers,

7.3 NMR spectrophotometer

8.0 Microbiological and cell culture Techniques
8.1 Setting of microbiological laboratory,
8.2 Sterilization and Media preparation techniques
8.3 Inoculation and growth monitoring (Standard plate count technique),
8.4 Isolation of a microbial colony and slant preparation.
8.5 Design and functioning of tissue culture laboratory,
8.6 Basics of cell/tissue culture, Culture media preparation,
8.7 Cell proliferation measurements
8.8 Cell viability testing and Cell harvesting methods.
8.9 Biosafety and levels

9.0. **Cryotechniques** :
9.1 Cryopreservation for cells, tissue, organisms,
9.2 Cryotechniques for microscopy.

UNIT - IV

10.0. **Separation techniques in biology**.
10.1 Molecular separations by chromatography, electrophoresis, precipitation etc.
10.2 Organelle separation by centrifugation. Density gradient centrifugation, Ultra Centrifugation, unit gravity centrifugation, affinity adsorption, anchorage based techniques
10.3 Cell separation by flow cytometery and FACS

11.0 **Radioisotope and mass isotope techniques in biology:**
11.1 Sample preparation for radioactive counting
11.2 Autoradiography
11.3 Biosensors

12.0 **DNA fingerprinting**

Suggested Reading Materials:

1. Animal Cell Culture – A practical approach, Ed. John R.W. Masters, IRL Press.
2. Introduction to Instrumental analysis, Robert Braun, McGraw Hill International editions
3. A Biologists guide to Principles and Techniques of Practical Biochemistry, K. Wilson and K.H. Goulding, ELBS Edn.
4. Lehninger AL, Nelson DL & Cox MM (1993) Principles of Biochemistry, 2nd edn. New York: Worth.
5. Stryer L (1995) Biochemistry, 4th edn. New York: WH Freeman.
6. Voet D, Voet JG & Pratt CW (1999) Fundamentals of Biochemistry. New York: Wiley.

SEMESTER – I

Paper: M-Z-103 (Core)
Biosystematics and Biostatistics
Total Marks: 100
Theory Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more selecting one questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT – I

1.0. Biosystematics and taxonomy: Definition and perspectives,
2.0. Historical resume, Importance and applications of systematics in biology.
Concepts of newer aspects of biosystematics: Chemotaxonomy, Cytotaxonomy, Molecular taxonomy.

3.0. Dimensions of speciation and taxonomic characters:
3.1 Different Species concepts – species category,
3.2. Sub-species and other intra-specific categories.

4.0. Theories of biological classification, hierarchy of categories.
5.0. Taxonomic characters – different kinds, weighing of characters

UNIT - II

6.0. **Methodology:**

6.1 Taxonomic collections, preservation, curetting process and identification.
6.2 Taxonomic keys-different kinds of taxonomic keys, their merits and demerits.

7.0. **Systematic publications:**

7.1 Different kinds of publications.
7.2 International code of Zoological Nomenclature (ICZN): principles, objectives and rules: Stability, Priority, Concept of availability, formation of names, synonymy, homonymy, the type method, kinds of type specimen, type-designation.

8.0 Principles of Bioethics in Biodiversity

UNIT - III

9.0 **Measures of central value:**

11.1 Arithmetic mean, mode and median, Definition, calculation and its properties.

10.0 **Measures of Dispersion: Range,**

12.1 Interquartile range,
12.2 Quartile deviation.
12.3 Mean deviation and standard deviation,
12.4 Standard error

11.0 **Correlation:**

13.1 Types and Methods studying correlation – Scatter diagram method, Graphic method, Karl Pearson coefficient of correlation, Rank correlation.

12.0 Regression analysis (Regression lines and regression equation)

13.0 Chi-square analysis

UNIT - IV

14.0. **Concept of sampling and sampling methods:**

14.1 Definition and law of sampling,

14.2 Judgment sampling, Random sampling, stratified sampling, systematic sampling, multi-stages sampling and quota sampling.

15.0. Test of significance for large samples and small samples (student t-test, F- test; ANOVA).

16.0. Probability and law of probability, Theoretical probability distribution: Binomial distribution, Poison distribution, Normal distribution.

17.0. Components of computers, Basic functioning of computers, Use of Statistical Software in Biology

Suggested Reading Material:

1. M. Kato. The Biology of Biodiversity, Springer.
2. E.O. Wilson, Biodiversity, Academic Press, Washington.
3. G.G. Simpson, Principle of animal taxonomy, Oxford ISH Publishing Company.
4. E. Mayer, Elements of Taxonomy.
5. E.O. Wilson, The Diversity of Life (The College Edition), W.W. Northerm & Co.
6. S.K. Tikadar, Threatened Animals of India, ZSI Publication, Calcutta.

SEMESTER – I

Paper: M-Z-104 (Core)
Biology of Invertebrates
Total Marks: 100
Theory Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more selecting one questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT – I

1.0 Introduction to invertebrates with their general characters, Basic body plan, Concept of Invertebrata v/s Vertebrata and Non-Chordata v/s Chordata

2.0 Organization of coelom
- 2.1 Concept and structure of Acoelomate, Pseudocoelomates and Coelomates.
- 2.2 Protostomia and Deuterostomia
- 2.3 Metamerism in Annelida, Pseudometamerism.

3.0 **Minor Phyla:**
- 3.1 Concept and significance
- 3.2 Organization and general characters of Acoelomate, Pseudocoelomates and Coelomates minor phyla (with special emphasis on Ctenophora, Rotifera, Endoprocta, Ectoprocta, Phoronida, Sipunculida and Echiuroidea).

UNIT-II

4.0 **Locomotion**
- 4.1 Flagella and ciliary movement in Protozoa
- 4.2 Hydrostatic movement in Coelenterata, Annelida and Echinodermata

5.0 **Nutrition and Digestion**
- 5.1 Patterns of feeding and digestion in lower metazoa
- 5.2 Filter-feeding in Polychaeta, Mollusca and Echinodermata

6.0 **Respiration**
- 6.1 Organs of respiration : Gills, lungs, trachea,skin,Cloacal chamber, Buccopharyangeal area etc.
- 6.2 Respiratory pigments
- 6.3 Mechanism of respiration

UNIT-III

7.0 **Excretion**

- 7.1 Organs of excretion: Coelom, coelomoducts, Nephridia and Malpighian tubules.
- 7.2 Mechanism of excretion and osmoregulation

8.0 **Nervous system**

- 8.1 Primitive nervous system: Coelenterata and Echinodermata
- 8.2 Advanced nervous system: Annelida, Arthropoda (Crustacea and Insecta) and Mollusca (Cephalopoda).
- 8.3 Trends in neural evolution.

9.0 Social life in insects, Social life in Isoptera and Hymenoptera

UNIT-IV

10.0 **Invertebrate larvae**

- 10.1 Larval forms of free living invertebrates
- 10.2 Strategies and Evolutionary significance of larval forms
- 10.3 Conservation of invertebrates.

11.0 **Introduction to insects**

- 11.1 Mouthparts of Insects
- 11.2 Mechanism of insect flight and hovering
- 11.3 Metamorphosis in insects
- 11.4 Hormonal control of moulting.

12.0 Economic importance of Invertebrates; Various Adaptations in Invertebrates

Suggested Reading Materials:

1. Hyman, L.H. The invertebrates, Vol. I. Protozoa through Ctenophora, McGraw Hill Co., New York.
2. Barrington, E.J.W. Invertebrate structure and function. Thomas Nelson and Sons Ltr J. London.
3. Jagerstein, G. Evolution of Metazoan life cycle, Academic Press, New York & London.
4. Hyman, L.H. The Invertebrates. Vol.2. McGraw Hill Co., New York.
5. Hyman, L.H. The Invertebrates. Vol.8. McGraw Hill. Co., New York.
6. Barnes, R.D. Invertebrate Zoology, IIIrd edition. W.B. Saundrs Co., Philadelphia.
7. Russel-Hunter, W.D. A Biology of higher invertebrates, the Macmillin Co. Ltd. London.
8. Hyman, L.H. the Invertebrates smaller coelomate groups, Vol. V. McGraw Hill Co., New York
9. Read, C.P. Animal Parasitism. Prentice Hall Inc., New Jersey.
10. Sedgwick, A.A. Student text book of Zoology. Vol. I, II and III Central Book Depot, Allahabad
11. Parker, T.J., Haswell, W.A. Text book of Zoology, McMillan Co., London.

SEMESTER – I

Paper: M-Z-105 (Core)
Practical (Based on Papers M-Z-101 &M-Z-102)
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 4 Hours
Course Contents:

1. Preparation of mitotic chromosomes from onion root tips
2. Preparation of meiotic chromosomes from grasshopper testes.
3. Preparation of karyotypes from micrographs.
4. Calculation of morphometric data and preparations of idiogram.
5. Determination of chiasma frequency and terminalization coefficient.
6. Study of permanent slides of different stages of meiosis and mitosis.
7. Preparation of polytene chromosomes (*Chironomous*/mosquito) and mapping.
8. Preparation of Solutions- Standard solution, Molar, Molal and Normal solution.
9. Proteins: Quantitative estimation of proteins by Biuret method and Lowry's method.
10. Carbohydrates: quantitative estimation of total carbohydrates and glucose
11. **Analysis of Fats/ Oils:** iodine number, saponification value, acid value quantitative estimation of total lipids.
12. Preparation of Standard curve for the estimation andextraction of nucleic acids (DNA and RNA).
13. Paper chromatography: amino acids and carbohydrates.
14. Thin layer chromatography: neutral and phospholipids.
15. Tools: demonstration of parts and working of the following tools: PCR, GLC, Spectrophotometers, various kinds of microscopes, pH meter, Electrophoresis, Centrifuges, Tissue culture unit, Incubators
16. Microbiological media preparation, sterilization, dilution, inoculation and standard plate count.

SEMESTER – I

Paper: M-Z-106 (Core)
Practical (Based on Papers M-Z-103 &M-Z-104)
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 4 Hours
Course Contents:

1. Slides and Museum specimens of following phyla:
    (a) PROTOZOA
    (b) PORIFERA
    (c) CNIDARIA
    (d) ANNELIDA
    (e) ARTHROPODA
    (f) MOLLUSCA
    (f) ECHINODERMATA
    (h) HEMICHORDATA
2. Study of mouth parts of Cockroach, Honey Bee, Red cotton bug and House fly
3. Mounting: Obelia, Tubularia, Bougainvillea, Trachea of Cockroach, Crustacean Larva, *Cyclops, Nauplius, Daphnia*
4. Demonstration of Digestive system, reproductive system and nervous system of Earthworm, Cockroach, Prawn, Loligo and Star fish.
5. Preparation and use of different types of taxonomic keys.
6. Statistical analysis of data using manual and computer software methods
    a. Mean, mode & Median
    b. Standard deviation and S.E.
    c. Coefficient of correlation
    d. Diversity Indices
    e. Test of Significance (Student's t - test)

SEMESTER – II

Paper: M-Z-201 (Core)
Population and Community Ecology
Total Marks: 100
Theory Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more selecting one questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT - I

1.0 Basic Concepts: Definition, Scope and Significance of Ecology, Concept of biosphere, atmosphere, litho sphere and hydrosphere.

2.0 Organizational level of ecological systems,Ecological aspects of abiotic, biotic and edaphic factors, limiting factors

3.0 **Ecosystem:** Concept, Kinds and components

4.0 **Ecological energetic and energy flow:** Food chains, food webs, trophic structure; concept of productivity: primary, secondary, gross and net, Energy flow models.

UNIT - II

5.0 **Restoration Ecology**

Ecology of Disturbed Ecosystems: disturbance and its impact on the structure and functioning of terrestrial and aquatic ecosystems.

6.0 **Population characteristics**

- 6.1 Introduction and concepts of population ecology
- 6.2 Attributes of populations
- 6.3 Population density, methods of population density measurement
- 6.4 Growth rate and growth forms
- 6.5 Natality, mortality, survivorship curves and life tables
- 6.6 Biotic potential – Generation time, net reproductive rate reproductive values
- 6.7 Population and distribution.
- 6.8 Population dispersion

UNIT - III

7.0 **Population regulation and Interactions**

- 7.1 Extrinsic and intrinsic mechanisms

7.2 Concept of density dependent and density independent factors in population regulation.
7.3 Concept of intra specific and inter specific population interactions
7.4 Protocooperation, mutualism and commensalisms
7.5 Host-parasite interactions, Life history strategies – r and k selection.

8.0 **Competition and niche theory**

8.1 Intraspecific and inter specific interactions
8.2 History of niche concepts
8.3 Gause's theory of niche

UNIT - IV

9.0 **Predation**

9.1 Theory; predator-prey oscillations
9.2 Model of prey – predatory dynamics
9.3 Role of predation in nature
9.4 Parasitism

10.0 **Community characteristics**

10.1 Species diversity; Biodiversity indices: Diversity, dominance, Similarity& dissimilarity Index
10.2 Ecological Succession
10.3 Ecological dominance
10.4 Ecotones and Edge effect

11.0 Ecological Impact Assessment

Suggested Reading Materials:

1. Understanding Evolution by Earl. D. Hanson, Oxford University Press, Oxford, New York.
2. Oxford Surveys in Evolutionary Biology Vol. I – Vol. VI, Oxford University Press, Walton, Street, Oxford.
3. Evolution by Theodose H. Eaton (Jr.) Thomes – Nolson & Sona Limited, London.
4. Evolutionary Theory: (The unfinished synthesis) by Robert G.B. Reid: Croom Helm: London & Sydney.
5. Dobzhansky, Th. Genetics and Origin of species. Columbia University Press.

SEMESTER – II

Paper: M-Z-202 (Core)
Comparative Physiology
Total Marks: 100
Theory Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more selecting one questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise

UNIT - I

1.0 **Digestion**
1.1 Feeding mechanisms and regulation,
1.2 Comparative physiology of digestionand absorption in different animal groups

2.0 **Respiration**
2.1 Respiratory organs, Types of respiration, mechanism of breathing
2.2 Transport of respiratory gases
2.3 Respiratory pigments through differentphylogenetic groups.
2.4 Physiological response to oxygen deficient stress.

3.0 **Excretion**
3.1 Patterns of nitrogen excretion among different animal groups
3.2 Functionalanatomy of renal unit; mechanisms of ultrafiltration,Counter Current mechanism, Dialysis

4.0 **Osmoregulation** in different animal groups
4.1 Definition and basic classification of organisms on the basis of osmoregulation
4.2 Osmotic challenges of different environments
4.3 Mechanism of Osmoregulation in fresh water, Estaurine and Marine animals
4.4 Osmoregulation in migratory organisms,Control and regulation of osmoregulation

UNIT - II

5.0 **Thermoregulation**
5.1 Homeothermic animals,Poikilotherms, Hibernation and Aestivation,
5.2 Physical, chemical, neural regulation,
5.3 Physiological adaptations acclimatization & acclimation in response to high,low ambient temperature

6.0 **Circulation** of body fluids and their regulation among different animal groups
6.1 Systems ofcirculation, heart beat and blood pressure,
6.2 Cardiac cycle,Cardiac output and its regulation,
6.3 Lymphatic system

7.0 **Receptor physiology** – a comparative study of Mechanoreception, Photoreception, Chemoreception and Equilibrium reception

8.0 **Muscle and Contractile physiology**

8.1 Contractile elements, cells and tissues among different phylogenic groups; Muscle structure and function-correlation;

8.2 Electric organs and tissues

UNIT- III

9.0 **Comparative testicular physiology** in animals

9.1 Morphology, Differentiation, Function and its regulation

10.0 **Comparative ovarian physiology** and differentiation in vertebrates

10.1 Morphology, Endocrinolgy, Oogensis vitellogensis

11.0 **Neuronal physiology**

11.1 Structure and classification of neurons and glial cells.

11.2 Synaptic action, dendritic properties and functional operation of spinal cord, Brain stem

11.3 Autonomic nervous system.

UNIT - IV

12.0 **Principles of synaptic transmission**

12.1.Ca2+ and transmitter release; post synaptic transmission mechanism;

12.2. diversity of neurotransmitters: acetylcholine, catecholamine, serotonin, GABA, glycine, histamine, peptides, NO, and opiods.

13.0 **Physiological adaptations** to different environments

13.1 Physiological adaptations acclimatization & acclimation in response to high, low ambient temperature,

13.2 physiological adaptation at high altitude and in deep sea environment**.**

14.0 **Stress Physiology** Concept of Stress and Strain, Stress hormones and stress regulatory mechanisms.

Suggested Reading Material

1. C.L. Prosser. Comparative Animal Physiology. W.B. Saunders & Company.
2. R. Eckert. Animal Physiology: Mechanisms and Adaptation. W.H. Freeman & Company.
3. W.S. Hoar. General and Comparative Animal Physiology
4. Schiemdt-Nielsen. Animal Physiology: Adaptation and Environment. Cambridge.
5. C.L. Prosser. Environment and Metabolic Physiology. Wiley-Liss, New York.
6. David Randall, Warren Burggren, Kathleen French: Eckert Animal Physiology
7. Guyton, A.X., Text Book of Medical Physiology, 7th edition, Saunders Company (1986).

SEMESTER – II

Paper: M-Z-203 (Core)
Population Genetics and Evolution
Total Marks: 100
Theory Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more selecting one questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise

UNIT-I

1.0 Concepts of evolution and theories of organic evolution with an emphasis on Darwinism.
2.0 Emergence of Neo-Darwinism-Neutral Hypothesis
3.0 **Neo Darwinism**
- 3.1 Hardy-Weinberg law of genetic equilibrium
- 3.2 A detailed account of destabilizing forces:
  - (i) Natural selection
  - (ii) Mutation
  - (iii) Genetic drift
  - (iv) Migration
  - (v) Meiotic drive

UNIT-II

4.0 **Quantifying genetic variability**
- 4.1 Genetic structure of natural populations
- 4.2 Phenotypic variations
- 4.3 Models explaining changes in genetic structure of populations
- 4.4 Factors affecting human disease frequency

5.0 **Molecular population genetics**
- 5.1 Patterns of change in nucleotide and amino acid sequences
- 5.2 Ecological significance of molecular variations

6.0 **Genetics of quantitative traits in populations**
- 6.1 Analysis of quantitative traits
- 6.2 Estimation of heritability
- 6.3 Genotype-environment interactions
- 6.4 Inbreeding depression and heterosis
- 6.5 Molecular analysis of quantitative traits
- 6.6 Phenotypic plasticity

UNIT-III

7.0 **Genetics of speciation**

- 7.1 Concept of species
- 7.2 Patterns and mechanisms of reproductive isolation
- 7.3 Modes of speciation (Allopatric, Sympatric, Parapatric, Peripatric)

8.0 **Molecular Evolution**

- 8.1 Gene Evolution
- 8.2 Evolution of gene families, Molecular drive
- 8.3 Assessment of molecular variations

9.0 **Origin of higher categories**

- 9.1 Phylogenetic gradualism and punctuated equilibrium
- 9.2 Major trends in 'the origin of higher categories
- 9.3 Micro-and Macro-evolution

UNIT-IV

10.0 **Molecular phylogenetics**

- 10.1 Concept of phylogenetic trees.
- 10.2 Methods of construction of Phylogenetic trees.

11.0 **Population genetics and ecology**

- 11.1 Metapopulations
- 11.2 Monitoring Natural Populations
- 11.3 Populations size and extinction
- 11.4 Loss of genetic variations
- 11.5 Conservation of genetic resources in diverse texa

Suggested Reading Material

1. Dobzhansky, Th. Genetics and Origin of Species. Columbia University Press. Dobzhansky, Th., F.J. Ayala, G.L. Stebbines and J.M. Valentine. Evolution. Surjeet Publication, Delhi.
2. Futuyama, D.J. Evolutinary Biology, Suinuaer Associates, INC Publishers, Dunderland.
3. Hartl, D.L. A Primer of Population Genetics. Sinauer Associates, Inc, Massachusetts.
4. Jha, A.P. Genes and Evolution. John Publication, New Delhi.
5. King, M. Species Evolution-The role of chromosomal change. The Cambridge University Press, Cambridge.
6. Merrel, D.J. Evolution and Genetics. Holt, Rinehart and Winston, Inc.
7. Smith, J.M. Evolutinary Gentics. Oxford University Press, New York.
8. Strikberger, M.W. Evolution. Jones and Bartett Publishers, Boston London.
9. Sherwood

SEMESTER – II

Paper: M-Z-204 (Core)
Biology of Vertebrates
Total Marks: 100
Theory Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more selecting one questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise

UNIT - I

1.0 **Introduction to Chordates with their general characters.**
- 1.1 Origin of Chordates
- 1.2 Concept of Protochordata or pre-vertebrates
- 1.3 Classification of Vertebrates upto orders

2.0 **Integument and its derivatives**
- 2.1 Development, general structure and functions of skin and its derivatives
- 2.2 Glands, scales, horns, claws, nails, hoofs, feathers and hair

UNIT - II

3.0 **Skeletal system**
- 3.1 Form, function, body size and skeletal elements of the body
- 3.2 Comparative account of jaw suspensorium, Vertebral column
- 3.3 Limbs and girdles

4.1 **Digestive system**
- 4.1 Dentition, Stomach, Digestive Glands
- 4.2 Anatomy of gut in relation of to feeding habits- herbivores, carnivores and omnivores.

5.0 **Respiratory system**
- 5.1 Characters of respiratory tissue, Internal and External Respiration
- 5.2 Comparative account of respiratory organs

UNIT –III

6.0 **General plan of circulation in various groups**
- 6.1 Components of Blood
- 6.2 General plan of circulation in reptiles, birds and mammals
- 6.3 Evolution of heart, aortic arches and Portal systems

7.0 **Evolution of Urinogenital system in vertebrate series**

7.1 Structure and functions of different types of kidney

7.2 Urino-genital ducts

Flight adaptation in birds, Migration in fish and Birds

UNIT– IV

8.0 **Nervous system**

8.1 Comparative anatomy of the brain in relation to its functions

8.2 Comparative anatomy of spinal cord

8.3 Nerves-Cranial, Peripheral and Autonomous nervous systems

9.0 **Sense organs**

9.1 Simple receptors

9.2 Organs of Olfaction and taste

9.3 Lateral line system

9.4 Electroreception

Suggested Reading Material

1. Barrington, E.J.W. The Biology of Hemichordata and Protochordata. Oliver and Boyd,Edinbourgh.
2. Bourne, G.H. The structure and functions of nervous tissue. Academic Press, New York.
3. Carter, G.S. Structure and habit in vertebrate evolution - Sedgwick and Jackson, London.
4. Kingsley, J.S. Outlines of Comparative Autonomy of Vertebrates. Central Book Depot,Allahabad.
5. Kent, C.G. Comparative anatomy of vertebrates.
6. Milton Hilderbrand. Analysis of vertebrate structure. IV. Ed. John Wiley and Sons Inc.,New York.
7. Sedgwick, A. A Students Text Book of Zoology, Vol. II.
8. Torrey, T.W. Morphogenesis of vertebrates. John Wiley and Sons Inc., New York and London.
10. Walters, H.E. and Sayles, L.D. Biology of vertebrates. MacMillan & Co., New York.

SEMESTER – II

Paper: M-Z-205 (Core)
Seminar
Total Marks: 25
Report and Presentation: 20
Attendance: 5

SEMESTER – II

Paper: M-Z-206 (Core)
Practical (Based on Papers M-Z-201 & M-Z-202)
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 4 Hours
Course Contents:

1. Study of various components of pond and grassland ecosystem.
2. Determination of Water quality characteristics viz: Dissolved oxygen, pH, free carbon dioxide, salinity, transparency, alkalinity and hardness.
3. Methods of population density measurements.
4. Estimation of biodiversity indices.
5. Field Visit to Aquatic, Forest and other ecosystems for identification of biota.
6. Preparation of tissues for microtomy and demonstration ofcryo techniques
7. Histochemistry: Methods of fixation of different tissues.
8. **Histochemical test:**
   (a) Haemotoxylin-eosin
   (b) Toluidine Blue
   (c) Sudan Block-B
   (d) Mercury bromophenol blue
   (e) Methyl green-pyronin-Y
   (f) Periodic acid Schiff's
   (g) Acid phosphatase
   (h) Alkaline phosphatase
9. Demonstration of live gametes and their staining procedure.
10. Determination of optimum pH, temperature and concentration for optimum activityof salivary amylase.
11. To demonstrate that the optimum activity of trypsin enzyme is pH temperaturedependent.
12. Qualitative test of vitamins and Quantification of vitamin A and C.
13. Total RBC, WBC and Different WBC count
14. Estimation of Blood plasma

SEMESTER – II

Paper:M-Z-207 (Core)
Practical (Based on Papers M-Z-203 & M-Z-204)
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 4 Hours
Course Contents:

1. Demonstration of cranial nerves and aortic arches of *Scoliodon*, Degestive system, Nervous system, Arterial and venous system of frog, Lizard, Pigeon and rabbit.
2. Museum specimens and slides :
    (i) Protochordates
    (ii) Fishes
    (iii) Amphibians
    (iv) Reptiles
    (v) Birds
    (vi) Mammals
3. Comparative Osteology
    (i) Skull and lower jaw
    (ii) Vertebrae
    (iii) Girdles
    (iv) Limb bones
4. Temporary/Permanent mounts of Hair & Scales
5. Different types of Feathers, Scales & Hair
6. Construction of Phylogenetic tree

SEMESTER – III

Paper: M-Z-301 (Core)
Molecular Biology
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more selecting one questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT-I

1.0 **DNA Replication**

- 1.1 Prokaryotic and Eukaryotic DNA replication
- 1.2 Mechanics of DNA replication
- 1.3 Enzymes and accessory proteins involved in DNA replication

2.0 **Transcription**

- 2.1 Prokaryotic and Eukaryotic transcription
- 2.2 General and specific transcription factors
- 2.3 Regulatory elements and mechanisms of transcription regulation
- 2.4 Transcriptional and post-transcriptional gene silencing.
- 2.5 Post-transcriptional Modifications in RNA
- 2.6 5'-Cap formation, 3'-end processing and polyadenylation
- 2.7 Splicing, Editing, Nuclear export of mRNA, mRNA stability

UNIT-II

3.0 **Translation**

- 3.1 Genetic code and deciphering of genetic code
- 3.2 Prokaryotic and Eukaryotic translation
- 3.3 The translational machinery
- 3.4 Adaptor hypothesis, Kozak rule
- 3.5 Mechanisms of initiation, elongation and termination
- 3.6 Regulation of translation

4.0. **Transport of Protein**

- 4.1 Co- and Post-translational transport of proteins
- 4.2 Co- and Post-translational modifications of proteins
- 4.3 Protein trafficking/sorting

UNIT-III

5.0 **Recombination and Repair**

- 5.1 Holiday junction, gene targeting, gene disruption
- 5.2 Cre/lox recombination
- 5.3 RecA and other recombinases
- 5.4 DNA repair mechanisms

6.0 Antisense and Ribozyme technology

- 6.1 Molecular mechanisms of antisense molecules
- 6.2 Inhibition of splicing, polyadenylation and translation
- 6.3 Disruption of RNA structure and capping
- 6.4 Biochemistry of ribozyme; hammerhead, hairpin and other ribozymes
- 6.5 Strategies for designing ribozymes
- 6.6 Application of antisense and ribozyme technologies

UNIT-IV

7.0 **Molecular mapping of genome**

- 7.1 Genetic and physical maps
- 7.2 Physical mapping and map-based cloning
- 7.3 Southern and fluorescence *in situ* hybridization for genome analysis
- 7.4 Chromosome micro-dissection and micro-cloning
- 7.5 Molecular markers in genome analysis RFLP, RAPD and AFLP analysis and their applications
- 7.6 Molecular markers linked to disease resistance genes

8.0 **rDNA Technology:**

- 8.1 Gene-cloning
- 8.2 Vectors
- 8.3 cDNA and genomic liberaries
- 8.4 Blotting techniques
- 8.5 Chromosome walking
- 8.6 Application of rDNA technology

Suggested Reading Materials

1. Molecular Biology of the Gene, J.D. Watson, N.H. Hopkins, J.W. Roberts, J.A Steitz and A.M. Weiner. The Benjamin/Cummings Pub. Co., Inc., California.
2. Molecular Cell Biology, J. Darnell, H. Lodish and D. Baltimore Scientific American Books, Inc., USA
3. Molecular Biology of the Cell, B. Alberts, D. Bray, J. Lewis, M. Raff, K. Roberts and J,D. Watson. Garland Publishing Inc., New York.
4. Gene VI, Benjamin Lewin, Oxford University Press, U.K.
5. Molecular Biology and Biotechnology. A comprehensive desk reference, R.A Meyers (Ed.), VCH Publishers, Inc., New York.
6. Molecular Cloning: a Laboratory Manual, J. Sambrook, E.F. Fritsch and T. Maniatis, Cold Spring Harbor Laboratory Press, New York.
7. Introduction to Practical Molecular Biology, P.D. Dabre, John Wiley & Sons Ltd., New York.
8. Molecular Biology LabFax, T.A Brown (Ed.), Bios Scientific Publishers Ltd., Oxford.

SEMESTER – III

Paper: M-Z-302 (Core)
Molecular Endocrinology
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more selecting one questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT-I

1. Basic concept of endocrinology, its scope and role in molecular biology.
2. **Chemical nature of hormones;**
   - 2.1 Amino-acid derived hormones
   - 2.2 Peptide hormones
   - 2.3 Glyco-protein hormones,
   - 2.4 Steroid hormones and
   - 2.5 Prostaglandin
3. Biosynthesis of peptide hormones, transcriptional and post-transcriptional modifications
4. Biosynthesis and secretion of thyroid hormones. Thyroid hormone disorders.

UNIT-II

5. Prostaglandin structure, type, synthesis and biological activities.
6. Mechanism of action of peptide hormones; concept of second messengers, cAMP, cGMP, Ca^{++}, IP_3, DAG, NO, signal transduction mechanisms.
7. Mechanism of action of steroid hormones; Cross talk concept, Heat shock proteins.

UNIT-III

8. **Hormonal regulation of Metabolism:**
   - 8.1 Role of Insulin & Glucagon in regulation of Carbohydrate metabolism
   - 8.2 Metabolic regulatory hormones in Lipid & Protein metabolism
9. Gastrointestinal hormones and their role in regulation of metabolic activity.
10. Endocrine regulation of calcium and phosphate homeostasis in mammals.

UNIT-IV

11. Genetic basis of hormonal disorders.

    11.1 General principle and classification of hormonal disorders

    11.2 Genetic basis of growth hormone disorder

11.3 Genetic basis of PCOS

12. Sequence-specific DNA binding receptor proteins
    - 12.1 Nuclear receptor proteins
    - 12.2 Cytosolic receptor proteins
    - 12.3 Cell surface receptor proteins
    - 12.4 Their role in gene transcription, cell differentiation and cell proliferation.

13.0 Regulatory substances –Eicosanoids,Growth factors, Thymus gland & Kinins.

Suggested Reading Materials

1. Benjamin Lewin, Genes VII, Oxford University Press.
2. Lodish et al. Molecular Cell Biology.
3. Ethan Bier. The Coiled Spring, Cold Spring Harbor Press.
4. L.P. Freedman. Molecular Biology of Steroid and Nuclear Hormone Receptors, Birkhauser.
5. G. Litwack. Biochemical Actions of Hormones, Academic Press.

SEMESTER – III

Paper: M-Z-303 (Core)
Applied Zoology
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more selecting one questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT- I

1.0 Vertebrate and non vertebrate pests (Wheat, Rice, Sugarcane and cotton) their harmful status and economic importance.

1.1 Integrated pest management. Cultural control, Physical control, Mechanical control, Chemical control, Biological control, Herbal control and legal control andPheromones involved in pest management.

2.0 Insects of medical and veterinary importance.

UNIT- II

3.0 Zoonosis:

3.1 Viral-Rabies,
3.2 Japaneses encephalitis;
3.3 Bacterial- Brucellosis, Plague;
3.4 Ricketsial- Ricketsial zoonosis, Q fever, Scrub typhus.
3.5 Protozoan *Entamoeba histolytica, Plasmodium vivax and Trypanosoma gambiense*), Helminth and Nematode diseases in humans (Schistosomiasis, Cestodiasis, Termatodasis, Filariasis and Ascariasis).

UNIT - III

Sericulture, Apiculture and Lac culture

4.0 Sericulture : Types of silk, species of silk moth (scientific names), Silkworms and their host plants, mulberry silk worm culture, agricultural aspects of mulberry plant cultivation, extraction and reeling of silk, natural enemies and diseases of silkworm and their control.

5.0 Apiculture : Species of honey bees in India, life history of *Apis cerana indica,* agriculture techniques, bee products and their uses, natural enemies and diseases of honey bee and their control.

6.0 Lac culture: lac insect (Scientific name), composition of lac, strains of lac insect, cultivation of lac host plants (in brief) processing of lac and uses of lac.

7.0 Wool and fur industry, leather industry.

UNIT- IV

8.0 Vermiculture, Poultry keeping and Dairy industry.

9.0 Prawn culture, Pearl culture.

10.0 Edible fresh water fishes and their diseases, Snakes (Haryana) and its Economic importance of snake venom

11.0 Pharmaceuticals from animals and role of animals in stem cell therapy. How to harvest the technology from animals for human welfare

12.0 Animal welfare and ethics, CPCSEA guidelines and maintenance of experimental animals

Suggested Readings:

1. Insect Pest Management by Dent, D.
2. Agricultural Entomology by Hill, D.S.,Timber Press.
3. General and Applied Entomology by David, B. V. & Ananthakrishnan, T. N., Tata McGraw-Hill Publishing.
4. Entomology and Pest Management by Pedigo L. P. Prentice Hall, India.
5. General and Applied Entomology by Nayar K. K. and T. N. Ananthkrishnan and B. V. Davis, Tata McGrew Hill Publications. New Delhi.
6. Agricultural Pests: Biology and Control Measures by B. M. Deoray and T. B. Nikam, Nirali Publication, Pune.
7. Concepts of Insect Control by Ghosh M. R. Wiley Eastern Ltd. New Delhi.
8. Economic Zoology. Shukla Upadhyay, Rastogi Publication, Meerut, India, 1998.

SEMESTER – III

Paper: M-Z-304 (Elective)
Molecular Reproduction-I
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more selecting one questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT-I

1. **Male Reproductive system:** Cytology of testis and spermatozoon, physiology of spermatogenesis, molecular bases of testicular steroidogenesis, endocrine regulation of steroidogenesis, role of male accessory sex structures.
2. **Female Reproductive System:** Structural and histochemical aspects of ovary and primordial follicles.
3. **Folliculogenesis:** Dynamics of follicular growth and maturation, intracellular dynamics of cholesterol synthesis-two cell theory, endocrine regulation of folliculogenesis.

UNIT–II

4. **Oocyte Maturation-** Nuclear, epigenetic and cytoplasmic; oocyte granulosa interactions
5. **Ovulation-** Mechanism, Induced and spontaneous ovulators.
6. **Corpus Luteum-**Structure and functions, molecular mechanism and endocrine regulation of luteinization, luteal steroidogenesis, corpus luteum of pregnancy.

UNIT-III

7. **Follicular atresia:** Causes, regulation and significance, factors affecting atresia, role of granulosa cells apoptosis in atresia.
8. **Male sterility-** Azoospermia, Oligozoospermia, Asthenozoospermia, Varicocele, Genetic basis for male infertility.
9. **Female infertility-** genetic and endocrinal factors, PCOD, atresia.

UNIT-IV

10. **Female reproductive aging:** epidemiology, theories, markers, significance, implications, fertility preservation.
11. **Age-Related Reproductive disorders-** perimenopause, premenopause, post menopausal disorders, osteoporosis.
12. Effect of diet, nutrition, stress, disease, exercise and yoga on reproductive ageing.

Suggested Reading Materials:

1. Guraya S.S. (1998). Cellular and Molecular Biology of General development and Maturation in mammals Narosa Publishing House, New Delhi.
2. Hafez E.S.E.(1994). "Reproduction in farm animals". Lea Febighiese.
3. Gurays S.S. (2000). Comparative Cellular and Molecular Biology of Ovary in mammals. I.B.H., New Delhi.
4. The Physiology of Reproduction, second edition, Vol 1 and 2, edited by Ernst Knobil and Jimmy D. Neil. *Raven Press*, 2014.
5. Male Reproductive Function, edited by Christina Wang. Kluwer *Academic Publishers*, 1999.
6. The ovary, edited by Solly Zuckerman Baron Zuckerman, Barbara J. Weir, T. G. Baker. *Academic Press.*
7. The ovary, edited by Peter C.K. Leung and Eli Y. Adashi, Elsevier (Academic Press), 2004.
8. Cell and Molecular Biology of Testis, edited by Claude Desjardins and Larry L. Ewing. *Oxford University Press US*.
9. Reproductive Endocrinology: Physiology, Pathophysiology, and Clinical Management, edited by Samuel S. C. Yen, Robert B. Jaffe, Robert L. Barbieri. *Saunders publisher*.
10. Regulation of Implantation and Establishment of Pregnancy in Mammals, Editors: Rodney D Geisert, Fuller W. Bazer, ISBN 978-3-319-15856-3, Springer International Publishing, 2015.
11. Implantation and early development, Editors: Hilary Critchley, Ian Cameron and Stephan Smith, ISBN 9781107784680, Cambridge University press, 2014.
12. Implantation, Biological and Clinical Aspects, Editors: Michael G. Chapman, J. GedisGrudzinskas, Tim Chard, ISBN 978-1-4471-3531-9, Springer-Verlag, 1988.

SEMESTER – III

Paper: M-Z-305 (Elective)
Animal Behaviour and Wildlife Conservation – I
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more selecting one questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT-I

1. Concept of Animal behaviour; Mile-Stones in the history of animal behaviour and scope.
2. Stereotyped and acquired behaviour patterns: Tropisms, Taxes, Reflexes, Instincts, learning & reasoning; Change in major modes of adaptive behaviour in phylogeny.
3. Perception of the environment : Mechanical, Electrical, chemical, olfactory, auditory, visual
4. Biological rhythms and concept of biological clock.

UNIT-II

5. Motivation: Introduction, goal oriented behaviour, biological drives – Primary and Secondary drives.
6. Concept of learning: law of learning, types of learning – Habitation, trial & error learning, latent learning, Insight, Imprinting, Classical conditioning & Instrumental learning.
7. Concept of Migratory behaviour

UNIT-III

8. Wildlife: Definition, significance and Biogeographic/wildlife zones of India, Bio-diversity of the Indian Subcontinent and World.
9. Protected Area Systems: Concept, Historical background, categories and management objectives of protected areas, world growth of protected areas, and Present status of National PA-Systems.
10. Theory and Practice of Biosphere Reserves of the world: Biosphere Reserves of India, Wildlife conservation techniques.

UNIT-IV

11. Natural Heritage Sites of the world, Natural Heritage sites in India. Important National Park and Wildlife Sanctuaries of India
12. Wildlife and livelihood; Wildlife and illegal trade & control;
13. Role of WWF, IUCN, UNEP,
14. Red Data Book; Categories of Endangered Wildlife Species.

Suggested Reading Materials:

1. Techniques for wildlife Census in India by W.A. Rogers (A field manual); Wildlife Institute of India, Dehradun.
2. Wildlife Wealth of India by T.C. Majupuria; Tecpress Services, L.P., 487/42-SOL-Wattenslip, Pratunam Bangkok, 10400, Thailand
3. Ali, S. Ripley S.D. Handbook of Birds of India, Pakistan 10-Vols. Oxford University Press, Bombay.
4. The Book of Indian Animals by S.H. Prater, BNHS-Publication, Bombay.
5. Wildlife in India by V.B. Saharia Natraj Publishers, Dehradun.
6. E.P. Gee, The Wildlife of India.

SEMESTER – III

Paper: M-Z-306 (Elective)
Fish, Fisheries and Aquaculture – I
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting two questions from each Unit I to IV. The candidate will be required to attempt question No. 1 and four more selecting one questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT - I

1.0 Definition of Fish, Fisheries and aquaculture; Types of Aquaculture

2.0 Classification of fishes with distinguishing characters and examples of each group.

3.0 Estuarine, Marine, Riverine and wetland fisheries: characteristic species and their exploitation.

4.0**Culture fisheries**

- 4.1 Cultivable organisms for aquaculture.
- 4.2 Criteria of selection of cultivable fishes

UNIT - II

5.0 Design, construction and maintenance of fish culture ponds.

6.0 **Ecology of fish pond ecosystem**

- 6.1 Physico chemical conditions of ponds water and soil
- 6.2 Biological conditions of waters
- 6.3 Weeds and their control
- 6.4 Productivity of fish pond
- 6.5 Classification of water bodies on the basis of productivity.

7.0 **Aquatic pollution**: Sources of water Pollution,Impact of pollution on aquatic organisms, Impact of exotic fish species onaquatic biodiversity, Fishes and their relationships with abiotic and biotic factors.

8.0 Aquaculture Ranching and Rational fishery.

UNIT -III

9.0 Fish integument: Exoskeleton and colouration

10.0 Fins: origin, types and functions

11.0 Food and feeding habits of fishes, Digestion in fishes

12.0 Respiratory system Gill structure and functions, Accessory respiratory organs swim bladder and webberian ossicles

13.0 Osmoregulation in fishes

UNIT - IV

14.0 Receptors in fishes
- 14.1 Chemoreceptors
- 14.2 Lateral line organs
- 14.3 Eye Ear
- 14.4 Pineal organ

15.0 Hormones and reproduction: Induced breeding in carps and catfishes.

16.0 Identification of different maturity stages of fishes.

17.0 Migration in fishes

18.0 Age and growth studies

Suggested Literature:

Encyclopedia of Fish Physiology. 2011. Anthony P. Farrell, E.D. Stevens, J.J. Cech& J.G. Richards (Eds). Academic Press, UK.

APHA (1995) Standard Methods of Examination of Water and Wastewater. American Public Health Association, AWWA, WCPF, Washington DC.

Bardach, JE, Ryther & McLarney, Wo (1972) Aquaculture, New York: Wiley-Interscience. 896pp.

Boulenger, GA & Bridge, TW (1910) Fishes (Vol. VII of the Cambridge Natural History) Cambridge Univ. Press, London.

Das, P, Verma, SR, Dhaje, RJ & Malik DS (2002) Coldwater Fish Genetic Resources and their Conservation. National Conservators publication, 7, 325pp.

Datta Munshi, JS & Srivastava, MP (1998) Natural History of Fishes and Systematics of Freshwater Fishes of Infia. Narendra Publishing house, Delhi, 403pp.

Jayram, KC (2013) The Freshwater Fishes of the Indian Region (Corrected 2nd Edition) Narendra Publishing house, Delhi, 616pp, XXXIX plates.

Lagler, KF, Bardach, JE, Miller, RR & Passino, DRM (1977) Ichthyology, 21nd Edition, New York, Wiley, 506 pp.

Nikolsky, GV (1963) The Ecology of Fishes, Academic Press, London.

Pillay, TVR (1990) Aquaculture, principles and practices. Fishing New Books. 575pp2. Fish Physiology. (Series) W.S.Hoar and D.J. Randall (Series Eds). Academic Press, UK.

The Physiology of Fishes. 2013. Evans, D. H. and Claiborne, J. D., Taylor and Francis Group, CRC Press, UK.

SEMESTER – III

Paper: M-Z 307 (Core)
Seminar
Total Marks: 25
Report and Presentation: 20
Attendance: 5

SEMESTER – III

Paper: M-Z-308 (Core)
Practical (Based on Papers M-Z-301 to M-Z-303)
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 4 Hours
Course Contents:

1. Non-protein nitrogenous substances: qualitative estimation of serum Bilirubin serum and urine creatintine.
2. Estimation of Acid and alkaline phosphates.
3. Barr body examination from Buccal smear.
4. Sex chromatin from blood sample.
5. *In-vitro* study of effect of hormones.
6. Study of **histological slides** and endocrine glands of vertebrates.
7. **Blood smear preparation**, Blood groups, hematin crystals, haemoglobin count, DLC, TLC etc.
8. Demonstration of SDS-PAGE
9. Demonstration of Agarose gel electrophoresis and prepration of gel
10. **Collection of different larva of**mosquitoes:-*Culex*; *Anopheles*; *Aedes*, marking out the basic **morphological** differences at larval level.
11. P**reparation of permanent mounts of adult mosquitoes:***Culex* and *Aedes* and *Anopheles* - highlight differences, if any, between basic these important vectors.
12. Study of life cycle of honey bee, Lac insect, Silk worm, Cabbage butterfly.
13. Study on common household and agriculture pest.

SEMESTER – III

Paper: M-Z-309 (Elective)
Practical (Based on Papers M-Z-304)
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 4 Hours
Course Contents:

1. Demonstration of male and female reproductive systems of earthworm, grass hopper, and rat.
2. Processing of reproductive tissues for microanatomy and histochemistry.
3. Study of permanent slides on mammalian reproductive tissues.
4. Study of folliculogenesis and atresia in rat ovary.
5. Study of apoptosis in gonads.
6. Extraction and estimation of macromolecules such as proteins, carbohydrates, lipids, and nucleic acids.
7. Isolation of testicular cells and ovarian follicular cells.
8. Oocyte collection; aspiration and slicing method.
9. Sperm morphology, capacitation, sperm count, and sperm motility.
10. Vaginal smear preparation to examine estrous cycle and pregnancy.
11. Oocyte maturation *in vitro*.
12. *In vitro* fertilization

SEMESTER – III

Paper: M-Z-309 (Elective)
Practical (Based on Papers M-Z-305)
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 4 Hours
Course Contents (Animal Behaviour and Wildlife Conservation – I)

1. Designing of experiments, observations, techniques of data analysis, presentation of results and writing of laboratory report.
2. To demonstrate locomotive, explorative withdrawal and habituation behaviours in animals.
3. To demonstrate response of animals to light.
4. To demonstrate antennal grooming behaviour in cockroach.
5. Demonstration of food preferences in insects/pests
6. Investigation of habituation of diving response of mosquito larvae.
7. To study the effect of temperature on heartbeat of cockroach/ Gill movements in Fishes.
8. Field study of nesting behaviour of common available avian fauna of the region.
9. Study of Migratory Birds
10. To study mobbing response of birds.
11. Study of animal behavior patterns using repertoire sheets.
12. To prepare charts of wildlife zones of India and the world.
13. Field visits to local areas/Project Report

SEMESTER – III

Paper: M-Z-309 (Elective)
Practical (Based on Papers M-Z-306)
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 4 Hours
Course Contents (Fish, Fisheries and Aquaculture – I):

1. Study of Anatomy and Morphology of important group of fishes.
2. Taxonomic study of common families, genera and species of fishes
3. Survey and Collection of fishes of Haryana
4. Examination of skeleton of cartilaginous and bony fishes
5. Study of histological and microscopic structure in fishes
6. Analysis of physical and chemical properties of water: Temperature, pH, turbidity, salinity, total solids, Dissolved oxygen, Free carbon-di-oxide, hardness, chlorides, orthophosphates, nitrates, ammonia
7. Qualitative and quantitative examination of Phyto and zooplanktons in a water body.
8. Determination of percent composition of different groups of phyto and zoo planktons
9. Determination of species diversity of phyto and zooplanktons
10. Study of Aquatic weeds and aquatic insects

SEMESTER – IV

Paper: M-Z-401 (Core)
Developmental Biology
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting four questions from each unit (I - IV). The candidate will be required to attempt question No. 1 and four more selecting two questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT - I

1 Introduction to animal development:
- 1.1 Problems of developmental biology
- 1.2 Developmental patterns in metazoans
- 1.3 Development in unicellular eukaryotes
- 1.4 Development in Dictyostelium

2. Creating multicellularity:
- 2.1 Cleavage types and significance, Blastula, Fate maps, cell lineages
- 2.2 Comparative account of gastrulation

3. Early vertebrate development:
- 3.1 Neurulation and ectoderm
- 3.2 Mesoderm and endoderm

UNIT - II

4. Cytoplasmic determinants and autonomous cell specification:
- 4.1 Cell commitment and differentiation
- 4.2 Germ cell determinants
- 4.3 Germ cell migration
- 4.4 Progressive cell - Cell interaction and cell specification fate
- 4.5 Cell specification in nematodes

5. Body pattern formation:
- 5.1 Establishment of Body axis in mammals and birds
- 5.2 Proximate tissue interactions
- 5.3 Genetics of axis specification in *Drosophila*

UNIT- III

6. Hormones as mediators of development:
   - 6.1 Amphibian metamorphosis
   - 6.2 Insect metamorphosis

7. Biology of sex determination:
   - 7.1 Chromosomal sex determination – Mammals, Drosophila and Nematodes
   - 7.2 Testis determining genes
   - 7.3 Secondary sex determination in mammals
   - 7.4 Environmental sex determination.

8. Cell death and cell renewal
   - 8.1 Programmed cell death
   - 8.2 Stem cells and the maintenance of adult tissues
   - 8.3 Embryonic stem cells and therapeutic cloning

UNIT - IV

9 Environmental evolution and animal development
   - 9.1 Environmental cues and effects
   - 9.2 Malformations and disruptions
   - 9.3 Changing evolution through development modularity
   - 9.4 Developmental constraints

10. Homeobox concept in different phylogenetic groups
   - 10.1 Cell diversification in early animal embryo
   - 10.2 Tetrapod limb development
   - 10.3 Skeletal muscle regeneration
   - 10.4 Connective tissue cell family
   - 10.5 Blood cells formation

Suggested Reading Material:

1. S.F. Gilbert. Developmental Biology. Sinauer Associates Inc., Massachusetts. Ethan Bier. 'The Cold Spring'. Cold Spring Harbor Laboratory Press, New York.
2. Essentials of Developmental Biology: JMW Slack [Latest edition] .
3. Principles of Development: Louis Wolpert [Latest edition].
4. An Introduction to Embryology by B.I. Balinsky, Saunders, Philadelphia (1981).
5. Major Problems in Developmental Biology by H. Urspaung, Academic Press, New York, (1972).
6. The Control of Gene Expression in Animal Development by J.B. Gurdon, Harvard University, Press, Oxford (1974).
7. Gene activity in Early Development by Davdson, E.H. Academic Press, London (1977).
8. Development Biology (Vol.II) by Browder, L.W, Saunders (1984).

SEMESTER – IV

Paper: M-Z-402 (Core)
Vertebrate Immunology
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting four questions from each unit (I - IV). The candidate will be required to attempt question No. 1 and four more selecting two questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT-I

1.0 Phylogeny and Ontogeny of immune system
- 1.1 Innate and Acquired Immunity
- 1.2 Organization and structure of lymphoid organs
- 1.3 Cells of the immune system and their differentiation

2.0 Nature of antigens and superantigens
- 2.1 Antigenicity and immunogenicity
- 2.2 Factors influencing immunogenicity
- 2.3 Epitopes and haptens

3.0 Structure and Functions of Antibodies
- 3.1 Classes and subclasses
- 3.2 Gross and Fine structure
- 3.3 Antibody mediated effector functions

4.0 Antigen-Ab interactions: Principles and Applications
- 4.1 Cross Reactivity, Precipitation reactions, Agglutination reactions
- 4.2 Radioimmunoassay, ELISA, Immunoprecipitation, Immunofluorescence

UNIT-II

5.0 Nature of immune response
- 5.1 Humoral Immune Response
- 5.2 Cellular Immune Response

6.0 Cytokines
- 6.1 Cytokine Properties
- 6.2 Cytokine receptors
- 6.3 Cytokines and Immune response

6.4 Cytokine Antagonists
6.5 Cytokine Related Diseases

7.0 Cell-mediated effector functions
7.1 Cell adhesion molecules
7.2 Effector cells and molecules
7.3 CTLs –Mechanism of action
7.4 NK cells-mechanisms of action

8.0 Hypersensitivity-Types and Mechanism.

UNIT-III

9.0 Complement System
9.1 Components and functions of Complement system
9.2 Pathways of complement system
9.3 Regulation and biological consequences.

10.0 Major Histocompatibility Complex in mouse and HLA system in human
10.1 Class I and class II molecules
10.2 Expression and diversity
10.3 Disease susceptibility and MHC/HLA

11.0 Organization and expression of Ig genes
11.1 Multigene organization of Ig genes
11.2 DNA rearrangements and mechanisms
11.3 Generation of antibody diversity
11.4 Differential expression of Ig genes.

UNIT-IV

12.0 T-Cell Maturation, Activation and Differentiation
12.1 T-Cell Receptors- Organization and rearrangement of TCR genes, TCR-CD3 complex
12.2 T-cell maturation and thymus
12.3 T -cell activation and differentiation
12.4 Cell death and T-cell population
13.0 B-cell generation, activation and differentiation
13.1 B-cell receptors
13.2 B-cell maturation, activation and proliferation
13.3 T H-B-Cell interactions

14.0 Auto-immunity and Vaccines- Types – subunit, conjugate and recombinant vector vaccines.

Suggested Reading Material:

1. Kuby. Immunology, W.H. Freeman, USA.
2. W. Paul. Fundamentals of Immunology.
3. I.M. Roitt. Essential of Immunology, ELBS Edition.
4. Immuno Biology- The immune system in health and disease, Janeway, Travers, Walport and Shlomchik, Garland Science Publishing [Latest edition].
5. Fundamentals of Immunology by William E. Paul, Lippincott Williams & Wilkins Publishing [Latest edition].
6. Cellular and Molecular Immunology by Abul K. Abbas, Andrew H. Lichtman, Shiv Pillai, Elsevier Publishing [Latest edition].

SEMESTER – IV

Paper: M-Z-403 (Core)
Environmental Toxicology
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting four questions from each unit (I - IV). The candidate will be required to attempt question No. 1 and four more selecting two questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT - I

1.0 **Introduction to Environmental Toxicology:**
- 1.1 Emergence of toxicity in the environment
- 1.2 Classical toxicology, ecotoxicology and environmental toxicology.
- 1.3 Classification of toxicants.

2.0 Toxic agents: Pesticides, metals, solvents radiation, carcinogens, poisons, bio-toxins,petrochemicals.

UNIT - II

3.0 **Toxicant uptake:**
- 3.1 Route of toxicant uptake/Absorption of toxicant at tissue and cellular level
- 3.2 Distribution and storage of toxicant.
- 3.3 Biotransformation and elimination of toxicant.

4.0 Xenobiotics: Definition, types and significance Target organ toxicity:
- 4.1 Hematotoxicity
- 4.2 Hepatotoxicity
- 4.3 Nephrotoxicity
- 4.4 Neurotoxicity

UNIT - III

5.0 Environmental Toxicology: Food additives, air, water and soil pollutants and Bioindicators.

6.0 Effect of pollutant on ecosystem with case study of important Organo-phosphorous and Organo-chlorine pesticides and Nitrates

7.0 Solid waste management: Primary waste products-Solid waste, toxic biological and hospital landfills, incineration, source reduction and recycling.

UNIT - IV

8.0 Bioremediation, its role and significance.

9.0 Toxicological risk assessment and management with reference to relevant case study.

10.0 Principles and significance of systematic toxicology.

11.0 Genotoxicology: Definition, Effects, molecular mechanisms and prevention.

12.0 Applications of toxicology anthropogenic activities and environment.

13.0 Human toxicology and medicinal ethics.

Suggested Reading Material:

1. Handbook of Solid Waste Management by Wilson, Van Nostrand, Reinhold.
2. Environmental Studies by D.B. Botkin, & E.A. Keller, Martill Publising Co., Columbs, Toronto, London.
3. Bioremediation Technology by Fulekar, M.H.
4. Biotranformation: Bioremediation Technology for Health & Environmental Protection by R. D. Stapleton Jr. and V.P. Singh (Ed), Elsevier.
5. Casarett & Doull's Toxicology: The Basic Science of Poisons by Curtis Klaassen.
6. Ecotoxicology: The study of pollutants in ecosystems. 3rd Ed. Elsevier by Moriarty, F.
7. Environment concerns and strategies. Ashish Pub. House, NDL by T.N. Khushoo.
8. Environmental biology. Akashdeep Pub. House by R.R. Trevedi Gurdeep Raj.
9. Textbook: A Textbook of Modern Toxicology. Third Edition by E. Hodgson (Ed.). John Wiley & Sons, Inc. (Posted on the D2L content page.)
10. Environmental Health by Monroe T. Morgan
11. Handbook of Environmental Health and Safety – principle and practices by H. Koren; Lewis Publishers
12. Principles of Environmental Toxicology by I. C. Shaw and J. Chadwick; Taylor & Francis ltd.
13. Introduction to Toxicology, 3rd Ed. Taylor & Francis, London by Timbrell, J.

SEMESTER – IV

Paper: M-Z-404 (Elective)
Molecular Reproduction-II
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting four questions from each unit (I - IV). The candidate will be required to attempt question No. 1 and four more selecting two questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT-I

1. **Sex Determination:** Chromosomal sex determination in mammals, Autosomal testis determining genes, Hormonal regulation of sex determination. Androgen insensitivity syndrome
2. **Reproductive cycles:** Menstrual cycle and its regulation in humans, Estrous cycle in rat, Estrous behaviour in cycling animals.
3. **Molecular bases of Fertilization in mammals:** Gamete transport, fertilization competence by gametes, capacitation, acrosome reaction, oocyte-sperm interaction, oocyte activation, gamete fusion.

UNIT – II

4. **Hormonal regulation:** Implantation, pregnancy, parturition, oxytocin- synthesis, secretion and its role in parturition, placenta and its hormones.
5. **Mammary glands**- Structure, development and physiology of lactation, milk synthesis and secretion; regulation and ejection of milk.

UNIT-III

6. **Apoptosis:** Molecular mechanism, regulation, and significance; Apoptosis in reproductive aging.
7. **Assisted reproductive techniques-** IVF, IUI, ICSI, GIFT, ZIFT, Surrogacy, negative aspects and recent trends in ART.
8. **Contraception:** Natural method (Fertility awareness), Surgical, Physical/Barrier methods, Chemical methods, Immunocontraception.

UNIT-IV

9. **Reproductive failure in females-**Ovarian dysfunction, estrus abnormalities, fertilization failure, Pregnancy wastage- embryonic mortality, fetal mortality, infectious and non-infectious causes, prenatal and neonatal mortality.
10. **Reproductive failure in males-**Congenital malformations-cryptorchidism, testicular hypoplasia, ejaculatory disturbances, sperm defects, fertilization failure.

Suggested Reading Materials:

1. Guraya S.S. (1998). Cellular and Molecular Biology of General development and Maturation in mammals Narosa Publishing House, New Delhi.
2. Hafez E.S.E.(1994).”Reproduction in farm animals”. Lea Febighiese.
3. Gurays S.S. (2000). Comparative Cellular and Molecular Biology of Ovary in mammals. I.B.H., New Delhi.
4. The Physiology of Reproduction, second edition, Vol 1 and 2, edited by Ernst Knobil and Jimmy D. Neil. *Raven Press*, 2014.
5. Male Reproductive Function, edited by Christina Wang. Kluwer *Academic Publishers*, 1999.
6. The ovary, edited by Solly Zuckerman Baron Zuckerman, Barbara J. Weir, T. G. Baker. *Academic Press*.
7. The ovary, edited by Peter C.K. Leung and Eli Y. Adashi, Elsevier (Academic Press), 2004.
8. Cell and Molecular Biology of Testis, edited by Claude Desjardins and Larry L. Ewing. *Oxford University Press US*.
9. Reproductive Endocrinology: Physiology, Pathophysiology, and Clinical Management, edited by Samuel S. C. Yen, Robert B. Jaffe, Robert L. Barbieri. *Saunders publisher*.
10. Regulation of Implantation and Establishment of Pregnancy in Mammals, Editors: Rodney D Geisert, Fuller W. Bazer, ISBN 978-3-319-15856-3, Springer International Publishing, 2015.
11. Implantation and early development, Editors: Hilary Critchley, Ian Cameron and Stephan Smith, ISBN 9781107784680, Cambridge University press, 2014.
12. Implantation, Biological and Clinical Aspects, Editors: Michael G. Chapman, J. GedisGrudzinskas, Tim Chard, ISBN 978-1-4471-3531-9, Springer-Verlag, 1988.

SEMESTER – IV

Paper: M-Z-405 (Elective)
Animal Behaviour and Wildlife Conservation – II
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set unit wise selecting four questions from each unit (I - IV). The candidate will be required to attempt question No. 1 and four more selecting two questions from each unit.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT-I

1.0 Social behaviour:
- 1.1 Aggregations and society;
- 1.2 Advantages of group living;
- 1.3 Types of social organization in animals
- 1.4 Group selection, kin selection, altruism, reciprocal altruism.
- 1.5 Territoriality and parental care
- 1.6 Behaviour Ecology: Habitat selection

2.0 Social behaviour of termites, ants and primates.

3.0 Various means of communication in animals: Chemical, Visual, auditory, touch etc.

UNIT-II

4.0 Hormones and animal Behaviour: Hormones important to behavioural regulation; Genetic basis of behaviour

5.0 Aggressive behaviour; sexual attraction and sexual behaviour.

6.0 Pheromones and animal behaviour: types of pheromones, role of pheromones in animal behaviour; pheromones of social insects, Human Ethology

UNIT-III

7.0 Wildlife Census: Planning a wildlife census, understanding sample counts, Block counts, Road side counts, Dung counts, Pugmark census, Water-hole census.

8.0 Study of signs and symptoms: A practice of recording field observations, Bio-telemetry, Ageing and Sexing techniques.

9.0 Wildlife Tourism: Definition scope and range; Popular Wildlife Tourist Sports of theworld, Popular Wildlife spots in India, Sustainable use of wildlife spots.

UNIT-IV

10.0 Wildlife Damage, its nature and definition, electric fences for wildlife damage control, Basic electric fence design, Trench design, live trapping, Mist netting, Rocket netting Chemical capture: Equipment, Drugs, Plan of operation.

11.0 Poaching: Its definition and implications, conducting anti-poaching operations, evidence in poaching cases.

12.0 National Projects: Project Tiger, Project elephant, Project Rhinoceros, ProjectCrocodiles, Project Hangul, Manipur Brow Antlered Deer.

Suggested Reading Materials:

1. Techniques for wildlife Census in India by W.A. Rogers (A field mannual); Wildlife Institute of India, Dehradun.
2. Wildlife Wealth of India by T.C. Majupuria; Tecpress Services, L.P., 487/42-SOL-Wattenslip, Pratunam Bangkok, 10400, Thailand
3. Ali, S. Ripley S.D. Handbook of Birds of India, Pakistan 10-Vols. Oxford University Press, Bombay.
4. The Book of Indian Animals by S.H. Prater, BNHS-Publication, Bombay.
5. Wildlife in India by V.B. Saharia Natraj Publishers, Dehradun.
6. E.P. Gee, The Wildlife of India.

SEMESTER – IV

Paper: M-Z-406 (Elective)
Fish, Fisheries and Aquaculture – II
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 3 Hours
Note:

1. Nine questions will be set in all.
2. Question No. 1, which will be objective/short answer type covering the entire syllabus, will be compulsory. The remaining eight questions will be set section wise selecting four questions from each section (I & II). The candidate will be required to attempt question No. 1 and four more selecting two questions from each section.
3. As far as possible the questions should be divided into sub-parts and marks indicated part wise.

UNIT - I

1.0 Introduction to fish biotechnology

2.0 Selection and hybridization

3.0 Androgenesis and Gynogenesis – natural and induced

4.0 Polyploidy techniques

5.0 Sex reversal and sterility

UNIT - II

6.0 Transgenesis, transgenes and application

7.0 Cryopreservation of gametes and embryo

8.0 Fish-by products

9.0 Fish preservation process

10.0 Nutritive aspect of fish meat and oil.

UNIT - III

11.0 Different systems for aquaculture: pond culture, cage culture, raceway culture.

12.0 Culture of important fish species (Major carps, common carps, Chinese carps, cat fish culture and Tilapia culture).

13.0 Integrated Aquaculture and waste water aquaculture

14.0 Pearl Culture

15.0 Frog culture

UNIT - IV

16.0 Prawn culture-Fresh and brackish water

17.0 Impact of Aquaculture on Environment

18.0 Methods of Fishing : Crafts and gear technology

19.0 Fish diseases and their control

20.0 Nutrition in Aquaculture
- 20.1 Nutrient and non-nutrient diet components
- 20.2 Preparation and processing of feed, feed formulae,
- 20.3 Natural and supplementary feed and their utilization

Suggested Reading Materials:

Ponniah, AG, Das, P & Verma SR (Ed.) (1998) Fish Genetics and Biodiversity Conservation. Nature Conservators, Muzaffarnagar, India 474pp.

Bardach, JE, Ryther, JH & Mclarnely, OW (1972) Aquaculture. Wiley Interscience

Boyd, CE (1988) Water quality management for pond fish culture. Developments in Aquaculture and Fisheries Sciences. I. Elsevier Scientific Publishing Company, Amsterdam.

Delince, G (1992) The Ecology of the fish pond system. Kluwer Academic Publishers, Netherlands, 230 pp.

Hepher, B (1975) Supplementary feeding in fish culture. In: Nutrition and Production of Fishes. Vol. 3 S. Karger, Basel : 183-198

Hoar, WS, Randall, DJ & Donaldson, ME (1983) Fish Physiology. Vol. IXA & IXB. Reproduction. Academic Press, London.

Jhingran, VG (1983) Fish and Fisheries of India. Hindustan Publishing Corporation (India) 954 pp

Tandon, KK & Johal, MS (2006) Age and Growth in Indian Freshwater Fishes.Narendra Publishing House Delhi, 232 pp.

Handbook of Fisheries and Aquaculture, Indian Council of Agricultural Research, New Delhi. 755 pp.

SEMESTER – IV

Paper: M-Z-407 (Core)
Practical (Based on Papers M-Z 401 to M-Z 403)
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 4 Hours
Course Contents:

1. Permanent preparation of chick embryo developmental stages.
2. Studies of different types of eggs with reference to their yolk contents
3. To study internal morphology of chick egg
4. Study of development in Dictyostelium
5. Determination of various parameters of chick egg
6. To study the permanent slides of frog embryo developmental stages
7. Antigen-antibody interaction in vitro.
8. ELISA (Demonstration).
9. Phagocytosis *in vitro*.
10. Immunological diagnosis of pregnancy/infection/cancer.
11. To study permanent slides of Lymphoid and endocrine glands
12. Studies on vaginal smears during different stages of estrous cycle.
13. Bioassay to demonstrate toxicological effect : Micronuclei Assay and demonstration of Single Cell Gel electrophoresis to elucidate toxicological effect
14. Determination of sediment chemistry
    a. Moisture
    b. Carbonate
    c. Nitrate
    d. pH
    e. Phosphate
    f. Texture

SEMESTER – IV

Paper: M-Z-408 (Elective)
Practical (Based on Papers M-Z-404)
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 4 Hours
Course Contents (Molecular Reproduction-II):

1. Effects of pesticides, drugs, and xenobiotics on granulosa cells *in vitro*.
2. Effects of pesticides, oxidants, and free radicals on testicular tissue *in vitro*.
3. Morphological changes during spermatogenesis.
4. Effects of environmental endocrine disruptors on the fertility after exposure in vitro.
5. Estimation of catalase from reproductive tissues
6. Determination of Glutathione peroxides, glutathione reductase from reproductive tissues.
7. Lipid peroxidation by MDA method.
8. Impact of Vitamin C & E and other antioxidants on pesticides induced cytotoxicity on reproductive tissues *in vitro.*
9. Isolation of genomic DNA
10. Agarose Gel Electrophoresis: Practical demonstration
11. Age related changes in sperm characteristics.
12. Demonstration of Single Cell Gel electrophoresis/COMET Assay to elucidate toxicological effect.

SEMESTER – IV

Paper: M-Z-408 (Elective)
Practical (Based on Papers M-Z-405)
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 4 Hours
Course Contents (Animal Behaviour and Wildlife Conservation – II):

1 To study the effect of temperature on gill movement in fishes.

2 To study nesting behaviour of squirrels in different habitats vis., urban environment, grain-market-area, roadside plantations, orchards gardens etc.

3 Field study of burrowing behaviour of common available rodent fauna of the region.

4 Study of morphological changes in common avian species during breeding season.

5 Preparation of charts of endangered amphibians, reptiles and mammals with ecological remarks.

6 Animal behaviour patterns using Photostat sheets/ repertoire sheets

7 Analysis of standard pug marks of large sized wild mammals.

8 Study of Migratory Birds

9 Study of Diversity indices : use of software in calculating diversity indices

10 Study of beaks and claws of different bird species.

11 Field visit to a zoo or wildlife part/sanctuary and preparation of field report

12 Preparation of field diary on the basis of observations regarding habitat, habits of common available avian and rodent fauna of the region.

SEMESTER – IV

Paper: M-Z-408 (Elective)
Practical (Based on Papers M-Z-406)
Total Marks: 100
External Examination: 80
Internal Assessment: 20
Time: 4 Hours
Course Contents (Fish, Fisheries and Aquaculture – II):

1. Fish Feed formulation and processing.
2. Proximate analysis of fish feed (Determination of moisture, protein, fat, ash carbohydrate, fiber and energy).
3. Taking out of pituitary gland, preservation and preparation of extract.
4. Estimation of primary productivity
5. Study of benthic macroinvertebrates in natural water bodies.
6. Identification of eggs, spawn, fry and fingerlings of cultivable fishes of India.
7. Determination of length weight relationship.
8. Determination of age of fish using hard parts
9. Analysis of fecundity, Gonado somatic index (GSI), Hepatosomatic index (HIS) in some fishes.
10. Study of crafts and gear and method of operation (Models can also be used)
11. Visit to fish farm and fish marketand preparation of report
12. A small experimental project

Kurukshetra University, Kurukshetra

(Established by the State Legislature Act XII of 1956)

('A+' Grade, NAAC Accredited)

॥ योगस्थः कुरु कर्माणि ॥

समबुद्धि व योग युक्त होकर कर्म करो

(Perform Actions while Stead fasting in the State of Yoga)

Scheme of Examination and Syllabus for Undergraduate Programme
Course: Computer Applications (Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance to NEP-2020) w.e.f. 2022-23 in Phased Manner

Kurukshetra University, Kurukshetra

Scheme of Examination and Syllabus for Undergraduate Programme Course: Computer Applications
(Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance to NEP-2020) w.e.f 2022-23 in Phased Manner

1. Programme Structure

Course Structure under Learning Outcome Based Curriculum Framework (LOCF-CBCS) and Multiple Entry Exit									
Semester	**Core Course(CC) @6credits Subject-1**	**Core Course (CC)@6credits Subject-2**	**Core Course @6credits Subject-3**	**Ability Enhancement Compulsory Course (AECC) @2credits**	**Skill Enhancement Course (SEC) @2-6credits**	**Discipline Specific Course (DSE)**@6credits**	**Activity/Hobby/ Clubs @2 credits (Audit courses)**	**Total Credits**	**Exit Option**
	Software Development	**Data Science and Machine Learning**	**Full Stack Development**						
I Level 5	CC-1A	CC-2A	CC-3A	Common with other UG Programme	Common with other UG Programme		Common with other UG Programme	24	Certificate in Computer Applications @ 58 credits
II Level 5	CC-1B	CC-2B	CC-3B	Common with other UG Programme	Common with other UG Programme		Common with other UG Programme	24	
Internship 10 Credits (only for Exit option)									
Semester	**Core Course (CC) @6credits Subject-1**	**Core Course (CC)@6credits Subject-2**	**Core Course @6credits Subject-3**	**General Elective course @ 6 credits**	**Skill Enhancement Course (SEC) @2-6credits**	**Discipline Specific Course (DSE)**@6 credits**	**Activity/Hobby/ Clubs @2 credits (Audit courses)**	**Total Credits**	**Exit Option**
	Software Development	**Data Science and Machine Learning**	**Full Stack Development**						
III Level 6	CC-1C	CC-2C	CC-3C	Common with other UG Programme	Common with other UG Programme		Common with other UG Programme	22+ 6*	Diploma in Computer Applications @ 106 Credits

IV Level 6	CC-1D	CC-2D	CC-3C	Common with other UG Programme	Common with other UG Programme		Common with other UG Programme	22+6*	
Summer Internship of 10 Credits (Compulsory for all students)									
Semester	**Core Course (CC) @6credits Subject-1**	**Core Course (CC)@6credits Subject-2**	**Core Course @6credits Subject-3**	**General Elective course @ credits**	**Skill Enhancement Course (SEC) @2-6credits**	**Discipline Specific Course (DSE)**@6 credits**	**Activity/Hobby/ Clubs @2 credits (Audit courses)**	**Total Credits**	**Exit Option**
	Software Development	**Data Science and Machine Learning**	**Full Stack Development**						
V Level 7	CC- $1H^H$	CC- $1H^H$	CC- $1H^H$	Common with other UG Programme	SEC-5(Major subject) @6credits	DSE-1 (Major subject-1) DSE-2 (Major Subject-2)	2	20 + 10 of Summer Internship +6 ^{H}+6*	Graduation in Computer Applications @146 Credits and with Honours @ 158 Credits
VI Level 7	CC- $2H^H$	CC- $1H^H$	CC- $1H^H$	Common with other UG Programme	SEC-5(Major subject) @6credits	DSE-1 (Major subject-1), DSE-2 (Major Subject - 2)		20+6 ^{H}+6*	
Semester	**Core Courses**	**Research Courses and Thesis**			**Research Progression Seminars**			**Credits**	**Exit**
VII Level 8	CC-$1H^H$ and CC-$2H^H$ of level 7 to be completed by Graduate students without Honours	Research Ethics @4 credits Research Methodology @4 credits			Review of literature General Seminar @ 4 Credits Synopsis writing and Seminar @ 4 credits			16	Graduation in (Tourism and Travel Management) Honours with Research @ 198 Credits
VIII Level 8		Dissertation/Thesis Preparation/ Writing @ 20 credits			Midterm seminar @ 2 Credits Pre- submission Seminar @ 2 Credits			24	

Notes:

1. Credits (C), Core Courses (CC); Discipline Specific Elective Courses (DSE); General Elective Courses (GE); Skill Enhancement Courses (SEC), Ability Enhancement Compulsory Courses (AECC).
2. *Students can opt for one course from other programmes as General Elective @ 6 credits in IIIrd, IVth, Vth and VIth semesters subject to the availability of seats and class timings not overlapping.

3. ^{H} Honours courses. CC- 1H and CC-2H are Honours courses to be taken if students opt for Honours course in third year and will have to be taken compulsorily by the students opting for 4^{th} year of the programme (Honours and Research) if these courses are not completed earlier at level 7.

4. All the Internship, dissertation/thesis will be effected through guided learning by allotting a teacher as guide to every student. Workload of above shall be computed per student as per Credit hours of above defined in ordinance.

5. Each candidate shall be examined in the courses through a system of Comprehensive Continuous Assessment using a mix of Internal and End term evaluation. The Internal Assessment and End term evaluation for different courses of programme shall carry weightage of 50% each. Internal assessment (50%) shall be based on clearly defined components of class attendance and participation (10%), mid-term exam of 2-hour duration (30%) and assignments-presentations (10%) of the credit and the rest (50 %) through End Term Examination.
6. DSE Selection- Options from following buckets will be offered for Majors at level 7 subject to availability.

7. Honours Selection- Options from following buckets will be offered for Honours at level 7/8 subject to availability.

8. SEC Selection- Options from following buckets will be offered for Majors at level 7 subject to availability.

STREAM: SOFTWARE DEVELOPMENT (SDE)

Semester	Core Course	Paper Code	Nomenclature of Paper	Credits	Work load/ hour/ week	Exam Time (Hrs)	Internal Marks	External Marks	Total Marks	
							Max	Max	Max	Pass
1	CC-1A	B-SDE-N-101	PROBLEM SOLVING USING C	4	4	3	50	50	100	40
		B-SDE- N-102	S/W LAB – I BASED ON B-SDE- N-101	2	4	3	25	25	50	20
2	CC-1B	B-SDE- N-201	DATA STRUCTURES USING C	4	4	3	50	50	100	40
		B-SDE- N-202	S/W LAB – II BASED ON B-SDE- N-201	2	4	3	25	25	50	20
3	CC-1C	B-SDE- N-301	COMPUTER ORGANIZATION	4	4	3	50	50	100	40
		B-SDE- N-302	S/W LAB – III BASED ON B-SDE- N-301	2	4	3	25	25	50	20
4	CC-1D	B-SDE- N-401	OBJECT-ORIENTED PROGAMMING USING C++	4	4	3	50	50	100	40
		B-SDE- N-402	S/W LAB – IV BASED ON B-SDE- N-401	2	4	3	25	25	50	20
5	CC-1H	B-SDE- N-501	SOFTWARE PROJECT MANAGEMENT	4	4	3	50	50	100	40
		B-SDE- N-502	S/W LAB – V BASED ON B-SDE- N-501	2	4	3	25	25	50	20
	DSE	B-SDE- N-503	ELECTIVE –I	4	4	3	50	50	100	40

		B-SDE- N-504	S/W LAB – VI BASED ON B-SDE- N-503	2	4	3	25	25	50	20
	SEC-5	B-SDE- N-505	ELECTIVE-II	4	4	3	50	50	100	40
		B-SDE- N-506	S/W LAB – VII BASED ON B-SDE- N-505	2	4	3	25	25	50	20
	ELECTIVE –I									
	B-SDE- N-503(i)		PROGRAMMING WITH JAVA	4	4	3	50	50	100	40
	B-SDE- N-503(ii)		OPERATING SYSTEMS	4	4	3	50	50	100	40
	B-SDE- N-503(iii)		MOOC							
	ELECTIVE –II									
	B-SDE- N-505 (i)		DATA ANALYSIS USING SPREADSHEETS	4	4	3	50	50	100	40
	B-SDE- N-505 (ii)		ARTIFICIAL INTELLIGENCE	4	4	3	50	50	100	40
	B-SDE- N-505(iii)		MOOC							
6	CC-2H	B-SDE- N-601	COMPILER DESIGN	4	4	3	50	50	100	40
		B-SDE- N-602	S/W LAB – VIII BASED ON B-SDE- N-601	2	4	3	25	25	50	20
	DSE	B-SDE- N-603	ELECTIVE –III	4	4	3	50	50	100	40
		B-SDE- N-604	S/W LAB – IX BASED ON B-SDE- N-603	2	4	3	25	25	50	20
	SEC-6	B-SDE- N-605	ELECTIVE-IV	4	4	3	50	50	100	40

		B-SDE- N-606	S/W LAB – X BASED ON B-SDE- N-605	2	4	3	25	25	50	20
	ELECTIVE –III									
	B-SDE- N-603(i)		ALGORITHMS DESIGN AND IMPLEMENTATION	4	4	3	50	50	100	40
	B-SDE- N-603(ii)		ADVANCED PROGRAMMING CONCEPTS	4	4	3	50	50	100	40
	B-SDE- N-603(iii)		MOOC							
	ELECTIVE –IV									
	B-SDE- N-605 (i)		CYBER SECURITY	4	4	3	50	50	100	40
	B-SDE- N-605 (ii)		DIGITAL MARKETING	4	4	3	50	50	100	40
	B-SDE- N-605(iii)		MOOC							
7	RESEARCH COURSES AND THESIS	B-SDE-N-701	RESEARCH ETHICS	4	4	3	50	50	100	40
		B-SDE-N-702	RESEARCH METHODOLOGY	4	4	3	50	50	100	40
	RESEARCH PROGRESSION SEMINAR	B-SDE-N-703	REVIEW OF LITERATURE GENERAL SEMINAR	4	4	-	-	-	100	40
		B-SDE-N-704	SYNOPSIS WRITING AND SEMINAR	4	4	-	-	-	100	40
8	RESEARCH COURSES AND THESIS	B-SDE-N-801	DISSERTATION/THESIS PREPARATION/ WRITING	20	20	-	-	-	500	200
	RESEARCH PROGRESS	B-SDE-N-802	MIDTERM SEMINAR	2	2	-	-	-	50	20

	ION SEMINAR	B-SDE-N-803	PRE- SUBMISSION SEMINAR	2	2	-	-	-	50	20

STREAM: DATA SCIENCE AND MACHINE LEARNING (DSM)

Semester	Core Course	Paper Code	Nomenclature of Paper	Credits	Work load/ hour/ week	Exam Time (Hrs)	Internal Marks	External Marks	Total Marks	
							Max	Max	Max	Pass
1	CC-2A	B-DSM- N-101	DATABASE MANAGEMENT SYSTEM	4	4	3	50	50	100	40
		B-DSM- N-102	S/W LAB – I BASED ON B-DSM- N-101	2	4	3	25	25	50	20
2	CC-2B	B-DSM- N-201	ADVANCED WEB TECHNOLOGIES	4	4	3	50	50	100	40
		B-DSM- N-202	S/W LAB – II BASED ON B-DSM- N-201	2	4	3	25	25	50	20
3	CC-2C	B-DSM- N-301	LINUX AND SHELL PROGRAMMING	4	4	3	50	50	100	40
		B-DSM- N-302	S/W LAB – III BASED ON B-DSM- N-301	2	4	3	25	25	50	20
4	CC-2D	B-DSM- N-401	THEORETICAL COMPUTER SCIENCE	4	4	3	50	50	100	40
		B-DSM- N-402	S/W LAB – IV BASED ON B-DSM- N-401	2	4	3	25	25	50	20
5	CC-1H	B-DSM- N-501	DATA MINING & WAREHOUSING	4	4	3	50	50	100	40
		B-DSM- N-502	S/W LAB – V BASED ON B-DSM- N-501	2	4	3	25	25	50	20
	DSE	B-DSM- N-503	ELECTIVE –I	4	4	3	50	50	100	40

		B-DSM-N-504	S/W LAB – VI BASED ON B-DSM- N-504	2	4	3	25	25	50	20
	SEC-5	B-DSM-N-505	ELECTIVE-II	4	4	3	50	50	100	40
		B-DSM-N-506	S/W LAB – VII BASED ON B-DSM- N-505	2	4	3	25	25	50	20
	ELECTIVE –I									
	B-DSM- N-503(i)		DATA VISUALIZATION USING PYTHON	4	4	3	50	50	100	40
	B-DSM- N-503(ii)		DATA VISUALIZATION USING R	4	4	3	50	50	100	40
	B-DSM- N-503(iii)		MOOC							
	ELECTIVE –II									
	B-DSM- N-505 (i)		DATA ANALYSIS USING SPREADSHEETS	4	4	3	50	50	100	40
	B-DSM- N-505 (ii)		ARTIFICIAL INTELLIGENCE	4	4	3	50	50	100	40
	B-DSM- N-505(iii)		MOOC							
6	CC-2H	B-DSM-N-601	BIGDATA TECHNOLOGY	4	4	3	50	50	100	40
		B-DSM-N-602	S/W LAB – VIII BASED ON B-DSM- N-601	2	4	3	25	25	50	20
	DSE	B-DSM-N-603	ELECTIVE –III	4	4	3	50	50	100	40
		B-DSM-N-604	S/W LAB – IX BASED ON B-DSM- N-603	2	4	3	25	25	50	20

	SEC-5	B-DSM-N-605	ELECTIVE-IV	4	4	3	50	50	100	40
		B-DSM-N-606	S/W LAB – X BASED ON B-DSM- N-605	2	4	3	25	25	50	20
	ELECTIVE –III									
	B-DSM- N-603 (i)		MACHINE LEARNING USING PYTHON	4	4	3	50	50	100	40
	B-DSM- N-603 (i)		MACHINE LEARNING USING R	4	4	3	50	50	100	40
	B-DSM- N-603 (iii)		MOOC							
	ELECTIVE –VI									
	B-DSM- N-605 (i)		CYBER SECURITY	4	4	3	50	50	100	40
	B-DSM- N-605 (ii)		DIGITAL MARKETING	4	4	3	50	50	100	40
	B-DSM- N-605(iii)		MOOC							
7	RESEARCH PROGRESSION SEMINAR	B-DSM-N-703	REVIEW OF LITERATURE GENERAL SEMINAR	4	4	-	-	-	100	40
		B-DSM-N-704	SYNOPSIS WRITING AND SEMINAR	4	4	-	-	-	100	40
	RESEARCH COURSES AND THESIS RESEARCH PROGRESSION SEMINAR	B-DSM-N-801	DISSERTATION/THESIS PREPARATION/ WRITING	20	20	-	-	-	500	200
		B-DSM-N-802	MIDTERM SEMINAR	2	2	-	-	-	50	20

8	RESEARCH COURSES AND THESIS	B-DSM-N-801	DISSERTATION/THESIS PREPARATION/ WRITING	20	20	-	-	-	500	200
	RESEARCH PROGRESSION SEMINAR	B-DSM-N-802	MIDTERM SEMINAR	2	2	-	-	-	50	20
		B-DSM-N-803	PRE- SUBMISSION SEMINAR	2	2	-	-	-	50	20

STREAM: FULL STACK DEVELOPMENT (FSD)

Semester	Core Course	Paper Code	Nomenclature of Paper	Credits	Work load/ hour/ week	Exam Time (Hrs)	Internal Marks	External Marks	Total Marks	
							Max	Max	Max	Pass
1	CC-3A	B-FSD- N-101	INTRODUCTION TO WEB TECHNOLOGY	4	4	3	50	50	100	40
		B-FSD- N-102	S/W LAB – I BASED ON B-FSD- N-101	2	4	3	25	25	50	20
2	CC-3B	B-FSD- N-201	PROGRAMMING WITH JAVASCRIPT	4	4	3	50	50	100	40
		B-FSD- N-202	S/W LAB – II BASED ON B-FSD- N-201	2	4	3	25	25	50	20
3	CC-3C	B-FSD- N-301	SOFTWARE ENGINEERING	4	4	3	50	50	100	40
		B-FSD- N-302	S/W LAB – III BASED ON B-FSD- N-301	2	4	3	25	25	50	20
4	CC-3D	B-FSD- N-401	COMPUTER NETWORKS	4	4	3	50	50	100	40
		B-FSD- N-402	S/W LAB – IV BASED ON B-FSD- N-401	2	4	3	25	25	50	20
5	CC-1H	B-FSD- N-501	NOSQL DATABASES	4	4	3	50	50	100	40
		B-FSD- N-502	S/W LAB – V BASED ON B-FSD- N-501	2	4	3	25	25	50	20
	DSE	B-FSD- N-503	ELECTIVE –I	4	4	3	50	50	100	40

		B-FSD- N-504	S/W LAB – VI BASED ON B-FSD- N-503	2	4	3	25	25	50	20
	SEC-5	B-FSD- N-505	ELECTIVE-II	4	4	3	50	50	100	40
		B-FSD- N-506	S/W LAB –VII BASED ON B-FSD- N-505	2	4	3	25	25	50	20
	ELECTIVE –I									
	B-FSD- N-503(i)		BACK-END DEVELOPMENT	4	4	3	50	50	100	40
	B-FSD- N-503(ii)		CLOUD COMPUTING	4	4	3	50	50	100	40
	B-FSD- N-503(iii)		MOOC							
	ELECTIVE –II									
	B-FSD- N-505 (i)		DATA ANALYSIS USING EXCEL	4	4	3	50	50	100	40
	B-FSD- N-505 (ii)		ARTIFICIAL INTELLIGENCE	4	4	3	50	50	100	40
	B-FSD- N-505(iii)		MOOC							
6	CC-2H	B-FSD- N-601	SOFTWARE PROJECT MANAGEMENT	4	4	3	50	50	100	40
		B-FSD- N-602	S/W LAB – VIII BASED ON B-FSD- N-601	2	4	3	25	25	50	20
	DSE	B-FSD- N-603	ELECTIVE –III	4	4	3	50	50	100	40
		B-FSD- N-604	S/W LAB – XIV BASED ON B-FSD- N-603	2	4	3	25	25	50	20
	SEC-5	B-FSD- N-605	ELECTIVE-IV	4	4	3	50	50	100	40

		B-FSD- N-606	S/W LAB – XVI BASED ON B-FSD- N-605	2	4	3	25	25	50	20
	ELECTIVE –III									
	B-FSD- N-603 (i)		DEVOPS	4	4	3	50	50	100	40
	B-FSD- N-603 (ii)		SOFTWARE TESTING	4	4	3	50	50	100	40
	B-FSD- N-603 (iii)		MOOC							
	ELECTIVE –IV									
	B-FSD- N-605 (i)		CYBER SECURITY	4	4	3	50	50	100	40
	B-FSD- N-605 (ii)		DIGITAL MARKETING	4	4	3	50	50	100	40
	B-FSD- N-605(iii)		MOOC							
7	RESEARCH COURSES AND THESIS	B-FSD-N-701	RESEARCH ETHICS	4	4	3	50	50	100	40
		B-FSD-N-702	RESEARCH METHODOLOGY	4	4	3	50	50	100	40
	RESEARCH PROGRESSION SEMINAR	B-FSD-N-703	REVIEW OF LITERATURE GENERAL SEMINAR	4	4	-	-	-	100	40
		B-FSD-N-704	SYNOPSIS WRITING AND SEMINAR	4	4	-	-	-	100	40
8	RESEARCH COURSES AND THESIS	B-FSD-N-801	DISSERTATION/THESIS PREPARATION/ WRITING	20	20	-	-	-	500	200
	RESEARCH PROGRESSION SEMINAR	B-FSD-N-802	MIDTERM SEMINAR	2	2	-	-	-	50	20
		B-FSD-N-803	PRE- SUBMISSION SEMINAR	2	2	-	-	-	50	20

B-SDE-N-101: Problem Solving using C

Type: Core Course (CC-1A)
Course Credits: 04
Contact Hours: 04 hours/week.
Examination Duration: 3 Hours
Mode: Lecture
External Maximum Marks: 50
Internal Maximum Marks: 50
Total Max. Marks: 100
Total Pass Marks: 40 (i.e. 40%)

Instructions To Paper Setter For End Semester Exam: Examiner will be required to set NINE questions in all. Question No.1 will consist of objective type / short-answer type questions covering the entire syllabus. In addition to Question no. 1, the examiner is required to set EIGHT more questions selecting TWO from each UNIT. Student will be required to attempt FIVE questions in all. Question No.1 will be compulsory. In addition to compulsory question, student will have to attempt FOUR more questions selecting ONE question from each UNIT. All questions will carry equal marks.

Course Objectives: The aim of the course is to provide basic knowledge of C as a High level language as one of the programming tool and generating logical development skills using programming.

Course Outcomes: At the end of this course, the student will be able to:
B-SDE-N-101.1 learn the basics of C program, data types and input/output statements.
B-SDE-N-101.2 understand different types of operators, their hierarchies and also control statements of C.
B-SDE-N-101.3 implement programs using arrays and strings.
B-SDE-N-101.4 get familiar with advanced concepts like structures, union etc. in C language.

CO-PO Mapping Matrix for Course Code: B-SDE-N-101

COs#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
B-SDE-N-101.1	3	3	2	3	3	2	2	2	2	3	2
B-SDE-N-101.2	3	2	3	3	3	2	2	2	2	2	2
B-SDE-N-101.3	2	3	3	3	2	2	2	2	1	1	1
B-SDE-N-101.4	3	2	2	2	3	3	3	3	3	2	2
Average	2.75	2.5	2.5	2.75	2.75	2.25	2.25	2.25	2	2	1.75

CO-PSO Mapping Matrix for Course Code: B-SDE-N-101

COs#	PSO1	PSO2	PSO3	PSO4	PSO5
B-SDE-N-101.1	3	3	2	3	3
B-SDE-N-101.2	3	2	3	3	3
B-SDE-N-101.3	2	3	3	3	2
B-SDE-N-101.4	3	2	2	2	3
Average	2.75	2.5	2.5	2.75	2.75

UNIT-I

Computer Fundamentals: Evolution of Computers through generations, Functional Components of a Computer System, Software, Hardware components of a computer system.

Overview of C: History, Importance, Structure of C Program, Character Set, Constants and Variables, Identifiers and Keywords, Data Types, Assignment Statement, Symbolic Constant.

Input/output: Unformatted & Formatted I/O Function, Input Functions viz. scanf(), getch(), getche(), getchar(), gets(), output functions viz. printf(), putch(), putchar(), puts().

UNIT-II

Operators & Expression: Arithmetic, Relational, Logical, Bitwise, Unary, Assignment, Conditional Operators and

Special Operators Operator Hierarchy & Associativity. Arithmetic Expressions, Evaluation of Arithmetic Expression, Type Casting and Conversion. Decision making with if statement, if-else statement, nested if statement, else-if ladder, switch and break statement, goto statement, Looping Statements: for, while, and do-while loop, jumps in loops.

UNIT-III

Arrays: One Dimensional arrays - Declaration, Initialization and Memory representation; Two Dimensional arrays - Declaration, Initialization and Memory representation.

Functions: definition, prototype, function call, passing arguments to a function: call by value, call by reference, recursive functions.

Strings: Declaration and Initialization, String I/O, Array of Strings, String Manipulation Functions: String Length, Copy, Compare, Concatenate etc., Search for a Substring.

Unit – IV

Storage Classes in C: Auto, Extern, Register and Static and their Scope, Storage & Lifetime.

Pointers in C: Declaring and initializing pointers, accessing address and value of variables using pointers; Pointers and Arrays.

User defined data types: Structures - Definition, Advantages of Structure, declaring structure variables, accessing structure members, Structure members initialization, Array of Structures; Unions - Union definition; difference between Structure and Union.

Text Books:

1. Gottfried, Byron S., Programming with C, Tata McGraw Hill.
2. Balagurusamy, E., Programming in ANSI C, Tata McGraw-Hill.

Reference Books:

1. Jeri R. Hanly & Elliot P. Koffman, Problem Solving and Program Design in C, Addison Wesley.
2. Yashwant Kanetker, Let us C, BPB.
3. Rajaraman, V., Computer Programming in C, PHI.
4. Yashwant Kanetker, Working with C, BPB.

B-SDE-N-102: S/W LAB-I BASED ON B-SDE-N-101	
Type: Core Course (CC-1A) Course Credits: 02 Contact Hours: 04 hours/week. Examination Duration: 3 Hours Mode: LAB External Maximum Marks: 25 Internal Maximum Marks: 25 Total Max. Marks: 50 Total Pass Marks: 20 (i.e. 40%)	**Instructions To Examiner For End Semester Exam:** Examiner will be required to check the practical knowledge of the student by providing some assignment related to the course, checking the practical records maintained by the student and conducting a viva-voce.
Course Objectives: The aim of the course is to provide basic knowledge of C as a High level language as one of the programming tool and generating logical development skills using programming.	
LAB WILL BE BASED ON CURRICULUM OF B-SDE-N-101. STUDENT WILL HAVE TO MAINTAIN THE RECORD OF ALL THE PRACTICALS CONDUCTED IN THE LAB.	

B-DSM-N-101: DATA BASE MANAGEMENT SYSTEM

Type: Core Course (CC-2A)
Course Credits: 04
Contact Hours: 04 hours/week.
Examination Duration: 3 Hours
Mode: Lecture
External Maximum Marks: 50
Internal Maximum Marks: 50
Total Max. Marks: 100
Total Pass Marks: 40 (i.e. 40%)

Instructions To Paper Setter For End Semester Exam: Examiner will be required to set NINE questions in all. Question No.1 will consist of objective type / short-answer type questions covering the entire syllabus. In addition to Question no. 1, the examiner is required to set EIGHT more questions selecting TWO from each UNIT. Student will be required to attempt FIVE questions in all. Question No.1 will be compulsory. In addition to compulsory question, student will have to attempt FOUR more questions selecting ONE question from each UNIT. All questions will carry equal marks.

Course Objectives: Today almost all real life problems include data**.** The objective of this course to make students aware about the basic concept of Data. In this paper, students will learn database management and its implementation.

Course Outcomes: At the end of this course, the student will be able to:

B-DSN-N-101.1. learn basic concepts of database along with its functions and components.
B-DSN-N-101.2. understand data base architecture and different data models.
B-DSN-N-101.3. understand functional dependency and normalization.
B-DSN-N-101.4. write SQL statements to retrieve information and learn the concept of relational algebra and calculus.

CO-PO Mapping Matrix for Course Code: B-DSN-N-101

COs#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
B-DSN-N-101.1	3	3	2	3	3	2	2	2	3	3	2
B-DSN-N-101.2	3	2	3	3	3	1	2	2	2	2	2
B-DSN-N-101.3	3	3	3	3	2	2	1	2	1	1	2
B-DSN-N-101.4	3	3	2	2	3	3	2	3	3	2	2
Average	3	2.75	2.5	2.75	2.75	2	1.75	2.25	2.25	2	2

CO-PSO Mapping Matrix for Course Code: B-DSN-N-101

COs#	PSO1	PSO2	PSO3	PSO4	PSO5
B-DSN-N-101.1	3	3	2	3	3
B-DSN-N-101.2	3	2	3	3	3
B-DSN-N-101.3	2	3	3	3	2
B-DSN-N-101.4	3	2	2	2	3
Average	2.75	2.5	2.5	2.75	2.75

UNIT – I

Basic Concepts: File Systems vs. DBMS, Characteristics of Database Approach, Abstraction and Data Integration, Database users, Advantages and Disadvantages of DBMS, Database Systems Architecture: Data Models, Schema and Instances, Data Independence, DBMS functions.

UNIT – II

Entity Relationship Model: Entity Types, Entity Sets, Attributes & keys, Relationships Types & instances, Roles and Structural Constraints, E-R Diagrams, Making ER Diagrams for Inventory, Book Store, Library and Flight Management

System and other examples.

Codd's Rule for Relational Model ; Relational Data Model: Basic Concepts, Integrity Constraints over Relations, Hierarchical Model, Network Model.

UNIT – III

Functional Dependencies, Decomposition, Types of Functional Dependency, Normalization: Benefits and Need of Normalization, Normal Forms Based on Primary Keys- (1NF, 2NF, 3NF, BCNF), Multi-valued Dependencies, 4 NF, Join dependencies, 5 NF, Domain Key Normal Form.

Transactions: Acid Properties, Operations on Transactions, Concurrency: Problems, Concurrency Control Techniques, Locking Schemes, Deadlock: Methods for Handling Deadlock, Database Backup and Recovery: Recovery Techniques, Shadow Paging, Database Security.

UNIT – IV

SQL: Meaning, Purpose and Need of SQL, Data Types, SQL Components: DDL, DML, DCL and DQL, Basic Queries, Join Operations and Sub-queries, Views, Specifying Indexes. Constraints and its Implementation in SQL. Relational Algebra: Basic Operations: Select, Project, Join, Union, Intersection, Difference, and Cartesian Product etc.

Relational Algebra: Basic Operations: Select, Project, Join, Union, Intersection, Difference, and Cartesian Product etc. Relational Calculus: Tuple Relational and Domain Relational Calculus. Relational Algebra Vs. Relational Calculus.

Text Books:

1. Elmasri & Navathe, Fundamentals of Database Systems, Pearson Education.
2. A Silberschatz, H Korth, S Sudarshan, Database System and Concepts, McGraw-Hill.

Reference Books:

1. Thomas Connolly Carolyn Begg, Database Systems, Pearson Education.
2. C. J. Date, An Introduction to Database Systems, Addison Wesley.

B-DSM- N-102: S/W LAB-I BASED ON B-DSM- N-101	
Type: Core Course (CC-2A) Course Credits: 02 Contact Hours: 04 hours/week. Examination Duration: 3 Hours Mode: LAB External Maximum Marks: 25 Internal Maximum Marks: 25 Total Max. Marks: 50 Total Pass Marks: 20 (i.e. 40%)	**Instructions To Examiner For End Semester Exam:** Examiner will be required to check the practical knowledge of the student by providing some assignment related to the course, checking the practical records maintained by the student and conducting a viva-voce.
Course Objectives: The aim of the course is to provide basic knowledge of C as a High level language as one of the programming tool and generating logical development skills using programming.	
LAB WILL BE BASED ON CURRICULUM OF B-DSM- N-101. STUDENT WILL HAVE TO MAINTAIN THE RECORD OF ALL THE PRACTICALS CONDUCTED IN THE LAB.	

B-FSD-N-101: INTRODUCTION TO WEB TECHNOLOGY

Type: Core Course (CC-3A)
Course Credits: 04
Contact Hours: 04 hours/week.
Examination Duration: 3 Hours
Mode: Lecture
External Maximum Marks: 50
Internal Maximum Marks: 50
Total Max. Marks: 100
Total Pass Marks: 40 (i.e. 40%)

Instructions To Paper Setter For End Semester Exam: Examiner will be required to set NINE questions in all. Question No.1 will consist of objective type / short-answer type questions covering the entire syllabus. In addition to Question no. 1, the examiner is required to set EIGHT more questions selecting TWO from each UNIT. Student will be required to attempt FIVE questions in all. Question No.1 will be compulsory. In addition to compulsory question, student will have to attempt FOUR more questions selecting ONE question from each UNIT. All questions will carry equal marks.

Course Objectives: The aim of the course is to provide knowledge of web as a tool in presenting information. Each and every product in e-world now needs a website, this course will make student knowing about the concept of web design in general.

Course Outcomes: At the end of this course, the student will be able to:
B-FSD-N-101.1. learn about WWW and search engines.
B-FSD-N-101.2. understand domain and assigning name to them.
B-FSD-N-101.3. understand basic web languages and its components.
B-FSD-N-101.4. perform simple web page designing for practical exposure.

CO-PO Mapping Matrix for Course Code: B-FSD-N-101

COs#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
B-FSD-N-101.1	3	3	2	3	3	2	2	2	2	3	2
B-FSD-N-101.1	3	2	3	3	3	2	2	2	2	2	2
B-FSD-N-101.1	2	3	3	3	2	2	2	2	1	1	2
B-FSD-N-101.1	3	2	2	2	3	3	2	3	3	2	2
Average	2.75	2.5	2.5	2.75	2.75	2.25	2	2.25	2	2	2

CO-PSO Mapping Matrix for Course Code: B-FSD-N-101

COs#	PSO1	PSO2	PSO3	PSO4	PSO5
B-FSD-N-101.1	3	3	2	3	3
B-FSD-N-101.1	3	2	3	3	3
B-FSD-N-101.1	2	3	3	3	2
B-FSD-N-101.1	3	2	2	2	3
Average	2.75	2.5	2.5	2.75	2.75

UNIT-I

Introduction to Internet and World Wide Web (WWW). Evolution and History of World Wide Web, Web Pages and Contents, Web Clients, Web Servers, Web Browsers. Hypertext Transfer Protocol, URLs. Searching and Web-Casting Techniques, Search Engines and Search Tools, Scripting Languages.

UNIT-II

Web Publishing: Hosting Web Site. Internet Service Provider. Planning and designing Web Site. Web Content Authoring, Web Graphics Design, Web Programming, Steps For Developing Web Site, Choosing the Contents, Home Page, Domain Names, Creating a Website and Markup Languages (HTML, DHTML).

UNIT-III

Web Development: HTML Document Features, HTML and XHTML, Standard XHTML Document Structure, Images, Headers, Text Styles, Text Structuring, Text Colors and Background, Formatting Text, Page Layouts. Hypertext Links, Syntactic Differences between HTML and XHTML. Overview and Features of HTML.

Unit – IV

Images. Ordered and Unordered lists, Inserting Graphics. Table Creation and Layouts, Frame Creation and Layouts, Working with Forms and Menus, Working with Radio Buttons, Check Boxes. Text Boxes.

CSS: Introduction, Types of style sheets, Style specification formats, Font properties, List properties, Color, Alignment of text, Background images, The and tags, Features of CSS.

Text Books:

1. Raj Kamal, Internet and Web Technologies, Tata McGraw-Hill.
2. Ramesh Bangia, Multimedia and Web Technology, Firewall Media.

Reference Books:

1. Thomas A. Powell, Web Design: The Complete Reference, Tata McGraw-Hill
2. Wendy Willard, HTML Beginners Guide, Tata McGraw-Hill.
3. Deitel and Goldberg, Internet and World Wide Web, How to Program, PHI.

B-FSD- N-102: S/W LAB-I BASED ON B-FSD- N-101	
Type: Core Course (CC-3A) Course Credits: 02 Contact Hours: 04 hours/week. Examination Duration: 3 Hours Mode: LAB External Maximum Marks: 25 Internal Maximum Marks: 25 Total Max. Marks: 50 Total Pass Marks: 20 (i.e. 40%)	**Instructions To Examiner For End Semester Exam:** Examiner will be required to check the practical knowledge of the student by providing some assignment related to the course, checking the practical records maintained by the student and conducting a viva-voce.
Course Objectives: The aim of the course is to provide basic knowledge of C as a High level language as one of the programming tool and generating logical development skills using programming.	
LAB WILL BE BASED ON CURRICULUM OF B-FSD- N-101. STUDENT WILL HAVE TO MAINTAIN THE RECORD OF ALL THE PRACTICALS CONDUCTED IN THE LAB.	

B-SDE-N-201: DATA STRUCTURES USING C

Type: Core Course (CC-1B)
Course Credits: 04
Contact Hours: 04 hours/week.
Examination Duration: 3 Hours
Mode: Lecture
External Maximum Marks: 50
Internal Maximum Marks: 50
Total Max. Marks: 100
Total Pass Marks: 40 (i.e. 40%)

Instructions To Paper Setter For End Semester Exam: Examiner will be required to set NINE questions in all. Question No.1 will consist of objective type / short-answer type questions covering the entire syllabus. In addition to Question no. 1, the examiner is required to set EIGHT more questions selecting TWO from each UNIT. Student will be required to attempt FIVE questions in all. Question No.1 will be compulsory. In addition to compulsory question, student will have to attempt FOUR more questions selecting ONE question from each UNIT. All questions will carry equal marks.

Course Objectives: Learning of data structure is like learning alphabets to learn any proper language. In this course students will be aware of memory management and use of data structure in computer programming.

Course Outcomes: At the end of this course, the student will be able to:
B-SDE-N-201.1. learn basics of data structure and algorithm complexities.
B-SDE-N-201.2. acquire knowledge of arrays and strings.
B-SDE-N-201.3. understand the idea of implementation for linked lists and stacks.
B-SDE-N-201.4. learn various searching and sorting techniques along with implementation of queues.

CO-PO Mapping Matrix for Course Code: B-SDE-N-201

COs#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
B-SDE-N-201.1	3	3	2	3	3	2	2	2	2	3	2
B-SDE-N-201.2	3	2	3	3	3	2	2	2	2	2	2
B-SDE-N-201.3	2	3	3	3	2	2	2	2	1	1	2
B-SDE-N-201.4	3	2	2	2	3	3	2	3	3	2	2
Average	2.75	2.5	2.5	2.75	2.75	2.25	2	2.25	2	2	2

CO-PSO Mapping Matrix for Course Code: B-SDE-N-201

COs#	PSO1	PSO2	PO3	PSO4	PSO5
B-SDE-N-201.1	3	3	2	3	3
B-SDE-N-201.2	3	2	3	3	3
B-SDE-N-201.3	2	3	3	3	2
B-SDE-N-201.4	3	2	2	2	3
Average	2.75	2.5	2.5	2.75	2.75

UNIT – I

Data Structure Definition, Data Type vs. Data Structure, Classification of Data Structures, Data Structure Operations, Applications of Data Structures;
Algorithm Specifications: Performance Analysis and Measurement (Time and Space Analysis of Algorithms- Average, Best and Worst Case Analysis), Asymptotic Notations and their use in Algorithm Handling.

UNIT – II

Arrays: Introduction, Linear Arrays, Representation of Linear Array In Memory, Two Dimensional and Multidimensional Arrays, Sparse Matrix and its Representation, Operations on Array: Algorithm for Traversal, Selection, Insertion, Deletion and its implementation.
String Handling: Storage of Strings, Operations on Strings viz., Length, Concatenation, Substring, Insertion, Deletion, Replacement, Pattern Matching.

UNIT – III

Linked List: Introduction, Array vs. linked list, Representation of linked lists in Memory, Traversing a Linked List, Insertion, Deletion, Searching into a Linked list, Type of Linked List.
Stack: Array Representation of Stack, Linked List Representation of Stack, Algorithms for Push and Pop, Application of Stack: Polish Notation, Postfix Evaluation Algorithms, Infix to Postfix Conversion, Infix to Prefix Conversion,

Recursion.

UNIT – IV

Introduction to Queues: Simple Queue, Double Queue, Circular Queue, Priority Queue, Representation of Queues as Linked List and Array, Applications of Queue. Algorithm on Insertion and Deletion in Simple Queue and Circular Queue.

Searching and Sorting Techniques, Sorting Techniques: Bubble sort, Merge sort, Selection sort, Quick sort, Insertion Sort. Searching Techniques: Sequential Searching, Binary Searching.

Text Books:

1. Seymour Lipschutz, Data Structures, Tata McGraw- Hill Publishing Company Limited, Schaum's Outlines.
2. Yedidyan Langsam, Moshe J. Augenstein, and Aaron M. Tenenbaum, Data Structures Using C, Pearson Education.

Reference Books:

1. Trembley, J.P. And Sorenson P.G., An Introduction to Data Structures With Applications, McGraw- Hill.
2. Mark Allen Weiss, Data Structures and Algorithm Analysis in C, Addison- Wesley.

B-SDE- N-202: S/W LAB-II BASED ON B-SDE- N-201	
Type: Core Course (CC-1B) Course Credits: 02 Contact Hours: 04 hours/week. Examination Duration: 3 Hours Mode: LAB External Maximum Marks: 25 Internal Maximum Marks: 25 Total Max. Marks: 50 Total Pass Marks: 20 (i.e. 40%)	**Instructions To Examiner For End Semester Exam:** Examiner will be required to check the practical knowledge of the student by providing some assignment related to the course, checking the practical records maintained by the student and conducting a viva-voce.
Course Objectives: The aim of the course is to provide basic knowledge of C as a High level language as one of the programming tool and generating logical development skills using programming.	
LAB WILL BE BASED ON CURRICULUM OF B-SDE- N-201. STUDENT WILL HAVE TO MAINTAIN THE RECORD OF ALL THE PRACTICALS CONDUCTED IN THE LAB.	

B-DSM-N-201: ADVANCED WEB TECHNOLOGIES

Type: Core Course (CC-2B)
Course Credits: 04
Contact Hours: 04 hours/week.
Examination Duration: 3 Hours
Mode: Lecture
External Maximum Marks: 50
Internal Maximum Marks: 50
Total Max. Marks: 100
Total Pass Marks: 40 (i.e. 40%)

Instructions To Paper Setter For End Semester Exam: Examiner will be required to set NINE questions in all. Question No.1 will consist of objective type / short-answer type questions covering the entire syllabus. In addition to Question no. 1, the examiner is required to set EIGHT more questions selecting TWO from each UNIT. Student will be required to attempt FIVE questions in all. Question No.1 will be compulsory. In addition to compulsory question, student will have to attempt FOUR more questions selecting ONE question from each UNIT. All questions will carry equal marks.

Course Objectives: The objective of this course is to create dynamic web sites. Students will be able to apply their skill for the creation of dynamic web applications such as content management and user registration etc.

Course Outcomes: At the end of this course, the student will be able to:
B-DSM-N-201.1 learn advanced web languages like DHTML and CSS along with its components.
B-DSM-N-201.2 understand operators and control statements in PHP.
B-DSM-N-201.3 gain a detailed knowledge on arrays, functions and strings.
B-DSM-N-201.4 implement his/ her learning in PHP and MySQL.

CO-PO Mapping Matrix for Course Code: B-DSM-N-201

COs#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
B-DSM-N-201.1	3	3	2	2	2	3	2	2	3	3	2
B-DSM-N-201.2	3	2	3	2	2	3	2	2	1	2	2
B-DSM-N-201.3	3	3	3	2	2	2	2	2	3	1	1
B-DSM-N-201.4	3	2	2	3	2	3	3	3	2	2	2
Average	3	2.5	2.5	2.25	2	2.75	2.25	2.25	2.25	2	1.75

CO-PSO Mapping Matrix for Course Code: B-DSM-N-201

COs#	PSO1	PSO2	PSO3	PSO4	PSO5
B-DSM-N-201.1	3	3	3	3	3
B-DSM-N-201.2	2	2	3	2	2
B-DSM-N-201.3	2	3	3	3	2
B-DSM-N-201.4	3	2	2	2	3
Average	2.5	2.5	2.75	2.5	2.5

Unit- I

DHTML: Introduction, Features, Events, Dynamic Positioning, Layer Object, Properties of STYLE, Dynamic Styles, Inline Styles, Event Handlers. Cascading Style Sheets (CSS): Basic Concepts, Properties, Creating Style Sheets. Common Tasks with CSS: Text, Fonts, Margins, Links, Tables, Colors. Marquee. Mouse Overs. Filters and Transitions. Adding Links. Adding Tables. Adding Forms. Adding Image and Sound. Use of CSS in HTML Documents Linking and Embedding of CSS in HTML Document.

Unit- II

Introduction to PHP: Advantages of PHP, HTML relationship, variable types and their scope, Types of Data, Type conversion, Type casting.
Operators, unary operators, arithmetic operators, logical operators, conditional operators, conversion operators, Comparison operators, Ternary Operator, Scope resolution operator.
Control statements – sequence, conditional statements, loops, jump statements.

Unit- III

Creating an array, Multidimensional arrays, Accessing array, Element Looping with Index based array, Looping with associative array using each () and foreach(), Array Library functions.
Functions and Strings: Function prototypes, arguments, Recursive functions, Mathematical conversion functions.
Strings: Basic operations on strings: Reading from part of a string, Replacing parts of a string, Finding a substring within a string, Trimming whitespace, Changing string case, Comparing strings.

Unit- IV

PHP & MySQL: Introduction MySQL, PhpMyAdmin, PHP MySQL functions, Connecting to a MySQL database, Performing basic database operation(DML) (Insert, Delete, Update, Select), Setting query parameter, Executing query, Join (Cross joins, Inner joins, Outer Joins, Self joins.),Aggregate Functions(sum, avg, count).
Introduction to Cookies and Sessions: Using cookies, Sessions: Starting a session, ending a session, checking session data.

Text Books:

1. Robert W.Sebesta, PHP Programming, Peason Education.
2. Joel Murach, Ray Harris, Murach's PHP and MySQL: Training & Reference.

Reference Books:

1. StevenHolzner, PHP: The Complete Reference.
2. Mario Lurig, PHP Reference: Beginner to Intermediate PHP5.

B-DSM- N-202: S/W LAB-II BASED ON B-DSM- N-201	
Type: Core Course (CC-2B) Course Credits: 02 Contact Hours: 04 hours/week. Examination Duration: 3 Hours Mode: LAB External Maximum Marks: 25 Internal Maximum Marks: 25 Total Max. Marks: 50 Total Pass Marks: 20 (i.e. 40%)	**Instructions To Examiner For End Semester Exam:** Examiner will be required to check the practical knowledge of the student by providing some assignment related to the course, checking the practical records maintained by the student and conducting a viva-voce.
Course Objectives: The aim of the course is to provide basic knowledge of C as a High level language as one of the programming tool and generating logical development skills using programming.	
LAB WILL BE BASED ON CURRICULUM OF B-DSM- N-201. STUDENT WILL HAVE TO MAINTAIN THE RECORD OF ALL THE PRACTICALS CONDUCTED IN THE LAB.	

B-FSD-N-201: PROGRAMMING WITH JAVASCRIPT

Type: Core Course (CC-3B)
Course Credits: 04
Contact Hours: 04 hours/week.
Examination Duration: 3 Hours
Mode: Lecture
External Maximum Marks: 50
Internal Maximum Marks: 50
Total Max. Marks: 100
Total Pass Marks: 40 (i.e. 40%)

Instructions To Paper Setter For End Semester Exam: Examiner will be required to set NINE questions in all. Question No.1 will consist of objective type / short-answer type questions covering the entire syllabus. In addition to Question no. 1, the examiner is required to set EIGHT more questions selecting TWO from each UNIT. Student will be required to attempt FIVE questions in all. Question No.1 will be compulsory. In addition to compulsory question, student will have to attempt FOUR more questions selecting ONE question from each UNIT. All questions will carry equal marks.

Course Objectives: The aim of the course is to develop the skill & knowledge of concepts commonly used in dynamic language programming. Student will also be able to learn about client side interfaces through the use of DOM.

Course Outcomes: At the end of this course, the student will be able to:
B-FSD-N-201.1 understand concept of Scripting.
B-FSD-N-201.2 acquire knowledge about fundamentals of JavaScript.
B-FSD-N-201.3 understand the applicability of various objects like window, document used in programming.
B-FSD-N-201.4 acquire the skills that will enable him to design and build high-level web enabled applications.

CO-PO Mapping Matrix for Course Code: B-FSD-N-201

COs#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
B-FSD-N-201.1	3	3	2	3	1	3	2	3	2	1	2
B-FSD-N-201.2	3	3	3	3	1	3	2	2	2	1	2
B-FSD-N-201.3	3	3	3	3	2	3	2	2	2	1	2
B-FSD-N-201.4	3	3	3	3	2	3	2	3	2	2	3
Average	3	3	2.75	3	1.5	3	2	2.5	2	1.25	2.25

CO-PSO Mapping Matrix for Course Code: B-FSD-N-201

COs#	PSO1	PSO2	PSO3	PSO4	PSO5
B-FSD-N-201.1	3	3	2	3	3
B-FSD-N-201.2	3	2	3	3	3
B-FSD-N-201.3	2	3	3	3	2
B-FSD-N-201.4	3	2	2	2	3
Average	2.75	2.5	2.5	2.75	2.75

UNIT – I

The Nature of JavaScript: Evolution of Scripting Languages, JavaScript -Definition, Programming for Non-Programmers, Introduction to Client–Side Programming, Comparison between Java, JavaScript & VB Script. Enhancing HTML Documents with JavaScript. Static and Dynamic web pages.

UNIT – II

Introduction to JavaScript: Document Object Model (DOM), obtaining user inputs, memory concepts, Character set, case sensitivity, comments, Literals, Expression & Operators, Control Structures, looping constructs, break, continue statements, variables, Data types, Keywords.

UNIT – III

JavaScript types, merge multiple JavaScript into one, Running Scripts, Methods, and Events, Introduction to Objects: String, Date, Boolean, Window, document and various Object interaction.

UNIT – IV

Array declaration and allocation, passing arrays to function, Scoping rules, Recursion and iteration, cookies, Form Validation: Basic validation, Data validation. Introduction to XML.

Text Books:

1. David Flanagan, JavaScript: The Definitive Guide: The Definitive Guide.
2. Chris Bates, Web Programming, Building Internet Applications, WILEY.

Reference Books:

1. Kogent Learning, Web Technologies: HTML, JavaScript, PHP, Java, JSP, XML, AJAX – Black Book, Wiley India Pvt. Ltd.

B-FSD- N-202: S/W LAB-II BASED ON B-FSD- N-201	
Type: Core Course (CC-3B) Course Credits: 02 Contact Hours: 04 hours/week. Examination Duration: 3 Hours Mode: LAB External Maximum Marks: 25 Internal Maximum Marks: 25 Total Max. Marks: 50 Total Pass Marks: 20 (i.e. 40%)	**Instructions To Examiner For End Semester Exam:** Examiner will be required to check the practical knowledge of the student by providing some assignment related to the course, checking the practical records maintained by the student and conducting a viva-voce.
Course Objectives: The aim of the course is to provide basic knowledge of C as a High level language as one of the programming tool and generating logical development skills using programming.	
LAB WILL BE BASED ON CURRICULUM OF B-FSD- N-201. STUDENT WILL HAVE TO MAINTAIN THE RECORD OF ALL THE PRACTICALS CONDUCTED IN THE LAB.	

ਪੰਜਾਬੀ ਵਿਭਾਗ

ਕੁਰੂਕਸ਼ੇਤਰ ਯੂਨੀਵਰਸਿਟੀ, ਕੁਰੂਕਸ਼ੇਤਰ

ਸਕੀਮ ਆਫ਼ ਐਗਜ਼ਾਮੀਨੇਸ਼ਨ ਅਤੇ ਸਿਲੇਬਸ ਬੀ. ਏ. (ਪ੍ਰੋਗਰਾਮ) ਪੰਜਾਬੀ

ਨਵੀਂ ਸਿੱਖਿਆ ਨੀਤੀ 2020 (ਮਲਟੀਪਲ ਐਂਟਰੀ-ਐਗਜ਼ਿਟ, ਇੰਟਰਨਸ਼ਿਪ ਅਤੇ ਚੁਆਇਸ ਬੇਸਡ ਕ੍ਰੈਡਿਟ ਸਿਸਟਮ)

ਸੈਸ਼ਨ 2022-23 ਤੋਂ ਚਰਣਬੱਧ ਤਰੀਕੇ ਨਾਲ ਲਾਗੂ

DEPARTMENT OF PANJABI

KURUKSHETRA UNIVERSITY KURUKSHETRA

Scheme of Examination & Syllabus for

Undergraduate Programme Courses Panjabi (Sem I to VI)

In Accordance to NEP – 2020 (Multiple Entry-Exit, Internship & Choice Based Credit System- LOCF)

To be implemented w.e.f Session 2022-23 (in Phased Manner)

ਕੋਰਸ ਕੋਡ (Course Code)	ਕੋਰਸ ਦੀ ਪ੍ਰਕ੍ਰਿਤੀ (Nature of Course)	ਕੋਰਸ ਦਾ ਨਾਮ (Subject)	ਕ੍ਰੈਡਿਟ (Credits)	ਪੀਰੀਅਡ ਪ੍ਰਤੀ ਹਫ਼ਤਾ (Periods Per Week)	ਪ੍ਰੀਖਿਆ ਦੀ ਯੋਜਨਾ (Scheme of Examination)				
					ਪ੍ਰੀਖਿਆ (Theory)	ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ Internal Assesment	ਕੁੱਲ ਅੰਕ Total Marks	ਸਮਾਂ Time	
ਸਮੈਸਟਰ ਪਹਿਲਾ (Semester I)									
B-PBI-N-100	AECC*	ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ (Punjabi Bhasha : Mudhli Jaan-Pachhan)	02	2	25	25	50	2 ਘੰਟੇ	**Certificate in Arts**
B-PBI-N-101	CC	ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ, ਇਕਾਂਗੀ ਅਤੇ ਵਿਹਾਰਕ ਪੰਜਾਬੀ (Aadhunik Punjabi Kavita, Ikangi Ate Viharak Punjabi)	06	6	75	75	150	3 ਘੰਟੇ	
ਸਮੈਸਟਰ ਦੂਜਾ (Semester II)									
B-PBI-N-201	CC	ਪੰਜਾਬੀ ਗਲਪ ਅਤੇ ਵਿਹਾਰਕ ਪੰਜਾਬੀ (Punjabi Galap Ate Viharak Punjabi)	06	6	75	75	150	3 ਘੰਟੇ	
Internship@10 credits (450 hours) after 2nd semester (only for exit option)									
ਸਮੈਸਟਰ ਤੀਜਾ (Semester III)									
B-PBI-N-301	CC	ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ ਤੇ ਵਿਹਾਰਕ ਪੰਜਾਬੀ (Aadhunik Punjabi Vartak Viharak Punjabi)	06	6	75	75	150	3 ਘੰਟੇ	**Diploma in Art**
* Students can opt AECC in sem I, II or III according to the time table adjustment in the Institute									
ਸਮੈਸਟਰ ਚੌਥਾ (Semester IV)									
B-PBI-N-401	CC	ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਅਤੇ ਵਿਹਾਰਕ ਪੰਜਾਬੀ (Madhkali Punjabi Sahit Ate Viharak Punjabi)	06	6	75	75	150	3 ਘੰਟੇ	
Internship@10 credits (450 hours) after 4th semester (Compulsory for all)									
ਸਮੈਸਟਰ ਪੰਜਵਾਂ (Semester V)									
B-PBI-N-501	CC (Honours)	ਪੰਜਾਬੀ ਲੋਕਧਾਰਾ ਅਤੇ ਸਭਿਆਚਾਰ (Punjabi Lokdhara Ate Sabhyachar)	06	6	75	75	150	3 ਘੰਟੇ	

B-PBI-N-502	SEC	ਨਾਟਕ, ਰੰਗਮੰਚ ਅਤੇ ਫ਼ਿਲਮਸਾਜ਼ੀ ਦਾ ਹੁਨਰ : ਅਧਿਐਨ ਅਤੇ ਸਿਖਲਾਈ (Natak, Rangmanch Ate Filamsazi Da Hunar : Adhyan Ate Sikhlai)	06	6	75	75	150	3 ਘੰਟੇ	
B-PBI-N-503-(i)	DSE	ਪੰਜਾਬੀ ਦਲਿਤ ਸਾਹਿਤ (Punjabi Dalit Sahit)	06	6	75	75	150	3 ਘੰਟੇ	Graduation in Arts/ Honours in Arts
B-PBI-N-503-(ii)		ਪੰਜਾਬੀ ਨਾਰੀ ਸਾਹਿਤ (Punjabi Nari Sahit)	06	6	75	75	150	3 ਘੰਟੇ	
B-PBI-N-503-(iii)		ਹਰਿਆਣਾ ਦਾ ਪੰਜਾਬੀ ਸਾਹਿਤ (Haryana Da Punjabi Sahit)	06	6	75	75	150	3 ਘੰਟੇ	
B-PBI-N-503-(iv)		ਭਾਰਤੀ ਸਾਹਿਤ (Bharti Sahit)	06	6	75	75	150	3 ਘੰਟੇ	
B-PBI-N-503-(v)		ਸਾਹਿਤ ਸਿਧਾਂਤ, ਭਾਰਤੀ ਅਤੇ ਯੂਨਾਨੀ ਕਾਵਿ ਸ਼ਾਸਤਰ (Sahit Sidhant, Bharti Ate Unani Kaav Shastar)	06	6	75	75	150	3 ਘੰਟੇ	
B-PBI-N-504	GE	ਮਹਾਂਕਾਵਿ ਅਤੇ ਪੰਜਾਬੀ ਮਹਾਂਕਾਵਿ (Mahakaav Ate Punjabi Mahakaav)	06	6	75	75	150	3 ਘੰਟੇ	
ਸਮੈਸਟਰ ਛੇਵਾਂ (Semester VI)									
B-PBI-N-601	CC (Honours)	ਪੰਜਾਬੀ ਭਾਸ਼ਾ, ਗੁਰਮੁਖੀ ਲਿੱਪੀ ਅਤੇ ਪੰਜਾਬੀ ਦਾ ਕੰਪਿਊਟਰੀਕਰਨ (Punjabi Bhasha, Gurmukhi Lipi Ate Punjabi Bhasha Da Computerikaran)	06	6	75	75	150	3 ਘੰਟੇ	
B-PBI-N-602	SEC	ਮੀਡੀਆ, ਜਨ-ਸੰਚਾਰ ਅਤੇ ਸਿਰਜਣਾਤਮਕ ਲੇਖਣ ਦਾ ਹੁਨਰ : ਅਧਿਐਨ ਅਤੇ ਸਿਖਲਾਈ (Media, Jan-Sanchar Ate Sirjanatmak Lekhan Da Hunar: Adhyan Ate Sikhlai)	06	6	75	75	150	3 ਘੰਟੇ	
B-PBI-N-603-(i)	DSE	ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ (Parvasi Punjabi Sahit)	06	6	75	75	150	3 ਘੰਟੇ	
B-PBI-N-603-(ii)		ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ (Pakistani Punjabi Sahit)	06	6	75	75	150	3 ਘੰਟੇ	
B-PBI-N-603-(iii)		ਜੰਮੂ ਕਸ਼ਮੀਰ ਦਾ ਪੰਜਾਬੀ ਸਾਹਿਤ (Jammu Kashmir Da Punjabi Sahit)	06	6	75	75	150	3 ਘੰਟੇ	
B-PBI-N-603-(iv)		ਵਿਸ਼ਵ ਸਾਹਿਤ (Vishav Sahit)	06	6	75	75	150	3 ਘੰਟੇ	

B-PBI-N-603-(v)		ਸਾਹਿਤ ਸਿਧਾਂਤ ਅਤੇ ਆਧੁਨਿਕ ਪੱਛਮੀ ਕਾਵਿ ਸ਼ਾਸਤਰ (Sahit Sidhant Ate Aadhunik Pachhmi Kaav Shastar)	06	6	75	75	150	3 ਘੰਟੇ	
B-PBI-N-604	GE	ਗ਼ਜ਼ਲ ਅਤੇ ਪੰਜਾਬੀ ਗ਼ਜ਼ਲ (Gazal Ate Punjabi Gazal)	06	6	75	75	150	3 ਘੰਟੇ	

*Students can opt SEC in sem V or VI according to the time table adjustment in the Institute
*Students can opt any one out of five papers of DSE

ਸਮੈਸਟਰ ਸੱਤਵਾਂ ਅਤੇ ਅੱਠਵਾਂ (Semester VII & VIII)

Semester	Core Course @ 6 Credits	Research Ability enhancement course (RAEC) and Thesis	Credits	Research Presentation Seminars	Credits	Exit
Sem VII	CC Hons. Sem 5th & Sem 6th (to be completed by Graduate Students without Hons)	Research Ethics	4	Review of literature General Seminar	4	Graduation in Subject (Honours & Research)
		Research Methodology	4	Synopsis writing and seminar	4	
Sem VIII		Dissertation/Thesis Preparation/Writing	20	Mid Term Seminar	2	
				Pre-submission seminar	2	

ਵਿਦਿਆਰਥੀ/ ਪ੍ਰੀਖਿਆ ਦਾ ਮੁਲਾਂਕਣ ਦੋ ਪੱਧਰਾਂ ਤੇ ਹੇਠ ਲਿਖੇ ਅਨੁਸਾਰ ਹੋਏਗਾ

ਕੁੱਲ ਅੰਕ (0 ਤੋਂ 100 ਪ੍ਰਤੀਸ਼ਤ ਦੇ ਵਿਚਕਾਰ)	**ਆਂਤਰਿਕ ਮੁਲਾਂਕਣ (Internal Assessment)** (50 ਪ੍ਰਤੀਸ਼ਤ)			ਅੰਤਿਮ ਅਵਧੀ ਪ੍ਰੀਖਿਆ (End Semester Examination) (50 ਪ੍ਰਤੀਸ਼ਤ)
	ਕਲਾਸ ਪ੍ਰਤੀਭਾਗਿਤਾ (ਅੰਕ 0 ਤੋਂ 10 ਪ੍ਰਤੀਸ਼ਤ ਦੇ ਵਿਚਕਾਰ)	ਕਾਰਜ ਤੇ ਪ੍ਰਸਤੁਤੀ (ਅੰਕ 0 ਤੋਂ 10 ਪ੍ਰਤੀਸ਼ਤ ਦੇ ਵਿਚਕਾਰ	ਮੱਧਵਰਤੀ ਪ੍ਰੀਖਿਆ (ਅੰਕ 0 ਤੋਂ 30 ਪ੍ਰਤੀਸ਼ਤ ਦੇ ਵਿਚਕਾਰ)	ਅੰਤਿਮ ਅਵਧੀ ਪ੍ਰੀਖਿਆ (ਅੰਕ 0 ਤੋਂ 50 ਪ੍ਰਤੀਸ਼ਤ ਦੇ ਵਿਚਕਾਰ)

ਨਵੀਂ ਸਿੱਖਿਆ ਨੀਤੀ 2020 (ਮਲਟੀਪਲ ਐਂਟਰੀ-ਐਗਜ਼ਿਟ, ਇੰਟਰਨਸ਼ਿਪ ਅਤੇ ਚੁਆਇਸ ਬੇਸਡ ਕ੍ਰੈਡਿਟ ਸਿਸਟਮ)

Semester	Core Course (CC) @6credits subject-1	Ability enhancement compulsory course (AECC)@2credit	Skill enhancement (SEC)@2-6credit	Discipline Specific Course (DSE)@6credit
I	ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ, ਇਕਾਂਗੀ ਅਤੇ ਵਿਹਾਰਕ ਪੰਜਾਬੀ (Aadhunik Punjabi Kavita, Ikangi Ate Viharak Punjabi)	ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ (Punjabi Bhasha : Mudhli Jaan-Pachhan)	---	---
II	ਪੰਜਾਬੀ ਗਲਪ ਅਤੇ ਵਿਹਾਰਕ ਪੰਜਾਬੀ (Punjabi Galap Ate Viharak Punjabi)	---	---	---
Internship@10 credits (450 hours) after 2nd semester (only for exit option)				
III	ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ ਤੇ ਵਿਹਾਰਕ ਪੰਜਾਬੀ	---	---	---

	(Aadhunik Punjabi Vartak Viharak Punjabi)			
IV	ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਅਤੇ ਵਿਹਾਰਕ ਪੰਜਾਬੀ (Madhkali Punjabi Sahit Ate Viharak Punjabi)	---	---	---
Internship@10 credits (450 hours) after 2nd semester (only for exit option)				
V	ਪੰਜਾਬੀ ਲੋਕਧਾਰਾ ਅਤੇ ਸਭਿਆਚਾਰ (Punjabi Lokdhara Ate Sabhyachar)	---	ਨਾਟਕ, ਰੰਗਮੰਚ ਅਤੇ ਫ਼ਿਲਮਸਾਜ਼ੀ ਦਾ ਹੁਨਰ : ਅਧਿਐਨ ਅਤੇ ਸਿਖਲਾਈ (Natak, Rangmanch Ate Filamsazi Da Hunar : Adhyan Ate Sikhlai)	(i) ਪੰਜਾਬੀ ਦਲਿਤ ਸਾਹਿਤ (Punjabi Dalit Sahit) (ii) ਪੰਜਾਬੀ ਨਾਰੀ ਸਾਹਿਤ (Punjabi Nari Sahit) (iii) ਹਰਿਆਣਾ ਦਾ ਪੰਜਾਬੀ ਸਾਹਿਤ (Haryana Da Punjabi Sahit Ate Viharak Punjabi) (iv) ਭਾਰਤੀ ਸਾਹਿਤ (Bharti Sahit) (v) ਸਾਹਿਤ ਸਿਧਾਂਤ, ਭਾਰਤੀ ਅਤੇ ਯੂਨਾਨੀ ਕਾਵਿ ਸ਼ਾਸਤਰ (Sahit Sidhant, Bharti Ate Unani Kav Shastar)
VI	ਪੰਜਾਬੀ ਭਾਸ਼ਾ, ਗੁਰਮੁਖੀ ਲਿੱਪੀ ਅਤੇ ਪੰਜਾਬੀ ਦਾ ਕੰਪਿਊਟਰੀਕਰਨ (Punjabi Bhasha, Gurmukhi Lipi Ate Punjabi Bhasha Da Computerikaran)		ਮੀਡੀਆ, ਜਨ-ਸੰਚਾਰ ਅਤੇ ਸਿਰਜਣਾਤਮਕ ਲੇਖਣ ਦਾ ਹੁਨਰ : ਅਧਿਐਨ ਅਤੇ ਸਿਖਲਾਈ (Media, Jan-Sanchar Ate Sirjanatmak Lekhan Da Hunar: Adhyan Ate Sikhlai)	(i) ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ (Parvasi Punjabi Sahit) (ii) ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ (Pakistani Punjabi Sahit) (iii) ਜੰਮੂ ਕਸ਼ਮੀਰ ਦਾ ਪੰਜਾਬੀ ਸਾਹਿਤ (Jammu Kashmir Da Punjabi Sahit) (iv) ਵਿਸ਼ਵ ਸਾਹਿਤ (Vishav Sahit) (v) ਸਾਹਿਤ ਸਿਧਾਂਤ ਅਤੇ ਆਧੁਨਿਕ ਪੱਛਮੀ ਕਾਵਿ ਸ਼ਾਸਤਰ (Sahit Sidhant ate Pachhmi Kaav Shastar)

ਕੁਰੂਕਸ਼ੇਤਰ ਯੂਨੀਵਰਸਿਟੀ, ਕੁਰੂਕਸ਼ੇਤਰ ਦੇ ਇੰਸਟੀਟਿਊਟ ਆਫ਼ ਇੰਟੇਗ੍ਰੇਟਿਡ ਐਂਡ ਆਨਰਜ਼ ਸਟੱਡੀਜ਼ (IIHS) ਦੇ ਬੀ. ਏ. ਆਰਟਸ, ਸੀ. ਬੀ. ਸੀ. ਐੱਸ (CBCS) ਪ੍ਰੋਗਰਾਮ/ ਪਾਠਕ੍ਰਮ ਦੇ ਸੰਭਾਵਿਤ ਵਿਸ਼ੇਸ਼ ਨਤੀਜੇ (LOCF)

1	ਮਾਨਵ ਸਮਾਜ ਵਿਗਿਆਨ ਅਤੇ ਭਾਸ਼ਾਵਾਂ ਦੇ ਪ੍ਰਮੁੱਖ ਵਿਸ਼ਿਆਂ ਦੇ ਅਧਿਐਨ ਲਈ ਚੁਣੇ ਹੋਏ ਖੇਤਰਾਂ ਸਬੰਧੀ ਵਿਸਤ੍ਰਿਤ ਜਾਣਕਾਰੀ ਅਤੇ ਸਮਝ ਵਿਕਸਤ ਹੋਵੇਗੀ।
2	ਜਟਿਲ ਅਤੇ ਬਦਲਦੇ ਸਮਾਜਿਕ ਸੰਦਰਭਾਂ ਦੀ ਪਛਾਣ ਅਤੇ ਸਮਾਧਾਨ ਲਈ ਮਹੱਤਵਪੂਰਨ ਅਤੇ ਵਿਸ਼ਲੇਸ਼ਣਾਤਮਕ ਕੌਸ਼ਲ ਦੇ ਢੰਗ ਤਰੀਕੇ ਪੈਦਾ ਕੀਤੇ ਜਾਣਗੇ।
3	ਮਾਨਵ ਸਮਾਜ ਵਿਗਿਆਨ ਅਤੇ ਭਾਸ਼ਾਵਾਂ ਦੇ ਪ੍ਰਮੁੱਖ ਵਿਸ਼ਿਆਂ ਦੇ ਬਾਹਰੀ ਅਧਿਐਨ ਲਈ ਚੁਣੇ ਹੋਏ ਖੇਤਰਾਂ ਦੇ ਸੰਕਲਪਾਂ ਅਤੇ ਸਿਧਾਂਤਾਂ ਪ੍ਰਤੀ ਆਮ ਸਮਝ ਪੈਦਾ ਕੀਤੀ ਜਾਵੇਗੀ।
4	ਗਿਆਨ ਪੱਧਤੀ ਲਈ ਇੱਕ ਸੁਤੰਤਰ ਅਤੇ ਨਿਰਪੱਖ ਦ੍ਰਿਸ਼ਟੀਕੋਣ ਵਿਕਸਤ ਹੋਵੇਗਾ ਜਿਹੜਾ ਪਰਖ-ਪੜਚੋਲ ਅਤੇ ਸਿਧਾਂਤਾਂ ਦੇ ਉੱਚਿਤ ਢੰਗ ਤਰੀਕਿਆਂ ਦੀ ਵਰਤੋਂ ਕਰਦਾ ਹੋਵੇਗਾ।
5	ਗਿਆਨ ਦੇ ਵਿਭਿੰਨ ਰੂਪਾਂ ਅਤੇ ਉਹਨਾਂ ਨੂੰ ਪੈਦਾ ਕਰਨ ਵਾਲੇ ਸਮਾਜਿਕ, ਇਤਿਹਾਸਕ ਅਤੇ ਸਭਿਆਚਾਰਕ ਸੰਦਰਭਾਂ ਦੀ

	ਪਛਾਣ ਕਰਕੇ ਉਹਨਾਂ ਦੇ ਆਪਸੀ ਸਬੰਧਾਂ ਬਾਰੇ ਸਪੱਸ਼ਟਤਾ ਪੈਦਾ ਕੀਤੀ ਜਾਵੇਗੀ।
6	ਪ੍ਰਭਾਵਮਈ ਅਤੇ ਸੁਚੱਜੇ ਢੰਗ ਨਾਲ ਸੰਵਾਦ ਸਥਾਪਿਤ ਕਰਨ ਦੇ ਨਾਲ-ਨਾਲ ਪ੍ਰਵਾਹਮਈ ਵੇਗ ਵਿੱਚ ਇੱਕ ਖਾਸ ਭਾਸ਼ਾ ਵਿੱਚ ਸੁਣਨ, ਲਿਖਣ, ਬੋਲਣ ਅਤੇ ਪੜ੍ਹਨ ਦੀ ਸਮਰੱਥਾ ਪੈਦਾ ਹੋਵੇਗੀ।
7	ਵਿਦਵਾਨਾਂ ਦੇ ਸਮੂਹ ਅਤੇ ਕਾਰਜ ਸਥਾਨ ਤੇ ਪ੍ਰਭਾਵੀ ਅਤੇ ਗੰਭੀਰ ਰੂਪ ਵਿੱਚ ਇੱਕ ਸਮਝਦਾਰ ਅਤੇ ਸਿਆਣੇ ਪ੍ਰਤੀਭਾਗੀ ਵਾਂਗ ਅਨੁਸ਼ਾਸਨਾਤਮਕ ਰੂਪ ਵਿੱਚ ਕੰਮ ਕਰਨ ਦੀ ਸਮਰੱਥਾ ਪੈਦਾ ਹੋਵੇਗੀ।
8	ਕਾਰਜ ਸਥਾਨ ਅਤੇ ਵਿਅਕਤੀਗਤ ਰੂਪ ਜੀਵਨ ਵਿੱਚ ਆਉਣ ਵਾਲੀਆਂ ਚੁਣੌਤੀਆਂ ਅਤੇ ਉਹਨਾਂ ਦਾ ਸਾਹਮਣਾ ਕਰਨ ਲਈ ਸੁਤੰਤਰ, ਸਵੈ-ਪ੍ਰਤੀਬਿੰਬਤ ਅਤੇ ਰਚਨਾਤਮਕ/ ਸਿਰਜਣਾਤਮਕ ਰੂਪ ਵਿੱਚ ਕੰਮ ਕਰਨ ਦੀ ਭਾਵਨਾਂ ਪੈਦਾ ਹੋਵੇਗੀ

ਬੀ. ਏ. ਪੰਜਾਬੀ (ਇਲੈਕਟਿਵ) ਪ੍ਰੋਗਰਾਮ/ ਪਾਠਕ੍ਰਮ ਦੇ ਅਧਿਐਨ ਉਪਰੰਤ ਸੰਭਾਵਿਤ ਵਿਸ਼ੇਸ਼ ਨਤੀਜੇ :

1. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ, ਭਾਸ਼ਾ ਵਿਗਿਆਨ, ਸਾਹਿਤ, ਸਭਿਆਚਾਰ ਅਤੇ ਲੋਕਧਾਰਾ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਵਿਹਾਰਕ ਅਧਿਐਨ/ ਪ੍ਰਯੋਗ ਦਾ ਗਿਆਨ ਪ੍ਰਾਪਤ ਹੋਵੇਗਾ।
2. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਵਿਭਿੰਨ ਸਮਿਆਂ ਵਿੱਚ ਪ੍ਰਾਪਤ ਸਾਹਿਤ, ਸਾਹਿਤਕ ਧਾਰਾਵਾਂ, ਸਾਹਿਤਕਾਰਾਂ ਦੇ ਜੀਵਨ, ਸਿਰਜਣ ਪ੍ਰਕ੍ਰਿਆ, ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਅਤੇ ਲੋਕਧਾਰਾ ਦੀਆਂ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਨੂੰ ਜਿੱਥੇ ਸਮਝਣ/ ਮੁਲਾਂਕਣ ਕਰਨ ਦੀ ਸੂਝ/ ਸਮਝ ਵਿਕਸਤ ਹੋਵੇਗੀ ਉੱਥੇ ਉਹਨਾਂ ਵਿੱਚ ਉਸ ਸਮੇਂ ਨਾਲ ਸਬੰਧਤ ਸਮਾਜਿਕ, ਆਰਥਿਕ, ਰਾਜਨੀਤਿਕ ਅਤੇ ਸਭਿਆਚਾਰਕ ਸਥਿਤੀਆਂ/ ਪ੍ਰਸਥਿਤੀਆਂ ਨੂੰ ਸਮਝਣ ਦਾ ਬੋਧ ਅਤੇ ਆਲੋਚਨਾਤਮਕ ਦ੍ਰਿਸ਼ਟੀ ਵੀ ਪੈਦਾ ਹੋਵੇਗੀ।
3. ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਜਿੱਥੇ ਸਾਹਿਤਕ ਕਿਰਤਾਂ ਨੂੰ ਪੜ੍ਹਨ ਦੀ ਰੁਚੀ, ਉਹਨਾਂ ਦੇ ਵਿਅਕਤੀਤਵ ਅਤੇ ਕਿੱਤਾਮੁਖੀ ਵਿਕਾਸ ਦੀ ਉਸਾਰੀ ਵਿੱਚ ਵਾਧਾ ਹੋਵੇਗਾ ਉਥੇ ਉਹਨਾਂ ਵਿੱਚ ਰੁਜ਼ਗਾਰ ਲਈ ਭਾਸ਼ਾਈ ਕੌਸ਼ਲ, ਕੰਪਿਊਟਰ, ਅਨੁਵਾਦ, ਪੱਤਰਕਾਰਿਤਾ, ਮੀਡੀਆ, ਰੰਗਮੰਚ ਅਤੇ ਫ਼ਿਲਮਾਂ, ਸਭਿਆਚਾਰ ਅਤੇ ਲੋਕਧਾਰਾ ਆਦਿ ਬਾਰੇ ਵਿਹਾਰਕ ਗਿਆਨ ਪ੍ਰਤੀ ਸਮਝ ਵੀ ਪੈਦਾ ਹੋਵੇਗੀ।
4. ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ, ਸਾਹਿਤ ਅਤੇ ਸਭਿਆਚਾਰ ਅਤੇ ਲੋਕਧਾਰਾ ਦੇ ਪ੍ਰਾਪਤ ਵਿਭਿੰਨ ਰੂਪਾਂ ਦੇ ਅਧਿਐਨ ਰਾਹੀਂ ਜਿੱਥੇ ਭਾਰਤੀ ਸਮਾਜ, ਸਭਿਆਚਾਰਕ ਜੀਵਨ ਮੁੱਲਾਂ ਦੇ ਵਿਭਿੰਨ ਪੱਖਾਂ ਵਿੱਚ ਪਈ ਸਾਂਝ ਦੇ ਵਿਭਿੰਨ ਤੱਤਾਂ ਬਾਰੇ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੋਵੇਗੀ ਉੱਥੇ ਉਹਨਾਂ ਵਿੱਚ ਕੌਮੀ ਅਤੇ ਕੌਮਾਂਤਰੀ ਸਮਾਜਾਂ ਨੂੰ ਗਲੋਬਲੀ ਪਰਿਪੇਖ ਵਿੱਚ ਸਮਝਣ ਦੀ ਸੂਝ ਪੈਦਾ ਹੋਵੇਗੀ।

Table 1. Mapping matrix for all the Courses of B.A. (Punjabi)

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
B-PBI-N-100-AECC	3	3	3	2	2	3	3	3	3	3	3	3
B-PBI-N-101-CC	3	2.25	3	2.25	2.75	2.25	3	3	3	3	2.25	3
B-PBI-N-201-CC	3	3	2.75	2	2	3	3	3	3	2.75	3	3
B-PBI-N-301-CC	3	2	3	3	2.75	3	2.75	3	3	3	3	3
B-PBI-N-401-CC	3	2	3	3	2.75	3	2.75	3	3	3	3	3
B-PBI-N-501-CC	3	2.5	3	2.5	2.5	2.75	2.75	3	3	3	3	3
B-PBI-N-502-SEC	3	2.75	3	3	3	3	2.75	2.75	2.25	2.25	3	3
B-PBI-N-503 (i)-DSC	3	3	3	2	3	2	3	3	3	3	3	2.75
B-PBI-N- 503 (ii)-DSC	3	3	3	2	3	2	3	3	3	3	3	2.75
B-PBI-N-503 (iii)-DSC	3	2.75	3	2	3	2.25	3	3	3	2.75	3	2
B-PBI-N-503 (iv)-DSC	3	2.5	3	2	3	2	3	3	3	2.75	3	2.75
B-PBI-N-503 (v)-DSC	3	2.5	3	2	3	2	3	3	3	3	3	2.75
B-PBI-N-504-GE	3	3	2.75	2	2	2.5	3	3	3	2.75	3	3
B-PBI-N-601-CC	3	2.5	2.75	2	3	2	3	3	3	2.75	3	2.75
B-PBI-N-602-SEC	3	3	3	2	3	2	3	3	3	3	3	2.75
B-PBI-N-603 (i)-DSC	3	2.75	3	2	3	2	3	3	3	3	3	2.75
B-PBI-N-603 (ii)-DSC	3	2.75	3	2	3	2	3	3	3	2.75	3	2.75
B-PBI-N-603 (iii)-DSC	3	2.75	3	2	3	2	3	3	3	2.75	3	2.75
B-PBI-N-603 (iv)-DSC	3	2.75	3	2	3	2	3	3	3	3	3	2.75
B-PBI-N-603 (v)-DSC	2.75	2.75	2.75	2.75	2.5	3	2.75	2.75	2.5	2.5	2.5	2.75
B-PBI-N-604-GE	3	3	3	2	2	3	3	3	3	2.75	3	3

Attainment of Cos : Attainment Level for Internal Assessment

Table given below shows the CO attainment levels assuming the set target of 60% marks :

Attainment Level	
1 (Low level of Attainment)	60% of Students score more than 60% of marks in class tests of a course
2 (Medium level of Attainment)	70% of Students score more than 55% of marks in class tests of a course
3 (High level of Attainment)	80% of Students score more than 50% of marks in class tests of a course

Table 3. CO Attainment Levels for End Semester Examination (ESE)

Attainment Level	
1 (Low level of Attainment)	60% of Students obtained letter grade of A or above (for CBCS programme) or score more than 60% of Marks (for non-CBCS programms) in ESE of a course
2 (Medium level of Attainment)	70% of Students obtained letter grade of A or above (for CBCS programme) or score more than 55% of Marks (for non-CBCS programms) in ESE of a course
3 (High level of Attainment)	80% of Students obtained letter grade of A or above (for CBCS programme) or score more than 50% of Marks (for non-CBCS programms) in ESE of a course

Semester : I

B-PBI-N-100-AECC

ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ

(Punjabi Bhasha : Mudhli Jaan Pachhan)

ਕ੍ਰੈਡਿਟ : 2

ਸਮਾਂ : 2 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 50

(ਪੇਪਰ : 25, ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 25)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 05 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਪੰਜ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਇਹ ਪੰਜੇ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਇਸ ਸੁਆਲ ਵਿੱਚ ਕੋਈ ਅੰਦਰੂਨੀ ਛੋਟ ਨਹੀਂ ਹੋਵੇਗੀ। ਹਰ ਸਵਾਲ ਇੱਕ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਚਾਰ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਨੇ ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਕੋਈ ਇੱਕ ਸੁਆਲ ਕਰਨਾ ਹੈ। ਹਰ ਸੁਆਲ 5 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਮੁੱਢਲਾ ਗਿਆਨ ਪ੍ਰਦਾਨ ਕਰਨਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-100- AECC.1 ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਸ਼ਬਦ ਰਚਨਾ, ਲਗਾਂ ਮਾਤਰਾ ਅਤੇ ਸ਼ਬਦ-ਜੋੜ ਨੇਮਾਂ ਦਾ ਗਿਆਨ ਪ੍ਰਾਪਤ ਹੋਵੇਗਾ।

B-PBI-N-100- AECC.2 ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਦੀਆਂ ਵਿਆਕਰਣਿਕ ਸ਼੍ਰੇਣੀਆਂ ਬਾਰੇ ਗਿਆਨ ਪ੍ਰਾਪਤ ਹੋਵੇਗਾ।

B-PBI-N-100- AECC.3 ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਵਾਕ, ਵਾਕ ਰਚਨਾ, ਅਰਥ ਬੋਧ ਅਤੇ ਪੰਜਾਬੀ ਅਰਥ ਵਿਗਿਆਨ ਦੀ ਮੁੱਢਲੀ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੋਵੇਗੀ।

B-PBI-N-100- AECC.4 ਪੰਜਾਬੀ ਵਿੱਚ ਪੱਤਰ ਲੇਖਣ ਅਤੇ ਸੰਖੇਪ ਰਚਨਾ ਦੀ ਜਾਣਕਾਰੀ, ਪੱਤਰ ਲੇਖਣ ਅਤੇ ਸੰਖੇਪ ਰਚਨਾ ਵਿੱਚ ਮੁਹਾਰਤ ਹਾਸਿਲ ਹੋਵੇਗੀ।

ਯੂਨਿਟ ਪਹਿਲਾ

1. ਧੁਨੀ/ ਅੱਖਰ ਬੋਧ

1.1 ਅੱਖਰਾਂ/ ਵਰਣਾਂ ਦੀ ਪਛਾਣ, ਅੱਖਰ ਉਚਾਰਣ

1.2 ਲਗਾਂ ਮਾਤਰਾਵਾਂ ਅਤੇ ਲਗਾਖਰ

1.3 ਸਵਰ-ਵਿਅੰਜਨ

1.4 ਸ਼ਬਦ ਜੋੜ ਨਿਯਮ

ਯੂਨਿਟ ਦੂਸਰਾ

2. ਸ਼ਬਦ ਬੋਧ ਤੇ ਵਿਆਕਰਣਕ ਸ਼੍ਰੇਣੀਆਂ

2.1 ਸ਼ਬਦ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਸ਼ਬਦ ਬਣਤਰ,

2.2 ਸ਼ਬਦ ਰਚਨਾ (ਅਗੇਤਰ, ਪਿਛੇਤਰ)

2.3 ਵਿਆਕਰਣਕ ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ-ਨਾਂਵ, ਪੜਨਾਂਵ, ਵਿਸ਼ੇਸ਼ਣ, ਕਿਰਿਆ ਵਿਸ਼ੇਸ਼ਣ, ਸਬੰਧਕ, ਯੋਜਕ, ਵਿਸਮਿਕ ਅਤੇ ਪਾਰਟੀਕਲਜ਼ (ਨਿਪਾਤ) ਦੀ ਸੰਖੇਪ ਜਾਣਕਾਰੀ

ਯੂਨਿਟ ਤੀਸਰਾ

3. ਵਾਕ ਬੋਧ ਅਤੇ ਅਰਥ ਬੋਧ

3.1 ਵਾਕ : ਅਰਥ, ਪਰਿਭਾਸ਼ਾ, ਵਾਕ ਰਚਨਾ ਅਤੇ ਵਾਕ ਵੰਡ

3.3 ਅਰਥ : ਅਰਥ, ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਪੰਜਾਬੀ ਅਰਥਾਵਲੀ (ਸਮਾਨਾਰਥਕ ਸ਼ਬਦ, ਬਹੁਅਰਥਕ ਸ਼ਬਦ, ਵਿਰੋਧਾਰਥਕ ਸ਼ਬਦ, ਵਿਪਰੀਤਆਰਥਕ ਸ਼ਬਦ

ਯੂਨਿਟ ਚੌਥਾ

3.4 ਚਿੱਠੀ ਪੱਤਰ ਲੇਖਣ : ਅਰਥ, ਕਿਸਮਾਂ ਅਤੇ ਨਿਯਮ

3.5 ਸੰਖੇਪ ਰਚਨਾ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਸ. ਸ. ਖਹਿਰਾ — **ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਵਿਆਕਰਣ ਅਤੇ ਬਣਤਰ**
ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ

2. ਹਰਕੀਰਤ ਸਿੰਘ — **ਪੰਜਾਬੀ ਸ਼ਬਦ ਰੂਪ ਅਤੇ ਸ਼ਬਦ ਜੋੜ ਕੋਸ਼**
ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ

3. ਹਰਬੰਸ ਸਿੰਘ ਧੀਮਾਨ — **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਵਿਆਕਰਣ**
ਗਗਨ ਪ੍ਰਕਾਸ਼ਨ, ਰਾਜਪੁਰਾ, ਪਟਿਆਲਾ, 2006

4. Gurinder Singh Mann — **An Introduction to Punjabi**
Punjabi University, Patiala

Mapping Matrix of Course B-PBI-N-100- AECC

Mapping: Mapping is a process of representing the correlation between COs and POs, COs and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and POs

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-100- AECC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-100- AECC

CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**
B-PBI-N-100- AECC.1	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**
B-PBI-N-100- AECC.2	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**
B-PBI-N-100- AECC.3	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**
B-PBI-N-100- AECC.4	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**
Average	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-100- AECC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-100- AECC

CO	**PSO 1**	**PSO 2**	**PSO 3**	**PSO 4**
B-PBI-N-100- AECC.1	**3**	**3**	**3**	**3**
B-PBI-N-100- AECC.2	**3**	**3**	**3**	**3**
B-PBI-N-100- AECC.3	**3**	**3**	**3**	**3**
B-PBI-N-100- AECC.4	**3**	**3**	**3**	**3**
Average	**3**	**3**	**3**	**3**

Semester : I

B-PBI-N-101- CC

ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ, ਇਕਾਂਗੀ ਅਤੇ ਵਿਹਾਰਕ ਪੰਜਾਬੀ
(Adhunik Panjabi Kavita, Ikangi Ate Viharak Punjabi)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਇੱਕ ਸੁਆਲ ਕਵਿਤਾ ਦੇ ਸਿਧਾਂਤ/ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀ ਕਵਿਤਾ ਦੇ ਵਿਸ਼ੇ/ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁਛਿਆ ਜਾਵੇਗਾ। ਇੱਕ ਸੁਆਲ ਕਵੀ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਕਵਿਤਾ ਦੀ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਹੋਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੇਵੇਗਾ।
4. ਯੂਨਿਟ ਦੂਜਾ ਵਿੱਚ ਇੱਕ ਸੁਆਲ ਇਕਾਂਗੀ ਦੇ ਸਿਧਾਂਤ/ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀਆਂ ਇਕਾਂਗੀਆਂ ਦੇ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ/ ਵਿਸ਼ੇ/ ਸਮੱਸਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਅਤੇ ਇੱਕ ਸੁਆਲ ਸਬੰਧਤ ਇਕਾਂਗੀਆਂ ਦੇ ਪਾਤਰ ਵਿਧਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਬਾਰੇ ਪੁਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਇਕਾਂਗੀਕਾਰਾਂ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
5. ਯੂਨਿਟ ਤੀਜਾ ਦੇ ਪੰਜ ਉਪ-ਭਾਗ ਹਨ। ਹਰ ਉਪ-ਭਾਗ ਦੇ 4 ਨੰਬਰ ਹਨ। ਉਪ-ਭਾਗ ਪਹਿਲਾ ਅਤੇ ਦੂਜਾ ਵਿੱਚੋਂ ਦੋ-ਦੋ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਜਿਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਇੱਕ ਸੁਆਲ ਕਰਨਾ ਹੈ। ਹਰ ਸੁਆਲ ਚਾਰ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਭਾਗ ਤੀਜਾ ਅਤੇ ਚੌਥਾ ਵਿੱਚ ਦੋ ਤਰ੍ਹਾਂ ਦੇ ਸੁਆਲ ਪੁਛੇ ਜਾਣਗੇ। ਪਹਿਲੇ ਭਾਗ ਵਿੱਚ ਦੋ ਸੁਆਲ ਅੰਦਰੂਨੀ ਚੋਣ ਤਹਿਤ ਮੁਹਾਵਰਿਆਂ ਅਤੇ ਅਖਾਣਾਂ ਬਾਰੇ ਸਿਧਾਂਤਕ ਹੋਣਗੇ। ਵਿਦਿਆਰਥੀਆਂ ਨੇ ਇਹ ਦੋਵੇਂ ਸੁਆਲ ਕਰਨੇ ਹਨ (ਇਹ ਪ੍ਰਸ਼ਨ 2+2=4 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ) ਦੂਜੇ ਭਾਗ ਵਿੱਚ ਪੰਜ ਮੁਹਾਵਰੇ ਅਤੇ ਅਖਾਣ ਪੁੱਛੇ ਜਾਣਗੇ ਜਿਹਨਾਂ ਵਿੱਚੋਂ ਦੋ ਮੁਹਾਵਰਿਆਂ ਤੇ ਦੋ ਅਖਾਣਾਂ ਦੇ ਅਰਥ ਦੱਸ ਕੇ ਵਾਕ ਬਣਾਉਣੇ ਹੋਣਗੇ। ਇਹ ਸੁਆਲ ਦੇ 4 ਨੰਬਰ ਹੋਣਗੇ। ਉਪ ਭਾਗ ਪੰਜਵਾਂ ਵਿੱਚ ਦਫ਼ਤਰੀ ਸ਼ਬਦਾਵਲੀ (ਦਿੱਤੇ ਗਏ ਦਸ ਸ਼ਬਦਾਂ ਵਿੱਚੋਂ ਕੋਈ ਅੱਠ ਸ਼ਬਦ ਕਰਨੇ ਹਨ) ਬਾਰੇ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਸ਼ਬਦ ਦਾ ਅੱਧਾ ਨੰਬਰ ਹੋਏਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ ਅਤੇ ਪੰਜਾਬੀ ਇਕਾਂਗੀ ਦੇ ਸਿਧਾਂਤ ਅਤੇ ਵਿਹਾਰਕ ਅਧਿਐਨ ਦੀ ਵਿਸਤ੍ਰਿਤ ਜਾਣਕਾਰੀ ਪ੍ਰਦਾਨ ਕਰਨਾ।
- ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਵਿਹਾਰਕ ਪੰਜਾਬੀ ਦੇ ਅਧਿਐਨ ਰਾਹੀਂ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਪ੍ਰਤੀ ਵਿਸ਼ੇਸ਼ ਸਮਝ ਪੈਦਾ ਕਰਨਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-101-CC.1 ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ ਅਤੇ ਪੰਜਾਬੀ ਇਕਾਂਗੀ ਦੇ ਵਿਧਾਗਤ ਸਰੋਕਾਰਾਂ, ਇਤਿਹਾਸਕ ਵਿਕਾਸ, ਪ੍ਰਮੁੱਖ ਝੁਕਾਵਾਂ ਅਤੇ ਪ੍ਰਵਿਰਤੀਆਂ ਬਾਰੇ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੋਵੇਗੀ।

B-PBI-N-101-CC.2 ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੇ ਕਾਵਿ ਸੰਗ੍ਰਹਿ/ ਇਕਾਂਗੀ ਸੰਗ੍ਰਹਿ ਦੇ ਅਧਿਐਨ ਦੁਆਰਾ ਕਾਵਿ ਅਧਿਐਨ ਅਤੇ ਇਕਾਂਗੀ ਦੀ ਪੜ੍ਹਤ/ ਮੁਲਾਂਕਣ ਦੀ ਸੂਝ ਅਤੇ ਸਮਝ ਪੈਦਾ ਹੋਵੇਗੀ।

B-PBI-N-101-CC.3 ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਕਵਿਤਾ ਨੂੰ ਪੜ੍ਹਨ/ ਸਮਝਣ/ ਸਿਰਜਣ ਅਤੇ ਇਕਾਂਗੀ ਨੂੰ ਪੜ੍ਹਨ/ ਸਮਝਣ/ ਸਿਰਜਣ ਅਤੇ ਖੇਡਣ ਦੀ ਰੁਚੀ ਪੈਦਾ ਹੋਵੇਗੀ।

B-PBI-N-101-CC.4 ਵਿਹਾਰਕ ਪੰਜਾਬੀ ਦੀ ਪੜ੍ਹਾਈ ਰਾਹੀਂ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਸੰਰਚਨਾ ਅਤੇ ਵਰਤੋਂ ਵਿਹਾਰ ਬਾਰੇ ਸਮਝ ਅਤੇ ਮੁਹਾਰਤ ਪੈਦਾ ਹੋਵੇਗੀ।

ਯੂਨਿਟ ਪਹਿਲਾ

1. ***ਕਾਵਿ ਨਾਦ*** (ਚੋਣਵਾਂ ਕਾਵਿ ਸੰਗ੍ਰਹਿ) ਸੰਪਾਦਕ ਡਾ. ਸਾਹਿਬ ਸਿੰਘ ਅਰਸ਼ੀ ਅਤੇ ਡਾ. ਰਮੇਸ਼ ਕੁਮਾਰ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਕੁਰੂਕਸ਼ੇਤਰ ਯੂਨੀਵਰਸਿਟੀ, ਕੁਰੂਕਸ਼ੇਤਰ। (ਭਾਈ ਵੀਰ ਸਿੰਘ, ਅੰਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ, ਮੋਹਨ ਸਿੰਘ, ਬਾਵਾ ਬਲਵੰਤ, ਸ਼ਿਵ ਕੁਮਾਰ, ਸੰਤੋਖ ਸਿੰਘ ਧੀਰ, ਰਮੇਸ਼ ਕੁਮਾਰ, ਹਰਭਜਨ ਸਿੰਘ ਕੋਮਲ, ਪਾਸ਼, ਸ. ਸ. ਮੀਸ਼ਾ– ਸਿਰਫ਼ ਇਹ ਕਵੀ ਹੀ ਪੜ੍ਹਾਏ ਜਾਣ)

1.1 ਕਵਿਤਾ ਦੀ ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਤੱਤ

1.2 ਕਵਿਤਾ ਦਾ ਸਾਰ ਅਤੇ ਵਿਸ਼ਾ ਵਸਤੂ

1.3 ਕਵਿਤਾ ਦਾ ਕਲਾ ਪੱਖ

1.4 ਕਵਿਤਾ ਦਾ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ

1.5 ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ

1.6 ਕਵੀਆਂ ਦਾ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ

1.7 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਦੂਜਾ

2. ***ਇਕਾਂਗੀ ਬਹੁ-ਰੰਗੀ*** (ਚੋਣਵਾਂ ਇਕਾਂਗੀ ਸੰਗ੍ਰਹਿ) ਸੰਪਾਦਕ ਡਾ. ਹਰਸਿਮਰਨ ਸਿੰਘ ਰੰਧਾਵਾ ਅਤੇ ਡਾ. ਬਲਵਿੰਦਰ ਸਿੰਘ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਕੁਰੂਕਸ਼ੇਤਰ ਯੂਨੀਵਰਸਿਟੀ, ਕੁਰੂਕਸ਼ੇਤਰ।

2.1 ਇਕਾਂਗੀ ਦੀ ਪਰਿਭਾਸ਼ਾ, ਤੱਤ ਅਤੇ ਰੂਪਾਕਾਰਕ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ

2.2 ਇਤਿਹਾਸਕ ਪਿਛੋਕੜ

2.3 ਉਦੇਸ਼ ਅਤੇ ਆਦਰਸ਼

2.4 ਸਾਰ, ਵਿਸ਼ਾ ਵਸਤੂ ਅਤੇ ਸਮੱਸਿਆ

2.5 ਪਾਤਰ ਉਸਾਰੀ

2.6 ਰੰਗਮੰਚੀ ਸਾਰਥਕਤਾ

2.8 ਇਕਾਂਗੀਕਾਰਾਂ ਦਾ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ

2.9 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਤੀਜਾ (ਵਿਹਾਰਕ ਪੰਜਾਬੀ)

3. ਵਿਹਾਰਕ ਪੰਜਾਬੀ

3.1 ਨਾਂਵ ਅਤੇ ਪੜਨਾਂਵ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਕਿਸਮਾਂ

3.2 ਕਿਰਿਆ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਕਿਸਮਾਂ

3.3 ਅਖਾਣ : ਅਰਥ, ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਯੋਗ, ਮਹੱਤਵ ਅਤੇ ਪੰਜਾਬੀ ਅਖਾਣ, ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ ਵਿੱਚ ਅੰਤਰ

3.4 ਮੁਹਾਵਰਾ : ਅਰਥ, ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਯੋਗ, ਮਹੱਤਵ ਅਤੇ ਪੰਜਾਬੀ ਮੁਹਾਵਰੇ, ਅਖਾਣਾਂ ਅਤੇ ਮੁਹਾਵਰਿਆਂ ਦੀ ਵਰਤੋਂ ਪ੍ਰਤੀ ਘੱਟ ਰਹੇ ਰੁਝਾਨ ਦੇ ਕਾਰਨ ਅਤੇ ਸੁਝਾਅ

3.5 ਦਫ਼ਤਰੀ ਸ਼ਬਦਾਵਲੀ (100 ਸ਼ਬਦ ਨਾਲ ਨੱਥੀ ਹਨ)

ਸਹਾਇਕ ਪੁਸਤਕਾਂ :

1. ਸ. ਸ. ਖਹਿਰਾ — **ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਵਿਆਕਰਣ ਅਤੇ ਬਣਤਰ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ

2. ਹਰਕੀਰਤ ਸਿੰਘ — **ਪੰਜਾਬੀ ਸ਼ਬਦ ਰੂਪ ਅਤੇ ਸ਼ਬਦ ਜੋੜ ਕੋਸ਼**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ

3. ਹਰਬੰਸ ਸਿੰਘ ਧੀਮਾਨ — **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਵਿਆਕਰਣ**, ਗਗਨ ਪ੍ਰਕਾਸ਼ਨ, ਰਾਜਪੁਰਾ, ਪਟਿਆਲਾ, 2006

ਦਫ਼ਤਰੀ ਸ਼ਬਦਾਵਲੀ (Official Terminology)

1.	Accountant	ਲੇਖਾਕਾਰ
2.	Acknowledgement	ਪਹੁੰਚ ਰਸੀਦ
3.	Action	ਕਾਰਵਾਈ
4.	Administration	ਪ੍ਰਸ਼ਾਸਨ
5.	Advance	ਪੇਸ਼ਗੀ
6.	All concerned to note	ਸਮੂਹ ਸੰਬੰਧਿਤ ਨੋਟ ਕਰਨ
7.	Agreement	ਸਮਝੌਤਾ
8.	Allocation	ਮਿਲੀ ਰਕਮ
9.	Allotment	ਵੰਡ
10.	Allowance	ਭੱਤਾ
11.	Amount	ਰਕਮ/ਰਾਸ਼ੀ
12.	Annual	ਸਾਲਾਨਾ

13.	Applicant	ਪ੍ਰਾਰਥਕ
14.	Application	ਪ੍ਰਾਰਥਨਾ-ਪੱਤਰ
15.	Appointing Authority	ਨਿਯੁਕਤੀ ਅਧਿਕਾਰੀ
16.	Appointment	ਨਿਯੁਕਤੀ
17.	Approval	ਪ੍ਰਵਾਨਗੀ
18.	Approximate	ਲਗਭਗ
19.	Arrears	ਬਕਾਇਆ
20.	As desired	ਇੱਛਾ ਅਨੁਸਾਰ
21.	As early as possible	ਜਿੰਨੀ ਜਲਦੀ ਹੋ ਸਕੇ
22.	Assessment	ਮੁੱਲ-ਨਿਰਧਾਰਣ
23.	Assistant	ਸਹਾਇਕ
24.	As the case may be	ਜਿਹੋ ਜਿਹੀ ਹਾਲਤ ਹੋਵੇ
25.	Attached here with	ਨਾਲ ਨੱਥੀ
26.	Attendance	ਹਾਜ਼ਰੀ
27.	Attention is invited	ਧਿਆਨ ਦਿਵਾਇਆ ਜਾਂਦਾ ਹੈ
28.	Attested copy	ਤਸਦੀਕੀ-ਨਕਲ
29.	At your earliest convenience	ਜਿਤਨੀ ਜਲਦੀ ਹੋ ਸਕੇ
30.	Audit	ਲੇਖਾ ਪੜਤਾਲ
31.	Authorities	ਅਧਿਕਾਰੀ-ਵਰਗ
32.	Balance	ਬਕਾਇਆ
33.	Based on facts	ਤੱਥ-ਆਧਾਰਿਤ
34.	Basic Pay	ਮੂਲ ਵੇਤਨ
35.	Bill	ਬਿੱਲ
36.	Book post	ਬੁੱਕ-ਪੋਸਟ
37.	Both day inclusive	ਦੋਨਾਂ ਦਿਨਾਂ ਸਮੇਤ
38.	Branch	ਸ਼ਾਖਾ
39.	Bring to notice	ਧਿਆਨ ਦਿਵਾਉਣਾ
40.	Brought forward	ਪਿਛਲਾ ਜੋੜ ਅੱਗੇ ਲਿਆਉਣਾ
41.	Calculation	ਹਿਸਾਬ
42.	Capital	ਪੂੰਜੀ/ਸਰਮਾਇਆ
43.	Carbon Copy	ਕਾਰਬਨ ਕਾਪੀ
44.	Cash Book	ਰੋਕੜ/ਵਹੀ/ ਕੈਸ਼ ਬੁੱਕ
45.	Cashier	ਖਜ਼ਾਨਚੀ
46.	Cash memo	ਨਕਦ ਪੱਤਰ
47.	Casual Leave	ਸਬੱਬੀ ਛੁੱਟੀ

48.	Catalogue	ਸੂਚੀ ਪੱਤਰ
49.	Checked and found correct	ਪੜਤਾਲ ਕੀਤੀ ਤੇ ਠੀਕ ਨਿਕਲਿਆ
50.	Cheque	ਚੈੱਕ
51.	Circular	ਗਸ਼ਤੀ ਚਿੱਠੀ
52.	Claim	ਦਾਅਵਾ
53.	Clerical Staff	ਕਲਰਕ/ਅਮਲਾ
54.	Come into force	ਲਾਗੂ ਹੋਣਾ
55.	Category	ਵਰਗ
56.	Come into Operation	ਚਾਲੂ ਹੋਣਾ
57.	Compensation	ਮੁਆਵਜ਼ਾ
58.	Compensatory leave	ਇਵਜ਼ੀ ਛੁੱਟੀ
59.	Competent Authority	ਸਮਰੱਥ ਅਧਿਕਾਰੀ
60.	Compliance	ਪਾਲਣਾ
61.	Compulsory Retirement	ਲਾਜ਼ਮੀ ਸੇਵਾ ਨਵਿਰਤੀ
62.	Concurrence	ਸਹਿਮਤੀ/ ਸੰਮਤੀ
63.	Conduct	ਆਚਰਣ/ ਵਿਹਾਰ
64.	Confidential	ਗੁਪਤ
65.	Contingency	ਅਚਾਨਕੀ
66.	Conveyance Allowance	ਸਵਾਰੀ ਭੱਤਾ
67.	Copy	ਨਕਲ ਉਤਾਰਾ
68.	Copy enclose for ready reference	ਤਿਆਰ ਸੰਦਰਭ ਲਈ ਕਾਪੀ ਨਾਲ ਨੱਥੀ
69.	Cost Price	ਲਾਗਤ ਮੁੱਲ
70.	Counter foil	ਪ੍ਰਤਿਪੇਜ
71.	Counter signature	ਪ੍ਰਤਿ ਹਸਤਾਖ਼ਰ
72.	Daily Wages	ਦਿਹਾੜੀ
73.	Damage	ਨੁਕਸਾਨ
74.	Dated	ਮਿਤੀ
75.	Day Book	ਰੋਜ਼ਨਾਮਚਾ
76.	Dealing Assistant	ਕਾਰਜਕਾਰੀ ਸਹਾਇਕ
77.	Dear Mr.	ਪਿਆਰੇ ਸ਼੍ਰੀ
78.	Dearness Allowance	ਮਹਿੰਗਾਈ ਭੱਤਾ
79.	Delay Regretted	ਦੇਰੀ ਲਈ ਖਿਮਾ
80.	Demy-official (D.O.) Letter	ਅਰਧ ਸਰਕਾਰੀ ਪੱਤਰ
81.	Departmental Action	ਵਿਭਾਗੀ ਕਾਰਵਾਈ
82.	Deputation Allowance	ਪ੍ਰਤਿ ਨਿਯੁਕਤੀ ਭੱਤਾ
83.	Dispatch Clerk	ਡਿਸਪੈਚ ਕਲਰਕ

84.	Discrepancies may be reconciled	ਫਰਕ ਦੂਰ ਕੀਤਾ ਜਾਵੇ
85.	Document	ਦਸਤਾਵੇਜ਼
86.	Documentary proof	ਦਸਤਾਵੇਜ਼ੀ ਸਬੂਤ
87.	Draft for Approval	ਪਰਵਾਨਗੀ ਲਈ ਖਰੜਾ
88.	Early action will be appreciated	ਛੇਤੀ ਕਾਰਵਾਈ ਸ਼ਲਾਘਾਯੋਗ ਹੋਵੇਗੀ
89.	Early orders are solicited	ਆਰਿਆ ਲਈ ਸ਼ੀਘਰ ਬੇਨਤੀ ਹੈ
90.	Earned Leave	ਕਮਾਈ ਛੁੱਟੀ
91.	Efficiency bar	ਨਿਪੁੰਨਤਾ ਰੋਕ
92.	Eligible	ਪਾਤਰ/ਯੋਗ
93.	Embezzlement	ਗ਼ਬਨ
94.	Employee	ਕਰਮਚਾਰੀ
95.	Enclosure	ਨੱਥੀ-ਪੱਤਰ
96.	Endorsement	ਪਿੱਠਅੰਕਣ
97.	Entry	ਦਾਖ਼ਲਾ
98.	Essential qualification	ਲਾਜ਼ਮੀ ਯੋਗਤਾਵਾਂ
99.	Estimate	ਅਨੁਮਾਨ
100.	Evaluation	ਮੁਲਾਂਕਣ/ ਮੁਲਅੰਕਣ

Mapping Matrix of Course B-PBI-N-101-CC

Mapping: Mapping is a process of representing the correlation between COs and POs, COs and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and POs

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-101-CC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-101-CC

CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**
B-PBI-N-101-CC.1	**3**	**2**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-101-CC.2	**3**	**3**	**3**	**3**	**3**	**2**	**3**	**3**
B-PBI-N-101-CC.3	**3**	**2**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-101-CC.4	**3**	**2**	**3**	**2**	**2**	**3**	**3**	**3**
Average	**3**	**2.25**	**3**	**2.25**	**2.75**	**2.25**	**3**	**3**

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-101-CC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-101-CC

CO	**PSO 1**	**PSO 2**	**PSO 3**	**PSO 4**
B-PBI-N-101-CC.1	**3**	**3**	**2**	**3**
B-PBI-N-101-CC.2	**3**	**3**	**2**	**3**
B-PBI-N-101-CC.3	**3**	**3**	**2**	**3**
B-PBI-N-101-CC.4	**3**	**3**	**3**	**3**
Average	**3**	**3**	**2.25**	**3**

Semester : II

B-PBI-N-201-CC

ਪੰਜਾਬੀ ਗਲਪ ਅਤੇ ਵਿਹਾਰਕ ਪੰਜਾਬੀ
(Punjabi Galap ate Viharak Punjabi)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਇੱਕ ਸੁਆਲ ਨਾਵਲ ਦੇ ਸਿਧਾਂਤ/ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੇ ਨਾਵਲ ਦੇ ਵਿਸ਼ੇ/ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਅਤੇ ਇੱਕ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੇ ਨਾਵਲ ਦੇ ਪਾਤਰ ਵਿਧਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਨਾਵਲਕਾਰ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੇਵੇਗਾ।
4. ਯੂਨਿਟ ਦੂਜਾ ਵਿੱਚ ਇੱਕ ਸੁਆਲ ਕਹਾਣੀ ਦੇ ਸਿਧਾਂਤ/ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀਆਂ ਕਹਾਣੀਆਂ ਦੇ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ/ ਵਿਸ਼ੇ/ ਸਮੱਸਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਅਤੇ ਇੱਕ ਸੁਆਲ ਸਬੰਧਤ ਕਹਾਣੀਆਂ ਦੇ ਪਾਤਰ ਵਿਧਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਕਹਾਣੀਕਾਰਾਂ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
5. ਯੂਨਿਟ ਤੀਜਾ ਦੇ ਪੰਜ ਉਪ-ਭਾਗ ਹਨ। ਉਪ-ਭਾਗ ਪਹਿਲਾ ਵਿੱਚ ਅਗੇਤਰ ਪਿਛੇਤਰ, ਉਪ-ਭਾਗ ਦੂਜਾ ਵਿੱਚ ਸਮਾਨਾਰਥਕ, ਵਿਪਰੀਤਾਰਥਕ ਅਤੇ ਬਹੁਅਰਥਕ ਸ਼ਬਦ, ਉਪਭਾਗ ਤੀਜਾ ਵਿੱਚ ਵਿਸ਼ੇਸ਼ਣ ਅਤੇ ਕਿਰਿਆ ਵਿਸ਼ੇਸ਼ਣ ਅਤੇ ਉਪਭਾਗ ਚੌਥਾ ਵਿੱਚ ਸਬੰਧਕ ਅਤੇ ਉਪ-ਭਾਗ ਪੰਜਵਾਂ ਵਿੱਚ ਦਫ਼ਤਰੀ ਸ਼ਬਦਾਵਲੀ (ਦਿੱਤੇ ਗਏ ਦਸ ਸ਼ਬਦਾਂ ਵਿੱਚੋਂ ਕੋਈ ਅੱਠ ਸ਼ਬਦ ਕਰਨੇ ਹਨ) ਬਾਰੇ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਉਪ-ਭਾਗ ਚਾਰ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਗਲਪ ਦੇ ਸਿਧਾਂਤ ਅਤੇ ਵਿਹਾਰਕ ਅਧਿਐਨ ਦੀ ਵਿਸਤ੍ਰਿਤ ਜਾਣਕਾਰੀ ਪ੍ਰਦਾਨ ਕਰਨਾ।
- ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਵਿਹਾਰਕ ਪੰਜਾਬੀ ਦੇ ਅਧਿਐਨ ਰਾਹੀਂ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਪ੍ਰਤੀ ਵਿਸ਼ੇਸ਼ ਸਮਝ ਪੈਦਾ ਕਰਨਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-201-CC.1 ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਗਲਪ ਦੇ ਪ੍ਰਮੁੱਖ ਰੂਪਾਂ (ਨਾਵਲ, ਕਹਾਣੀ) ਦੇ ਵਿਧਾਗਤ ਪ੍ਰਤੀਮਾਨਾਂ ਬਾਰੇ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੋਵੇਗੀ।

B-PBI-N-201-CC.2 ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਪੰਜਾਬੀ ਨਾਵਲ ਅਤੇ ਕਹਾਣੀ ਦੇ ਇਤਿਹਾਸ, ਪ੍ਰਮੁੱਖ ਝੁਕਾਵਾਂ, ਪ੍ਰਵਿਰਤੀਆਂ ਅਤੇ ਵਿਸ਼ੇਸ਼ ਨਾਵਲਕਾਰਾਂ ਦੇ ਜੀਵਨ ਅਤੇ ਸਿਰਜਣ ਪ੍ਰਕ੍ਰਿਆ ਬਾਰੇ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੋਵੇਗੀ।

B-PBI-N-201-CC.3 ਵਿਸ਼ੇਸ਼ ਨਾਵਲ ਅਤੇ ਕਹਾਣੀਆਂ ਦੀ ਪੜ੍ਹਤ ਦੁਆਰਾ ਗਲਪ ਅਧਿਐਨ ਦੀ ਸੂਝ ਅਤੇ ਸਮਝ ਪੈਦਾ ਹੋਵੇਗੀ।

B-PBI-N-201-CC.4 ਵਿਹਾਰਕ ਪੰਜਾਬੀ ਦੀ ਪੜ੍ਹਾਈ ਰਾਹੀਂ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਸੰਰਚਨਾ ਅਤੇ ਵਰਤੋਂ ਵਿਹਾਰ ਬਾਰੇ ਸਮਝ ਅਤੇ ਮੁਹਾਰਤ ਪੈਦਾ ਹੋਵੇਗੀ।

ਯੂਨਿਟ ਪਹਿਲਾ (ਨਾਵਲ)

1. ***ਏਹੁ ਹਮਾਰਾ ਜੀਵਣਾ***, ਦਲੀਪ ਕੌਰ ਟਿਵਾਣਾ, ਆਰਸੀ ਪ੍ਰਕਾਸ਼ਨ, ਦਿੱਲੀ

1.1 ਨਾਵਲ ਦੀ ਪਰਿਭਾਸ਼ਾ, ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਅਤੇ ਪੰਜਾਬੀ ਨਾਵਲ ਦਾ ਸੰਖੇਪ ਇਤਿਹਾਸ

1.2 ਵਿਸ਼ਾ ਵਸਤੂ ਅਤੇ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ

1.3 ਨਾਰੀ ਸੰਵੇਦਨਾ

1.4 ਪਾਤਰ ਚਿੱਤਰਣ

1.5 ਪੰਜਾਬੀ ਜਗੀਰੂ ਸਮਾਜ ਅਤੇ ਔਰਤ ਦੀ ਸਥਿਤੀ

1.6 ਲੇਖਿਕਾ ਦਾ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ

1.7 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਦੂਜਾ (ਕਹਾਣੀ)

2. ***ਕਥਾ ਯਾਤਰਾ*** (ਚੋਣਵਾਂ ਕਹਾਣੀ ਸੰਗ੍ਰਿਹ), ਸੰਪਾਦਕ ਡਾ. ਗੁਰਦੇਵ ਸਿੰਘ ਅਤੇ ਹਰਸ਼ਰਨ ਕੌਰ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਕੁਰੂਕਸ਼ੇਤਰ ਯੂਨੀਵਰਸਿਟੀ, ਕੁਰੂਕਸ਼ੇਤਰ।

2.1 ਕਹਾਣੀ ਦਾ ਅਰਥ, ਪਰਿਭਾਸ਼ਾ, ਤੱਤ ਅਤੇ ਰੂਪਾਕਾਰਕ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ

2.2 ਪੰਜਾਬੀ ਕਹਾਣੀ ਦਾ ਜਨਮ ਅਤੇ ਸੰਖੇਪ ਇਤਿਹਾਸ

2.3 ਕਥਾਨਕ ਸਾਰ ਅਤੇ ਸਮੱਸਿਆ

2.4 ਵਿਸ਼ਾ ਵਸਤੂ ਅਤੇ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ

2.5 ਪਾਤਰ ਚਿੱਤਰਣ

2.6 ਕਹਾਣੀ ਜੁਗਤਾਂ

2.7 ਕਹਾਣੀਕਾਰਾਂ ਦਾ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ

2.8 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਤੀਜਾ (ਵਿਹਾਰਕ ਪੰਜਾਬੀ)

3. ਵਿਹਾਰਕ ਪੰਜਾਬੀ

3.1 ਅਗੇਤਰ ਪਿਛੇਤਰ

3.2 ਸਮਾਨਾਰਥਕ, ਵਿਪਰੀਤਾਰਥਕ ਅਤੇ ਬਹੁਅਰਥਕ ਸ਼ਬਦ

3.3 ਵਿਸ਼ੇਸ਼ਣ ਅਤੇ ਕਿਰਿਆ ਵਿਸ਼ੇਸ਼ਣ

3.4 ਸਬੰਧਕ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਕਿਸਮਾਂ

3.5 ਦਫ਼ਤਰੀ ਸ਼ਬਦਾਵਲੀ (100 ਸ਼ਬਦ ਨਾਲ ਨੱਥੀ ਹਨ)

ਸਹਾਇਕ ਪੁਸਤਕਾਂ :

1. ਸਵਿੰਦਰ ਸਿੰਘ ਉੱਪਲ — **ਪੰਜਾਬੀ ਕਹਾਣੀ**
ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1995

2. ਸੁਖਦੇਵ ਸਿੰਘ ਖਾਹਰਾ — **ਪੰਜਾਬੀ ਨਾਵਲ ਦਾ ਸੰਸਕ੍ਰਿਤਕ ਅਧਿਐਨ**
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 1986

3. ਸੁਰਿੰਦਰ ਕੁਮਾਰ ਦਵੇਸ਼ਵਰ — **ਨਾਵਲ ਸ਼ਾਸਤਰ ਤੇ ਪੰਜਾਬੀ ਨਾਵਲ**
ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2002

4. ਹਰਸਿਮਰਨ ਸਿੰਘ ਰੰਧਾਵਾ — **ਬਿਰਤਾਂਤਕ ਗਲਪ ਪ੍ਰਬੰਧ**
ਨਾਨਕ ਸਿੰਘ ਪੁਸਤਕਮਾਲਾ, ਅੰਮ੍ਰਿਤਸਰ, 1993

5. ਕਰਨੈਲ ਸਿੰਘ ਥਿੰਦ (ਸੰਪਾ.) — **ਪੰਜਾਬੀ ਨਾਵਲ : ਸਰਵੇਖਣ ਤੇ ਮੁਲਾਂਕਣ**
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 1974

6. ਗੁਰਪਾਲ ਸਿੰਘ ਸੰਧੂ — **ਪੰਜਾਬੀ ਨਾਵਲ ਦਾ ਇਤਿਹਾਸ**
ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ, 2005

7. ਗੁਰਬਖਸ਼ ਸਿੰਘ ਫ਼ਰੈਂਕ — **ਨਿੱਕੀ ਕਹਾਣੀ ਅਤੇ ਪੰਜਾਬੀ ਨਿੱਕੀ ਕਹਾਣੀ**
ਪੰਜਾਬੀ ਰਾਈਟਰਜ਼ ਕੋਆਪਰੇਟਿਵ ਸੁਸਾਇਟੀ ਲਿਮ., ਲੁਧਿਆਣਾ, 1988

8. ਜਸਪਾਲ ਕੌਰ ਕਾਂਗ — **ਪੰਜਾਬੀ ਨਾਵਲ ਦਾ ਗਲਪ ਸ਼ਾਸਤਰ**
ਨਾਨਕ ਸਿੰਘ ਪੁਸਤਕਮਾਲਾ, ਅੰਮ੍ਰਿਤਸਰ, 1995

9. ਜੋਗਿੰਦਰ ਸਿੰਘ ਨਹਿਰੂ — **ਨਾਵਲ ਦੀ ਵਿਧਾ**
ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ

10. -ਉਹੀ- — **ਕਹਾਣੀ ਦੀ ਵਿਧਾ**
ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ

11. ਜੋਗਿੰਦਰ ਸਿੰਘ ਰਾਹੀ — **ਪੰਜਾਬੀ ਨਾਵਲ**
ਨਾਨਕ ਸਿੰਘ ਪੁਸਤਕਮਾਲਾ, ਅੰਮ੍ਰਿਤਸਰ, 1978

12. ਟੀ. ਆਰ. ਵਿਨੋਦ — **ਪੰਜਾਬੀ ਕਹਾਣੀ ਅਧਿਐਨ**
ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ, 1988

13. ਧਨਵੰਤ ਕੌਰ — **ਪੰਜਾਬੀ ਕਹਾਣੀ : ਬਿਰਤਾਂਤ ਸ਼ਾਸਤਰੀ ਅਧਿਐਨ**
ਆਰਸੀ ਪਬਲੀਕੇਸ਼ਨ, ਦਿੱਲੀ

14. -ਉਹੀ- — **ਪੰਜਾਬੀ ਕਹਾਣੀ ਸ਼ਾਸਤਰ**
ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, 2014

15. ਬਲਦੇਵ ਸਿੰਘ ਧਾਲੀਵਾਲ — **ਪੰਜਾਬੀ ਕਹਾਣੀ ਦਾ ਇਤਿਹਾਸ**
ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ, 2005

16. ਪਰਮਜੀਤ ਕੌਰ ਸਿੱਧੂ — **ਪੰਜਾਬੀ ਨਾਵਲ : ਸਿਧਾਂਤ ਤੇ ਸਮੀਖਿਆ**
ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ, 2013

17. ਰਜਨੀਸ਼ ਬਹਾਦਰ ਸਿੰਘ **ਪੰਜਾਬੀ ਨਾਵਲ : ਵਿਰਾਸਤ ਅਤੇ ਵਰਤਮਾਨ**
ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ, 2020
18. ਰਤਨ ਸਿੰਘ ਜੱਗੀ **ਖੋਜ ਪਤ੍ਰਿਕਾ (ਗਲਪ ਵਿਸ਼ੇਸ਼ ਅੰਕ) ਅੰਕ 19**
ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1982
19. ਸ. ਸ. ਖਹਿਰਾ **ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਵਿਆਕਰਣ ਅਤੇ ਬਣਤਰ**
ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ
20. ਹਰਕੀਰਤ ਸਿੰਘ **ਪੰਜਾਬੀ ਸ਼ਬਦ ਰੂਪ ਅਤੇ ਸ਼ਬਦ ਜੋੜ ਕੋਸ਼**
ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ
21. ਹਰਬੰਸ ਸਿੰਘ ਧੀਮਾਨ **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਵਿਆਕਰਣ**
ਗਗਨ ਪ੍ਰਕਾਸ਼ਨ, ਰਾਜਪੁਰਾ, ਪਟਿਆਲਾ, 2006

ਦਫ਼ਤਰੀ ਸ਼ਬਦਾਵਲੀ (Official Terminology)

1.	Exercise of Powers	ਅਧਿਕਾਰ ਵਰਤੋਂ
2.	Ex-Officio	ਪਦਵੀ ਕਾਰਣ
3.	Facts and Figures	ਤੱਥ ਅਤੇ ਅੰਕੜੇ
4.	File	ਮਿਸਲ/ ਫਾਈਲ
5.	Financial Year	ਵਿੱਤੀ ਸਾਲ
6.	For Comments	ਟਿੱਪਣੀ ਲਈ
7.	For disposal	ਨਿਪਟਾਰੇ ਲਈ
8.	For information	ਸੂਚਨਾ ਲਈ
9.	Formal Approval	ਰਸਮੀ ਪ੍ਰਵਾਨਗੀ
10.	For Strict Compliance	ਇੰਨ ਬਿੰਨ ਪਾਲਣਾ ਲਈ
11.	Gazette Holiday	ਗਜ਼ਟਿਡ ਛੁੱਟੀ
12.	Grant-in-aid	ਮਾਲੀ ਸਹਾਇਤਾ
13.	Have no comments to make	ਕਿਸੇ ਟਿੱਪਣੀ ਦੀ ਲੋੜ ਨਹੀਂ
14.	Head clerk	ਪ੍ਰਧਾਨ ਕਲਰਕ
15.	Head of Account	ਲੇਖੇ ਦੀ ਮੱਦ
16.	Held in abeyance	ਰੋਕ ਰੱਖਿਆ ਹੈ
17.	Herewith enclosed	ਨਾਲ ਨੱਥੀ ਹੈ
18.	Honorarium	ਮਾਨ ਭੇਂਟ
19.	I am directed	ਨਾਲ ਹਿਦਾਇਤ ਹੋਈ ਹੈ
20.	Implement	ਅਮਲ ਵਿੱਚ ਲਿਆਉਣਾ
21.	In accordance with	ਦੇ ਅਨੁਸਾਰ

22.	In addition to	ਇਸ ਤੋਂ ਇਲਾਵਾ
23.	In advance	ਅਗੇਤੀ
24.	Increment	ਸਾਲਾਨਾ ਤਰੱਕੀ
25.	Initial pay	ਆਰੰਭਕ ਤਨਖਾਹ
26.	Inland letter	ਅੰਤਰਦੇਸ਼ੀ ਪੱਤਰ
27.	In order to merit	ਯੋਗਤਾ ਅਨੁਸਾਰ
28.	In respect of	ਦੇ ਵਿਸ਼ੇ ਵਿਚ
29.	Interim pay	ਅੰਤਰਿਮ
30.	Intimation	ਇਤਲਾਹ
31.	In the light of	ਇਸ ਦੀ ਰੋਸ਼ਨੀ ਵਿਚ
32.	Irregularity	ਬੇਨਿਯਮੀ
33.	Joining date	ਸੇਵਾ ਆਰੰਭ ਮਿਤੀ
34.	Joining report	ਸੇਵਾ ਇਤਲਾਹ
35.	Joining Time	ਹਾਜਰੀ ਸਮਾਂ
36.	Kindly Acknowledge Receipt	ਕਿਰਪਾ ਪਹੁੰਚ ਭੇਜੀ ਜਾਵੇ
37.	Leave not due	ਨਾ ਬਣਦੀ ਛੁੱਟੀ
38.	Leave with pay	ਤਨਖਾਹ ਸਹਿਤ ਛੁੱਟੀ
39.	Leave preparatory to retirement	ਨਵਿਰਤੀ ਪੂਰਵ ਛੁੱਟੀ
40.	Length of service	ਸੇਵਾ ਕਾਲ
41.	Maintenance Allowance	ਨਿਰਵਾਹ ਭੱਤਾ
42.	May be filed	ਫਾਈਲ ਕਰ ਦਿੱਤਾ ਜਾਵੇ
43.	Medical Certificate fitness	ਡਾਕਟਰੀ ਅਰੋਗਤਾ ਪ੍ਰਮਾਣ
44.	Memorandum	ਯਾਦ ਪੱਤਰ
45.	Minimum	ਘੱਟੋ ਘੱਟ
46.	Ministerial Staff	ਦਫ਼ਤਰੀ ਅਮਲਾ
47.	Misappropriation	ਖਿਆਲਾਤ
48.	Miscellaneous	ਫੁੱਟਕਲ
49.	Modification	ਤਰਮੀਮ
50.	Necessary action	ਲੋੜੀਂਦੀ ਕਾਰਵਾਈ
51.	Non Official	ਗ਼ੈਰ-ਸਰਕਾਰੀ
52.	Noted	ਨੋਟ ਕੀਤਾ
53.	Notification	ਅਧਿਸੂਚਨਾ
54.	Noting and Drafting	ਟਿੱਪਣੀ ਤੇ ਲੇਖਨ
55.	Office Order	ਦਫ਼ਤਰੀ ਹੁਕਮ

56.	Official Correspondence	ਸਰਕਾਰੀ ਪੱਤਰ ਵਿਹਾਰ
57.	Officiating Allowance	ਕਾਇਮ ਮੁਕਾਮੀ ਭੱਤਾ
58.	Out today	ਅੱਜ ਹੀ ਭੇਜੋ
59.	Paper under consideration	ਵਿਚਾਰ ਅਧੀਨ ਪੱਤਰ
60.	Pay bill	ਵੇਤਨ-ਬਿੱਲ
61.	Pay scale	ਵੇਤਨਮਾਨ
62.	Pending decision	ਫੈਸਲਾ ਹੋਣ ਤੱਕ
63.	Personal file	ਨਿੱਜੀ ਮਿਸਲ
64.	Please discuss	ਵਿਚਾਰ ਵਟਾਂਦਰੇ ਲਈ ਆਓ
65.	Please expedite	ਛੇਤੀ ਨਿਪਟਾਇਆ ਜਾਵੇ
66.	Please speak	ਗੱਲ ਕਰੋ
67.	Prescribed form	ਨਿਯਤ ਫਾਰਮ
68.	Probation	ਅਜਮਾਇਸ਼
69.	Procedure	ਕਾਰਜ ਵਿਧੀ
70.	Promotion	ਤਰੱਕੀ
71.	Recurring	ਆਵਰਤੀ
72.	Refund	ਧਨ ਵਾਪਸੀ
73.	Reinstatement	ਬਹਾਲੀ
74.	Reminder	ਚਿਤਾਵਨੀ ਪੱਤਰ
75.	Registration	ਤਿਆਗ ਪੱਤਰ
76.	Retrenchment	ਛਾਂਟੀ
77.	Returns	ਵਿਵਰਣ
78.	Rough Copy	ਕੱਚੀ ਨਕਲ
79.	Rules and Regulations	ਨਿਯਮ ਤੇ ਵਿਨਿਯਮ
80.	Sanction	ਪ੍ਰਵਾਨਗੀ
81.	Service Book	ਸੇਵਾ-ਪੱਤਰੀ
82.	Stock Taking	ਮਾਲ ਦੀ ਪੜਤਾਲ
83.	Submitted for information	ਸੂਚਨਾ ਲਈ ਪੇਸ਼ ਹੈ
84.	Subordinate staff	ਅਧੀਨ ਅਮਲਾ
85.	Suspension	ਮੁਅੱਤਲੀ
86.	Temporary Appointment	ਆਰਜ਼ੀ ਨਿਯੁਕਤੀ
87.	Through Proper Channel	ਯੋਗ ਪ੍ਰਣਾਲੀ ਦੁਆਰਾ
88.	Time barred	ਮਿਆਦ ਪੁੱਗਿਆ
89.	Top Priority	ਪਹਿਲ/ ਅਗੇਤ

90.	Top Secret	ਅਤਿ ਗੁਪਤ
91.	True Copy	ਅਸਲੀ ਕਾਪੀ
92.	Urgent	ਤੁਰੰਤ/ ਜ਼ਰੂਰੀ
93.	Voucher	ਵਾਊਚਰ
94.	Waiting list	ਉਡੀਕ-ਸੂਚੀ
95.	With effect from	ਮਿਤੀ ਤੋਂ
96.	With Reference	ਦੇ ਹਵਾਲੇ ਨਾਲ
97.	With retrospective effect	ਪਿੱਛੇ ਤੋਂ ਲਾਗੂ
98.	Yours faithfully	ਵਿਸ਼ਵਾਸ ਪਾਤਰ
99.	Yours sincerely	ਹਿੱਤੂ
100.	Clerical Error	ਲਿਖਾਈ ਭੁੱਲ

Mapping Matrix of Course B-PBI-N-201-CC

Mapping: Mapping is a process of representing the correlation between COs and POs, Cos and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and POs

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-201-CC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-201-CC

CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**
B-PBI-N-201-CC.1	**3**	**3**	**2**	**2**	**2**	**3**	**3**	**3**
B-PBI-N-201-CC.2	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**
B-PBI-N-201-CC.3	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**
B-PBI-N-201-CC.4	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**
Average	**3**	**3**	**2.75**	**2**	**2**	**3**	**3**	**3**

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-201-CC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-201-CC

CO	**PSO 1**	**PSO 2**	**PSO 3**	**PSO 4**
B-PBI-N-201-CC.1	**3**	**2**	**3**	**3**
B-PBI-N-201-CC.2	**3**	**3**	**3**	**3**
B-PBI-N-201-CC.3	**3**	**3**	**3**	**3**
B-PBI-N-201-CC.4	**3**	**3**	**3**	**3**
Average	**3**	**2.75**	**3**	**3**

Semester : III

B-PBI-N-301-CC

ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ ਅਤੇ ਵਿਹਾਰਕ ਪੰਜਾਬੀ
(Aadhunik Panjabi Vartak ate Viharak Panjabi)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਇੱਕ ਸੁਆਲ ਨਿਬੰਧ ਦੇ ਸਿਧਾਂਤ/ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੇ ਨਿਬੰਧਾਂ ਦੇ ਵਿਸ਼ੇ/ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਅਤੇ ਇੱਕ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੇ ਨਿਬੰਧਾਂ ਦੀ ਕਲਾਤਮਕਤਾ/ ਵਾਰਤਕ ਸ਼ੈਲੀ/ ਭਾਸ਼ਾ ਸ਼ੈਲੀ ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਨਿਬੰਧਕਾਰਾਂ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੇਵੇਗਾ।
4. ਯੂਨਿਟ ਦੂਜਾ ਵਿੱਚ ਇੱਕ ਸੁਆਲ ਸਵੈਜੀਵਨੀ ਦੇ ਸਿਧਾਂਤ ਅਤੇ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀ ਸਵੈਜੀਵਨੀ ਦੇ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ/ ਵਿਸ਼ੇ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਸਬੰਧਤ ਸਵੈਜੀਵਨੀ ਦੀ ਕਲਾਤਮਕਤਾ/ ਵਾਰਤਕ ਸ਼ੈਲੀ/ ਭਾਸ਼ਾ ਸ਼ੈਲੀ ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਸਵੈਜੀਵਨੀਕਾਰ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
5. ਯੂਨਿਟ ਤੀਜਾ ਦੇ ਪੰਜ ਉਪ-ਭਾਗ ਹਨ। ਉਪ-ਭਾਗ ਪਹਿਲਾ ਵਿੱਚ ਬਹੁਤੇ ਸ਼ਬਦਾਂ ਦੀ ਥਾਂ ਇੱਕ ਸ਼ਬਦ (ਅੱਠ), ਉਪ-ਭਾਗ ਦੂਜਾ ਵਿੱਚ ਸ਼ੁੱਧ-ਅਸ਼ੁੱਧ ਸ਼ਬਦ (ਅੱਠ), ਉਪਭਾਗ ਤੀਜਾ ਵਿੱਚ ਵਿਰੋਧੀ ਸ਼ਬਦ (ਅੱਠ), ਉਪ-ਭਾਗ ਚੌਥਾ ਵਿੱਚ ਛੰਦਾਂ ਬਾਰੇ ਅਤੇ ਉਪਭਾਗ ਪੰਜਵਾਂ ਵਿੱਚ ਸਾਹਿਤਕ ਸ਼ਬਦਾਵਲੀ (ਦਿੱਤੇ ਗਏ ਦਸ ਸ਼ਬਦਾਂ ਵਿੱਚੋਂ ਕੋਈ ਛੇ ਸ਼ਬਦ ਕਰਨੇ ਹਨ) ਬਾਰੇ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਉਪ-ਭਾਗ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ ਦੇ ਸਿਧਾਂਤ ਅਤੇ ਵਿਹਾਰਕ ਅਧਿਐਨ ਦੀ ਵਿਸਤ੍ਰਿਤ ਜਾਣਕਾਰੀ ਪ੍ਰਦਾਨ ਕਰਨਾ।
- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਨਿਬੰਧ ਅਤੇ ਸਵੈਜੀਵਨੀ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਵਿਹਾਰਕ ਪਹਿਲੂਆਂ ਤੋਂ ਜਾਣੂ ਕਰਾਉਣਾ।
- ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਵਿਹਾਰਕ ਪੰਜਾਬੀ ਦੇ ਅਧਿਐਨ ਰਾਹੀਂ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਪ੍ਰਤੀ ਵਿਸ਼ੇਸ਼ ਸਮਝ ਪੈਦਾ ਕਰਨਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-301-CC.1 ਵਿਦਿਆਰਥੀ ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਵਾਰਤਕ ਦੇ ਵਿਭਿੰਨ ਰੂਪਾਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।

B-PBI-N-301-CC.2 ਨਿਬੰਧ ਅਤੇ ਪੰਜਾਬੀ ਨਿਬੰਧ ਦੀ ਪੜ੍ਹਤ ਦੁਆਰਾ ਨਿਬੰਧ ਅਧਿਐਨ ਦੀ ਸੂਝ ਅਤੇ ਸਮਝ ਪੈਦਾ ਹੋਵੇਗੀ।

B-PBI-N-301-CC.3 ਸਵੈਜੀਵਨੀ ਅਤੇ ਪੰਜਾਬੀ ਸਵੈਜੀਵਨੀ ਦੀ ਪੜ੍ਹਤ ਦੁਆਰਾ ਸਵੈਜੀਵਨੀ ਅਧਿਐਨ ਦੀ ਸੂਝ ਅਤੇ ਸਮਝ ਪੈਦਾ ਹੋਵੇਗੀ।

B-PBI-N-301-CC.4 ਵਿਹਾਰਕ ਪੰਜਾਬੀ ਦੀ ਪੜ੍ਹਾਈ ਰਾਹੀਂ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਸੰਰਚਨਾ ਅਤੇ ਵਰਤੋਂ ਵਿਹਾਰ ਬਾਰੇ ਸਮਝ ਅਤੇ ਮੁਹਾਰਤ ਪੈਦਾ ਹੋਵੇਗੀ।

ਯੂਨਿਟ ਪਹਿਲਾ (ਨਿਬੰਧ)

1. ***ਗਦ ਦਰਪਣ***, ਮੁੱਖ ਸੰਪਾਦਕ ਪ੍ਰੋ. ਅਮਰਜੀਤ ਸਿੰਘ ਕਾਂਗ (ਉਪ ਸੰਪਾਦਕ– ਪ੍ਰੋ. ਦਰਸ਼ਨ ਸਿੰਘ ਅਤੇ ਪ੍ਰੋ. ਲਲਿਤ ਕੁਮਾਰ ਜੈਨ), ਪ੍ਰਕਾਸ਼ਨ ਵਿਭਾਗ, ਕੁਰੂਕਸ਼ੇਤਰ ਯੂਨੀਵਰਸਿਟੀ, ਕੁਰੂਕਸ਼ੇਤਰ।

1.1 ਵਾਰਤਕ ਅਤੇ ਪੰਜਾਬੀ ਵਾਰਤਕ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਤੱਤ ਅਤੇ ਵਿਭਿੰਨ ਵੰਨਗੀਆਂ

1.2 ਨਿਬੰਧ ਦੀ ਪਰਿਭਾਸ਼ਾ, ਤੱਤ, ਰੂਪਾਕਾਰਕ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ

1.3 ਪੰਜਾਬੀ ਨਿਬੰਧ : ਉਦਭਵ ਤੇ ਵਿਕਾਸ, ਪ੍ਰਮੁੱਖ ਵੰਨਗੀਆਂ

1.4 ਨਿਬੰਧਾਂ ਦਾ ਸਾਰ ਅਤੇ ਵਿਸ਼ਾ ਵਸਤੂ

1.5 ਕਲਾਤਮਕ ਪੱਖ ਅਤੇ ਭਾਸ਼ਾ ਸ਼ੈਲੀ

1.6 ਨਿਬੰਧਕਾਰਾਂ ਦਾ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ

1.7 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਦੂਜਾ (ਸਵੈਜੀਵਨੀ)

2. ***ਮੈਂ ਸਾਂ ਜੱਜ ਦਾ ਅਰਦਲੀ***, ਨਿੰਦਰ ਘੁਗਿਆਣਵੀ, ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ, 2004

2.1 ਸਵੈਜੀਵਨੀ ਦੀ ਪਰਿਭਾਸ਼ਾ, ਤੱਤ ਅਤੇ ਰੂਪਾਕਾਰਕ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ

2.2 ਜੀਵਨੀ ਅਤੇ ਸਵੈਜੀਵਨੀ ਵਿਚਲਾ ਅੰਤਰ

2.3 ਸਫ਼ਲ ਸਵੈਜੀਵਨੀ ਦੇ ਤੌਰ 'ਤੇ ਪਰਖ਼

2.4 ਵਾਰਤਕ ਸ਼ੈਲੀ

2.5 ਭਾਸ਼ਾ ਸ਼ੈਲੀ

2.6 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਤੀਜਾ (ਵਿਹਾਰਕ ਪੰਜਾਬੀ)

3. ਵਿਹਾਰਕ ਪੰਜਾਬੀ

3.1 ਬਹੁਤੇ ਸ਼ਬਦਾਂ ਦੀ ਥਾਂ ਇੱਕ ਸ਼ਬਦ

3.2 ਸ਼ਬਦ ਜੋੜਾਂ ਦੇ ਨੇਮ ਅਤੇ ਸ਼ੁੱਧ ਅਸ਼ੁੱਧ ਸ਼ਬਦ ਬੋਧ

3.3 ਵਿਰੋਧੀ ਸ਼ਬਦ

3.4 ਛੰਦ : ਅਰਥ, ਪਰਿਭਾਸ਼ਾ, ਤੱਤ ਅਤੇ ਕਿਸਮਾਂ

3.5 ਸਾਹਿਤਕ ਸ਼ਬਦਾਵਲੀ (100 ਸ਼ਬਦ ਨਾਲ ਨੱਥੀ ਹਨ)

ਸਹਾਇਕ ਪੁਸਤਕਾਂ :

1. ਸ. ਸ. ਖਹਿਰਾ — **ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਵਿਆਕਰਣ ਅਤੇ ਬਣਤਰ**
ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ

2. ਹਰਕੀਰਤ ਸਿੰਘ — **ਪੰਜਾਬੀ ਸ਼ਬਦ ਰੂਪ ਅਤੇ ਸ਼ਬਦ ਜੋੜ ਕੋਸ਼**
ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ

3. ਹਰਬੰਸ ਸਿੰਘ ਧੀਮਾਨ — **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਵਿਆਕਰਣ**
ਗਗਨ ਪ੍ਰਕਾਸ਼ਨ, ਰਾਜਪੁਰਾ, ਪਟਿਆਲਾ, 2006

ਸਾਹਿਤਕ ਸ਼ਬਦਾਵਲੀ (Literary Terminology)

1.	Abstract	ਸੂਖ਼ਮ
2.	Absurd	ਊਲ-ਜਲੂਲ/ ਅਸੰਗਤ
3.	Accent	ਸੁਰਦਬਾ/ਲਹਿਜ਼ਾ
4.	Actor	ਅਦਾਕਾਰ
5.	Adoption	ਅਪਨਾਉਣਾ
6.	Adaptation	ਅਨੁਕੂਲਤਾ/ਰੂਪਾਂਤ੍ਰਣ
7.	Aesthetic	ਸੁਹਜ
8.	Aesthetics	ਸੁਹਜ-ਸ਼ਾਸਤਰ/ ਸੁਹਜਵਾਦ
9.	Analysis	ਵਿਸ਼ਲੇਸ਼ਣ
10.	Annotation	ਟੀਕਾ
11.	Anthologist	ਸੰਗ੍ਰਹਿ-ਕਰਤਾ
12.	Anthology	ਸੰਗ੍ਰਹਿ
13.	Aptitude	ਰੁਚੀ
14.	Architect	ਸ਼ਿਲਪਕਾਰ
15.	Artistically	ਕਲਾ ਪੱਖ ਤੋਂ
16.	Atheism	ਨਾਸਤਿਕਤਾ
17.	Assonance	ਸੁਰ ਸਮਾਨਤਾ
18.	Auditorium	ਸਰੋਤਾ-ਭਵਨ
19.	Autobiography	ਸਵੈਜੀਵਨੀ
20.	Ballad	ਗਾਥਾ
21.	Bibliography	ਪੁਸਤਕ ਸੂਚੀ
22.	Biography	ਜੀਵਨੀ

23.	Blank Verse	ਮੁਕਤ-ਕਾਵਿ
24.	Brevity	ਸੰਖੇਪਤਾ
25.	Brochure	ਪੁਸਤਿਕਾ
26.	Catharsis	ਭਾਵ ਵਿਰੇਚਨ
27.	Characterization	ਪਾਤਰ ਚਿੱਤਰਣ
28.	Chorus	ਸਮੂਹ ਗੀਤ
29.	Chronology	ਕਾਲਕ੍ਰਮ
30.	Clarification	ਸਪੱਸ਼ਟੀਕਰਣ
31.	Climax	ਸਿਖਰ
32.	Comedy	ਸੁਖਾਂਤ
33.	Commentary	ਭਾਸ਼ਣ
34.	Communism	ਸਾਮਵਾਦ
35.	Concept	ਸੰਕਲਪ
36.	Conflict	ਦਵੰਦ
37.	Consonant	ਵਿਅੰਜਨ
38.	Contemporary	ਸਮਕਾਲੀ
39.	Content	ਵਸਤੂ
40.	Criterion	ਕਸੌਟੀ/ ਮਾਪਦੰਡ
41.	Critic	ਆਲੋਚਕ
42.	Critical	ਆਲੋਚਨਾਤਮਿਕ
43.	Cynicism	ਸਨਕੀ ਹੋਣਾ
44.	Definition	ਪਰਿਭਾਸ਼ਾ
45.	Dialect	ਉਪਭਾਸ਼ਾ
46.	Dialogue	ਵਾਰਤਾਲਾਪ
47.	Director	ਨਿਰਦੇਸ਼ਕ
48.	Drama	ਨਾਟਕ
49.	Dramatist	ਨਾਟਕਕਾਰ
50.	Duet Song	ਦੁਗਾਣਾ
51.	Ego	ਹਉਮੈ
52.	Elegy	ਸ਼ੋਕ ਗੀਤ
53.	Element	ਤੱਤ
54.	Eloquence	ਖੁਸ਼-ਬਿਆਨੀ/ ਸੁਭਾਸ਼ਣ
55.	Emotional	ਭਾਵੁਕ/ ਜਜ਼ਬਾਤੀ
56.	Epic	ਮਹਾਂਕਾਵਿ

57.	Essay	ਨਿਬੰਧ
58.	Etymology	ਨਿਰੁਕਤ
59.	Example	ਮਿਸਾਲ/ਉਦਾਹਰਣ
60.	Existentialism	ਹੋਂਦਵਾਦ/ਅਸਤਿਤਵਵਾਦ
61.	Expression	ਪ੍ਰਗਟਾਅ
62.	Expressionism	ਅਭਿਵਿਅੰਜਨਾਵਾਦ
63.	Facility	ਸਹੂਲਤ
64.	Fantasy	ਕਲਪਨਾ
65.	Fatalism	ਭਾਗਵਾਦ/ ਭਰੋਸਾਵਾਦ/ ਹੋਣੀਵਾਦ
66.	Farce	ਸਾਂਗ
67.	Feudalism	ਜਾਗੀਰਦਾਰੀ/ ਸਾਮੰਤਵਾਦ
68.	Fiction	ਗਲਪ
69.	Figure of speech	ਅਲੰਕਾਰ
70.	Folklore	ਲੋਕਧਾਰਾ/ ਲੋਕਯਾਨ
71.	Folksong	ਲੋਕਗੀਤ
72.	Free verse	ਮੁਕਤ-ਕਾਵਿ
73.	Form	ਰੂਪ
74.	Genius	ਪ੍ਰਤਿਭਾਸ਼ੀਲ
75.	Genealogy	ਵੰਸ਼ਾਵਲੀ
76.	Glossary	ਸ਼ਬਦ ਸੂਚੀ
77.	Hereditary	ਪਿਤਾ ਪੁਰਖੀ
78.	Histrionics	ਸਵਾਂਗ ਕਲਾ
79.	Humanism	ਮਾਨਵਵਾਦ
80.	Idea	ਵਿਚਾਰ
81.	Idealism	ਵਿਚਾਰਵਾਦ/ਆਦਰਸ਼ਵਾਦ
82.	Ideology	ਵਿਚਾਰਧਾਰਾ
83.	Illusion	ਭਰਮ
84.	Imagery	ਬਿੰਬਾਵਲੀ
85.	Imagination	ਕਲਪਨਾ
86.	Imitation	ਨਕਲ
87.	Impressionism	ਪ੍ਰਭਾਵਵਾਦ
88.	Impulse	ਮਨੋ-ਤਰੰਗ
89.	Individual	ਵਿਅਕਤੀ
90.	Individualism	ਵਿਅਕਤੀਵਾਦ

91.	Inferiority complex	ਹੀਣ ਭਾਵ
92.	Instinct	ਪ੍ਰਵਿਰਤੀ
93.	Journalism	ਪੱਤਰਕਾਰੀ
94.	Legend	ਦੰਤ ਕਥਾ
95.	Liberalism	ਉਦਾਰਵਾਦ
96.	Linguistics	ਭਾਸ਼ਾ ਵਿਗਿਆਨ
97.	Linguistics continuity	ਭਾਸ਼ਾ ਦੀ ਅਖੰਡਤਾ
98.	Literal	ਸ਼ਾਬਦਿਕ
99.	Literature	ਸਾਹਿਤ
100.	Lyrical Poetry	ਸਰੋਦੀ ਕਾਵਿ

Mapping Matrix of Course B-PBI-N-301-CC

Mapping: Mapping is a process of representing the correlation between COs and POs, Cos and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and POs

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-301-CC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-301-CC

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
B-PBI-N-301-CC.1	3	2	3	3	3	3	3	3
B-PBI-N-301-CC.2	3	2	3	3	3	3	3	3
B-PBI-N-301-CC.3	3	2	3	3	3	3	3	3
B-PBI-N-301-CC.4	3	2	3	3	2	3	2	3
Average	3	2	3	3	2.75	3	2.75	3

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-301-CC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-301-CC

CO	PSO 1	PSO 2	PSO 3	PSO 4
B-PBI-N-301-CC.1	3	3	3	3
B-PBI-N-301-CC.2	3	3	3	3
B-PBI-N-301-CC.3	3	3	3	3
B-PBI-N-301-CC.4	3	3	3	3
Average	3	3	3	3

Semester : IV

B-PBI-N-401-CC

ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਅਤੇ ਵਿਹਾਰਕ ਪੰਜਾਬੀ
(Madhkali Panjabi Sahit ate Viharak Panjabi)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਇੱਕ ਸੁਆਲ ਕਵਿਤਾ ਦੇ ਸਿਧਾਂਤ/ ਮੱਧਕਾਲੀਨ ਕਾਵਿ ਦੇ ਸੁਭਾਅ/ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀ ਕਵਿਤਾ ਦੇ ਵਿਸ਼ੇ/ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਅਤੇ ਇੱਕ ਸੁਆਲ ਕਵੀ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਕਵਿਤਾਵਾਂ ਦੀ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਹੋਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
4. ਯੂਨਿਟ ਦੂਜਾ ਵਿੱਚ ਇੱਕ ਸੁਆਲ ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਵਾਰਤਕ ਦੇ ਸੁਭਾਅ, ਰੂਪਾਂ ਅਤੇ ਨਿਕਾਸ ਵਿਕਾਸ ਬਾਰੇ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਅਤੇ ਇੱਕ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀ ਵਾਰਤਕ ਪੁਸਤਕ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ/ ਵਿਸ਼ੇ, ਪਾਤਰ ਉਸਾਰੀ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਸਬੰਧਤ ਵਾਰਤਕ ਪੁਸਤਕ ਦੀ ਕਲਾਤਮਕਤਾ/ ਵਾਰਤਕ ਸ਼ੈਲੀ/ ਭਾਸ਼ਾ ਸ਼ੈਲੀ ਅਤੇ ਸੰਪਾਦਕ ਦੀ ਸੰਪਾਦਨ ਕਲਾ ਬਾਰੇ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
5. ਯੂਨਿਟ ਤੀਜਾ ਦੇ ਪੰਜ ਉਪ-ਭਾਗ ਹਨ। ਉਪ-ਭਾਗ ਪਹਿਲਾ ਵਿੱਚ ਕਾਰਕ, ਉਪ-ਭਾਗ ਦੂਜਾ ਵਿੱਚ ਯੋਜਕ, ਉਪ-ਭਾਗ ਤੀਜਾ ਵਿੱਚ ਵਿਸਮਿਕ, ਉਪਭਾਗ ਚੌਥਾ ਵਿੱਚ ਅਲੰਕਾਰ ਅਤੇ ਉਪਭਾਗ ਪੰਜਵਾਂ ਵਿੱਚ ਸਾਹਿਤਕ ਸ਼ਬਦਾਵਲੀ (ਦਿੱਤੇ ਗਏ ਦਸ ਸ਼ਬਦਾਂ ਵਿੱਚੋਂ ਕੋਈ ਅੱਠ ਸ਼ਬਦ ਕਰਨੇ ਹਨ) ਬਾਰੇ ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਹਰ ਉਪ-ਭਾਗ ਪੰਜ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀ ਨੂੰ ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਸਰੂਪ, ਸੁਭਾਅ, ਵਿਸ਼ਿਆਂ ਅਤੇ ਰੂਪਾਂ ਬਾਰੇ ਜਾਣਕਾਰੀ ਪ੍ਰਦਾਨ ਕਰਨਾ।
- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਕਵਿਤਾ ਅਤੇ ਵਾਰਤਕ ਦੇ ਸਿਧਾਂਤ ਅਤੇ ਵਿਹਾਰਕ ਅਧਿਐਨ ਦੀ ਵਿਸਤ੍ਰਿਤ ਜਾਣਕਾਰੀ ਪ੍ਰਦਾਨ ਕਰਨਾ।
- ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਵਿਹਾਰਕ ਪੰਜਾਬੀ ਦੇ ਅਧਿਐਨ ਰਾਹੀਂ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਪ੍ਰਤੀ ਵਿਸ਼ੇਸ਼ ਸਮਝ ਪੈਦਾ ਕਰਨਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-401-CC.1 ਵਿਦਿਆਰਥੀ ਮੱਧਕਾਲੀਨ ਪੰਜਾਬੀ ਕਵਿਤਾ ਅਤੇ ਵਾਰਤਕ ਦੇ ਵਿਭਿੰਨ ਰੂਪਾਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।

B-PBI-N-401-CC.2 ਗੁਰਮਤਿ, ਸੂਫ਼ੀ ਅਤੇ ਭਗਤੀ ਕਾਵਿ ਵਿਚਲੀਆਂ ਵਿਚਾਰਧਾਰਕ ਸਾਂਝਾਂ ਅਤੇ ਵਖਰੇਵਿਆਂ ਦੀ ਸਮਝ ਪੈਦਾ ਹੋਵੇਗੀ।

B-PBI-N-401-CC.3 ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਵਾਰਤਕ ਦੀਆਂ ਵਿਭਿੰਨ ਵੰਨਗੀਆਂ ਖਾਸ ਕਰ ਜਨਮਸਾਖੀ ਦੀ ਪੜ੍ਹਤ ਰਾਹੀਂ ਵਾਰਤਕ ਅਧਿਐਨ ਦੀ ਸੂਝ ਅਤੇ ਸਮਝ ਪੈਦਾ ਹੋਵੇਗੀ।

B-PBI-N-401-CC.4 ਵਿਹਾਰਕ ਪੰਜਾਬੀ ਦੀ ਪੜ੍ਹਾਈ ਰਾਹੀਂ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀ ਸੰਰਚਨਾ ਅਤੇ ਵਰਤੋਂ ਵਿਹਾਰ ਬਾਰੇ ਸਮਝ ਅਤੇ ਮੁਹਾਰਤ ਪੈਦਾ ਹੋਵੇਗੀ।

ਯੂਨਿਟ ਪਹਿਲਾ (ਕਵਿਤਾ)

1. ***ਕਾਵਿ ਸੋਤਾਂ*** (ਚੋਣਵਾਂ ਕਾਵਿ ਸੰਗ੍ਰਿਹ), ਸੰਪਾਦਕ ਪ੍ਰੋ. ਅਮਰਜੀਤ ਸਿੰਘ ਉਬਰਾਇ ਅਤੇ ਡਾ. ਗੁਰਦਿਆਲ ਸਿੰਘ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਕੁਰੂਕਸ਼ੇਤਰ ਯੂਨੀਵਰਸਿਟੀ, ਕੁਰੂਕਸ਼ੇਤਰ।

1.1 ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਕਵਿਤਾ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਤੱਤ

1.2 ਗੁਰਮਤਿ, ਸੂਫ਼ੀ, ਕਿੱਸਾ ਅਤੇ ਵਾਰ ਕਾਵਿ ਦਾ ਸੰਕਲਪ

1.3 ਗੁਰਮਤਿ, ਸੂਫ਼ੀ, ਕਿੱਸਾ ਅਤੇ ਵਾਰ : ਰੂਪਾਕਾਰਕ ਅਧਿਐਨ

1.4 ਕਵਿਤਾਵਾਂ ਦਾ ਸਾਰ ਅਤੇ ਵਿਸ਼ਾ ਵਸਤੂ

1.5 ਕਲਾਤਮਕ ਪੱਖ

1.6 ਕਵਿਤਾ ਦਾ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ

1.7 ਮੱਧਕਾਲੀਨ ਕਾਵਿ ਰੂਪ : ਵਿਧਾਗਤ ਅੰਤਰ ਨਿਖੇੜ

1.8 ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਕਵਿਤਾ ਦਾ ਸਮਾਜ-ਸਭਿਆਚਾਰਕ ਪੱਖ

1.9 ਕਵੀਆਂ ਦਾ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ

1.10 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਦੂਜਾ (ਵਾਰਤਕ)

1. ***ਪੁਰਾਤਨ ਜਨਮਸਾਖੀ***

1.1 ਵਾਰਤਕ ਅਤੇ ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਵਾਰਤਕ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਤੱਤ, ਸਰੂਪ ਅਤੇ ਸੁਭਾਅ

1.2 ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਵਾਰਤਕ : ਵਿਭਿੰਨ ਰੂਪਾਂ ਦਾ ਰੂਪਾਕਾਰਕ ਅਧਿਐਨ

1.3 ਜਨਮਸਾਖੀ ਦਾ ਸਾਰ ਅਤੇ ਵਿਸ਼ਾ ਵਸਤੂ

1.4 ਜਨਮਸਾਖੀ ਵਿੱਚੋਂ ਉਭਰਦਾ ਨਾਨਕ ਬਿੰਬ/ ਪਾਤਰ ਉਸਾਰੀ

1.5 ਜਨਮਸਾਖੀ ਦਾ ਕਲਾਤਮਕ ਪੱਖ ਅਤੇ ਭਾਸ਼ਾ ਸ਼ੈਲੀ

1.6 ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਵਾਰਤਕ ਦਾ ਸਮਾਜ-ਸਭਿਆਚਾਰਕ ਪੱਖ

1.7 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਤੀਜਾ (ਵਿਹਾਰਕ ਪੰਜਾਬੀ)

3. ਵਿਹਾਰਕ ਪੰਜਾਬੀ

3.1 ਕਾਰਕ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਕਿਸਮਾਂ

3.2 ਯੋਜਕ : ਪਰਿਭਾਸ਼ਾ, ਕਿਸਮਾਂ ਅਤੇ ਵਰਤੋਂ

3.3 ਵਿਸਮਿਕ : ਪਰਿਭਾਸ਼ਾ, ਕਿਸਮਾਂ ਅਤੇ ਵਰਤੋਂ

3.4 ਅਲੰਕਾਰ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਕਿਸਮਾਂ

3.5 ਸਾਹਿਤਕ ਸ਼ਬਦਾਵਲੀ (100 ਸ਼ਬਦ ਨਾਲ ਨੱਥੀ ਹਨ)

ਸਹਾਇਕ ਪੁਸਤਕ ਸੂਚੀ

1. ਅਮਰਜੀਤ ਸਿੰਘ ਕਾਂਗ, **ਮੱਧਕਾਲੀ ਸਾਹਿਤ ਅਧਿਐਨ,** ਨਾਨਕ ਸਿੰਘ ਪੁਸਤਕਮਾਲਾ, ਅੰਮ੍ਰਿਤਸਰ
2. ਸਾਹਿਬ ਸਿੰਘ, **ਜਪੁਜੀ ਸਾਹਿਬ ਸਟੀਕ,** ਸਿੰਘ ਬ੍ਰਦਰਜ਼, ਅੰਮ੍ਰਿਤਸਰ
3 ਹਰਚਰਨ ਸਿੰਘ (ਸੰਪਾ.), **ਖੋਜ ਪਤ੍ਰਿਕਾ (ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਵਿਸ਼ੇਸ਼ ਅੰਕ),** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ,1990
4. ਕੁਲਦੀਪ ਸਿੰਘ, **ਮੱਧਕਾਲੀ ਪੰਜਾਬੀ ਸਾਹਿਤ : ਸੇਵੇਦਨਾ ਤੇ ਸਰੋਕਾਰ**, ਸੰਗਮ ਪਬਲੀਕੇਸ਼ਨ, ਸਮਾਣਾ, 2017
5. ਗੁਰਦੇਵ ਸਿੰਘ, **ਪੰਜਾਬੀ ਸੂਫ਼ੀ ਕਾਵਿ ਦਾ ਇਤਿਹਾਸ,** ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ, 2005
6. ਜਗਜੀਤ ਸਿੰਘ, **ਸ਼ੇਖ ਫ਼ਰੀਦ ਦਾ ਕਾਵਿ ਪ੍ਰਵਚਨ,** ਵਾਰਿਸ ਸ਼ਾਹ ਫ਼ਾਊਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ, 2005
7. ਜਗਬੀਰ ਸਿੰਘ, **ਮੱਧਕਾਲੀ ਸਾਹਿਤ ਸਭਿਆਚਾਰ,** ਆਰਸੀ ਪ੍ਰਕਾਸ਼ਨ, ਦਿੱਲੀ
8. ਜੀਤ ਸਿੰਘ ਸੀਤਲ, **ਖੋਜ ਪਤ੍ਰਿਕਾ (ਬਾਬਾ ਫ਼ਰੀਦ ਵਿਸ਼ੇਸ਼ ਅੰਕ),** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1997
9. ਤਾਰਨ ਸਿੰਘ, **ਗੁਰੂ ਨਾਨਕ : ਚਿੰਤਨ ਤੇ ਕਲਾ,** ਕਸਤੂਰੀ ਲਾਲ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ
10. ਦਵਿੰਦਰ ਸਿੰਘ, **ਪੰਜਾਬੀ ਸੂਫ਼ੀ ਸਾਹਿਤ ਦਾ ਅਧਿਐਨ,** ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ, 1986
11. ਰਤਨ ਸਿੰਘ ਜੱਗੀ, **ਖੋਜ ਪਤ੍ਰਿਕਾ (ਸੂਫ਼ੀ ਕਾਵਿ ਵਿਸ਼ੇਸ਼ ਅੰਕ) ਅੰਕ 33,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1989
12. ਰਾਜਿੰਦਰ ਸਿੰਘ ਭੱਟੀ ਅਤੇ ਹਰਸਿਮਰਨ ਸਿੰਘ ਰੰਧਾਵਾ, **ਸਿੱਖ ਧਰਮ ਦਾ ਮਾਨਵਵਾਦੀ ਪਰਿਪੇਖ,** ਗਰੇਸੀਅਸ ਬੁੱਕਸ, ਪਟਿਆਲਾ, 2014
13. ਲਾਜਵੰਤੀ ਰਾਮਾ ਕ੍ਰਿਸ਼ਨਾ, **ਪੰਜਾਬੀ ਸੂਫ਼ੀ ਪੋਇਟਸ,** ਆਸ਼ਾਜਨਕ ਪਬਲੀਕੇਸ਼ਨ, ਦਿੱਲੀ, 1973
14. ਸੁਰਿੰਦਰ ਸਿੰਘ ਕੋਹਲੀ **ਪੁਰਾਤਨ ਪੰਜਾਬੀ ਵਾਰਤਕ : ਸਰੂਪ ਸਿਧਾਂਤ ਤੇ ਵਿਕਾਸ,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ
15. ਹਰਭਜਨ ਸਿੰਘ (ਸੰਪਾ.), **ਜਨਮਸਾਖੀ ਬਿਰਤਾਂਤ,** ਵਿਦਵਾਨ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਬਾਲਾ ਕੈਂਟ
16. ਹਰਭਜਨ ਸਿੰਘ ਅਤੇ ਮਨਜੀਤ ਸਿੰਘ (ਸੰਪਾ.), **ਸਾਖੀ ਸੂਰਤ,** ਫਕੀਰ ਸਿੰਘ ਐਂਡ ਸੰਨਜ਼, ਅੰਮ੍ਰਿਤਸਰ, 1982
17. ਕਰਮਜੀਤ ਸਿੰਘ, **ਪੁਰਾਤਨ ਪੰਜਾਬੀ ਵਾਰਤਕ ਦਾ ਇਤਿਹਾਸ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ
18. ਕੁਲਵੰਤ ਸਿੰਘ, **ਪੰਜਾਬੀ ਵਾਰਤਕ : ਸੰਚਾਰ ਤੇ ਵਿਹਾਰ**, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ
19. ਗੁਰਚਰਨ ਸਿੰਘ, **ਮੱਧਕਾਲੀ ਪਾਠ ਤੇ ਵਰਤਮਾਨ ਪ੍ਰਸੰਗ,** ਆਰਸੀ ਪਬਲਿਸ਼ਰ, ਦਿੱਲੀ
20. -ਉਹੀ-, **ਮੱਧਕਾਲੀਨ ਪੰਜਾਬੀ ਵਾਰਤਕ,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ
21. ਰਤਨ ਸਿੰਘ ਜੱਗੀ, **ਪੁਰਾਤਨ ਪੰਜਾਬੀ ਵਾਰਤਕ,** ਪੰਜਾਬ ਸਟੇਟ ਯੂਨੀਵਰਸਿਟੀ ਟੈਕਸਟ ਬੁੱਕ ਬੋਰਡ, ਚੰਡੀਗੜ੍ਹ
22. ਰਤਨ ਸਿੰਘ ਜੱਗੀ, **ਪੁਰਾਤਨ ਵਾਰਤਕ ਵਿਸ਼ੇਸ਼ ਅੰਕ**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ

ਸਾਹਿਤਕ ਸ਼ਬਦਾਵਲੀ (Literary Terminology)

1.	Morphology	ਰੂਪ ਵਿਗਿਆਨ, ਭਾਵਾਂਸ਼ ਵਿਗਿਆਨ
2.	Maxim	ਕਹਾਵਤ
3.	Melodious	ਮਧੁਰ
4.	Metaphor	ਰੂਪਕ
5.	Metaphysical	ਪਰਾਭੌਤਿਕ
6.	Meter	ਛੰਦ
7.	Modernity	ਆਧੁਨਿਕਤਾ

8.	Modernism	ਆਧੁਨਿਕਤਾਵਾਦ
9.	Monologue	ਮਨਵਚਨ ਜਾਂ ਇਕਵਚਨੀ
10.	Mystical	ਰਹੱਸਮਈ
11.	Mysticism	ਰਹੱਸਵਾਦ
12.	Mythology	ਮਿਥਿਹਾਸ
13.	Nationalism	ਰਾਸ਼ਟਰਵਾਦ
14.	Naturalism	ਪ੍ਰਕਿਰਤੀਵਾਦ
15.	Note	ਟਿੱਪਣੀ
16.	Novelist	ਨਾਵਲਕਾਰ
17.	Novelette	ਛੋਟਾ ਨਾਵਲ
18.	Obsolete	ਅਪ੍ਰਚਲਿਤ
19.	Obscene	ਅਸ਼ਲੀਲ
20.	Opera	ਸੰਗੀਤ ਨਾਟਕ
21.	Optimist	ਆਸ਼ਾਵਾਦੀ
22.	Originality	ਮੌਲਿਕਤਾ
23.	Orthodox	ਕੱਟੜਪੰਥੀ
24.	Paradox	ਵਿਰੋਧਾਭਾਸ
25.	Paragraph	ਪੈਰ੍ਹਾ
26.	Parody	ਨਕਲ, ਵਿਅੰਗ ਕਾਵਿ
27.	Pathetic	ਭਾਵ ਭਰਮ
28.	Pathos	ਕਰੁਣਾ ਰਸ
29.	Personality	ਵਿਅਕਤੀਤਵ
30.	Personification	ਸਮੂਰਤੀਕਰਨ
31.	Pessimist	ਨਿਰਾਸ਼ਾਵਾਦੀ
32.	Philologist	ਭਾਸ਼ਾ ਸ਼ਾਸਤਰੀ
33.	Phoneme	ਧੁਨੀਗ੍ਰਾਮ
34.	Phonetic law	ਧੁਨੀ ਨਿਯਮ
35.	Phonology	ਧੁਨੀ ਵਿਗਿਆਨ
36.	Playwright	ਨਾਟਕਕਾਰ
37.	Poetical Insight	ਕਾਵਿਕ ਸੂਝ
38.	Poetical Effect	ਕਾਵਿਕ ਪ੍ਰਭਾਵ
39.	Polyglot	ਬਹੁਭਾਸ਼ੀ
40.	Suffix	ਪਿਛੇਤਰ
41.	Prefix	ਅਗੇਤਰ

42.	Progressive	ਪ੍ਰਗਤੀਸ਼ੀਲ/ਅਗਾਂਹਵਧੂ
43.	Prose	ਵਾਰਤਕ
44.	Producer	ਨਿਰਮਾਤਾ
45.	Production	ਪੇਸ਼ਕਾਰੀ
46.	Prosody	ਪਿੰਗਲ
47.	Psycho-Analysis	ਮਨੋਵਿਸ਼ਲੇਸ਼ਣ
48.	Realism	ਯਥਾਰਥਵਾਦ
49.	Rhetoric	ਅਲੰਕਾਰ ਸ਼ਾਸਤਰ
50.	Rhyme	ਬਾਲਗੀਤ
51.	Rhythm	ਲੈਅ
52.	Romanticism	ਰੁਮਾਂਸਵਾਦ
53.	Satire	ਵਿਅੰਗ
54.	Skepticism	ਸ਼ੰਕਾਵਾਦ
55.	Script	ਲਿਪੀ
56.	Secularism	ਧਰਮ ਨਿਰਪੇਖਤਾ
57.	Semantics	ਅਰਥ ਵਿਗਿਆਨ
58.	Sensibility	ਸੰਵੇਦਨਾ
59.	Sensitivity	ਸੰਵੇਦਨਸ਼ੀਲਤਾ
60.	Smile	ਉਪਮਾ
61.	Size	ਆਕਾਰ
62.	Socialism	ਸਮਾਜਵਾਦ
63.	Soliloquy	ਇਕੋਵਚਨ/ ਮਨੋਵਚਨੀ
64.	Spiritualism	ਅਧਿਆਤਮਵਾਦ
65.	Stage	ਰੰਗ-ਮੰਚ
66.	Stream of consciousness	ਚੇਤਨਾ ਪ੍ਰਵਾਹ
67.	Structure	ਸੰਰਚਨਾ/ਬਣਤਰ
68.	Style	ਸ਼ੈਲੀ
69.	Sublime	ਉਦਾਤ
70.	Syllable	ਅੱਖਰ
71.	Symbolism	ਪ੍ਰਤੀਕਵਾਦ
72.	Synopsis	ਆਰਜ਼ੀ ਰੂਪ-ਰੇਖਾ
73.	Syntax	ਵਾਕ-ਰਚਨਾ/ਵਾਕ-ਵਿਚਾਰ
74.	Synthesis	ਸੰਸ਼ਲੇਸ਼ਣ
75.	Tactile image	ਸਪਰਸ਼-ਬਿੰਬ

76.	Technique	ਵਿਧੀ
77.	Terminology	ਪਾਰਿਭਾਸ਼ਿਕ ਸ਼ਬਦਾਵਲੀ
78.	Tradition	ਪਰੰਪਰਾ
79.	Traditionalism	ਪਰੰਪਰਾਵਾਦ
80.	Translation	ਅਨੁਵਾਦ
81.	Treatise	ਨਿਬੰਧ
82.	Unities	ਏਕਤਾਵਾਂ
83.	Unity of action	ਕਾਰਜ ਦੀ ਏਕਤਾ
84.	Unity of Impression	ਪ੍ਰਭਾਵ ਦੀ ਏਕਤਾ
85.	Unity of Space	ਸਥਾਨ ਦੀ ਏਕਤਾ
86.	Unity of Time	ਸਮੇਂ ਦੀ ਏਕਤਾ
87.	Utilitarianism	ਉਪਯੋਗਤਾਵਾਦ
88.	Verse	ਪਦ
89.	Versatile	ਸਰਬਾਂਗੀ
90.	Villain	ਖਲਨਾਇਕ
91.	Vision	ਅੰਤਰ-ਦ੍ਰਿਸ਼ਟੀ
92.	Visual Image	ਦ੍ਰਿਸ਼ਟੀ ਪਰਤ, ਬਿੰਬ
93.	Vocabulary	ਸ਼ਬਦ-ਕੋਸ਼
94.	Vowel	ਸਵਰ
95.	Vulgarity	ਅਸ਼ਲੀਲਤਾ
96.	Work	ਕਾਰਜ, ਕੰਮ, ਰਚਨਾ

Mapping Matrix of Course B-PBI-N-401-CC

Mapping: Mapping is a process of representing the correlation between COs and POs, Cos and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and POs

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-401-CC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-401-CC

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
B-PBI-N-401-CC.1	3	2	3	3	3	3	3	3
B-PBI-N-401-CC.2	3	2	3	3	3	3	3	3
B-PBI-N-401-CC.3	3	2	3	3	3	3	3	3
B-PBI-N-401-CC.4	3	2	3	3	2	3	2	3
Average	3	2	3	3	2.75	3	2.75	3

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-401-CC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-401-CC

CO	PSO 1	PSO 2	PSO 3	PSO 4
B-PBI-N-401-CC.1	3	3	3	3
B-PBI-N-401-CC.2	3	3	3	3
B-PBI-N-401-CC.3	3	3	3	3
B-PBI-N-401-CC.4	3	3	3	3
Average	3	3	3	3

Semester : IV

B-PBI-N-501-CC

ਪੰਜਾਬੀ ਲੋਕਧਾਰਾ ਅਤੇ ਸਭਿਆਚਾਰ
(Punjabi Lokdhara Ate Sabhyachar)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਲੋਕਧਾਰਾ ਅਤੇ ਸਭਿਆਚਾਰ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ ਬਾਰੇ ਕੁੱਲ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਇਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਵਿੱਚ ਪੰਜਾਬ ਦੀ ਲੋਕਧਾਰਾ ਪੁਸਤਕ ਵਿੱਚੋਂ ਕੁੱਲ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਇਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
5. ਯੂਨਿਟ ਤੀਜਾ ਵਿੱਚ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦੇ ਵਿਹਾਰਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ ਬਾਰੇ ਕੁੱਲ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਇਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਲੋਕਧਾਰਾ, ਸਭਿਆਚਾਰ ਅਤੇ ਲੋਕ ਪ੍ਰੰਪਰਾ ਤੋਂ ਜਾਣੂ ਕਰਾਉਣਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-501-CC.1	ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਸਭਿਆਚਾਰ ਅਤੇ ਲੋਕਧਾਰਾ ਦੇ ਸਿਧਾਂਤਕ ਪਹਿਲੂਆਂ ਬਾਰੇ ਗਿਆਨ ਪ੍ਰਾਪਤ ਹੋਵੇਗਾ।
B-PBI-N-501-CC.2	ਵਿਦਿਆਰਥੀ ਵਿੱਚ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦੇ ਵਿਸ਼ੇਸ਼ ਪਛਾਣ ਚਿੰਨ੍ਹਾਂ ਰਾਹੀਂ ਪੰਜਾਬੀ ਮਾਨਸਿਕਤਾ ਅਤੇ ਪੰਜਾਬੀਅਤ ਨੂੰ ਸਮਝਣ ਦੀ ਸੂਝ ਪੈਦਾ ਹੋਵੇਗੀ।
B-PBI-N-501-CC.3	ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦੇ ਵਿਲੱਖਣ ਸਰੂਪ ਦੇ ਨਾਲ-ਨਾਲ ਵਰਤਮਾਨ ਦੌਰ ਵਿੱਚ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਨੂੰ ਦਰਪੇਸ਼ ਚੁਣੌਤੀਆਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।
B-PBI-N-501-CC.4	ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਲੋਕ ਪ੍ਰੰਪਰਾ ਦੀ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਕਰਕੇ ਪੰਜਾਬੀ ਜਨ-ਜੀਵਨ ਪ੍ਰਤੀ ਆਪਣੀ ਸਮਝ ਪੈਦਾ ਕਰ ਸਕਣ ਦੇ ਯੋਗ ਹੋਣਗੇ।

ਯੂਨਿਟ ਪਹਿਲਾ

1. ਲੋਕਧਾਰਾ ਅਤੇ ਸਭਿਆਚਾਰ : ਸਿਧਾਂਤਕ ਪਰਿਪੇਖ

1.1 ਲੋਕਧਾਰਾ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ

1.2 ਲੋਕਧਾਰਾ : ਪ੍ਰਮੁੱਖ ਤੱਤ

1.3 ਲੋਕਧਾਰਾ ਦਾ ਖੇਤਰ

1.4 ਸਭਿਆਚਾਰ : ਸਿਧਾਂਤਕ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ

1.5 ਸਭਿਆਚਾਰ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ

1.6 ਸਭਿਅਤਾ, ਸਭਿਆਚਾਰ ਅਤੇ ਲੋਕਧਾਰਾ : ਅੰਤਰ ਨਿਖੇੜ

ਯੂਨਿਟ ਦੂਜਾ

2. ਸੋਹਿੰਦਰ ਸਿੰਘ ਵਣਜਾਰਾ ਬੇਦੀ, ***ਪੰਜਾਬ ਦੀ ਲੋਕਧਾਰਾ***, ਨੈਸ਼ਨਲ ਬੁੱਕ ਟਰੱਸਟ, ਦਿੱਲੀ, 2011

2.1 ਪੰਜਾਬ ਦੇ ਲੋਕ ਨਾਚ

2.2 ਮੇਲੇ ਤੇ ਤਿਉਹਾਰ

2.3 ਜਾਦੂ ਟੂਣੇ ਤੇ ਧਰਮ

2.4 ਲੋਕਾਚਾਰ ਤੇ ਰੀਤੀ ਰਿਵਾਜ

2.5 ਪੰਜਾਬੀ ਲੋਕਧਾਰਾ ਅਧਿਐਨ ਦੀਆਂ ਸਮੱਸਿਆਵਾਂ

ਯੂਨਿਟ ਤੀਜਾ

3. ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ : ਵਿਹਾਰਕ ਪਹਿਲੂ

3.1 ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ : ਮੂਲ ਪਛਾਣ ਚਿੰਨ੍ਹ

3.2 ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ : ਭੂਗੋਲਿਕ ਪਹਿਲੂ

3.3 ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਆਰਥਿਕ ਪਰਿਪੇਖ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਗੁਰਬਖਸ਼ ਸਿੰਘ ਫ਼ਰੈਂਕ, **ਸਭਿਆਚਾਰ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ**, ਪੰਜਾਬੀ ਰਾਈਟਰਜ਼ ਕੋਆਪਰੇਟਿਵ ਸੁਸਾਇਟੀ, ਲੁਧਿਆਣਾ
2. ਜਸਵਿੰਦਰ ਸਿੰਘ, **ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ : ਪਛਾਣ ਚਿੰਨ੍ਹ,** ਗਰੇਸੀਅਸ ਬੁੱਕਸ, ਪਟਿਆਲਾ, 2012
3. ਜੀਤ ਸਿੰਘ ਜੋਸ਼ੀ, **ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਬਾਰੇ,** ਵਾਰਿਸ ਸ਼ਾਹ ਫਾਊਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ, 1999
4. ਟੀ. ਆਰ. ਵਿਨੋਦ , **ਸੰਸਕ੍ਰਿਤੀ : ਸਿਧਾਂਤ ਅਤੇ ਵਿਹਾਰ,** ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2004
5. ਭੁਪਿੰਦਰ ਸਿੰਘ ਖਹਿਰਾ, **ਲੋਕਧਾਰਾ ਭਾਸ਼ਾ ਅਤੇ ਸਭਿਆਚਾਰ,** ਪੈਪਸੂ ਬੁੱਕ ਡਿਪੂ, ਪਟਿਆਲਾ, 1998
6. ਸੋਹਿੰਦਰ ਸਿੰਘ ਬੇਦੀ, **ਪੰਜਾਬ ਦੀ ਲੋਕਧਾਰਾ,** ਨੈਸ਼ਨਲ ਬੁੱਕ ਟ੍ਰੱਸਟ, ਇੰਡੀਆ, 1999
7. ਕਰਨੈਲ ਸਿੰਘ ਥਿੰਦ, **ਲੋਕਯਾਨ ਅਧਿਐਨ,** ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ
8. ਕਰਨੈਲ ਸਿੰਘ ਥਿੰਦ, **ਪੰਜਾਬ ਦਾ ਲੋਕ ਵਿਰਸਾ,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1996
9. ਗੁਰਨਾਮ ਸਿੰਘ, **ਪੰਜਾਬ ਦੇ ਲੋਕ ਨਾਚ,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 1996
10. ਗੁਰਮੀਤ ਸਿੰਘ, **ਲੋਕਧਾਰਾ : ਪਰੰਪਰਾ ਤੇ ਆਧੁਨਿਕਤਾ,** ਨਾਨਕ ਸਿੰਘ ਪੁਸਤਕਮਾਲਾ, ਅੰਮ੍ਰਿਤਸਰ
11. ਮਨਜੀਤ ਸਿੰਘ (ਸੰਪਾ.), **ਪੰਜਾਬੀ ਲੋਕ ਪਰੰਪਰਾ,** ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ, 1987

Mapping Matrix of Course B-PBI-N-501-CC

Mapping: Mapping is a process of representing the correlation between COs and POs, Cos and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and POs

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-501-CC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-501-CC

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
B-PBI-N-501-CC.1	3	2	3	2	2	3	3	3
B-PBI-N-501-CC.2	3	2	3	3	3	3	3	3
B-PBI-N-501-CC.3	3	3	3	2	2	2	2	3
B-PBI-N-501-CC.4	3	3	3	3	3	3	3	3
Average	3	2.5	3	2.5	2.5	2.75	2.75	3

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-501-CC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-501-CC

CO	PSO 1	PSO 2	PSO 3	PSO 4
B-PBI-N-501-CC.1	3	3	3	3
B-PBI-N-501-CC.2	3	3	3	3
B-PBI-N-501-CC.3	3	3	3	3
B-PBI-N-501-CC.4	3	3	3	3
Average	3	3	3	3

Semester : V

B-PBI-N-502-SEC

ਨਾਟਕ, ਰੰਗਮੰਚ ਅਤੇ ਫ਼ਿਲਮਸਾਜ਼ੀ ਦਾ ਹੁਨਰ : ਅਧਿਐਨ ਅਤੇ ਸਿਖਲਾਈ

(Natak, Rangmanch Ate Filamsazi Da Hunar : Adhyan Ate Sikhlai)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਚਾਰ ਸੁਆਲ ਨਾਟਕ ਦੇ ਸਿਧਾਂਤ, ਵਿਹਾਰਕ ਅਧਿਐਨ ਅਤੇ ਨਾਟਕੀ ਹੁਨਰ ਬਾਰੇ ਪੁੱਛੇ ਜਾਣਗੇ ਜਿਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਵਿੱਚ ਚਾਰ ਸੁਆਲ ਰੰਗਮੰਚ ਦੇ ਸਿਧਾਂਤ, ਵਿਹਾਰਕ ਅਧਿਐਨ ਅਤੇ ਰੰਗਮੰਚੀ ਹੁਨਰ ਬਾਰੇ ਪੁੱਛੇ ਜਾਣਗੇ ਜਿਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
5. ਯੂਨਿਟ ਤੀਜਾ ਵਿੱਚ ਚਾਰ ਸੁਆਲ ਫ਼ਿਲਮਸਾਜ਼ੀ ਦੇ ਸਿਧਾਂਤ, ਇਤਿਹਾਸ, ਵਿਹਾਰਕ ਅਧਿਐਨ ਅਤੇ ਫ਼ਿਲਮੀ ਹੁਨਰ ਬਾਰੇ ਪੁੱਛੇ ਜਾਣਗੇ ਜਿਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਨਾਟਕ, ਰੰਗਮੰਚ ਅਤੇ ਫ਼ਿਲਮਸਾਜ਼ੀ ਦੇ ਹੁਨਰ ਬਾਰੇ ਜਾਣਕਾਰੀ ਪ੍ਰਦਾਨ ਕਰਨਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-502-SEC.1	ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਭਾਰਤੀ ਅਤੇ ਪੰਜਾਬੀ ਨਾਟਕ, ਰੰਗਮੰਚ ਅਤੇ ਫ਼ਿਲਮਸਾਜ਼ੀ ਦੇ ਇਤਿਹਾਸ ਅਤੇ ਪ੍ਰਮੁੱਖ ਝੁਕਾਵਾਂ ਦਾ ਗਿਆਨ ਪ੍ਰਾਪਤ ਹੋਵੇਗਾ
B-PBI-N-502-SEC.2	ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਨਾਟਕ ਪੜ੍ਹਨ, ਨਾਟਕ ਖੇਡਣ, ਨਾਟਕ ਲਈ ਸੰਵਾਦ ਲੇਖਣ ਅਤੇ ਇਸਦੀ ਪੇਸ਼ਕਾਰੀ ਲਈ ਸਹਾਇਕ ਵਿਉਂਤਕਾਰਾਂ ਬਾਰੇ ਵਿਸਤ੍ਰਿਤ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੋਵੇਗੀ।
B-PBI-N-502-SEC.3	ਵਿਦਿਆਰਥੀ ਫ਼ਿਲਮਸਾਜ਼ੀ, ਕੋਰੀਓਗਰਾਫ਼ੀ, ਸਿਨਮੈਟੋਗਰਾਫ਼ੀ ਅਤੇ ਫ਼ਿਲਮਾਂ ਲਈ ਸੰਵਾਦ ਲੇਖਣ, ਫ਼ਿਲਮ ਮੁਲਾਂਕਣ, ਫ਼ਿਲਮ ਰਿਵਿਊ ਕਰਨ ਦੀ ਮੁਹਾਰਤ ਹਾਸਲ ਕਰ ਸਕਣਗੇ।
B-PBI-N-502-SEC.4	ਵਿਦਿਆਰਥੀ ਨਾਟਕ ਅਤੇ ਰੰਗਮੰਚ ਅਤੇ ਫ਼ਿਲਮਸਾਜ਼ੀ ਦੇ ਹੁਨਰ ਵਿੱਚ ਵਿਹਾਰਕ ਅਤੇ ਪ੍ਰੋਫ਼ੈਸ਼ਨਲ ਤੌਰ 'ਤੇ ਮੁਹਾਰਤ ਹਾਸਲ ਕਰਨਗੇ।

ਯੂਨਿਟ ਪਹਿਲਾ

1. ਨਾਟਕ : ਸਿਧਾਂਤਕ ਪੱਖ

1.1 ਨਾਟ-ਵਿਧਾ ਦੇ ਸਹਾਇਕ ਵਿਉਂਤਕਾਰ ਅਤੇ ਰੰਗਮੰਚੀ ਸਮੱਸਿਆਵਾਂ

1.2 ਪਾਤਰ ਉਸਾਰੀ, ਅਦਾਕਾਰੀ ਹੁਨਰ ਅਤੇ ਰੀਹਰਸਲਾਂ

1.3 ਨਾਟ ਸਿਰਜਣ ਪ੍ਰਕ੍ਰਿਆ ਨੂੰ ਸਮਝਣਾ

1.4 ਨਾਟਕ ਪੇਸ਼ਕਾਰੀ ਵਿੱਚ ਸੰਗੀਤ ਅਤੇ ਆਵਾਜ਼ ਵੇਰੀਏਸ਼ਨਜ਼ ਦਾ ਰੋਲ ਅਤੇ ਮਹੱਤਵ

1.5 ਨਾਟਕ ਪੇਸ਼ਕਾਰੀ ਵਿੱਚ ਅਦਾਵਾਂ ਅਤੇ ਵੇਸ-ਭੂਸ਼ਾ ਦਾ ਰੋਲ ਅਤੇ ਮਹੱਤਵ

1.6 ਨਾਟਕ ਪੇਸ਼ਕਾਰੀ ਵਿੱਚ ਰੋਸ਼ਨੀ ਅਤੇ ਮੰਚ ਸੱਜਾ ਦਾ ਰੋਲ ਅਤੇ ਮਹੱਤਵ

ਯੂਨਿਟ ਦੂਜਾ

2. ਰੰਗਮੰਚ : ਸਿਧਾਂਤ ਅਤੇ ਮੰਚੀ ਅਭਿਆਸ

2.1 ਕਹਾਣੀ ਅਤੇ ਹੋਰ ਸਾਹਿਤਕ ਪਾਠਾਂ ਦਾ ਨਾਟਕੀ ਰੂਪਾਂਤਰਣ

2.2 ਲੇਖਣ ਹੁਨਰ-ਸਕਰਿਪਟ ਅਤੇ ਸੰਵਾਦ ਤਿਆਰ ਕਰਨਾ

2.3 ਅਭਿਨੈ ਹੁਨਰ ਨੂੰ ਸਿੱਖਣਾ

2.4 ਵੇਸ-ਭੂਸ਼ਾ, ਮੇਕਅਪ ਕਰਨ ਦੇ ਹੁਨਰ ਨੂੰ ਸਿੱਖਣਾ

ਯੂਨਿਟ ਤੀਜਾ

3 ਭਾਰਤੀ ਅਤੇ ਪੰਜਾਬੀ ਫ਼ਿਲਮਸਾਜ਼ੀ : ਆਰੰਭ, ਵਿਕਾਸ, ਪ੍ਰਵਿਰਤੀਆਂ ਅਤੇ ਝੁਕਾਅ

3.1 ਭਾਰਤੀ ਅਤੇ ਪੰਜਾਬੀ ਫ਼ਿਲਮਸਾਜ਼ੀ : ਅੰਤਰ ਪ੍ਰਭਾਵ

3.2 ਨਾਚ ਨਿਰਦੇਸ਼ਨ ਜਾਂ ਕੋਰੀਓਗ੍ਰਾਫ਼ੀ : ਪਰਿਭਾਸ਼ਾ, ਕਾਰਜ ਅਤੇ ਮਹੱਤਵ

3.3 ਕੈਮਰਾਮੈਨ ਜਾਂ ਸਿਨਮੈਟੋਗ੍ਰਾਫ਼ਰ : ਪਰਿਭਾਸ਼ਾ, ਕਾਰਜ ਅਤੇ ਮਹੱਤਵ

3.4 ਫ਼ਿਲਮਸਾਜ਼ੀ ਦੀ ਭਾਸ਼ਾ/ ਸ਼ਬਦਾਵਲੀ, ਨਿਰਦੇਸ਼ਨ ਅਤੇ ਨਿਰਦੇਸ਼ਕ

3.5 ਫ਼ਿਲਮ ਲਈ ਕਹਾਣੀ ਲੇਖਣ, ਸੰਵਾਦ ਲੇਖਣ, ਗੀਤ ਸੰਗੀਤ ਦੀ ਚੋਣ ਅਤੇ ਤਿਆਰੀ

3.6 ਅਦਾਕਾਰਾਂ ਦੀ ਚੋਣ ਜਾਂ ਕਾਸਟਿੰਗ, ਹੈਂਡਲਿੰਗ

3.7 ਮੜੀ ਦਾ ਦੀਵਾ (ਫ਼ਿਲਮ, 1989), ਨਿਰਦੇਸ਼ਕ ਸੁਰਿੰਦਰ ਸਿੰਘ, ਪ੍ਰੋਡਿਊਸਰ ਰਵੀ ਮਲਿਕ ਦਾ ਮੁਲਾਂਕਣ/ ਰਿਵਿਊ)

3.8 ਆਧਾਰਤ ਨਾਵਲ (ਮੜੀ ਦਾ ਦੀਵਾ) ਤੋਂ ਫ਼ਿਲਮੀ ਰੂਪਾਂਤਰਣ-ਸੰਵਾਦ ਦੀ ਭਾਸ਼ਾ ਪਾਤਰਾਂ ਦੀ ਅਦਾਕਾਰੀ ਦਾ ਵਿਸ਼ਲੇਸ਼ਣ ਅਤੇ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ :

1. ਪਾਲੀ ਭੁਪਿੰਦਰ, ਨਾਟਕ ਅਤੇ ਨਾਟ ਚਿੰਤਨ, ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ
2. ਕਿਰਪਾਲ ਕਜ਼ਾਕ, ਰੰਗਮੰਚ ਚਿੰਤਨ, ਗਰੇਸੀਅਸ ਬੁੱਕਸ, ਪਟਿਆਲਾ
3. ਨਵਨਿੰਦਰਾ ਬਹਿਲ, ਰੰਗਮੰਚ ਅਤੇ ਟੈਲੀਵਿਜ਼ਨ ਨਾਟਕ, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ
4. ਜਸਵਿੰਦਰ ਕੌਰ ਮਾਂਗਟ, ਰੰਗਮੰਚ ਦੇ ਬੁਨਿਆਦੀ ਨਿਯਮ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ
5. ਸਤੀਸ਼ ਕੁਮਾਰ ਵਰਮਾ, ਪੰਜਾਬੀ ਰੰਗਮੰਚ ਦੀ ਭੂਮਿਕਾ, ਬਿਸ਼ਨ ਚੰਦ ਐਂਡ ਸੰਜ਼, ਦਿੱਲੀ
6. ਬਖ਼ਸ਼ਿੰਦਰ, ਫ਼ਿਲਮਸਾਜ਼ੀ, ਕਲਮਿਸਤਾਨ, 2-ਨਿਊ ਦਿਓਲ ਨਗਰ, ਜਲੰਧਰ, 2010
7. Jasbir Kaur (Dr.), **Punjabi samaj Ate Media**, Publication Bureau, Punjabi University, Patiala, 2014
8. ਬਲਜਿੰਦਰ ਨਸਰਾਲੀ, ਪੰਜਾਬੀ ਸਿਨੇਮਾ ਅਤੇ ਸਾਹਿਤ (ਸਮਕਾਲੀ ਸੰਦਰਭ), ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ

Mapping Matrix of Course B-PBI-N-502-SEC

Mapping: Mapping is a process of representing the correlation between COs and POs, Cos and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and POs

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-502-SEC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-502-SEC

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
B-PBI-N-502-SEC.1	3	2	3	3	3	3	2	2
B-PBI-N-502-SEC.2	3	3	3	3	3	3	3	3
B-PBI-N-502-SEC.3	3	3	3	3	3	3	3	3
B-PBI-N-502-SEC.4	3	3	3	3	3	3	3	3
Average	3	2.75	3	3	3	3	2.75	2.75

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-502-SEC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-502-SEC

CO	PSO 1	PSO 2	PSO 3	PSO 4
B-PBI-N-502-SEC.1	2	2	3	3
B-PBI-N-502-SEC.2	2	2	3	3
B-PBI-N-502-SEC.3	2	2	3	3
B-PBI-N-502-SEC.4	2	2	3	3
Average	2.25	2.25	3	3

Semester : V

B-PBI-N-503-(i)-DSC

ਪੰਜਾਬੀ ਦਲਿਤ ਸਾਹਿਤ
(Punjabi Dalit Sahit)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਦਲਿਤ ਅਤੇ ਦਲਿਤ ਚੇਤਨਾ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ ਬਾਰੇ ਕੁੱਲ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਇਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਤਿੰਨ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਕਵਿਤਾ ਦੇ ਸਾਰ/ ਵਿਸ਼ੇ/ ਦਲਿਤ ਦ੍ਰਿਸ਼ਟੀ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਕਵੀ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਕਵਿਤਾਵਾਂ ਦੀ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਲੰਬਰ ਦਾ ਹੋਵੇਗਾ।
5. ਯੂਨਿਟ ਤੀਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀਆਂ ਕਹਾਣੀਆਂ ਦੇ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ/ ਵਿਸ਼ੇ/ ਦਲਿਤ ਚੇਤਨਾ/ ਸਮੱਸਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਕਹਾਣੀਆਂ ਦੇ ਪਾਤਰ ਵਿਧਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਕਹਾਣੀਕਾਰ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਏਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਦਲਿਤ, ਦਲਿਤ ਚੇਤਨਾ, ਦਲਿਤ ਸਾਹਿਤ ਅਤੇ ਦਲਿਤ ਸਰੋਕਾਰਾਂ ਤੋਂ ਜਾਣੂ ਕਰਾਉਣਾ.

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-503 (i)-DSC.1 ਵਿਦਿਆਰਥੀ ਦਲਿਤ ਅਤੇ ਦਲਿਤ ਚੇਤਨਾ ਨਾਲ ਸਬੰਧਤ ਵਿਭਿੰਨ ਸੰਕਲਪਾਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।

B-PBI-N-503 (i)-DSC.2 ਵਿਦਿਆਰਥੀਆਂ ਦਾ ਦਲਿਤ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਇਤਿਹਾਸ, ਇਸਦੇ ਝੁਕਾਵਾਂ ਅਤੇ ਪ੍ਰਮੁੱਖ ਸਾਹਿਤਕਾਰਾਂ ਨਾਲ ਪਰਿਚੈ ਹੋਵੇਗਾ।

B-PBI-N-503 (i)-DSC.3 ਦਲਿਤ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਮੁੱਖ ਸਰੋਕਾਰਾਂ ਨਾਲ ਜਾਣ-ਪਛਾਣ ਹੋਵੇਗੀ।

B-PBI-N-503 (i)-DSC.4 ਦਲਿਤ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਜ਼ਰੀਏ ਪੰਜਾਬੀ ਦਲਿਤ ਦੀ ਅੰਤਰਮਨ ਸੰਵੇਦਨਾ ਨੂੰ ਸਮਝਣ ਦੀ ਸੂਝ ਪੈਦਾ ਹੋਵੇਗੀ।

ਯੂਨਿਟ ਪਹਿਲਾ : (ਦਲਿਤ ਅਤੇ ਦਲਿਤ ਚਿੰਤਨ)

1. ਦਲਿਤ ਅਤੇ ਦਲਿਤ ਚਿੰਤਨ : ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ
1.1 ਦਲਿਤ ਅਤੇ ਦਲਿਤ ਚੇਤਨਾ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਸਰੂਪ
1.2 ਭਾਰਤੀ ਜਾਤੀ ਅਤੇ ਵਰਣ ਵੰਡ
1.3 ਦਲਿਤ ਦ੍ਰਿਸ਼ਟੀ : ਮਾਰਕਸਵਾਦ, ਅੰਬੇਦਕਰਵਾਦ
1.4 ਪੰਜਾਬੀ ਕੌਮ, ਦਲਿਤ ਮੁਕਤੀ ਅਤੇ ਸ਼ਸ਼ਕਤੀਕਰਨ
1.5 ਦਲਿਤ ਚੇਤਨਾ ਅਤੇ ਪੰਜਾਬ ਵਿੱਚ ਸਮਾਜਿਕ ਪਰਿਵਰਤਨ
1.6 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਦੂਜਾ (ਦਲਿਤ ਕਵਿਤਾ)

2. ਸੰਤ ਰਾਮ ਉਦਾਸੀ, ***ਕੰਮੀਆਂ ਦਾ ਵਿਹੜਾ***, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ, 1987
2.1 ਵਿਸ਼ਾ ਵਸਤੂ ਅਤੇ ਸਰੋਕਾਰ
2.2 ਦਲਿਤ ਚੇਤਨਾ
2.3 ਕਲਾਤਮਕ ਪੱਖ
2.4 ਕਵਿਤਾ ਦਾ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ
2.5 ਕਵੀ ਦਾ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ
2.6 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਤੀਜਾ (ਦਲਿਤ ਕਹਾਣੀ)

3. ਅਤਰਜੀਤ, ***ਸਭੂਤੇ ਕਦਮ***, ਬਲਰਾਜ ਸਾਹਨੀ ਯਾਦਗਾਰੀ ਪ੍ਰਕਾਸ਼ਨ, ਬਠਿੰਡਾ, 2009
3.1 ਵਿਸ਼ਾ ਵਸਤੂ
3.2 ਕਲਾਤਮਕ ਜੁਗਤਾਂ
3.3 ਦਲਿਤ ਚੇਤਨਾ
3.4 ਸਰੋਕਾਰ ਅਤੇ ਵਿਚਾਰਧਾਰਾ
3.5 ਕਹਾਣੀਕਾਰ ਦਾ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ
3.6 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ :

1. ਸਤਿੰਦਰ ਸਿੰਘ ਨੂਰ ਅਤੇ ਪ੍ਰੀਤਮ ਸਿੰਘ ਬੱਤਰਾ (ਸੰਪਾ.), **ਦਲਿਤ ਚੇਤਨਾ ਅਤੇ ਸਾਹਿਤ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ
2. ਸਰਬਜੀਤ ਸਿੰਘ, **ਦਲਿਤ ਦ੍ਰਿਸ਼ਟੀ**, ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ, 2004
3. ਸੰਤੋਖ ਸਿੰਘ, **ਭਾਰਤ ਵਿੱਚ ਜਾਤ ਅਤੇ ਜਮਾਤ**, ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2013
4. ਪਰਮਜੀਤ ਕੌਰ ਸਿੱਧੂ, **ਪੰਜਾਬੀ ਕਹਾਣੀ ਵਿੱਚ ਦਲਿਤ ਸਰੋਕਾਰ**, ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ
5. ਭੀਮਇੰਦਰ ਸਿੰਘ, **ਦਲਿਤ ਚਿੰਤਨ : ਮਾਰਕਸੀ ਪਰਿਪੇਖ**, ਕੰਕਰ ਪ੍ਰਕਾਸ਼ਨ, ਜਲੰਧਰ
6. ਰੌਣਕੀ ਰਾਮ, **ਦਲਿਤ ਚੇਤਨਾ : ਸਰੋਤ ਤੇ ਸਰੂਪ**, ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2010
7. ਰੌਣਕੀ ਰਾਮ, **ਦਲਿਤ ਪਛਾਣ : ਮੁਕਤੀ ਤੇ ਸ਼ਕਤੀਕਰਨ**, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2012

Mapping Matrix of Course B-PBI-N-503 (i)-DSC

Mapping: Mapping is a process of representing the correlation between COs and POs, COs and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and Pos

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-503 (i)-DSC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-503 (i)-DSC

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
B-PBI-N-503 (i)-DSC.1	3	3	3	2	3	2	3	3
B-PBI-N-503 (i)-DSC.2	3	3	3	2	3	2	3	3
B-PBI-N-503 (i)-DSC.3	3	3	3	2	3	2	3	3
B-PBI-N-503 (i)-DSC.4	3	3	3	2	3	2	3	3
Average	3	3	3	2	3	2	3	3

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-503 (i)-DSC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-503 (i)-DSC

CO	PSO 1	PSO 2	PSO 3	PSO 4
B-PBI-N-503 (i)-DSC.1	3	3	3	3
B-PBI-N-503 (i)-DSC.2	3	3	3	3
B-PBI-N-503 (i)-DSC.3	3	3	3	3
B-PBI-N-503 (i)-DSC.4	3	3	3	2
Average	3	3	3	2.75

Semester : V
B-PBI-N-503 (ii)-DSC

ਪੰਜਾਬੀ ਨਾਰੀ ਸਾਹਿਤ
(Punjabi Nari Sahit)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਨਾਰੀ ਅਤੇ ਨਾਰੀ ਚੇਤਨਾ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ ਬਾਰੇ ਕੁੱਲ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਇਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਕਵਿਤਾ ਦੇ ਸਾਰ/ ਵਿਸ਼ੇ/ ਨਾਰੀ ਦ੍ਰਿਸ਼ਟੀ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਕਵੀ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਕਵਿਤਾਵਾਂ ਦੀ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
5. ਯੂਨਿਟ ਤੀਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀਆਂ ਕਹਾਣੀਆਂ ਦੇ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ/ ਵਿਸ਼ੇ/ ਨਾਰੀ ਚੇਤਨਾ/ ਸਮੱਸਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਕਹਾਣੀਆਂ ਦੇ ਪਾਤਰ ਵਿਧਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਕਹਾਣੀਕਾਰ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਏਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਨਾਰੀਵਾਦ, ਨਾਰੀ ਸਾਹਿਤ ਅਤੇ ਨਾਰੀ ਸਰੋਕਾਰਾਂ ਤੋਂ ਜਾਣੂ ਕਰਾਉਣਾ.

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-503 (ii)-DSC.1	ਵਿਦਿਆਰਥੀ ਨਾਰੀ ਅਤੇ ਨਾਰੀ ਚੇਤਨਾ ਨਾਲ ਸਬੰਧਤ ਵਿਭਿੰਨ ਸੰਕਲਪਾਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।
B-PBI-N-503 (ii)-DSC.2	ਵਿਦਿਆਰਥੀਆਂ ਦਾ ਨਾਰੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਇਤਿਹਾਸ, ਇਸਦੇ ਝੁਕਾਵਾਂ ਅਤੇ ਪ੍ਰਮੁੱਖ ਸਾਹਿਤਕਾਰਾਂ ਨਾਲ ਪਰਿਚੈ ਹੋਵੇਗਾ।
B-PBI-N-503 (ii)-DSC.3	ਨਾਰੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਮੁੱਖ ਸਰੋਕਾਰਾਂ ਨਾਲ ਜਾਣ-ਪਛਾਣ ਹੋਵੇਗੀ।
B-PBI-N-503 (ii)-DSC.4	ਨਾਰੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਜ਼ਰੀਏ ਪੰਜਾਬੀ ਔਰਤ ਦੀ ਅੰਤਰਮਨ ਸੰਵੇਦਨਾ ਨੂੰ ਸਮਝਣ ਦੀ ਸੂਝ ਪੈਦਾ ਹੋਵੇਗੀ।

ਯੂਨਿਟ ਪਹਿਲਾ : (ਨਾਰੀ ਵਾਦ)

1. ਨਾਰੀ ਵਾਦ : ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ
1.1 ਨਾਰੀ ਵਾਦ : ਪਰਿਭਾਸ਼ਾ ਵਿਕਾਸ ਅਤੇ ਮੰਤਵ
1.2 ਨਾਰੀ ਵਾਦ ਅਤੇ ਨਾਰੀ ਮੁਕਤੀ ਮਾਡਲ
1.3 ਨਾਰੀ ਲਿਖਤ ਦਾ ਮਸਲਾ
1.4 ਭਾਰਤੀ ਨਾਰੀ ਅਤੇ ਨਾਰੀਵਾਦ
1.5 ਪੰਜਾਬੀ ਸਾਹਿਤ ਅਤੇ ਨਾਰੀਵਾਦ
1.6 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਦੂਜਾ (ਨਾਰੀ ਕਵਿਤਾ)

2. ਪਾਲ ਕੌਰ, ***ਇੰਝ ਨਾ ਮਿਲੀਂ***, ਆਰਸੀ ਪਬਲਿਸ਼ਰਜ਼, ਦਿੱਲੀ, 1999
2.1 ਨਾਰੀ ਸੰਵੇਦਨਾ
2.2 ਕਾਵਿ ਜੁਗਤਾਂ
2.3 ਵਿਹਾਰਕ ਸਮੀਖਿਆ
2.4 ਕਾਵਿ ਸਰੋਕਾਰ
2.5 ਕਵਿੱਤਰੀ ਦਾ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ
2.6 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਤੀਜਾ (ਨਾਰੀ ਕਹਾਣੀ)

3. ਨਿਰਮਲ ਜਸਵਾਲ, ***ਮੱਛੀਆਂ ਕੱਚ ਦੀਆਂ***, ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2004
3.1 ਵਿਸ਼ਾ ਵਸਤੂ
3.2 ਕਲਾਤਮਕ ਜੁਗਤਾਂ
3.3 ਨਾਰੀ ਸੰਵੇਦਨਾ
3.4 ਸਰੋਕਾਰ ਅਤੇ ਵਿਚਾਰਧਾਰਾ
3.5 ਲੇਖਿਕਾ ਦਾ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ
3.6 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ :

1. ਅਰਵਿੰਦਰਪਾਲ ਕੌਰ, **ਨਾਰੀ ਕਾਵਿ-ਚਿੰਤਨ,** ਵਾਰਿਸ ਸ਼ਾਹ ਫ਼ਾਊਂਡੇਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ
2. ਆਸ਼ਾ ਕੌਸ਼ਿਕ, **ਨਾਰੀ ਸ਼ਸ਼ਕਤੀਕਰਣ : ਵਿਮਰਸ਼ ਏਵਮ ਯਥਾਰਥ,** ਪੁਆਇੰਟਰ ਪਬਲਿਸ਼ਰ, ਜੈਪੁਰ, 2004
3. ਹਰਪ੍ਰੀਤ ਕੌਰ, **ਨਾਰੀਵਾਦ,** ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ
4. ਮਾਨਚੰਦ ਖੰਡੇਲਾ, **ਮਹਿਲਾ ਔਰ ਬਦਲਤਾ ਸਮਾਜਿਕ ਪਰਿਵੇਸ਼,** ਅਵਿਸ਼ਕਾਰ ਪਬਲਿਸ਼ਰ, ਜੈਪੁਰ, 2012
5. ਰਵਿੰਦਰ ਕੁਮਾਰ, **ਔਰਤ ਤੇ ਦਲਿਤ ਹਾਸ਼ੀਆਗਤ ਪ੍ਰਵਚਨ : ਨਵ-ਇਤਿਹਾਸਵਾਦੀ ਪਰਿਪੇਖ,** ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2005
6. ਵਨੀਤਾ, **ਨਾਰੀਵਾਦ ਤੇ ਸਾਹਿਤ,** ਅਜੰਤਾ ਬੁੱਕਸ ਇੰਟਰਨੈਸ਼ਨਲ, ਦਿੱਲੀ, 2002

Mapping Matrix of Course B-PBI-N-503 (ii)-DSC

Mapping: Mapping is a process of representing the correlation between COs and POs, COs and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and Pos

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-503 (ii)-DSC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-503 (ii)-DSC

CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**
B-PBI-N-503 (ii)-DSC .1	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-503 (ii)-DSC.2	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-503 (ii)-DSC.3	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-503 (ii)-DSC.4	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
Average	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-503 (ii)-DSC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-503 (ii)-DSC

CO	**PSO 1**	**PSO 2**	**PSO 3**	**PSO 4**
B-PBI-N-503 (ii)-DSC .1	**3**	**3**	**3**	**3**
B-PBI-N-503 (ii)-DSC.2	**3**	**3**	**3**	**3**
B-PBI-N-503 (ii)-DSC.3	**3**	**3**	**3**	**3**
B-PBI-N-503 (ii)-DSC.4	**3**	**3**	**3**	**2**
Average	**3**	**3**	**3**	**2.75**

Semester : V

B-PBI-N-503 (iii)-DSC

ਹਰਿਆਣਾ ਦਾ ਪੰਜਾਬੀ ਸਾਹਿਤ
(Haryana Da Panjabi Sahit)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਇੱਕ ਸੁਆਲ ਕਵਿਤਾ ਦੇ ਸਿਧਾਂਤ/ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀ ਕਵਿਤਾ ਦੇ ਵਿਸ਼ੇ/ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਅਤੇ ਇੱਕ ਸੁਆਲ ਕਵੀ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ, ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਅਤੇ ਹਰਿਆਣੇ ਦੀ ਪੰਜਾਬੀ ਕਵਿਤਾ ਦੇ ਨਿਕਾਸ-ਵਿਕਾਸ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਕਵਿਤਾਵਾਂ ਦੀ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
4. ਯੂਨਿਟ ਦੂਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਨਾਵਲ ਦੇ ਸਾਰ/ ਵਿਸ਼ੇ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਨਾਵਲ ਦੇ ਪਾਤਰ ਵਿਧਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਪ੍ਰਸ਼ਨ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਨਾਵਲਕਾਰ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਅਤੇ ਹਰਿਆਣੇ ਦੇ ਪੰਜਾਬੀ ਨਾਵਲ ਦੇ ਨਿਕਾਸ ਵਿਕਾਸ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
5. ਯੂਨਿਟ ਤੀਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੇ ਨਾਟਕ ਦੇ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ/ ਵਿਸ਼ੇ/ਸਮੱਸਿਆ ਅਤੇ ਰੰਗਮੰਚੀ ਸਾਰਥਕਤਾ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਨਾਟਕ ਦੇ ਪਾਤਰ ਵਿਧਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਨਾਟਕਕਾਰ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ, ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਅਤੇ ਹਰਿਆਣੇ ਦੇ ਪੰਜਾਬੀ ਨਾਟਕ ਦੇ ਨਿਕਾਸ ਵਿਕਾਸ ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਏਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਹਰਿਆਣੇ ਦੇ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਇਤਿਹਾਸ, ਇਸਦੇ ਝੁਕਾਵਾਂ ਅਤੇ ਪ੍ਰਮੁੱਖ ਸਾਹਿਤਕਾਰਾਂ ਤੋਂ ਜਾਣੂ ਕਰਾਉਣਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-503 (iii)-DSC.1	ਹਰਿਆਣਾ ਵਿਚਲੇ ਵੱਖ-ਵੱਖ ਸਾਹਿਤਕਾਰਾਂ ਦੀਆਂ ਰਚਨਾਵਾਂ ਦੇ ਅਧਿਐਨ ਦੁਆਰਾ ਸਾਹਿਤ ਅਧਿਐਨ ਦੀ ਸੂਝ ਪੈਦਾ ਹੋਵੇਗੀ।
B-PBI-N-503 (iii)-DSC.2	ਹਰਿਆਣਾ ਦੇ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਅਧਿਐਨ ਦੁਆਰਾ ਹਰਿਆਣਾ ਵਿੱਚ ਵਸਦੇ ਪੰਜਾਬੀ ਲੋਕਾਂ ਦੀ ਜੀਵਨ-ਜਾਚ ਨੂੰ ਸਮਝਣ ਦੀ ਸੂਝ ਬਣੇਗੀ।

B-PBI-N-503 (iii)-DSC.3	ਹਰਿਆਣੇ ਦੀ ਪੰਜਾਬੀ ਕਵਿਤਾ, ਨਾਵਲ ਅਤੇ ਨਾਟਕ ਦੇ ਵਿਹਾਰਕ ਅਧਿਐਨ ਰਾਹੀਂ ਸਾਹਿਤ ਦੀ ਸਮਝ ਪੈਦਾ ਹੋਵੇਗੀ।
B-PBI-N-503 (iii)-DSC.4	ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਖੇਤਰੀ ਸਾਹਿਤ ਨੂੰ ਪੜ੍ਹਨ, ਸਮਝਣ ਦੀ ਰੁਚੀ ਪੈਦਾ ਹੋਵੇਗੀ।

ਯੂਨਿਟ ਪਹਿਲਾ (ਕਵਿਤਾ)

1. ***ਪਰਵਾਜ਼***, ਰਤਨ ਸਿੰਘ ਢਿੱਲੋਂ, ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ, 2012
1.1 ਕਵਿਤਾ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਤਕਨੀਕ
1.2 ਹਰਿਆਣਾ ਦੀ ਪੰਜਾਬੀ ਕਵਿਤਾ : ਨਿਕਾਸ, ਵਿਕਾਸ ਅਤੇ ਸੰਖੇਪ ਇਤਿਹਾਸ
1.3 ਹਰਿਆਣਾ ਦੀ ਪੰਜਾਬੀ ਕਵਿਤਾ ਦੇ ਪ੍ਰਮੁੱਖ ਰੂਪ
1.4 ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ
1.5 ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ
1.6 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਦੂਜਾ (ਨਾਵਲ)

2. ਸੋਹਣ ਸਿੰਘ ਹੰਸ, ***ਕਾਰੇ ਹੱਥੀਂ***, ਬਲਰਾਜ ਸਾਹਨੀ ਯਾਦਗਾਰੀ ਪ੍ਰਕਾਸ਼ਨ, 1986
2.1 ਹਰਿਆਣਾ ਦਾ ਪੰਜਾਬੀ ਨਾਵਲ : ਨਿਕਾਸ, ਵਿਕਾਸ ਅਤੇ ਸੰਖੇਪ ਇਤਿਹਾਸ
2.2 ਵਿਸ਼ਾ ਵਸਤੂ ਅਤੇ ਸਰੋਕਾਰ
2.3 ਆਲੋਚਨਾਤਕ ਅਧਿਐਨ
2.4 ਪਾਤਰ ਵਿਧਾਨ
2.5 ਬਿਰਤਾਂਤਕ ਜੁਗਤਾਂ
2.6 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਤੀਜਾ (ਨਾਟਕ)

2. ***ਤੂੰ ਮੇਰਾ ਕੀ ਲੱਗਦੈਂ,*** ਕੁਲਦੀਪ ਸਿੰਘ ਦੀਪ, ਅਦਬੀ ਪ੍ਰਵਾਜ਼ ਪ੍ਰਕਾਸ਼ਨ, ਮਾਨਸਾ, 2016
2.1 ਨਾਟਕ : ਅਰਥ, ਪਰਿਭਾਸ਼ਾ, ਤੱਤ ਅਤੇ ਰੂਪਾਕਾਰਕ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ
2.2 ਹਰਿਆਣਾ ਦਾ ਪੰਜਾਬੀ ਨਾਟਕ : ਜਨਮ ਅਤੇ ਸੰਖੇਪ ਇਤਿਹਾਸ
2.3 ਵਿਸ਼ਾ ਵਸਤੂ ਅਤੇ ਸਰੋਕਾਰ
2.4 ਆਲੋਚਨਾਤਕ ਅਧਿਐਨ
2.5 ਪਾਤਰ ਵਿਧਾਨ
2.6 ਨਾਟਕੀ ਜੁਗਤਾਂ/ ਰੰਗਮੰਚੀ ਸਾਰਥਕਤਾ
2.7 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਅਮਰਜੀਤ ਸਿੰਘ ਕਾਂਗ, **ਹਰਿਆਣਾ ਦਾ ਪੰਜਾਬੀ ਸਾਹਿਤ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ
2. ਅਮਰਜੀਤ ਸਿੰਘ ਕਾਂਗ ਅਤੇ ਹਿੰਮਤ ਸਿੰਘ ਸੋਢੀ (ਸੰਪਾ.), **ਹਰਿਆਣਾ ਦਾ ਪੰਜਾਬੀ ਸਾਹਿਤ ਨੂੰ ਯੋਗਦਾਨ** ਹਰਿਆਣਾ ਸਾਹਿਤ ਅਕਾਦਮੀ, ਚੰਡੀਗੜ੍ਹ
3. ਸ. ਸ. ਖਹਿਰਾ, **ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਵਿਆਕਰਣ ਅਤੇ ਬਣਤਰ,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ
4. ਹਰਕੀਰਤ ਸਿੰਘ, **ਪੰਜਾਬੀ ਸ਼ਬਦ ਰੂਪ ਅਤੇ ਸ਼ਬਦ ਜੋੜ ਕੋਸ਼**, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ
5. ਹਰਬੰਸ ਸਿੰਘ ਧੀਮਾਨ, **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਵਿਆਕਰਣ,** ਗਗਨ ਪ੍ਰਕਾਸ਼ਨ, ਰਾਜਪੁਰਾ, ਪਟਿਆਲਾ, 2006
6. ਗੁਰਦਿਆਲ ਸਿੰਘ , **ਹਰਿਆਣਾ ਦੀ ਪੰਜਾਬੀ ਕਵਿਤਾ ਦਾ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ,** ਨਾਨਕ ਸਿੰਘ ਪੁਸਤਕਮਾਲਾ, ਅੰਮ੍ਰਿਤਸਰ, 2011

Mapping Matrix of Course B-PBI-N-503 (iii)-DSC

Mapping: Mapping is a process of representing the correlation between COs and POs, COs and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and Pos

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-503 (iii)-DSC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-503 (iii)-DSC

CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**
B-PBI-N-503 (iii)-DSC.1	**3**	**2**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-503 (iii)-DSC.2	**3**	**3**	**3**	**2**	**3**	**3**	**3**	**3**
B-PBI-N-503 (iii)-DSC.3	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-503 (iii)-DSC.4	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
Average	**3**	**2.75**	**3**	**2**	**3**	**2.25**	**3**	**3**

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-503 (iii)-DSC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-503 (iii)-DSC

CO	**PSO 1**	**PSO 2**	**PSO 3**	**PSO 4**
B-PBI-N-503 (iii)-DSC.1	**3**	**3**	**3**	**2**
B-PBI-N-503 (iii)-DSC.2	**3**	**3**	**3**	**3**
B-PBI-N-503 (iii)-DSC.3	**3**	**2**	**3**	**3**
B-PBI-N-503 (iii)-DSC.4	**3**	**3**	**3**	**2**
Average	**3**	**2.75**	**3**	**2**

Semester : V

B-PBI-N-503 (iv)-DSC

ਭਾਰਤੀ ਸਾਹਿਤ

(Bharti Sahit)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਸਾਹਿਤ, ਅਨੁਵਾਦ ਅਤੇ ਤੁਲਨਾਤਮਕ ਸਾਹਿਤ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ ਬਾਰੇ ਕੁੱਲ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਇਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀਆਂ ਕਹਾਣੀਆਂ ਦੇ ਸਾਰ/ ਵਿਸ਼ੇ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਕਹਾਣੀਆਂ ਦੇ ਪਾਤਰ ਵਿਧਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਕਹਾਣੀਕਾਰਾਂ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
5. ਯੂਨਿਟ ਤੀਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੇ ਨਾਵਲ ਦੇ ਸਾਰ/ ਵਿਸ਼ੇ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਨਾਵਲ ਦੇ ਪਾਤਰ ਵਿਧਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਨਾਵਲਕਾਰ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ, ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਅਤੇ ਪੰਜਾਬੀ ਨਾਵਲ ਵਿੱਚ ਉਸਦੇ ਬਣਦੇ ਸਥਾਨ ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਭਾਰਤੀ ਸਾਹਿਤ, ਸਾਹਿਤਕਾਰਾਂ ਅਤੇ ਸਾਹਿਤ ਇਤਿਹਾਸ ਨਾਲ ਸੰਖੇਪ ਜਾਣ-ਪਛਾਣ ਕਰਾਉਣਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-503 (iv)-DSC.1	ਵਿਦਿਆਰਥੀ ਅਨੁਵਾਦਿਤ ਅਤੇ ਤੁਲਨਾਤਮਕ ਸਾਹਿਤ ਦੇ ਵਿਭਿੰਨ ਸਿਧਾਂਤਕ ਪਹਿਲੂਆਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।
B-PBI-N-503 (iv)-DSC.2	ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਵਿੱਚ ਅਨੁਵਾਦਿਤ ਭਾਰਤੀ ਸਾਹਿਤ ਦੇ ਇਤਿਹਾਸ, ਇਸਦੇ ਝੁਕਾਵਾਂ ਅਤੇ ਪ੍ਰਮੁੱਖ ਸਾਹਿਤਕਾਰਾਂ ਬਾਰੇ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੋਵੇਗੀ।
B-PBI-N-503 (iv)-DSC.3	ਵਿਦਿਆਰਥੀਆਂ ਵਿਭਿੰਨ ਭਾਰਤੀ ਸਾਹਿਤਕ ਰਚਨਾਵਾਂ ਦੇ ਤੁਲਨਾਤਮਕ ਅਧਿਐਨ ਰਾਹੀਂ ਭਾਰਤੀ ਸਾਹਿਤ ਦੇ ਵਿਭਿੰਨ ਰੁਝਾਨਾਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।

B-PBI-N-503 (iv)-DSC.4 ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਵਿੱਚ ਅਨੁਵਾਦਿਤ ਭਾਰਤੀ ਸਾਹਿਤ ਦੇ ਮੁੱਖ ਸਰੋਕਾਰਾਂ ਦਾ ਗਿਆਨ ਪ੍ਰਾਪਤ ਹੋਵੇਗਾ।

ਯੂਨਿਟ ਪਹਿਲਾ

1. ਸਿਧਾਂਤ ਇਤਿਹਾਸ ਅਤੇ ਪ੍ਰਵਿਰਤੀਆਂ
1.1 ਅਨੁਵਾਦ : ਪਰਿਭਾਸ਼ਾ
1.2 ਅਨੁਵਾਦਿਤ ਸਾਹਿਤ ਦੀ ਮਹੱਤਤਾ
1.3 ਤੁਲਨਾਤਮਕ ਅਧਿਐਨ
1.4 ਭਾਰਤੀ ਸਾਹਿਤ ਦੇ ਪ੍ਰਮੁੱਖ ਰੁਝਾਨ

ਯੂਨਿਟ ਦੂਜਾ

2. ਬਲਬੀਰ ਮਾਧੋਪੁਰੀ, (ਅਨੁ. ਅਤੇ ਸੰਪਾ.), ***ਮਿੱਟੀ ਬੋਲਦੀ ਹੈ*** (ਪਹਿਲੀਆਂ ਦਸ ਕਹਾਣੀਆਂ), ਨਵਯੁਗ ਪਬਲਿਸ਼ਰਜ਼, ਦਿੱਲੀ, 2014
2.1 ਵਿਸ਼ੈਗਤ ਅਧਿਐਨ
2.2 ਕਹਾਣੀ ਕਲਾ
2.3 ਬਿਰਤਾਂਤਕ ਜੁਗਤਾਂ
2.4 ਤੁਲਨਾਤਮਕ ਅਧਿਐਨ

ਯੂਨਿਟ ਤੀਜਾ

3. ਲਵਲੀਨ ਜੌਲੀ (ਅਨੁ.), ***ਸੰਸਕਾਰ*** (ਮੂਲ ਲੇਖਕ ਯੂ. ਆਰ ਅਨੰਤਮੂਰਤੀ), ਸਾਹਿਤ ਅਕਾਦਮੀ, ਦਿੱਲੀ, 1997
3.1 ਵਿਸ਼ੇਗਤ ਸਰੋਕਾਰ
3.2 ਗਲਪੀ ਸੰਗਠਨ
3.3 ਕਥਾਨਕ ਅਤੇ ਪਾਤਰ ਚਿੱਤਰਣ
3.4 ਬਿਰਤਾਂਤਕ ਜੁਗਤਾਂ
3.5 ਸਮਾਜਿਕ-ਸੰਸਕ੍ਰਿਤਕ ਪਰਿਪੇਖ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ :

1. ਹਰਚਰਨ ਕੌਰ ਅਤੇ ਰਵੇਲ ਸਿੰਘ (ਸੰਪਾ.), ਪੰਜਾਬੀ ਅਤੇ ਭਾਰਤੀ ਸਾਹਿਤ : ਤੁਲਨਾ ਤੋਂ ਸੰਵਾਦ ਤੱਕ, ਪੰਜਾਬੀ ਅਕਾਡਮੀ, ਦਿੱਲੀ, 2002
2. ਸਤਿੰਦਰ ਸਿੰਘ (ਸੰਪਾ.), ਤੁਲਨਾਤਮਕ ਭਾਰਤੀ ਸਾਹਿਤ, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 1990

Mapping Matrix of Course B-PBI-N-503 (iv)-DSC

Mapping: Mapping is a process of representing the correlation between COs and POs, COs and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and Pos

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-503 (iv)-DSC)assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-503 (iv)-DSC

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
B-PBI-N-503 (iv)-DSC.1	**3**	**2**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-503 (iv)-DSC.2	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-503 (iv)-DSC.3	**3**	**2**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-503 (iv)-DSC.4	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
Average	**3**	**2.5**	**3**	**2**	**3**	**2**	**3**	**3**

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-503 (iv)-DSC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-503 (iv)-DSC

CO	PSO 1	PSO 2	PSO 3	PSO 4
B-PBI-N-503 (iv)-DSC.1	**3**	**2**	**3**	**3**
B-PBI-N-503 (iv)-DSC.2	**3**	**3**	**3**	**3**
B-PBI-N-503 (iv)-DSC.3	**3**	**3**	**3**	**3**
B-PBI-N-503 (iv)-DSC.4	**3**	**3**	**3**	**2**
Average	**3**	**2.75**	**3**	**2.75**

Semester : V

B-PBI-N-503 (v)-DSC

ਸਾਹਿਤ ਸਿਧਾਂਤ, ਭਾਰਤੀ ਅਤੇ ਯੂਨਾਨੀ ਕਾਵਿ ਸ਼ਾਸਤਰ

(Sahit Sidhant, Bharti Ate Unani Kaav Shastar)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਸਾਹਿਤ ਅਤੇ ਸਾਹਿਤ ਸਿਧਾਂਤ ਬਾਰੇ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਨੇ ਇਹਨਾਂ ਵਿੱਚੋਂ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਵਿੱਚ ਭਾਰਤੀ ਕਾਵਿ ਸ਼ਾਸਤਰ ਬਾਰੇ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਨੇ ਇਹਨਾਂ ਵਿੱਚੋਂ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
5. ਯੂਨਿਟ ਤੀਜਾ ਵਿੱਚ ਯੂਨਾਨੀ ਕਾਵਿ ਸ਼ਾਸਤਰ ਬਾਰੇ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਨੇ ਇਹਨਾਂ ਵਿੱਚੋਂ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਸਾਹਿਤ ਅਤੇ ਸਾਹਿਤ ਸਿਧਾਂਤ ਨਾਲ ਸਬੰਧਤ ਵੱਖ-ਵੱਖ ਸੰਕਲਪਾਂ ਦਾ ਬੋਧ ਹਾਸਲ ਕਰਾਉਣਾ।
- ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਭਾਰਤੀ ਅਤੇ ਯੂਨਾਨੀ ਕਾਵਿ ਸ਼ਾਸਤਰ ਪ੍ਰਤੀ ਸਮਝ ਪੈਦਾ ਕਰਨਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-503 (v)-DSC.1	ਵਿਦਿਆਰਥੀ ਸਾਹਿਤ ਅਤੇ ਸਾਹਿਤ ਸਿਧਾਂਤ ਬਾਰੇ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਕਰਨਗੇ।
B-PBI-N-503 (v)-DSC.2	ਵਿਦਿਆਰਥੀ ਭਾਰਤੀ ਸਾਹਿਤ ਸਿਧਾਂਤ ਦੇ ਵਿਭਿੰਨ ਸੰਕਲਪਾਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।
B-PBI-N-503 (v)-DSC.3	ਵਿਦਿਆਰਥੀ ਯੂਨਾਨੀ ਸਾਹਿਤ ਸ਼ਾਸਤਰੀਆਂ ਦੇ ਹਵਾਲੇ ਨਾਲ ਸਾਹਿਤ ਸਿਧਾਂਤ ਦੇ ਵਿਭਿੰਨ ਸੰਕਲਪਾਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।
B-PBI-N-503 (v)-DSC.4	ਭਾਰਤੀ ਅਤੇ ਯੂਨਾਨੀ ਕਾਵਿ ਸ਼ਾਸਤਰ ਦੀ ਵਿਸਤ੍ਰਿਤ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੋਵੇਗੀ।

ਯੂਨਿਟ ਪਹਿਲਾ

1. ਸਾਹਿਤ : ਸਿਧਾਂਤਕ ਪੱਖ

1.1 ਸਾਹਿਤ : ਪਰਿਭਾਸ਼ਾ ਤੇ ਪ੍ਰਕ੍ਰਿਤੀ

1.2 ਸਾਹਿਤ ਅਤੇ ਦੂਜੀਆਂ ਸੂਖ਼ਮ ਕਲਾਵਾਂ : ਅੰਤਰ ਨਿਖੇੜ

1.3 ਸਾਹਿਤ ਤੇ ਭਾਸ਼ਾ

1.4 ਸਾਹਿਤ ਦਾ ਪ੍ਰਯੋਜਨ

ਯੂਨਿਟ ਦੂਜਾ

2. ਭਾਰਤੀ ਕਾਵਿ ਸ਼ਾਸਤਰ

2.1 ਭਾਰਤੀ ਕਾਵਿ ਸ਼ਾਸਤਰ ਦੇ ਮੁੱਖ ਸਿਧਾਂਤ

2.2 ਰਸ ਸਿਧਾਂਤ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵਰਗੀਕਰਨ

2.3 ਅਲੰਕਾਰ ਸਿਧਾਂਤ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵਰਗੀਕਰਨ

2.4 ਧੁਨੀ ਸਿਧਾਂਤ ਅਤੇ ਸ਼ਬਦ ਸ਼ਕਤੀਆਂ

2.5 ਰੀਤੀ ਸਿਧਾਂਤ : ਪ੍ਰਮੁੱਖ ਸੰਕਲਪ

2.6 ਵਕ੍ਰੋਕਤੀ ਸਿਧਾਂਤ : ਪ੍ਰਮੁੱਖ ਸੰਕਲਪ

2.7 ਔਚਿਤਯ ਸਿਧਾਂਤ : ਮੂਲ ਧਾਰਨਾਵਾਂ

ਯੂਨਿਟ ਤੀਜਾ

3. ਯੂਨਾਨੀ ਕਾਵਿ ਸ਼ਾਸਤਰ

3.1 ਪਲੈਟੋ ਦਾ ਕਾਵਿ ਸਿਧਾਂਤ

3.2 ਅਰਸਤੂ ਦਾ ਤ੍ਰਾਸਦੀ ਸਿਧਾਂਤ

3.3 ਪਲੈਟੋ ਤੇ ਅਰਸਤੂ ਦੀਆਂ ਧਾਰਨਾਵਾਂ ਵਿੱਚ ਅੰਤਰ ਨਿਖੇੜ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਸੁਰਿੰਦਰ ਕੁਮਾਰ ਦਵੇਸ਼ਵਰ, **ਆਧੁਨਿਕ ਸਾਹਿਤ ਆਲੋਚਨਾ : ਸਿਧਾਂਤ ਅਤੇ ਵਿਸ਼ਲੇਸ਼ਣ,** ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2005
2. ਹਰਿਭਜਨ ਸਿੰਘ, **ਅਰਸਤੂ ਦਾ ਕਾਵਿ ਸ਼ਾਸਤਰ,** ਐੱਸ ਚਾਂਦ ਐਂਡ ਸੰਨਜ਼, ਦਿੱਲੀ
3. ਹਰਿਭਜਨ ਸਿੰਘ, **ਸਾਹਿਤ ਸ਼ਾਸਤਰ,** ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ
4. ਕਿਸ਼ਨ ਸਿੰਘ, **ਸਾਹਿਤ ਦੀ ਸਮਝ,** ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2005
5. ਗਨਪਤੀ ਚੰਦਰ ਗੁਪਤ, **ਭਾਰਤੀਯ ਔਰ ਪਾਛਚਾਤਯ ਕਾਵਯ ਸਿਧਾਂਤ,** ਲੋਕ ਭਾਰਤੀ ਪ੍ਰਕਾਸ਼ਨ, ਅਲਾਹਾਬਾਦ
6. ਗੁਰਚਰਨ ਕੌਰ ਜੱਗੀ, **ਭਾਰਤੀ ਕਾਵਿ ਸ਼ਾਸਤਰ,** ਆਰਸੀ ਪਬਲਿਸ਼ਰਜ਼, ਦਿੱਲੀ, 1981
7. ਗੋਪਾਲ ਸਿੰਘ, **ਸਾਹਿਤ ਦੀ ਪਰਖ,** ਵਰਲਡ ਬੁੱਕ ਸੈਂਟਰ, ਨਵੀਂ ਦਿੱਲੀ, 1989
8. ਜਗਬੀਰ ਸਿੰਘ, **ਪੱਛਮੀ ਸਾਹਿਤ ਸਿਧਾਂਤ ਅਤੇ ਭਾਰਤੀ ਕਾਵਿ ਸ਼ਾਸਤਰ,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2014
9. ਨਗੇਂਦਰਾ, **ਰਸ ਸਿਧਾਂਤ,** ਨੈਸ਼ਨਲ ਪਬਲਿਸ਼ਿੰਗ ਹਾਊਸ, ਦਿੱਲੀ, 1969
10. ਪ੍ਰੇਮ ਪ੍ਰਕਾਸ਼ ਸਿੰਘ, **ਭਾਰਤੀ ਕਾਵਿ ਸ਼ਾਸਤਰ,** ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ, 1998
11. ਰੋਸ਼ਨ ਲਾਲ ਆਹੂਜਾ, **ਅਰਸਤੂ ਦਾ ਕਾਵਿ ਸ਼ਾਸਤਰ**, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ, 1981
12. ਰੋਸ਼ਨ ਲਾਲ ਆਹੂਜਾ, **ਸਾਹਿਤ ਸ਼ਾਸਤਰ**, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ

Mapping Matrix of Course B-PBI-N-503 (v)-DSC

Mapping: Mapping is a process of representing the correlation between COs and POs, COs and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and Pos

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-503 (v)-DSC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-503 (v)-DSC

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
B-PBI-N-503 (v)-DSC.1	**3**	**2**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-503 (v)-DSC.2	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-503 (v)-DSC.3	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-503 (v)-DSC.4	**3**	**2**	**3**	**2**	**3**	**2**	**3**	**3**
Average	**3**	**2.5**	**3**	**2**	**3**	**2**	**3**	**3**

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-503 (v)-DSC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-503 (v)-DSC

CO	PSO 1	PSO 2	PSO 3	PSO 4
B-PBI-N-503 (v)-DSC.1	**3**	**3**	**3**	**3**
B-PBI-N-503 (v)-DSC.2	**3**	**3**	**3**	**3**
B-PBI-N-503 (v)-DSC.3	**3**	**3**	**3**	**3**
B-PBI-N-503 (v)-DSC.4	**3**	**3**	**3**	**2**
Average	**3**	**3**	**3**	**2.75**

Semester : V

B-PBI-N-504-GE

ਮਹਾਂਕਾਵਿ ਅਤੇ ਪੰਜਾਬੀ ਮਹਾਂਕਾਵਿ (Mahakaav Ate Punjabi Mahakaav)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਮਹਾਂਕਾਵਿ ਅਤੇ ਪੰਜਾਬੀ ਮਹਾਂਕਾਵਿ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ ਬਾਰੇ ਕੁੱਲ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਇਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਵਿੱਚ ਇੱਕ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੇ ਮਹਾਂਕਾਵਿ ਦੇ ਸਾਰ/ਵਿਸ਼ੇ/ਸਰੋਕਾਰ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇੱਕ ਸੁਆਲ ਮਹਾਂਕਾਵਿ ਦੇ ਕਲਾਤਮਕ ਅਧਿਐਨ/ ਜੁਗਤਾਂ/ ਭਾਸ਼ਾ ਸ਼ੈਲੀ ਅਤੇ ਮਹਾਂਕਾਵਿ ਲੇਖਕ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਬਾਰੇ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਮਹਾਂਕਾਵਿ ਵਿੱਚੋਂ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
5. ਯੂਨਿਟ ਤੀਜਾ ਵਿੱਚ ਇੱਕ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੇ ਮਹਾਂਕਾਵਿ ਦੇ ਸਾਰ/ਵਿਸ਼ੇ/ਸਰੋਕਾਰ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇੱਕ ਸੁਆਲ ਮਹਾਂਕਾਵਿ ਦੇ ਕਲਾਤਮਕ ਅਧਿਐਨ/ ਜੁਗਤਾਂ/ ਭਾਸ਼ਾ ਸ਼ੈਲੀ ਅਤੇ ਮਹਾਂਕਾਵਿ ਲੇਖਕ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਬਾਰੇ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਮਹਾਂਕਾਵਿ ਵਿੱਚੋਂ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਮਹਾਂਕਾਵਿ ਅਤੇ ਪੰਜਾਬੀ ਮਹਾਂਕਾਵਿ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪੱਖ ਬਾਰੇ ਸਮਝ ਪੈਦਾ ਕਰਨਾ
- ਪੰਜਾਬੀ ਦੇ ਮਹੱਤਵਪੂਰਨ ਮਹਾਂਕਾਵਿ ਦੀ ਵਿਸ਼ਲੇਸ਼ਣੀ ਪੜ੍ਹਤ ਦੁਆਰਾ ਵਿਦਿਆਰਥੀਆਂ ਅੰਦਰ ਮਹਾਂਕਾਵਿ ਨੂੰ ਪੜ੍ਹਨ ਸਮਝਣ ਦੀ ਸੂਝ ਪੈਦਾ ਕਰਨਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-504-GE.1 ਮਹਾਂਕਾਵਿ ਸਬੰਧੀ ਸਿਧਾਂਤਕ ਅਤੇ ਵਿਹਾਰਕ ਸੂਝ ਪੈਦਾ ਹੋਵੇਗੀ।

B-PBI-N-504-GE.2 ਪੰਜਾਬੀ ਮਹਾਂਕਾਵਿ ਸਾਹਿਤ ਦੇ ਇਤਿਹਾਸਕ ਵਿਕਾਸ ਬਾਰੇ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੋਵੇਗੀ।

B-PBI-N-504-GE.3 ਕੁਝ ਵਿਸ਼ੇਸ਼ ਮਹਾਂਕਾਵਿ ਲੇਖਕਾਂ ਦੇ ਮਹਾਂਕਾਵਿ ਦੀ ਪੜ੍ਹਤ ਦੁਆਰਾ ਮਹਾਂਕਾਵਿ ਦੇ ਵਿਹਾਰਕ ਅਧਿਐਨ

ਦੀ ਯੋਗਤਾ ਹਾਸਲ ਹੋਵੇਗੀ।

B-PBI-N-504-GE.4 ਪੰਜਾਬੀ ਮਹਾਂਕਾਵਿ ਵਿੱਚ ਪੇਸ਼ ਵਿਸ਼ੇਸ਼ ਵਿਅਕਤੀਆਂ ਦੇ ਸਿਰਜਤ ਬਿੰਬ ਰਾਹੀਂ ਪੰਜਾਬੀ ਦੀਆਂ ਮਹਾਨ ਇਤਿਹਾਸਕ/ ਧਾਰਮਿਕ ਸਖਸ਼ੀਅਤਾਂ ਦੇ ਜੀਵਨ ਬਿਰਤਾਂਤ ਤੋਂ ਵਿਦਿਆਰਥੀ ਪ੍ਰੇਰਣਾ ਲੈ ਸਕਣਗੇ।

ਯੂਨਿਟ ਪਹਿਲਾ

1. ਮਹਾਂਕਾਵਿ ਅਤੇ ਪੰਜਾਬੀ ਮਹਾਂਕਾਵਿ : ਸਿਧਾਂਤ, ਇਤਿਹਾਸ ਅਤੇ ਪ੍ਰਵਿਰਤੀਆਂ

1.1 ਮਹਾਂਕਾਵਿ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਤੱਤ

1.2 ਪੰਜਾਬੀ ਮਹਾਂਕਾਵਿ : ਆਰੰਭ ਅਤੇ ਵਿਕਾਸ

1.3 ਪੰਜਾਬੀ ਮਹਾਂਕਾਵਿ : ਪ੍ਰਮੁੱਖ ਪ੍ਰਵਿਰਤੀਆਂ

ਯੂਨਿਟ ਦੂਜਾ

2. ਪ੍ਰੋ. ਮੋਹਨ ਸਿੰਘ, ***ਨਨਕਾਇਣ***, ਪਬਲੀਕੇਸ਼ਨ ਬਿਉਰੋ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2019

2.1 ਨਾਨਕ ਬਿੰਬ

2.2 ਕਲਾ ਪੱਖ/ ਵਿਧੀ ਅਤੇ ਤਕਨੀਕ

2.3 ਮਹਾਂਕਾਵਿ ਦੇ ਤੌਰ 'ਤੇ ਪਰਖ

2.4 ਕਾਵਿ ਜੁਗਤਾਂ

ਯੂਨਿਟ ਤੀਜਾ

3. ਦਲਬੀਰ ਸਿੰਘ, ***ਵਰਿਆਮ ਇਕੇਲਾ***, ਰਘਬੀਰ ਰਚਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ

3.1 ਨਾਇਕ ਬਿੰਬ

3.2 ਕਲਾ ਪੱਖ/ ਵਿਧੀ ਅਤੇ ਤਕਨੀਕ

3.3 ਮਹਾਂਕਾਵਿ ਦੇ ਤੌਰ 'ਤੇ ਪਰਖ

3.4 ਕਾਵਿ ਜੁਗਤਾਂ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ :

1. ਅਵਤਾਰ ਸਿੰਘ, ***ਪੰਜਾਬੀ ਮਹਾਂਕਾਵਿ ਦਾ ਵਿਕਾਸ***, ਨੈਸ਼ਨਲ ਬੁੱਕ ਸ਼ਾਪ, ਦਿੱਲੀ
2. ਮਨਜੀਤ ਸਿੰਘ, ਪੰਜਾਬੀ ਸਮੀਖਿਆ ਸੰਸਾਰ, ਨਨਕਾਇਣ : ਮਹਾਂ ਕਾਵਿ ਜਨ ਕਾਵਿ ਸਾਖੀ , ਪੰਜਾਬੀ ਪ੍ਰਕਾਸ਼ਨ, ਦਿੱਲੀ (ਪੰਨੇ 101-111)
3. ਪ੍ਰੀਤਮ ਸਿੰਘ ਸੈਨੀ, ***ਨਨਕਾਇਣ : ਇੱਕ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ***, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ

Mapping Matrix of Course B-PBI-N-504-GE

Mapping: Mapping is a process of representing the correlation between COs and POs, Cos and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and POs

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-504-GE) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-504-GE

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
B-PBI-N-504-GE.1	3	3	2	2	2	2	3	3
B-PBI-N-504-GE.2	3	3	3	2	2	3	3	3
B-PBI-N-504-GE.3	3	3	3	2	2	3	3	3
B-PBI-N-504-GE.4	3	3	3	2	2	2	3	3
Average	3	3	2.75	2	2	2.5	3	3

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-504-GE) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-504-GE

CO	PSO 1	PSO 2	PSO 3	PSO 4
B-PBI-N-504-GE.1	3	2	3	3
B-PBI-N-504-GE.2	3	3	3	3
B-PBI-N-504-GE.3	3	3	3	3
B-PBI-N-504-GE.4	3	3	3	3
Average	3	2.75	3	3

Semester : VI

B-PBI-N-601-CC

ਪੰਜਾਬੀ ਭਾਸ਼ਾ, ਗੁਰਮੁਖੀ ਲਿੱਪੀ ਅਤੇ ਪੰਜਾਬੀ ਦਾ ਕੰਪਿਊਟਰੀਕਰਨ

(Punjabi Bhasha, Gurmukhi Lipi Ate Punjabi Bhasha Da Computerikaran)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ ਬਾਰੇ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਨੇ ਇਹਨਾਂ ਵਿੱਚੋਂ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਵਿੱਚ ਗੁਰਮੁਖੀ ਲਿੱਪੀ ਬਾਰੇ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਨੇ ਇਹਨਾਂ ਵਿੱਚੋਂ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
5. ਯੂਨਿਟ ਤੀਜਾ ਵਿੱਚ ਪਿੰਗਲ ਤੇ ਅਰੂਜ਼ ਬਾਰੇ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਨੇ ਇਹਨਾਂ ਵਿੱਚੋਂ ਕੋਈ ਤਿੰਨ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਭਾਸ਼ਾ, ਲਿੱਪੀ ਅਤੇ ਪਿੰਗਲ-ਅਰੂਜ਼ ਦਾ ਮੁੱਢਲਾ ਗਿਆਨ ਪ੍ਰਦਾਨ ਕਰਨਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-601-CC.1	ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਨਿਕਾਸ ਅਤੇ ਵਿਕਾਸ ਪੜਾਵਾਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।
B-PBI-N-601-CC.2	ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਗੁਰਮੁਖੀ ਲਿੱਪੀ ਦੇ ਜਨਮ ਅਤੇ ਵਿਕਾਸ ਬਾਰੇ ਜਾਣਕਾਰੀ ਦੇ ਨਾਲ-ਨਾਲ ਉਹ ਗੁਰਮੁਖੀ ਲਿੱਪੀ ਦੀ ਪ੍ਰਾਚੀਨਤਾ ਅਤੇ ਪੰਜਾਬੀ ਲਈ ਗੁਰਮੁਖੀ ਦੀ ਉਚਿਤਤਾ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।
B-PBI-N-601-CC.3	ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਵਿੱਚ ਕੰਪਿਊਟਰ ਅਤੇ ਇੰਟਰਨੈੱਟ ਦੀ ਵਰਤੋਂ ਕਰਨ ਦੇ ਸਮਰੱਥ ਹੋ ਸਕੇਗਾ।
B-PBI-N-601-CC.4	ਵਿਦਿਆਰਥੀ ਵਿਭਿੰਨ ਪੰਜਾਬੀ ਫੌਂਟਾਂ ਵਿੱਚ ਟਾਈਪਿੰਗ ਕਰਨ ਦੀ ਮੁਹਾਰਤ ਹਾਸਲ ਕਰਨਗੇ।

ਯੂਨਿਟ ਪਹਿਲਾ

1. ਪੰਜਾਬੀ ਭਾਸ਼ਾ : ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ
1.1 ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਨਿਕਾਸ ਬਾਰੇ ਮਿਲਦੇ ਵਿਭਿੰਨ ਮਤ
1.2 ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਵਿਕਾਸ ਪੜਾਅ
1.3 ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਉੱਤੇ ਪਏ ਦੂਜੀਆਂ ਬੋਲੀਆਂ ਦੇ ਪ੍ਰਭਾਵ
1.4 ਸਵਰ ਅਤੇ ਵਿਅੰਜਨ

ਯੂਨਿਟ ਦੂਜਾ

2. ਗੁਰਮੁਖੀ ਲਿੱਪੀ : ਮੁੱਢਲੀ ਜਾਣ ਪਛਾਣ

2.1 ਗੁਰਮੁਖੀ ਲਿਪੀ ਦਾ ਜਨਮ ਅਤੇ ਵਿਕਾਸ

2.2 ਗੁਰਮੁਖੀ ਦੀ ਪੰਜਾਬੀ ਲਈ ਉੱਚਿਤਤਾ

2.3 ਗੁਰਮੁਖੀ ਦੀ ਪ੍ਰਾਚੀਨਤਾ

2.4 ਲਗਾਂ ਅਤੇ ਲਗਾਖਰ

ਯੂਨਿਟ ਤੀਜਾ

1. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਕੰਪਿਊਟਰੀਕਰਨ

1.1 ਪੰਜਾਬੀ ਫੌਂਟ ਅਤੇ ਕੀ-ਬੋਰਡ : ਪਰਿਭਾਸ਼ਾ, ਕਿਸਮਾਂ, ਸਮੱਸਿਆਵਾਂ ਅਤੇ ਵਰਤੋਂ-ਵਿਉਂਤ

1.2 ਪੰਜਾਬੀ ਟਾਈਪਿੰਗ : ਕੀ-ਬੋਰਡ ਉੱਤੇ ਉਂਗਲਾਂ ਦੀ ਸਥਿਤੀ, ਫੁੱਟ ਨੋਟ ਲਗਾਉਣੇ, ਫੌਂਟ ਬਦਲਣ ਦਾ ਕੀ-ਬੋਰਡ ਸ਼ਾਰਟਕੱਟ ਬਣਾਉਣਾ, ਸ਼ਬਦ ਦੇ ਪਹਿਲੇ ਅੱਖਰ ਦੇ ਬਦਲਣ ਦੀ ਸਮੱਸਿਆ ਨੂੰ ਹੱਲ ਕਰਨਾ, ਹੋੜਾ ਅਤੇ ਪੁੱਠੇ ਕਾਮੇ ਦੀ ਸਮੱਸਿਆ ਦਾ ਹੱਲ ਅਤੇ ਆਟੋ ਕ੍ਰੈਕਟ ਬਣਾਉਣਾ।

1.3 ਪੰਜਾਬੀ ਸਾਫਟਵੇਅਰ ਅਤੇ ਇਨ੍ਹਾਂ ਦੀ ਵਰਤੋਂ: ਪੰਜਾਬੀ ਵਰਡ ਪ੍ਰੋਸੈੱਸਰ ਅੱਖਰ, ਫੌਂਟ ਕਨਵਰਟਰ ਅਤੇ ਪੰਜਾਬੀ ਦਾ ਸਪੈੱਲ ਚੈੱਕਰ, ਯੂਨੀਕੋਡ ਬਾਰੇ ਜਾਣ-ਪਛਾਣ, ਯੂਨੀਕੋਡ ਦੀ ਲੋੜ, ਪੰਜਾਬੀ ਯੂਨੀਕੋਡ ਫੌਂਟ ਕਨਵਰਟਰ

1.4 ਸੋਧਕ ਟਾਈਪਿੰਗ ਪੈਡ, ਈਸ਼ਰ ਮਾਈਕਰੋਮੀਡੀਆ, ਕਿਸ਼ਨ ਮਾਈਕਰੋਮੀਡੀਆ, ਪੰਜਾਬੀ ਪੀਡੀਆ, ਗੁਰਮੁਖੀ ਓ. ਸੀ. ਆਰ. ਦੀ ਵਰਤੋਂ

1.5 ਇੰਟਰਨੈੱਟ 'ਤੇ ਪੰਜਾਬੀ ਦੀ ਵਰਤੋਂ: ਈ ਮੇਲ : ਈ ਮੇਲ ਖਾਤਾ ਬਣਾਉਣਾ, ਪੰਜਾਬੀ ਵਿੱਚ ਈ ਮੇਲ ਸੰਦੇਸ਼ ਤਿਆਰ ਕਰਨਾ, ਭੇਜਣਾ, ਪ੍ਰਾਪਤ ਕਰਨਾ/ ਪੜ੍ਹਨਾ, ਰਿਪਲਾਈ ਕਰਨਾ, ਫਾਰਵਰਡ ਕਰਨਾ ਅਤੇ ਫਾਈਲ ਅਟੈਚ ਕਰਨਾ,

1.6 ਪੰਜਾਬੀ ਅਧਿਅਨ/ ਅਧਿਆਪਨ ਵੈੱਬਸਾਈਟਾਂ : ਆਨ-ਲਾਈਨ ਸ਼ਬਦ ਕੋਸ਼, ਗੁਰਮੁਖੀ, ਸ਼ਾਹਮੁਖੀ, ਦੇਵਨਾਗਰੀ, ਰੋਮਨ ਦਰਮਿਆਨ ਲਿਪੀਅੰਤਰਣ, ਪੰਜਾਬੀ, ਹਿੰਦੀ ਅਤੇ ਅੰਗਰੇਜ਼ੀ ਦਰਮਿਆਨ ਅਨੁਵਾਦ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ :

1. ਹਰਕੀਰਤ ਸਿੰਘ, ਭਾਸ਼ਾ ਅਤੇ ਭਾਸ਼ਾ ਵਿਗਿਆਨ, ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ, 1983
2. ਜੇ. ਬੀ. ਸਿੰਘ, ਗੁਰਮੁਖੀ ਲਿਪੀ ਦਾ ਜਨਮ ਤੇ ਵਿਕਾਸ, ਪੰਜਾਬ ਯੂਨੀਵਰਸਿਟੀ, ਚੰਡੀਗੜ੍ਹ, 1972 (ਦੂਜਾ ਐਡੀਸ਼ਨ)
3. ਜੁਗਿੰਦਰ ਸਿੰਘ ਪੁਆਰ, ਭਾਸ਼ਾ ਵਿਗਿਆਨ : ਸੰਕਲਪ ਤੇ ਦਿਸ਼ਾਵਾਂ, ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਕਾਡਮੀ, ਜਲੰਧਰ, 1988
4. ਸੀ. ਪੀ. ਕੰਬੋਜ, **ਮਾਈਕਰੋਸਾਫ਼ਟ ਵਿੰਡੋਜ਼,** ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2012
5. -ਉਹੀ-, **ਸਾਈਬਰ ਸੰਸਾਰ ਅਤੇ ਪੰਜਾਬੀ ਭਾਸ਼ਾ,** ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2010
6. -ਉਹੀ-, **ਕੰਪਿਊਟਰ ਵਿਗਿਆਨ,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2012
7. -ਉਹੀ-, **ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਕੰਪਿਊਟਰੀਕਰਨ,** ਕੰਪਿਊਟਰ ਵਿਗਿਆਨ ਪ੍ਰਕਾਸ਼ਨ, ਫ਼ਿਰੋਜ਼ਪੁਰ, 2015
8. ਕਿਰਪਾਲ ਸਿੰਘ ਪੰਨੂੰ, **ਆਓ ਕੰਪਿਊਟਰ ਸਿੱਖੀਏ,** ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ, 2012
9. ਜਗਮੋਹਨ ਸਿੰਘ, **ਕੰਪਿਊਟਰ : ਮੁੱਢਲੀ ਜਾਣਕਾਰੀ ਅਤੇ ਉਪਯੋਗ,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2006

Mapping Matrix of Course B-PBI-N-601-CC

Mapping: Mapping is a process of representing the correlation between COs and POs, COs and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and Pos

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-601-CC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-601-CC

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
B-PBI-N-601-CC.1	3	2	2	2	3	2	3	3
B-PBI-N-601-CC.2	3	2	3	2	3	2	3	3
B-PBI-N-601-CC.3	3	3	3	2	3	2	3	3
B-PBI-N-601-CC.4	3	3	3	2	3	2	3	3
Average	3	2.5	2.75	2	3	2	3	3

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-601-CC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-601-CC

CO	PSO 1	PSO 2	PSO 3	PSO 4
B-PBI-N-601-CC.1	3	2	3	3
B-PBI-N-601-CC.2	3	3	3	3
B-PBI-N-601-CC.3	3	3	3	3
B-PBI-N-601-CC.4	3	3	3	2
Average	3	2.75	3	2.75

Semester : VI

B-PBI-N-602-SEC

ਮੀਡੀਆ, ਜਨ-ਸੰਚਾਰ ਅਤੇ ਸਿਰਜਣਾਤਮਕ ਲੇਖਣ ਦਾ ਹੁਨਰ : ਅਧਿਐਨ ਅਤੇ ਸਿਖਲਾਈ
(Media, Jan-Sanchar Ate Sirjanatmak Lekhan Da Hunar : Adhyan Ate Sikhlai)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਮੀਡੀਆ ਅਤੇ ਜਨ-ਸੰਚਾਰ ਦੇ ਸਿਧਾਂਤਕ-ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ ਨਾਲ ਸਬੰਧਿਤ ਕੋਈ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਨੇ ਇਹਨਾਂ ਵਿੱਚੋਂ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਵਿੱਚ ਮੀਡੀਆ ਅਤੇ ਜਨ-ਸੰਚਾਰ ਦੇ ਵਿਹਾਰਕ ਪੱਖ ਨਾਲ ਸਬੰਧਿਤ ਕੋਈ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਨੇ ਇਹਨਾ ਵਿੱਚੋਂ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
5. ਯੂਨਿਟ ਤੀਜਾ ਵਿੱਚ ਸਿਰਜਣਾਤਮਕ ਲੇਖਣ ਦੇ ਹੁਨਰ ਅਤੇ ਜਨ-ਸੰਚਾਰ ਲਈ ਸਿਰਜਣਾਤਮਕ ਲੇਖਣ ਦੀ ਵਰਤੋਂ ਅਤੇ ਮਹੱਤਵ ਨਾਲ ਸਬੰਧਤ ਕੋਈ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਨੇ ਇਹਨਾ ਵਿੱਚੋਂ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਮੀਡੀਆ ਅਤੇ ਜਨ-ਸੰਚਾਰ ਦੇ ਹੁਨਰ ਬਾਰੇ ਜਾਣਕਾਰੀ ਪ੍ਰਦਾਨ ਕਰਨਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

- B-PBI-N-602-SEC.1 ਵਿਦਿਆਰਥੀ ਪੰਜਾਬੀ ਜਨ-ਸੰਚਾਰ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਹਿਲੂਆਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।
- B-PBI-N-602-SEC.2 ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਜਨ-ਸੰਚਾਰ ਦੇ ਪ੍ਰਿੰਟ ਅਤੇ ਇਲੈਕਟ੍ਰੋਨਿਕ ਮੀਡੀਆ ਦੇ ਹੁਨਰ ਬਾਰੇ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੋਵੇਗੀ।
- B-PBI-N-602-SEC.3 ਵਿਦਿਆਰਥੀ ਮੀਡੀਆ ਅਤੇ ਜਨ-ਸੰਚਾਰ ਦੇ ਹੁਨਰ ਵਿੱਚ ਵਿਹਾਰਕ ਅਤੇ ਪ੍ਰੋਫ਼ੈਸ਼ਨਲ ਤੌਰ ਤੇ ਜਾਣਕਾਰੀ ਹਾਸਲ ਕਰਕੇ ਪੰਜਾਬੀ ਰੇਡੀਓ, ਟੈਲੀਵਿਜ਼ਨ ਅਤੇ ਐਂਕਰਿੰਗ ਦੇ ਕਿੱਤੇ ਵਿੱਚ ਮੁਹਾਰਤ ਪ੍ਰਾਪਤ ਕਰ ਸਕਣਗੇ।
- B-PBI-N-602-SEC.3 ਵਿਦਿਆਰਥੀ ਸਿਰਜਣਾਤਮਕ ਲੇਖਣ ਦੇ ਹੁਨਰ ਵਿੱਚ ਵਿਵਹਾਰਕ ਅਤੇ ਪ੍ਰੋਫ਼ੈਸ਼ਨਲ ਤੌਰ 'ਤੇ ਮੁਹਾਰਤ ਹਾਸਲ ਕਰਨਗੇ।

ਯੂਨਿਟ ਪਹਿਲਾ

1.1 ਮੀਡੀਆ ਅਤੇ ਜਨ-ਸੰਚਾਰ: ਅਰਥ, ਪਰਿਭਾਸ਼ਾ, ਤੱਤ, ਸਰੂਪ ਤੇ ਸੰਕਲਪ ਅਤੇ ਮੀਡੀਆ ਨਾਲ ਸਬੰਧਿਤ ਮਹੱਤਵਪੂਰਨ ਮਦਾਂ

1.2 ਮੀਡੀਆ : ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ

1.3 ਪ੍ਰਿੰਟ ਤੇ ਇਲੈਕਟ੍ਰਾਨਿਕ ਮੀਡੀਆ : ਤਕਨੀਕੀ ਵਿਕਾਸ

1.4 ਮੀਡੀਆ ਅਤੇ ਸੰਚਾਰ ਦਾ ਸਬੰਧ

1.5 ਜਨ ਸੰਚਾਰ ਦੇ ਮਾਧਿਅਮ ਅਤੇ ਕਿਸਮਾਂ

1.6 ਜਨ-ਸੰਚਾਰ ਦਾ ਕਾਰਜ ਅਤੇ ਮਹੱਤਵ

ਯੂਨਿਟ ਦੂਜਾ

2. ਮੀਡੀਆ ਅਤੇ ਜਨ-ਸੰਚਾਰ : ਵਿਹਾਰਕ ਪੱਖ

2.1 ਸੰਚਾਰ ਪ੍ਰਕ੍ਰਿਆ ਦੇ ਜ਼ਰੂਰੀ ਤੱਤਾਂ ਨੂੰ ਜਾਣਨਾ

2.2 ਰੇਡੀਓ ਜਾਂ ਟੈਲੀਵਿਜ਼ਨ ਲਈ ਇੰਟਰਵਿਊ ਤਿਆਰ ਕਰਨ ਦੀ ਵਿਧੀ ਨੂੰ ਸਿੱਖਣਾ

2.3 ਰੇਡਿਓ ਜਾਂ ਟੈਲੀਵਿਜ਼ਨ ਲਈ ਵਿਗਿਆਪਨ ਤਿਆਰ ਕਰਨ ਦੇ ਹੁਨਰ ਨੂੰ ਸਿੱਖਣਾ

2.4 ਐਂਕਰਿੰਗ ਦੇ ਹੁਨਰ ਨੂੰ ਸਿੱਖਣਾ

ਯੂਨਿਟ ਤੀਜਾ

1. ਸਿਰਜਣਾਤਮਕ ਲੇਖਣ : ਅਰਥ, ਪਰਿਭਾਸ਼ਾ, ਉਦੇਸ਼ ਅਤੇ ਮਹੱਤਵ

1.1 ਸਿਰਜਣਾਤਮਕਤਾ ਅਤੇ ਮੀਡੀਆ ਲੇਖਣ- ਕਵਿਤਾ, ਕਹਾਣੀ ਅਤੇ ਨਾਟਕ,

1.2 ਸਾਹਿਤ ਅਤੇ ਸੰਚਾਰ ਦੇ ਆਪਸੀ ਸਬੰਧ

1.3 ਜਨ-ਸੰਚਾਰ ਲਈ ਸਿਰਜਣਾ-ਪ੍ਰਿੰਟ ਮੀਡੀਆ: ਖ਼ਬਰਾਂ ਦਾ ਸੰਪਾਦਨ, ਫ਼ੀਚਰ ਲੇਖਣ, ਇੰਟਰਵਿਊ ਲੇਖਣ, ਵਿਗਿਆਪਨ ਲੇਖਣ ਅਤੇ ਬੱਚਿਆਂ ਲਈ ਲੇਖਣ

1.4 ਜਨ-ਸੰਚਾਰ ਲਈ ਸਿਰਜਣਾ -ਇਲੈਕਟ੍ਰੋਨਿਕ ਮੀਡੀਆ : ਖ਼ਬਰਾਂ ਲੇਖਣ ਦੀ ਕਲਾ ਸਿੱਖਣਾ, ਐਂਕਰਿੰਗ ਦੀ ਕਲਾ ਸਿੱਖਣਾ, ਇੰਟਰਨੈੱਟ ਦਾ ਪ੍ਰਯੋਗ ਸਿੱਖਣਾ, ਇੰਟਰਵਿਊ ਕਰਨ ਦੀ ਕਲਾ ਸਿੱਖਣਾ, ਵਿਗਿਆਪਨ ਤਿਆਰ ਕਰਨਾ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ :

1. ਹਰਜਿੰਦਰ ਸਿੰਘ ਵਾਲੀਆ ਅਤੇ ਭੁਪਿੰਦਰ ਸਿੰਘ ਬੱਤਰਾ, ਸੰਚਾਰ, ਮਦਾਨ ਪਬਲੀਕੇਸ਼ਨਜ਼, ਪਟਿਆਲਾ, 2005
2. ਜਗਜੀਤ ਕੌਰ ਅਤੇ ਮਨਜੀਤ ਸਿੰਘ (ਸੰਪਾ.), ਸਿਰਜਣਾਤਮਕ ਲੇਖਣ ਅਤੇ ਜਨ-ਸੰਚਾਰ ਮਾਧਿਅਮ, ਮਨਪ੍ਰੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਨਵੀਂ ਦਿੱਲੀ, 2013
3. ਨਵਨਿੰਦਰਾ ਬਹਿਲ (ਸੰਪਾ.), ਰੰਗਮੰਚ ਅਤੇ ਟੈਲੀਵਿਜ਼ਨ ਨਾਟਕ, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ
4. ਜਸਬੀਰ ਕੌਰ (ਸੰਪਾ.), ਪੰਜਾਬੀ ਸਮਾਜ ਅਤੇ ਮੀਡੀਆ, ਪਬਲੀਕੇਸ਼ਨ ਬਿਊਰੋ, ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ
5. ਰਵੇਲ ਸਿੰਘ, ਮੀਡੀਆ ਵਿਹਾਰਕ ਅਧਿਐਨ, ਗਰੇਸੀਅਸ ਬੁੱਕਸ, ਪਟਿਆਲਾ
6. ਪ੍ਰਿਥਵੀ ਰਾਜ ਥਾਪਰ, ਸੰਚਾਰ ਤਕਨੀਕ ਅਤੇ ਮਲਟੀਮੀਡੀਆ, ਮਨਪ੍ਰੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਦਿੱਲੀ

Mapping Matrix of Course B-PBI-N-602-SEC

Mapping: Mapping is a process of representing the correlation between COs and POs, COs and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and Pos

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-602-SEC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-602-SEC

CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**
B-PBI-N-602-SEC.1	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-602-SEC.2	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-602-SEC.3	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N-602-SEC.4	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
Average	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-602-SEC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-602-SEC

CO	**PSO 1**	**PSO 2**	**PSO 3**	**PSO 4**
B-PBI-N-602-SEC.1	**3**	**3**	**3**	**3**
B-PBI-N-602-SEC.2	**3**	**3**	**3**	**3**
B-PBI-N-602-SEC.3	**3**	**3**	**3**	**3**
B-PBI-N-602-SEC.4	**3**	**3**	**3**	**2**
Average	**3**	**3**	**3**	**2.75**

Semester : VI
B-PBI-N-603-(i)-DSC

ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ
(Parvasi Punjabi Sahit)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਪਰਵਾਸ ਅਤੇ ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ ਬਾਰੇ ਕੁੱਲ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਇਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਕਵਿਤਾ ਦੇ ਸਾਰ/ ਵਿਸ਼ੇ/ ਪਰਵਾਸੀ ਚੇਤਨਾ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਕਵੀ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੇ ਕਵੀ ਦੀਆਂ ਕਵਿਤਾਵਾਂ ਦੀ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
5. ਯੂਨਿਟ ਤੀਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀਆਂ ਕਹਾਣੀਆਂ ਦੇ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ/ ਵਿਸ਼ੇ/ ਪਰਵਾਸੀ ਚੇਤਨਾ/ ਸਮੱਸਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਕਹਾਣੀਆਂ ਦੇ ਪਾਤਰ ਵਿਧਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਕਹਾਣੀਕਾਰ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ, ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਅਤੇ ਪਰਵਾਸੀ ਕਹਾਣੀ ਦੇ ਨਿਕਾਸ-ਵਿਕਾਸ ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਏਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਦਾ ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਇਤਿਹਾਸ, ਇਸਦੇ ਝੁਕਾਵਾਂ ਅਤੇ ਪ੍ਰਮੁੱਖ ਸਾਹਿਤਕਾਰਾਂ ਨਾਲ ਪਰਿਚੈ ਕਰਾਉਣਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-603-(i)-DSC.1	ਪਰਵਾਸੀ ਚੇਤਨਾ ਦੇ ਹਵਾਲੇ ਨਾਲ ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਮੁੱਖ ਸਰੋਕਾਰਾਂ ਨਾਲ ਜਾਣ-ਪਛਾਣ ਹੋਵੇਗੀ।
B-PBI-N-603-(i)-DSC.2	ਵਿਦਿਆਰਥੀ ਪਰਵਾਸੀ ਸਾਹਿਤਕਾਰਾਂ ਦੀਆਂ ਰਚਨਾਵਾਂ ਦੇ ਹਵਾਲੇ ਨਾਲ ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਜੀਵਨ, ਸਭਿਆਚਾਰ, ਸੋਚ ਅਤੇ ਸਮੱਸਿਆਵਾਂ ਨੂੰ ਸਮਝਣ ਦੇ ਯੋਗ ਹੋਣਗੇ।

B-PBI-N-603-(i)-DSC.3	ਵਿਦਿਆਰਥੀ ਪਰਵਾਸੀ ਅਤੇ ਪਰਵਾਸੀ ਚੇਤਨਾ ਨਾਲ ਸਬੰਧਤ ਵਿਭਿੰਨ ਸੰਕਲਪਾਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।
B-PBI-N-603-(i)-DSC.4	ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਜ਼ਰੀਏ ਪਰਵਾਸੀ ਪੰਜਾਬੀਆਂ ਦੀ ਅੰਤਰਮਨ ਸੰਵੇਦਨਾ ਨੂੰ ਸਮਝਣ ਦੀ ਸੂਝ ਪੈਦਾ ਹੋਵੇਗੀ।

ਯੂਨਿਟ ਪਹਿਲਾ : (ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ)

1. ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ : ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ
1.1 ਪਰਵਾਸ ਅਤੇ ਪਰਵਾਸੀ ਚੇਤਨਾ
1.2 ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ : ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ
1.3 ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ : ਮੂਲ ਸਰੋਕਾਰ
1.4 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਦੂਜਾ (ਪਰਵਾਸੀ ਕਵਿਤਾ)

2. ਮਹਿੰਦਰ ਗਿੱਲ, ***ਬਿਨ ਬਰਸਾਤੀ ਮੇਘਲੇ***, ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2017
2.1 ਕਵਿਤਾ ਦੀ ਪਰਿਭਾਸ਼ਾ, ਤੱਤ ਅਤੇ ਰੂਪਾਕਾਰਕ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ
2.2 ਪਰਵਾਸੀ ਚੇਤਨਾ
2.3 ਕਾਵਿ ਜੁਗਤਾਂ
2.4 ਵਿਹਾਰਕ ਸਮੀਖਿਆ
2.5 ਕਾਵਿ ਸਰੋਕਾਰ
2.6 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਯੂਨਿਟ ਤੀਜਾ (ਪਰਵਾਸੀ ਕਹਾਣੀ)

3. ਗੁਰਮੀਤ ਪਨਾਗ, ***ਮੁਰਗਾਬੀਆਂ***, ਐਸਥੈਟਿਕ ਪਬਲੀਕੇਸ਼ਨਜ਼ ਲੁਧਿਆਣਾ, 2018
3.1 ਕਹਾਣੀ : ਪਰਿਭਾਸ਼ਾ, ਸਰੂਪ ਅਤੇ ਲੱਛਣ
3.2 ਵਿਸ਼ੇਗਤ ਸਰੋਕਾਰ
3.3 ਕਲਾਤਮਕ ਜੁਗਤਾਂ
3.4 ਪਰਵਾਸੀ ਚੇਤਨਾ
3.5 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ :

1. ਅਕਾਲ ਅੰਮ੍ਰਿਤ ਕੌਰ, **ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਗਲਪ : ਨਵੇਂ ਪਾਸਾਰ,** ਨਾਨਕ ਸਿੰਘ ਪੁਸਤਕਮਾਲਾ, ਅੰਮ੍ਰਿਤਸਰ
2. ਸ. ਪ. ਸਿੰਘ, **ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ,** ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ
3. ਹਰਚੰਦ ਸਿੰਘ ਬੇਦੀ, **ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਮਸਲੇ**, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ, 2004

4. ਜਸਵਿੰਦਰ ਸਿੰਘ ਅਤੇ ਸੁਰਜੀਤ ਸਿੰਘ, **ਪੰਜਾਬੀ ਡਾਇਸਪੋਰਾ, ਸਾਹਿਤ ਅਤੇ ਸਭਿਆਚਾਰ,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2012
5. ਜੁਗਿੰਦਰ ਸਿੰਘ ਨਹਿਰੂ, **ਪੰਜਾਬੀ ਕੈਨੇਡੀਅਨ ਸਾਹਿਤ,** ਲੋਕਾਇਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 1998
6. ਦੇਵਿੰਦਰ ਚੰਦਨ, **ਬਰਤਾਨਵੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਮਸਲੇ,** ਸੂਰਜ ਪ੍ਰਕਾਸ਼ਨ, ਦਿੱਲੀ
7. ਪ੍ਰੇਮ ਪ੍ਰਕਾਸ਼ ਸਿੰਘ ਧਾਲੀਵਾਲ, **ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ : ਮੁੱਲ ਤੇ ਮੁਲਾਂਕਣ,** ਮਦਾਨ ਪਬਲੀਕੇਸ਼ਨ, ਪਟਿਆਲਾ
8. ਬਲਕਾਰ ਸਿੰਘ, **ਡਾਇਸਪੋਰਾ ਅਤੇ ਪੰਜਾਬੀ ਬਿਰਤਾਂਤ,** ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2005
9. ਰਾਜਿੰਦਰ ਸਿੰਘ ਲਾਂਬਾ, **ਖੋਜ ਪਤ੍ਰਿਕਾ (ਪਰਵਾਸੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਵਿਸ਼ੇਸ਼ ਅੰਕ) ਅੰਕ 40,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2000
10. ਰਾਜਿੰਦਰ ਪਾਲ ਸਿੰਘ (ਸੰਪਾ.), **ਪੰਜਾਬੀ ਡਾਇਸਪੋਰਾ ਸਾਹਿਤ ਅਤੇ ਸਭਿਆਚਾਰ,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ,
11. –ਉਹੀ–, **ਪੰਜਾਬੀ ਡਾਇਸਪੋਰਾ ਅਧਿਐਨ ਅਤੇ ਅਧਿਆਪਨ,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ

Mapping Matrix of Course B-PBI-N-603-(i)-DSC

Mapping: Mapping is a process of representing the correlation between COs and POs, COs and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and Pos

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-603-(i)-DSC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-603-(i)-DSC

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
B-PBI-N-603-(i)-DSC.1	3	2	3	2	3	2	3	3
B-PBI-N-603-(i)-DSC.2	3	3	3	2	3	2	3	3
B-PBI-N-603-(i)-DSC.3	3	3	3	2	3	2	3	3
B-PBI-N-603-(i)-DSC.4	3	3	3	2	3	2	3	3
Average	3	2.75	3	2	3	2	3	3

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-603-(i)-DSC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-603-(i)-DSC

CO	PSO 1	PSO 2	PSO 3	PSO 4
B-PBI-N-603-(i)-DSC.1	3	3	3	3
B-PBI-N-603-(i)-DSC.2	3	3	3	3
B-PBI-N-603-(i)-DSC.3	3	3	3	3
B-PBI-N-603-(i)-DSC.4	3	3	3	2
Average	3	3	3	2.75

Semester : VI
B-PBI-N-603-(ii)-DSC

ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ
(Pakistani Punjabi Sahit)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ ਬਾਰੇ ਕੁੱਲ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਇਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀ ਕਾਵਿ ਪੁਸਤਕ ਦੇ ਸਾਰ/ ਵਿਸ਼ੇ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਕਵੀਆਂ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
5. ਯੂਨਿਟ ਤੀਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀਆਂ ਕਹਾਣੀਆਂ ਦੇ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ/ ਵਿਸ਼ੇ/ ਸਮੱਸਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਕਹਾਣੀਆਂ ਦੇ ਪਾਤਰ ਵਿਧਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਕਹਾਣੀਕਾਰ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ, ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਅਤੇ ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਕਹਾਣੀ ਦੇ ਨਿਕਾਸ-ਵਿਕਾਸ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਦਾ ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਇਤਿਹਾਸ, ਇਸਦੇ ਝੁਕਾਵਾਂ ਅਤੇ ਪ੍ਰਮੁੱਖ ਸਾਹਿਤਕਾਰਾਂ ਨਾਲ ਪਰਿਚੈ ਕਰਾਉਣਾ ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N- 603-(ii)-DSC.1	ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਮੁੱਖ ਸਰੋਕਾਰਾਂ ਨਾਲ ਜਾਣ-ਪਛਾਣ ਹੋਵੇਗੀ।
B-PBI-N- 603-(ii)-DSC.2	ਵਿਦਿਆਰਥੀ ਪਾਕਿਸਤਾਨੀ ਸਾਹਿਤਕਾਰਾਂ ਦੀਆਂ ਰਚਨਾਵਾਂ ਦੇ ਹਵਾਲੇ ਨਾਲ ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਜੀਵਨ, ਸਭਿਆਚਾਰ, ਸੋਚ ਅਤੇ ਸਮੱਸਿਆਵਾਂ ਨੂੰ ਸਮਝਣ ਦੇ ਯੋਗ ਹੋਣਗੇ।

B-PBI-N- 603-(ii)-DSC.3 ਵਿਦਿਆਰਥੀ ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਵਿਭਿੰਨ ਸੰਕਲਪਾਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।

B-PBI-N- 603-(ii)-DSC.4 ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਜ਼ਰੀਏ ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀਆਂ ਦੀ ਅੰਤਰਮਨ ਸੰਵੇਦਨਾ ਨੂੰ ਸਮਝਣ ਦੀ ਸੂਝ ਪੈਦਾ ਹੋਵੇਗੀ।

ਯੂਨਿਟ ਪਹਿਲਾ

1. ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ : ਸਿਧਾਂਤ, ਇਤਿਹਾਸ ਅਤੇ ਪ੍ਰਵਿਰਤੀਆਂ
1.1 ਸ਼ਾਹਮੁਖੀ ਅਤੇ ਗੁਰਮੁਖੀ ਲਿੱਪੀ ਦਾ ਮਸਲਾ
1.2 ਵੰਡ ਦੇ ਆਧਾਰ
1.3 ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ : ਇਤਿਹਾਸ ਤੇ ਪ੍ਰਵਿਰਤੀਆਂ
1.4 ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਨਵੇਂ ਰੁਝਾਨ

ਯੂਨਿਟ ਦੂਜਾ

2. ਮਨਜੀਤ ਸਿੰਘ ਅਤੇ ਰਣਬੀਰ ਸਿੰਘ, ***ਕਾਵਿ-ਕਣੀਆਂ : ਵਾਘਿਓਂ ਪਾਰ ਦੀਆਂ***, ਮਨਪ੍ਰੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਦਿੱਲੀ, 2011
2.1 ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਕਵਿਤਾ : ਸੰਖੇਪ ਇਤਿਹਾਸ
2.2 ਵਿਸ਼ਾ ਪੱਖ
2.3 ਵਿਚਾਰਧਾਰਾ
2.4 ਕਲਾਤਮਕ ਪੱਖ
2.5 ਸਭਿਆਚਾਰਕ ਪੱਖ

ਯੂਨਿਟ ਤੀਜਾ

3. ਨੈਣ ਸੁਖ (ਮੂਲ ਲੇਖਕ), ***ਆਈ ਪੁਰੇ ਦੀ ਵਾਅ***, ਲਿੱਪੀਆਂਤਰ ਪਰਮਜੀਤ ਸਿੰਘ ਮੀਸ਼ਾ, ਸੱਚਲ ਪ੍ਰਕਾਸ਼ਨ , ਅੰਮ੍ਰਿਤਸਰ, 2019
3.1 ਪਾਕਿਸਤਾਨੀ ਕਹਾਣੀ: ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ
3.2 ਵਿਸ਼ੇਗਤ ਅਧਿਐਨ
3.3 ਬਿਰਤਾਂਤਕ ਜੁਗਤਾਂ
3.4 ਪਾਤਰ ਵਿਧਾਨ
3.5 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਅਜਮੇਰ ਸਿੰਘ (ਸੰਪਾ.), **ਖੋਜ ਪਤ੍ਰਿਕਾ (ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਵਿਸ਼ੇਸ਼ ਅੰਕ) ਅੰਕ 37,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2000
2. ਇੰਦਰਪਾਲ ਕੌਰ (ਸੰਪਾ.), **ਸ਼ਬਦ ਬੂੰਦ (ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਵਿਸ਼ੇਸ਼ ਅੰਕ),** ਹਰਿਆਣਾ ਪੰਜਾਬੀ ਸਾਹਿਤ ਅਕਾਦਮੀ, ਪੰਚਕੂਲਾ
3. ਸਤਿੰਦਰ ਸਿੰਘ ਨੂਰ ਅਤੇ ਰਵੇਲ ਸਿੰਘ (ਸੰਪਾ.), **ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ**, ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ, 2001

4. ਹਰਬੰਸ ਸਿੰਘ ਧੀਮਾਨ, **ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ : ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ,** ਗਗਨ ਪ੍ਰਕਾਸ਼ਨ, ਰਾਜਪੁਰਾ, 1998
5. ਕਰਨੈਲ ਸਿੰਘ ਥਿੰਦ, **ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਸੰਖੇਪ ਜਾਇਜ਼ਾ,** ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ,ਪਟਿਆਲਾ, 2006
6. ਗੁਰਚਰਨ ਸਿੰਘ ਮਹਿਤਾ, **ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਸਾਹਿਤ : ਇੱਕ ਪਰਿਚਯ ਇੱਕ ਜਾਇਜ਼ਾ,** ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ, ਅੰਮ੍ਰਿਤਸਰ, 1998
7. ਜਤਿੰਦਰ ਪਾਲ ਸਿੰਘ, **ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਗਲਪ,** ਨਾਨਕ ਸਿੰਘ ਪੁਸਤਕਮਾਲਾ, ਅੰਮ੍ਰਿਤਸਰ, 2001

Mapping Matrix of Course B-PBI-N- 603-(ii)-DSC

Mapping: Mapping is a process of representing the correlation between COs and POs, COs and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and Pos

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N- 603-(ii)-DSC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N- 603-(ii)-DSC

CO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**
B-PBI-N- 603-(ii)-DSC.1	**3**	**2**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N- 603-(ii)-DSC.2	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N- 603-(ii)-DSC.3	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N- 603-(ii)-DSC.4	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
Average	**3**	**2.75**	**3**	**2**	**3**	**2**	**3**	**3**

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N- 603-(ii)-DSC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N- 603-(ii)-DSC

CO	**PSO 1**	**PSO 2**	**PSO 3**	**PSO 4**
B-PBI-N- 603-(ii)-DSC.1	**3**	**2**	**3**	**3**
B-PBI-N- 603-(ii)-DSC.2	**3**	**3**	**3**	**3**
B-PBI-N- 603-(ii)-DSC.3	**3**	**3**	**3**	**3**
B-PBI-N- 603-(ii)-DSC.4	**3**	**3**	**3**	**2**
Average	**3**	**2.75**	**3**	**2.75**

Semester : VI

B-PBI-N- 603 (iii)-DSC

ਜੰਮੂ ਕਸ਼ਮੀਰ ਦਾ ਪੰਜਾਬੀ ਸਾਹਿਤ

(Jammu Kashmir Da Punjabi Sahit)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਜੰਮੂ-ਕਸ਼ਮੀਰ ਦੇ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ ਬਾਰੇ ਕੁੱਲ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਇਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀ ਕਾਵਿ ਪੁਸਤਕ ਦੇ ਸਾਰ/ ਵਿਸ਼ੇ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਕਵੀਆਂ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
5. ਯੂਨਿਟ ਤੀਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀਆਂ ਕਹਾਣੀਆਂ ਦੇ ਸਾਰ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ/ ਵਿਸ਼ੇ/ ਸਮੱਸਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਕਹਾਣੀਆਂ ਦੇ ਪਾਤਰ ਵਿਧਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਕਹਾਣੀਕਾਰ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ, ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਅਤੇ ਪਾਕਿਸਤਾਨੀ ਪੰਜਾਬੀ ਕਹਾਣੀ ਦੇ ਨਿਕਾਸ-ਵਿਕਾਸ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਦਾ ਜੰਮੂ ਕਸ਼ਮੀਰ ਦੇ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਇਤਿਹਾਸ, ਇਸਦੇ ਝੁਕਾਵਾਂ ਅਤੇ ਪ੍ਰਮੁੱਖ ਸਾਹਿਤਕਾਰਾਂ ਨਾਲ ਪਰਿਚੈ ਕਰਾਉਣਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N-603-(iii)-DSC.1	ਵਿਦਿਆਰਥੀ ਜੰਮੂ ਕਸ਼ਮੀਰ ਵਿੱਚ ਰਚੇ ਜਾ ਰਹੇ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਇਤਿਹਾਸਕ ਵਿਕਾਸ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।
B-PBI-N-603-(iii)-DSC.2	ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਜੰਮੂ ਕਸ਼ਮੀਰ ਦੇ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦੇ ਮੁੱਖ ਸਰੋਕਾਰਾਂ ਨਾਲ ਜਾਣ-ਪਛਾਣ ਹੋਵੇਗੀ।

B-PBI-N-603-(iii)-DSC.3 ਜੰਮੂ ਕਸ਼ਮੀਰ ਦੇ ਪੰਜਾਬੀ ਸਾਹਿਤਕਾਰਾਂ ਦੀਆਂ ਰਚਨਾਵਾਂ ਦੇ ਹਵਾਲੇ ਨਾਲ ਜੰਮੂ ਕਸ਼ਮੀਰ ਦੇ ਲੋਕਾਂ ਦੇ ਜਨ-ਜੀਵਨ, ਸਭਿਆਚਾਰ, ਸੋਚ ਅਤੇ ਸਮੱਸਿਆਵਾਂ ਨੂੰ ਸਮਝਣ ਦੀ ਸੂਝ ਪੈਦਾ ਹੋਵੇਗੀ।

B-PBI-N-603-(iii)-DSC.4 ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਖੇਤਰੀ ਸਾਹਿਤ ਨੂੰ ਪੜ੍ਹਨ, ਸਮਝਣ ਦੀ ਰੁਚੀ ਪੈਦਾ ਹੋਵੇਗੀ।

ਯੂਨਿਟ ਪਹਿਲਾ

1. ਜੰਮੂ ਕਸ਼ਮੀਰ ਦਾ ਪੰਜਾਬੀ ਸਾਹਿਤ
1.1 ਜੰਮੂ ਕਸ਼ਮੀਰ ਦਾ ਪੰਜਾਬੀ ਸਾਹਿਤ : ਸਿਧਾਂਤ, ਇਤਿਹਾਸ ਅਤੇ ਪ੍ਰਵਿਰਤੀਆਂ
1.2 ਡੋਗਰੀ ਅਤੇ ਗੁਰਮੁਖੀ ਲਿੱਪੀ ਦਾ ਮਸਲਾ
1.3 ਜੰਮੂ ਕਸ਼ਮੀਰ ਦਾ ਪੰਜਾਬੀ ਸਾਹਿਤ : ਪ੍ਰਮੁੱਖ ਰੁਝਾਨ
1.4 ਜੰਮੂ ਕਸ਼ਮੀਰ ਦਾ ਪੰਜਾਬੀ ਸਾਹਿਤ : ਪ੍ਰਮੁੱਖ ਸਾਹਿਤ ਧਾਰਾਵਾਂ

ਯੂਨਿਟ ਦੂਜਾ

2. ਡਾ. ਹਰਜਿੰਦਰ ਸਿੰਘ ਅਤੇ ਡਾ. ਪ੍ਰੀਤਮ ਸਿੰਘ, ***ਕਾਵਿ ਮਹਿਕਾਂ (ਸੰਪਾਦਿਤ),*** ਗ੍ਰੇਸੀਅਸ ਬੁਕਸ, ਪਟਿਆਲਾ
2.1 ਜੰਮੂ ਕਸ਼ਮੀਰ ਦੀ ਪੰਜਾਬੀ ਕਵਿਤਾ : ਸੰਖੇਪ ਇਤਿਹਾਸ
2.2 ਵਿਸ਼ਾ ਪੱਖ
2.3 ਵਿਚਾਰਧਾਰਾ
2.4 ਕਲਾਤਮਕ ਪੱਖ
2.5 ਸਭਿਆਚਾਰਕ ਪੱਖ

ਯੂਨਿਟ ਤੀਜਾ

3. ਡਾ. ਹਰਜਿੰਦਰ ਸਿੰਘ ਅਤੇ ਡਾ. ਪ੍ਰੀਤਮ ਸਿੰਘ, ***ਕਥਾ-ਬਿਰਤਾਂਤ (ਸੰਪਾਦਿਤ),*** ਮਦਾਨ ਪਬਲਿਸ਼ਿੰਗ ਹਾਊਸ, ਪਟਿਆਲਾ, 2022
3.1 ਜੰਮੂ ਕਸ਼ਮੀਰ ਦੀ ਪੰਜਾਬੀ : ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ
3.2 ਵਿਸ਼ੇਗਤ ਅਧਿਐਨ
3.3 ਬਿਰਤਾਂਤਕ ਜੁਗਤਾਂ
3.4 ਪਾਤਰ ਵਿਧਾਨ
3.5 ਸੰਖੇਪ ਉੱਤਰਾਂ ਵਾਲੇ ਪ੍ਰਸ਼ਨ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਕਰਤਾਰ ਸਿੰਘ ਸੂਰੀ **ਜੰਮੂ ਕਸ਼ਮੀਰ ਦੀ ਪ੍ਰਤੀਨਿਧ ਪੰਜਾਬੀ ਕਵਿਤਾ** ਨਾਨਕ ਸਿੰਘ ਪੁਸਤਕਮਾਲਾ, ਅੰਮ੍ਰਿਤਸਰ, 1982
2. ਗੁਰਚਰਨ ਸਿੰਘ ਗੁਲਸ਼ਨ **ਜੰਮੂ ਕਸ਼ਮੀਰ ਦੇ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ (ਭਾਗ ਪਹਿਲਾ, ਦੂਜਾ ਤੇ ਤੀਜਾ),** ਜੰਮੂ ਕਸ਼ਮੀਰ ਅਕਾਦਮੀ ਆਫ਼ ਆਰਟਸ, ਕਲਚਰ ਐਂਡ ਲਿਟਰੇਚਰ, ਜੰਮੂ
3. **ਆਲੋਚਨਾ** (ਜੰਮੂ ਕਸ਼ਮੀਰ ਦਾ ਪੰਜਾਬੀ ਸਾਹਿਤ ਵਿਸ਼ੇਸ਼ ਅੰਕ), ਅੰਕ 224, ਅਕਤੂਬਰ 2010-ਮਾਰਚ 2011
4. **ਆਲੋਚਨਾ** (ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਭਾਰਤੀ ਪਰਿਪੇਖ), ਅੰਕ 205, ਜਨਵਰੀ-ਜੂਨ, 2005

Mapping Matrix of Course B-PBI-N-603-(iii)-DSC

Mapping: Mapping is a process of representing the correlation between COs and POs, COs and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and Pos

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N-603-(iii)-DSC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N-603-(iii)-DSC

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
B-PBI-N-603-(iii)-DSC.1	3	2	3	2	3	2	3	3
B-PBI-N-603-(iii)-DSC.2	3	3	3	2	3	2	3	3
B-PBI-N-603-(iii)-DSC.3	3	3	3	2	3	2	3	3
B-PBI-N-603-(iii)-DSC.4	3	3	3	2	3	2	3	3
Average	3	2.75	3	2	3	2	3	3

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N-603-(iii)-DSC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N-603-(iii)-DSC

CO	PSO 1	PSO 2	PSO 3	PSO 4
B-PBI-N-603-(iii)-DSC.1	3	2	3	3
B-PBI-N-603-(iii)-DSC.2	3	3	3	3
B-PBI-N-603-(iii)-DSC.3	3	3	3	3
B-PBI-N-603-(iii)-DSC.4	3	3	3	2
Average	3	2.75	3	2.75

Semester : VI
B-PBI-N- 603 (iv)-DSC

ਵਿਸ਼ਵ ਸਾਹਿਤ

(Vishav Sahit)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਸਾਹਿਤ, ਵਿਸ਼ਵ ਸਾਹਿਤ ਅਤੇ ਤੁਲਨਾਤਮਕ ਸਾਹਿਤ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ ਬਾਰੇ ਕੁੱਲ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਇਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੀਆਂ ਕਵਿਤਾਵਾਂ ਦੇ ਸਾਰ/ ਵਿਸ਼ੇ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਅਤੇ ਇੱਕ ਸੁਆਲ ਕਵੀਆਂ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰਾਂ ਦਾ ਹੋਵੇਗਾ।
5. ਯੂਨਿਟ ਤੀਜਾ ਦਾ ਪਹਿਲਾ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੇ ਨਾਟਕ ਦੇ ਸਾਰ/ ਵਿਸ਼ੇ/ ਰੰਗਮੰਚੀ ਸਾਰਥਕਤਾ/ ਆਲੋਚਨਾਤਮਕ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਅਤੇ ਇੱਕ ਸੁਆਲ ਨਾਟਕ ਦੇ ਪਾਤਰ ਵਿਧਾਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਨਾਟਕਕਾਰ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰਾਂ ਦਾ ਹੋਵੇਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਦੀ ਵਿਸ਼ਵ ਸਾਹਿਤ, ਸਾਹਿਤਕਾਰਾਂ ਅਤੇ ਸਾਹਿਤ ਇਤਿਹਾਸ ਨਾਲ ਸੰਖੇਪ ਜਾਣ-ਪਛਾਣ ਕਰਾਉਣਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N- 603 (iv)-DSC.1	ਵਿਦਿਆਰਥੀ ਅਨੁਵਾਦਿਤ ਅਤੇ ਤੁਲਨਾਤਮਕ ਸਾਹਿਤ ਦੇ ਵਿਭਿੰਨ ਸਿਧਾਂਤਕ ਪਹਿਲੂਆਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।
B-PBI-N- 603 (iv)-DSC.2	ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਵਿੱਚ ਅਨੁਵਾਦਿਤ ਵਿਸ਼ਵ ਸਾਹਿਤ ਦੇ ਇਤਿਹਾਸ, ਇਸਦੇ ਝੁਕਾਵਾਂ ਅਤੇ ਪ੍ਰਮੁੱਖ ਸਾਹਿਤਕਾਰਾਂ ਬਾਰੇ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੋਵੇਗੀ।
B-PBI-N- 603 (iv)-DSC.3	ਵਿਦਿਆਰਥੀਆਂ ਵਿਭਿੰਨ ਵਿਸ਼ਵ ਸਾਹਿਤਕ ਰਚਨਾਵਾਂ ਦੇ ਤੁਲਨਾਤਮਕ ਅਧਿਐਨ ਰਾਹੀਂ ਵਿਸ਼ਵ ਸਾਹਿਤ ਦੇ ਵਿਭਿੰਨ ਰੁਝਾਨਾਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।

B-PBI-N- 603 (iv)-DSC.4 ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਵਿੱਚ ਅਨੁਵਾਦਿਤ ਵਿਸ਼ਵ ਸਾਹਿਤ ਦੇ ਮੁੱਖ ਸਰੋਕਾਰਾਂ ਦਾ ਗਿਆਨ ਪ੍ਰਾਪਤ ਹੋਵੇਗਾ।

ਯੂਨਿਟ ਪਹਿਲਾ

1. ਵਿਸ਼ਵ ਸਾਹਿਤ : ਸਿਧਾਂਤ, ਇਤਿਹਾਸ ਅਤੇ ਪ੍ਰਵਿਰਤੀਆਂ
1.1 ਤੁਲਨਾਤਮਕ ਸਾਹਿਤ ਦਾ ਸੰਕਲਪ
1.2 ਵਿਸ਼ਵ ਸਾਹਿਤ ਵਿੱਚ ਨਾਟਕ ਦੀ ਪਰੰਪਰਾ
1.3 ਵਿਸ਼ਵ ਸਾਹਿਤ ਵਿੱਚ ਕਵਿਤਾ ਦੀ ਪਰੰਪਰਾ
1.4 ਵਿਸ਼ਵ ਸਾਹਿਤ : ਪ੍ਰਮੁੱਖ ਰੁਝਾਨ

ਯੂਨਿਟ ਦੂਜਾ

2. ਹਰਭਜਨ ਸਿੰਘ ਹੁੰਦਲ, ਵਿਸ਼ਵ ਕਵੀ – ਬ੍ਰੈਖ਼ਤ ਤੇ ਲੋਰਕਾ : ਚੋਣਵੀਂ ਕਵਿਤਾ, ਐੱਚ. ਕੇ. ਪ੍ਰਕਾਸ਼ਨ, ਦਿੱਲੀ (ਦੋਹਾਂ ਦੀਆਂ ਪੰਜ ਪੰਜ ਪਹਿਲੀਆਂ ਕਵਿਤਾਵਾਂ)
2.1 ਪਾਠਗਤ ਅਧਿਐਨ
2.2 ਬ੍ਰੈਖ਼ਤ ਦੀ ਕਾਵਿ–ਕਲਾ
2.3 ਲੋਰਕਾ ਦੀ ਕਾਵਿ–ਕਲਾ
2.4 ਵਿਚਾਰਧਾਰਾ ਅਤੇ ਕਾਵਿ ਜੁਗਤਾਂ

ਯੂਨਿਟ ਤੀਜਾ

3. ਸੁਰਜੀਤ ਪਾਤਰ (ਅਨੁ.) ***ਅੱਗ ਦੇ ਕਲੀਰੇ,*** ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2002
3.1 ਵਿਸ਼ੈਗਤ ਅਧਿਐਨ
3.2 ਨਾਟ ਜੁਗਤਾਂ
3.3 ਰੰਗਮੰਚੀ ਸਾਰਥਕਤਾ
3.4 ਡਾਇਲਾਗ ਅਤੇ ਪਾਤਰ ਉਸਾਰੀ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ :

1. ਹਰਚਰਨ ਕੌਰ ਅਤੇ ਰਵੇਲ ਸਿੰਘ (ਸੰਪਾ.), ਪੰਜਾਬੀ ਅਤੇ ਭਾਰਤੀ ਸਾਹਿਤ : ਤੁਲਨਾ ਤੋਂ ਸੰਵਾਦ ਤੱਕ, ਪੰਜਾਬੀ ਅਕਾਡਮੀ, ਦਿੱਲੀ, 2002
2. ਸਤਿੰਦਰ ਸਿੰਘ (ਸੰਪਾ.), ਤੁਲਨਾਤਮਕ ਭਾਰਤੀ ਸਾਹਿਤ, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 1990

Mapping Matrix of Course B-PBI-N- 603 (iv)-DSC

Mapping: Mapping is a process of representing the correlation between COs and POs, COs and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and Pos

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N- 603 (iv)-DSC) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N- 603 (iv)-DSC

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
B-PBI-N- 603 (iv)-DSC.1	**3**	**2**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N- 603 (iv)-DSC.2	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N- 603 (iv)-DSC.3	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
B-PBI-N- 603 (iv)-DSC.4	**3**	**3**	**3**	**2**	**3**	**2**	**3**	**3**
Average	**3**	**2.75**	**3**	**2**	**3**	**2**	**3**	**3**

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N- 603 (iv)-DSC) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N- 603 (iv)-DSC

CO	PSO 1	PSO 2	PSO 3	PSO 4
B-PBI-N- 603 (iv)-DSC.1	**3**	**3**	**3**	**3**
B-PBI-N- 603 (iv)-DSC.2	**3**	**3**	**3**	**3**
B-PBI-N- 603 (iv)-DSC.3	**3**	**3**	**3**	**3**
B-PBI-N- 603 (iv)-DSC.4	**3**	**3**	**3**	**2**
Average	**3**	**3**	**3**	**2.75**

Semester : VI

B-PBI-N- 603 (v)-DSC

ਸਾਹਿਤ ਸਿਧਾਂਤ ਅਤੇ ਆਧੁਨਿਕ ਪੱਛਮੀ ਕਾਵਿ ਸ਼ਾਸਤਰ

(Sahit Sidhant ate Aadhunik Pachhmi Kaav Shastar)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਸਾਹਿਤ ਅਤੇ ਦੂਜੇ ਅਨੁਸ਼ਾਸਨਾਂ ਬਾਰੇ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਨੇ ਇਹਨਾਂ ਵਿੱਚੋਂ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਵਿੱਚ ਪੰਜਾਬੀ ਸਾਹਿਤ ਵਿੱਚ ਵਿਭਿੰਨ ਸਮੇਂ ਪ੍ਰਚੱਲਿਤ ਰਹੇ ਵਾਦਾਂ ਬਾਰੇ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਨੇ ਇਹਨਾਂ ਵਿੱਚੋਂ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
5. ਯੂਨਿਟ ਤੀਜਾ ਵਿੱਚ ਪੱਛਮੀ ਕਾਵਿ ਸ਼ਾਸਤਰ ਬਾਰੇ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਨੇ ਇਹਨਾਂ ਵਿੱਚੋਂ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਸਾਹਿਤ, ਸਾਹਿਤ ਅਧਿਐਨ ਅਤੇ ਸਾਹਿਤ ਸਿਧਾਂਤ ਨਾਲ ਸਬੰਧਤ ਵੱਖ-ਵੱਖ ਸੰਕਲਪਾਂ ਦਾ ਬੋਧ ਹਾਸਲ ਕਰਾਉਣਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N- 603 (v)-DSC.1	ਵਿਦਿਆਰਥੀ ਸਾਹਿਤ ਨੂੰ ਦੂਜੇ ਅਨੁਸ਼ਾਸਨਾਂ ਦੇ ਪ੍ਰਸੰਗ ਵਿੱਚ ਸਮਝਣਗੇ।
B-PBI-N- 603 (v)-DSC.2	ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਸਾਹਿਤ ਵਿੱਚ ਵੱਖ-ਵੱਖ ਸਮੇਂ ਪ੍ਰਚਲਿਤ ਵਾਦਾਂ ਅਤੇ ਆਧੁਨਿਕ ਸਾਹਿਤ ਅਧਿਐਨ ਪ੍ਰਣਾਲੀਆਂ ਦੀ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੋਵੇਗੀ।
B-PBI-N- 603 (v)-DSC.3	ਵਿਦਿਆਰਥੀ ਪੱਛਮੀ ਸਾਹਿਤ ਸਿਧਾਂਤ ਦੀਆਂ ਵੱਖ-ਵੱਖ ਪ੍ਰਣਾਲੀਆਂ ਤੋਂ ਜਾਣੂ ਹੋਣਗੇ।
B-PBI-N- 603 (v)-DSC.4	ਪੱਛਮੀ ਸਾਹਿਤ ਅਧਿਐਨ ਦੇ ਸਿਧਾਂਤਾ ਦੀ ਪੜ੍ਹਤ ਰਾਹੀਂ ਪੰਜਾਬੀ ਸਾਹਿਤ ਨੂੰ ਸਮਝਣ ਦੇ ਯੋਗ ਹੋਣਗੇ।

ਯੂਨਿਟ ਪਹਿਲਾ

1. ਸਾਹਿਤ ਤੇ ਹੋਰ ਅਨੁਸ਼ਾਸਨ

1.1 ਸਾਹਿਤ ਤੇ ਸਮਾਜ

1.2 ਸਾਹਿਤ ਤੇ ਮਨੋਵਿਗਿਆਨ

1.3 ਸਾਹਿਤ ਤੇ ਰਾਜਨੀਤੀ

1.4 ਸਾਹਿਤ ਅਤੇ ਵਿਚਾਰਧਾਰਾ

ਯੂਨਿਟ ਦੂਜਾ

2. ਸਾਹਿਤਕ ਵਾਦ

2.2 ਪ੍ਰਗਤੀਵਾਦ

2.3 ਰੁਮਾਂਸਵਾਦ

2.4 ਯਥਾਰਥਵਾਦ

2.5 ਆਧੁਨਿਕਤਾਵਾਦ

ਯੂਨਿਟ ਤੀਜਾ

3. ਪੱਛਮੀ ਸਾਹਿਤ ਸਿਧਾਂਤ

3.1 ਮਾਰਕਸਵਾਦ

3.2 ਸੰਰਚਨਾਵਾਦ

3.3 ਚਿਹਨ ਵਿਗਿਆਨ

3.4 ਉੱਤਰ ਆਧੁਨਿਕ ਸਾਹਿਤ ਸਿਧਾਂਤ

3.5 ਨਾਰੀਵਾਦ

3.6 ਦਲਿਤ ਚਿੰਤਨ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ

1. ਅਤਰ ਸਿੰਘ — **ਸਾਹਿਤ ਸੰਵੇਦਨਾ**
ਰਘਬੀਰ ਰਚਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ

2. ਸੰਤ ਸਿੰਘ ਸੇਖੋਂ — **ਸਾਹਿਤਆਰਥ**
ਲਾਹੌਰ ਬੁੱਕ ਸ਼ਾਪ, ਲੁਧਿਆਣਾ

3. ਸੁਤਿੰਦਰ ਸਿੰਘ ਨੂਰ ਅਤੇ ਰਵੇਲ ਸਿੰਘ — **ਸਮਕਾਲੀ ਪੱਛਮੀ ਚਿੰਤਨ**
ਪੰਜਾਬੀ ਅਕਾਦਮੀ, ਦਿੱਲੀ, 2001

4. ਸੁਰਜੀਤ ਸਿੰਘ ਭੱਟੀ — **ਵਾਦ ਚਿੰਤਨ**
ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, ਲੁਧਿਆਣਾ, 2010

5. ਸੁਰਿੰਦਰ ਕੁਮਾਰ ਦਵੇਸ਼ਵਰ — **ਆਧੁਨਿਕ ਸਾਹਿਤ ਆਲੋਚਨਾ : ਸਿਧਾਂਤ ਅਤੇ ਵਿਸ਼ਲੇਸ਼ਣ**
ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2005

6. ਹਰਪ੍ਰੀਤ ਕੌਰ — **ਨਾਰੀਵਾਦ**
ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2003

7. ਹਰਿਭਜਨ ਸਿੰਘ ਭਾਟੀਆ — **ਸਾਹਿਤ ਅਧਿਐਨ ਵਿਧੀਆਂ : ਵਰਤਮਾਨ ਪਰਿਪੇਖ**
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 2006

8. ਕਰਨੈਲ ਸਿੰਘ ਥਿੰਦ — **ਸਾਹਿਤ ਅਧਿਐਨ ਪ੍ਰਣਾਲੀਆਂ**
ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ, 2002

9. ਕਿਸ਼ਨ ਸਿੰਘ **ਸਾਹਿਤ ਦੀ ਸਮਝ**
ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2005

10. ਗੁਰਚਰਨ ਸਿੰਘ ਅਰਸ਼ੀ **ਸਮੀਖਿਆ ਦ੍ਰਿਸ਼ਟੀਆਂ**
ਆਰਸੀ ਪਬਲਿਸ਼ਰਜ਼, ਦਿੱਲੀ, 1998

11. ਗੋਪੀ ਚੰਦ ਨਾਰੰਗ **ਸੰਰਚਨਾਵਾਦ, ਉੱਤਰ-ਸੰਰਚਨਾਵਾਦ ਅਤੇ ਪੂਰਬੀ ਕਾਵਿ ਸ਼ਾਸਤਰ**
ਸਾਹਿਤ ਅਕਾਦਮੀ, ਦਿੱਲੀ, 2002

12. ਦਵਿੰਦਰ ਸੈਫ਼ੀ **ਸਿਧਾਂਤਕਾਰੀ ਅਤੇ ਪੰਜਾਬੀ ਸਿਧਾਂਤਕਾਰ**
ਲੋਕਗੀਤ ਪ੍ਰਕਾਸ਼ਨ, ਚੰਡੀਗੜ੍ਹ, 2012

13. ਨਜ਼ਮ ਹੁਸੈਨ ਸੱਯਦ **ਸੇਧਾਂ ਸਾਰਾਂ ਤੇ ਹੋਰ ਲੇਖ (ਲਿਪੀਅੰਤਰ ਤੇ ਸੰਪਾ. ਪਰਦੁਮਨ ਸਿੰਘ ਬੇਦੀ)**
ਜਸਵੰਤ ਪ੍ਰਿੰਟਰਜ਼, ਲੁਧਿਆਣਾ, 2005

14. ਭੀਮ ਇੰਦਰ ਸਿੰਘ **ਮਾਰਕਸਵਾਦ, ਨਵ-ਮਾਰਕਸਵਾਦ ਅਤੇ ਉੱਤਰ ਆਧੁਨਿਕਤਾਵਾਦ**
ਤਰਕ ਭਾਰਤੀ ਪ੍ਰਕਾਸ਼ਨ, ਬਰਨਾਲਾ, 2004

15. ਰਤਨ ਸਿੰਘ ਜੱਗੀ **ਖੋਜ ਪਤ੍ਰਿਕਾ (ਸਾਹਿਤਕ ਵਾਦ ਅੰਕ) ਅੰਕ 31-32**
ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ

16. ਰਾਜਿੰਦਰ ਪਾਲ ਸਿੰਘ **ਉੱਤਰ ਆਧੁਨਿਕਤਾ**
ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ, 2011

Mapping Matrix of Course B-PBI-N- 603(v)-DSC

Mapping: Mapping is a process of representing the correlation between COs and POs, COs and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and POs

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N- 603(v)-DSC) assuming that there are 6 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N- 603(v)-DSC

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
B-PBI-N- 603(v)-DSC.1	3	3	3	2	3	3	3	3
B-PBI-N- 603(v)-DSC.2	3	3	2	3	2	3	3	2
B-PBI-N- 603(v)-DSC.3	3	2	3	3	3	3	2	3
B-PBI-N- 603(v)-DSC.4	2	3	3	3	2	3	3	3
Average	**2.75**	**2.75**	**2.75**	**2.75**	**2.5**	**3**	**2.75**	**2.75**

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N- 603(v)-DSC**)** assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N- 603(v)-DSC

CO	PSO 1	PSO 2	PSO 3	PSO 4
B-PBI-N- 603(v)-DSC.1	2	3	2	3
B-PBI-N- 603(v)-DSC.2	3	2	2	3
B-PBI-N- 603(v)-DSC.3	3	3	3	3
B-PBI-N- 603(v)-DSC.4	2	2	3	2
Average	**2.5**	**2.5**	**2.5**	**2.75**

Semester : VI

B-PBI-N- 604-GE

ਗ਼ਜ਼ਲ ਅਤੇ ਪੰਜਾਬੀ ਗ਼ਜ਼ਲ (Gazal Ate Punjabi Gazal)

ਕ੍ਰੈਡਿਟ : 6

ਸਮਾਂ : 3 ਘੰਟੇ ਕੁੱਲ ਅੰਕ : 150

(ਪੇਪਰ : 75 ਅਤੇ ਇੰਟਰਨਲ ਅਸੈੱਸਮੈਂਟ : 75)

ਨੋਟ :

1. ਪਹਿਲਾ ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਇਹ ਪ੍ਰਸ਼ਨ 15 ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ। ਇਸ ਵਿੱਚ ਸਮੁੱਚੇ ਸਿਲੇਬਸ ਵਿੱਚੋਂ ਕੁੱਲ ਛੇ (ਹਰ ਯੂਨਿਟ ਵਿੱਚੋਂ ਦੋ) ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ ਅਤੇ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਪੰਜ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਤਿੰਨ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
2. ਸਮੁੱਚਾ ਸਿਲੇਬਸ ਕੁੱਲ ਤਿੰਨ ਯੂਨਿਟਾਂ ਵਿੱਚ ਵੰਡਿਆ ਗਿਆ ਹੈ। ਹਰ ਯੂਨਿਟ 20 ਨੰਬਰਾਂ ਦਾ ਹੈ।
3. ਯੂਨਿਟ ਪਹਿਲਾ ਵਿੱਚ ਗ਼ਜ਼ਲ ਅਤੇ ਪੰਜਾਬੀ ਗ਼ਜ਼ਲ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ ਬਾਰੇ ਕੁੱਲ ਚਾਰ ਸੁਆਲ ਪੁੱਛੇ ਜਾਣਗੇ। ਇਹਨਾਂ ਵਿੱਚੋਂ ਵਿਦਿਆਰਥੀ ਨੇ ਕੋਈ ਦੋ ਸੁਆਲ ਕਰਨੇ ਹਨ। ਹਰ ਸੁਆਲ ਦਸ ਨੰਬਰ ਦਾ ਹੈ।
4. ਯੂਨਿਟ ਦੂਜਾ ਵਿੱਚ ਇੱਕ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੇ ਗ਼ਜ਼ਲ ਸੰਗ੍ਰਹਿ ਵਿੱਚੋਂ ਗ਼ਜ਼ਲ ਦੇ ਸਾਰ/ਵਿਸ਼ੇ/ਸਰੋਕਾਰ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇੱਕ ਸੁਆਲ ਗ਼ਜ਼ਲ ਦੇ ਕਲਾਤਮਕ ਅਧਿਐਨ/ ਜੁਗਤਾਂ/ ਭਾਸ਼ਾ ਸ਼ੈਲੀ ਅਤੇ ਗ਼ਜ਼ਲ ਦੀ ਤਕਨੀਕ ਅਤੇ ਗ਼ਜ਼ਲਗੋ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਬਾਰੇ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਗ਼ਜ਼ਲ ਸੰਗ੍ਰਹਿ ਵਿੱਚੋਂ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।
5. ਯੂਨਿਟ ਦੂਜਾ ਵਿੱਚ ਇੱਕ ਸੁਆਲ ਸਿਲੇਬਸ ਵਿੱਚ ਲੱਗੇ ਗ਼ਜ਼ਲ ਸੰਗ੍ਰਹਿ ਵਿੱਚੋਂ ਗ਼ਜ਼ਲ ਦੇ ਸਾਰ/ਵਿਸ਼ੇ/ਸਰੋਕਾਰ ਅਧਿਐਨ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇੱਕ ਸੁਆਲ ਗ਼ਜ਼ਲ ਦੇ ਕਲਾਤਮਕ ਅਧਿਐਨ/ ਜੁਗਤਾਂ/ ਭਾਸ਼ਾ ਸ਼ੈਲੀ ਅਤੇ ਗ਼ਜ਼ਲ ਦੀ ਤਕਨੀਕ ਅਤੇ ਗ਼ਜ਼ਲਗੋ ਦੇ ਜੀਵਨ ਪ੍ਰੀਚੈ ਅਤੇ ਸਾਹਿਤਕ ਯੋਗਦਾਨ ਬਾਰੇ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਸੱਤ-ਸੱਤ ਨੰਬਰਾਂ ਦੇ ਹੋਣਗੇ। ਇੱਕ ਸੁਆਲ ਗ਼ਜ਼ਲ ਸੰਗ੍ਰਹਿ ਵਿੱਚੋਂ ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ (ਦੋ ਵਿੱਚੋਂ ਇੱਕ) ਬਾਰੇ ਪੁੱਛਿਆ ਜਾਵੇਗਾ। ਇਹ ਸੁਆਲ ਛੇ ਨੰਬਰ ਦਾ ਹੋਵੇਗਾ।

ਉਦੇਸ਼ (Objectives)

- ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਗ਼ਜ਼ਲ ਅਤੇ ਪੰਜਾਬੀ ਗ਼ਜ਼ਲ ਦੇ ਸਿਧਾਂਤਕ ਅਤੇ ਵਿਹਾਰਕ ਪੱਖ ਬਾਰੇ ਸਮਝ ਪੈਦਾ ਕਰਨਾ।

ਸੰਭਾਵਿਤ ਨਤੀਜੇ (Course Outcomes)

B-PBI-N- 604-GE.1 ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਗ਼ਜ਼ਲ ਸਬੰਧੀ ਸਿਧਾਂਤਕ ਅਤੇ ਵਿਹਾਰਕ ਸੂਝ ਪੈਦਾ ਹੋਵੇਗੀ।

B-PBI-N- 604-GE.2 ਵਿਦਿਆਰਥੀਆਂ ਨੂੰ ਪੰਜਾਬੀ ਗ਼ਜ਼ਲ ਸਾਹਿਤ ਦੇ ਇਤਿਹਾਸਕ ਵਿਕਾਸ ਬਾਰੇ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਹੋਵੇਗੀ।

B-PBI-N- 604-GE.3 ਕੁਝ ਵਿਸ਼ੇਸ਼ ਗ਼ਜ਼ਲਗੋਆਂ ਦੀਆਂ ਗ਼ਜ਼ਲਾਂ ਦੀ ਵਿਸ਼ੇਸ਼ ਪੜ੍ਹਤ ਦੁਆਰਾ ਗ਼ਜ਼ਲ ਦੇ ਵਿਹਾਰਕ ਅਧਿਐਨ ਦੀ ਯੋਗਤਾ ਹਾਸਲ ਹੋਵੇਗੀ।

B-PBI-N- 604-GE.4 ਵਿਦਿਆਰਥੀਆਂ ਵਿੱਚ ਗ਼ਜ਼ਲ ਪੜ੍ਹਨ ਅਤੇ ਲਿਖਣ ਦੀ ਰੁਚੀ ਪੈਦਾ ਹੋਵੇਗੀ।

ਯੂਨਿਟ ਪਹਿਲਾ

1. ਗ਼ਜ਼ਲ ਅਤੇ ਪੰਜਾਬੀ ਗ਼ਜ਼ਲ : ਸਿਧਾਂਤ, ਇਤਿਹਾਸ ਅਤੇ ਪ੍ਰਵਿਰਤੀਆਂ

1.1 ਗ਼ਜ਼ਲ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਤਕਨੀਕ

1.2 ਪੰਜਾਬੀ ਗ਼ਜ਼ਲ : ਆਰੰਭ ਅਤੇ ਵਿਕਾਸ

1.3 ਪੰਜਾਬੀ ਗ਼ਜ਼ਲ : ਪ੍ਰਮੁੱਖ ਝੁਕਾਅ

ਯੂਨਿਟ ਦੂਜਾ

2. ਗੁਰਤੇਜ ਕੋਹਾਰਵਾਲਾ, **ਪਾਣੀ ਦਾ ਹਾਸ਼ੀਆ**, ਚੇਤਨਾ ਪ੍ਰਕਾਸ਼ਨ, 2015

2.1 ਪ੍ਰਮੁੱਖ ਸਰੋਕਾਰ

2.2 ਕਲਾ ਪੱਖ/ ਤਕਨੀਕ

2.3 ਪਾਠਗਤ ਅਧਿਐਨ

2.4 ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ

ਯੂਨਿਟ ਤੀਜਾ

3. ਰਾਬਿੰਦਰ ਮਸਰੂਰ, **ਤੁਰਨਾ ਮੁਹਾਲ ਹੈ**, ਅਸਥੈਟਿਕ ਪਬਲੀਕੇਸ਼ਨਜ਼, ਲੁਧਿਆਣਾ, 1997

3.1 ਪ੍ਰਮੁੱਖ ਸਰੋਕਾਰ

3.2 ਕਲਾ ਪੱਖ/ ਤਕਨੀਕ

3.3 ਪਾਠਗਤ ਅਧਿਐਨ

3.4 ਪ੍ਰਸੰਗ ਸਾਹਿਤ ਵਿਆਖਿਆ

ਸਹਾਇਕ ਪੁਸਤਕਾਂ :

1. ਸਾਧੂ ਸਿੰਘ ਹਮਦਰਦ, ਗ਼ਜ਼ਲ ਦੇ ਰੰਗ, ਹਮਦਰਦ ਪਬਲੀਕੇਸ਼ਨ, ਅਜੀਤ ਭਵਨ ਜਲੰਧਰ
2. ਹਰਿਭਜਨ ਸਿੰਘ, ਗ਼ਜ਼ਲ ਜਨਮ ਤੇ ਵਿਕਾਸ, ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਯੂਨੀਵਰਸਿਟੀ, ਅੰਮ੍ਰਿਤਸਰ
3. ਦੀਪਕ ਜੈਤੋਈ, ਗ਼ਜ਼ਲ ਕੀ ਹੈ?, ਲਿਟਰੇਚਰ ਹਾਊਸ, ਪੁਤਲੀਘਰ ਅੰਮ੍ਰਿਤਸਰ, 1982
4. ਜੋਗਿੰਦਰ ਸਿੰਘ, ਪਿੰਗਲ ਤੇ ਅਰੂਜ਼, ਪੰਜਾਬੀ ਸਾਹਿਤ ਅਕਾਦਮੀ, ਲੁਧਿਆਣਾ, 1960

Mapping Matrix of Course B-PBI-N- 604-GE

Mapping: Mapping is a process of representing the correlation between COs and POs, Cos and PSOs in the scale of 1 to 3 as follows (Table 1):

Table 1: Scale of mapping between COs and POs

Scale	
1	If the contents of course have low correlation (i.e. in agreement with the particular PO to a small extent) with the particular Programme outcome
2	If the contents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	If the contents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (B-PBI-N- 604-GE) assuming that there are 8 POs and 4COs.

Table 2: CO-PO Matrix for the Course B-PBI-N- 604-GE

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
B-PBI-N- 604-GE.1	3	3	3	2	2	3	3	3
B-PBI-N- 604-GE.2	3	3	3	2	2	3	3	3
B-PBI-N- 604-GE.3	3	3	3	2	2	3	3	3
B-PBI-N- 604-GE.4	3	3	3	2	2	3	3	3
Average	3	3	3	2	2	3	3	3

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (B-PBI-N- 604-GE) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course B-PBI-N- 604-GE

CO	PSO 1	PSO 2	PSO 3	PSO 4
B-PBI-N- 604-GE.1	3	2	3	3
B-PBI-N- 604-GE.2	3	3	3	3
B-PBI-N- 604-GE.3	3	3	3	3
B-PBI-N- 604-GE.4	3	3	3	3
Average	3	2.75	3	3

Learning Outcomes-based Curriculum Framework (LOCF)

For

M.A. (Journalism & Mass Communication-ONLINE)
A Two Year Master Degree Programme

Under
Choice Based Credit System (CBCS)/Learning Outcomes-based Curriculum Framework (LOCF)

w.e.f. Academic Session July 2022-2023

Directorate of Distance Education
Kurukshetra University, Kurukshetra

PROGRAMME OUTCOMES

On successful completion of the programme, the student will be able to:-

PO1 Acquire knowledge related to the discipline under study.

PO2 Communicate and reflect effectively and efficiently on the issues related to the discipline.

PO3 Exhibit the professional skills and competencies acquired during the Programme of study.

PO4 Apply the knowledge and skills acquired in planning, organizing, evaluation and decision making.

PO5 Explore, analyze and provide solutions to the problems related to discipline and life.

PO6 Develop exposure to the actual working environment leading to employability and entrepreneurship.

PO7 Exhibit scientific & research capabilities in academic, professional and general life pursuits.

PO8 Recognize, appreciate and follow ethical issues relating to the discipline and society.

Programme Specific Outcomes (PSOs)

After completing the Postgraduate programme, a learner will be able to:

PSO1 Acquire fundamental knowledge of Mass Communication & Journalism and related study areas.

PSO2 Learn communication and professional skills related to various fields of mass communication.

PSO3 Become competent enough to undertake a professional job as per demands and requirements of Mmedia& Eentertainment Industry.

PSO4 Bbecome an ethically committed media professional adhering to the human values and the values of the Indian culture.

PSO5 Acquire primary research skills, understand the importance of innovation, entrepreneurship and global vision.

Curriculum Design

The programme is designed to be offered as a two year programme. The total period is divided into 4 semesters where the learners have to earn 20 credits in each semester with a total of 80 credits in two years. For the benefit of the learners maximum period of 8 semesters (4 years) is given to complete the programme. The programme is based on the concept of online teaching-learning methods in the form of interactive sessions have been implemented. Twelve (12) hours' face-to-face counselling will be provided to the learners in this programme. The learners may have weekly online interactive sessions with instructors as and when required. The learners may be exposed to audio-visual aids, such as films and dramatized versions of classics and other technological advantages for better understanding of the topic discussed.

Scheme of Examination of M.A. (Journalism & Mass Communication-ONLINE)

The M.A. Examination in Mass Communication has been divided into four semester spread over two years. Every student has to pass 80 credits (**80 Compulsory credits** as necessary to earn the degree under the new scheme i.e. Choice Based Credit System. In each semester 20 compulsory credits shall be offered to the students. The paper scheme detail semester wise is as follow:-

Scheme of Examination

Course No.	Title of the Paper	Credit	Teaching Scheme (Hrs/Week)			Examination Scheme (Marks)			
			L	Contact Hours	Study Input Hours	Sem. Theory Exam	Internal Assessment	Total	Time
M.A. Previous (Mass Communication) Semester-I									
MAMC 101	Theory and Practice of communication	4	4	12	12	75	25	100	3 Hrs.
MAMC 102	Writing Skills	4	4	12	12	75	25	100	3 Hrs.
MAMC 103	Introduction to Mass Media	4	4	12	12	75	25	100	3 Hrs.
MAMC 104	Media & Society	4	4	12	12	75	25	100	3 Hrs.
MAMC 105	Computer Applications	4	4	12	12	75	25	100	3 Hrs.
M.A. Previous (Mass Communication) Semester-II									
MAMC 201	Reporting	4	4	12	12	75	25	100	3 Hrs.
MAMC 202	Advertising	4	4	12	12	75	25	100	3 Hrs.
MAMC 203	Radio Journalism	4	4	12	12	75	25	100	3 Hrs.
MAMC 204	Photo Journalism	4	4	12	12	75	25	100	3 Hrs.
MAMC 205	Media Laws and Management	4	4	12	12	75	25	100	3 Hrs.
M.A. Final (Mass Communication) Semester-III									
MAMC 301	Editing	4	4	12	12	75	25	100	3 Hrs.
MAMC 302	TV Journalism	4	4	12	12	75	25	100	3 Hrs.
MAMC 303	Public Relations	4	4	12	12	75	25	100	3 Hrs.
MAMC 304	Communication Research	4	4	12	12	75	25	100	3 Hrs.
MAMC 305	Communication Technology	4	4	12	12	75	25	100	3 Hrs.
M.A. Final (Mass Communication) Semester-IV									
MAMC 401	Print Media Production	4	4	12	12	75	25	100	3 Hrs.
MAMC 402	Electronic Media Production	4	4	12	12	75	25	100	3 Hrs.
MAMC 403	Cyber Journalism	4	4	12	12	75	25	100	3 Hrs.
MAMC 404	Development Communication	4	4	12	12	75	25	100	3 Hrs.
MAMC 405	Film and Entertainment Industry	4	4	12	12	75	25	100	3Hrs.

Directorate of Distance Education

Kurukshetra University, Kurukshetra

M.A. (Journalism & Mass Communication-ONLINE)

Scheme of Examination and Syllabus
w.e.f. session July 2022-2023

M.A. Previous (Mass Communication) Semester-I

Paper Code	Subject Name	Theory	Internal Assessment	Time	Credits
MAMC 101	Theory and Practice of communication	75	25	4 Hours	4
MAMC 102	Writing Skills	75	25	4 Hours	4
MAMC 103	Introduction to Mass Media	75	25	4 Hours	4
MAMC 104	Media & Society	75	25	4 Hours	4
MAMC 105	Computer Applications	75	25	4 Hours	4
	Total Marks=500				**20**

M.A. Previous (Mass Communication) Semester-II

Paper Code	Subject Name	Theory	Internal Assessment	Time	Credits
MAMC 201	Reporting	75	25	4 Hours	4
MAMC 202	Advertising	75	25	4 Hours	4
MAMC 203	Radio Journalism	75	25	4 Hours	4
MAMC 204	Photo Journalism	75	25	4 Hours	4
MAMC 205	Media Laws and Management	75	25	4 Hours	4
	Total Marks=500				**20**

M.A. Final (Mass Communication) Semester-III

Paper Code	Subject Name	Theory	Internal Assessment	Time	Credits
MAMC 301	Editing	75	25	4 Hours	4
MAMC 302	TV Journalism	75	25	4 Hours	4
MAMC 303	Public Relations	75	25	4 Hours	4
MAMC 304	Communication Research	75	25	4 Hours	4
MAMC 305	Communication Technology	75	25	4 Hours	4
	Total Marks=500				**20**

M.A. Final (Mass Communication) Semester-IV

Paper Code	Subject Name	Theory	Internal Assessment	Time	Credits
MAMC 401	Print Media Production	75	25	4 Hours	4
MAMC 402	Electronic Media Production	75	25	4 Hours	4
MAMC 403	Cyber Journalism	75	25	4 Hours	4
MAMC 404	Development Communication	75	25	4 Hours	4
MAMC 405	Film and Entertainment Industry	75	25	4 Hours	4
	Total Marks=500				**20**

Paper-MAMC 101: Theory and Practice of Communication

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Objectives of the Paper:
This course is designed to develop understanding of the basic concept and process of communication. Besides elaborating upon basic models the paper highlights the Indian concept of communication. The prime objective is to enhance communication skills by learning and practice.

Course Learning Outcomes:
After completing the course, the student will be able:

CO1: To understand the basics concept of communication and their applications.
CO2: To know about the various formats and types of communication.
CO3: To develop an understanding about the models and theories related to communication.
CO4: To enhance the knowledge and skills about communication.

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

- Definition, concept, process and elements of communication
- Evolution of human beings and human communication
- Role, scope and need of communication in society
- Functions and objectives of communication
- Barriers in communication

Unit-II

- Principles of communication
- Socialization and communication
- Traditional communication forms
- Verbal communication
- Non-verbal communication

Unit-III

- Communication in ancient civilizations
- Indian concepts of communication
- Levels of communication and interaction: intra-personal, interpersonal, group, public and mass communication. machine to man, man to machine, machine to machine and mediated communication
- Spiritual communication

Unit-IV

Models and theories of human communication

- Aristotle
- Osgood
- Dance
- New comb
- Schramm
- Meaning theory
- Relational theory
- Transactional theory

References:

1. Rutherfoord, J: Basic:Communication Skills for Technology, and area Pearson Education Asia, 2001
2. Dennis Macquil : Mass Communication Theory, Sage Publication, New Delhi,202
3. Agee, Warren K., Ault Philip H: Introduction to Mass Communication, Oxford & IBH Publishing Company, 1967
4. Narula, Uma : Communication Models, Atlantic Publishers, 2006
5. Kewal J. Kumar: Mass Communication in India, Jaico Publication,2020
6. Agrwal, Veer Bala: Handbook of Journalism and Mass Communication, Concept publishing company private Ltd, 2012
7. Baran, Stanley: Introduction to Mass Communication, McGraw Hill Publication,2021
8. Emery E. et al. Introduction to Mass Communication (Harper Collins College,(1994).
9. Virginia P. Clarifying Communication Theories (Surjeet Publications,2003)

Paper-MAMC 102: Writing Skills

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives: The course is designed to introduce the students for the basics of writing, to acquaint them with elements, types and important aspects of process of writing and to enhance understanding of the technical terms of media writing.

Course Learning Outcomes:
After completing the course, the student will be able:

CO1: To develop the skills of writing among budding journalists.
CO2: To understand how to write copy for radio and television news.
CO3: To understand and know various formats of Scripting for broadcasting.
CO4: To write editorials, features, articles, news analysis and backgrounders.

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

- Difference between creative writing and journalistic writing
- News Story structure, News writing style
- Writing features, articles, editorials, columns, middle letter to editor, news analysis reviews, backgrounds, freelancing
- Writing features and articles for magazines

Unit-II

- Basics of radio writing
- Elements of radio script
- Techniques and style of radio script writing
- Writing for different formats of radio programmes

    - Radio talks
    - Radio newsRadio features
    - Musical programmes

Unit-III

- Basic of television writing
- Different script format
- Writing for various television programmes
    - Television news
    - Television documentary
    - Television special programmes

Unit-IV

- Basics of writing skills for commercial advertisements
- Writing for radio advertisement
- Writing for television advertisement
- Basics of web writing
- Writing for PR- News releases, press releases, letters, publications, house journals, speeches, etc.

References:

1. George, A. H. News Writing, Kanishka Publications,1990
2. Itule &Anderson): News Writing and reporting for today media, McGraw Hill Publication, 2002
3. George A Hough: News Writin, Kanishka Publishers,New Delhi, 2006.
4. Sachdeva, Iqbal,S : Public Relations Principles and Practices, oxford Higher Education,2009
5. Verma, M.K, News Reporting and Editing, APH Publication, 2009
6. Kumar Dibyanshu, Mass Media and Communication, KK Publication, 2014
7. vyh] vkfcn o dqekj] lanhi] ys[ku dyk% l`tukRed ,oa tulapkj ys[ku fof/k] fueZy izdk”ku dq:{ks=] 2019
8. eksgu lqfer] ehfM;k ys[ku] ok.kh izdk”ku] 2013

Paper-MAMC 103: Introduction to Mass Media

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:
This course will provide an overview of the glorious journey of journalism in India and will also enhance the understanding of the history and development of print traditional media and electronic media and films in India.

Course Learning Outcomes:
After completing the course, the student will be able to:

CO1: To learn about the history and development of print media in India
CO2: To understand the origin and growth of electronic media
CO3: To know about the history and development of Indian Cinema
CO4: To learn about various types of popular traditional media

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

Beginning of the Press in India

- Technological development, invention of printing and movable type in Europe
- Early Anglo-Indian newspapers, Hicky's Gazette, Buckingham's Journal, official press
- Press: An instrument of social change: Birth and spread of vernacular
- Press in India, Social reform movement and journalism- Raja Ram Mohan Roy, etc.
- Role of media in freedom struggle

Unit-II

- Development of news agencies
- changing role and nature of the press
- Government's newsprint policy
- Emergency and the press,
- Role and reports of press commissions;
- Current trends in English, Hindi and language journalism in India

Unit-III

- Origin and development of Radio in India
- AIR, Private FM, Community Radio
- Characteristics of Radio and TV
- Public and commercial radio

Unit-IV

- Origin and development of television in India
- Public and Commercial television
- Television and social change : A historical perspective

- Present Status of television industry in India

References :

1. Kumar, Keval J: Mass Communication in India Jaico, 2020
2. B.D. Garga, So Many Cinemas: The Motion Picture in India, Bombay, Eminence, Design Pvt. Ltd, 1996
3. Erik Barnouw and S. Krishnaswamy: Indian Films, New Delhi, Oxford, Luthra, H.R., Indian Broadcasting, Publication Division, 1986.
4. Rangaswamy, Parthasaratihi: Journalism in India, Sterling Publication, New Delhi, 1989.
5. Natarajan, J: History of Indian Journalism, Publication Division, New Delhi, 2010.
6. Jeffrey, Robin:India's Newspaper Revolution, Oxford University Press, Delhi, 2009.
7. Singh,Chandrakant, Before the Headlines : A Handbook of Television Journalism, Macmilan India Ltd. Delhi, 1999
8. Singh, Devvrat, Indian Television: Content, Issues and Challenges, Har Anand Publications Delhi, 2012
9. Narayan Sunetra Sen: Globalization and Television, Oxford University Press Delhi, 2014.

Paper-MAMC104: Media and Society

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:

The objectives of course are to understand the students to the basic concepts, current economic and social issues in India. These courses also describe and understand the different media coverage in burning issues in world.

Course Learning Outcomes:

After completing the course, the student will be able:

CO1: To understand the role of media in society
CO2: To prepare the young Journalists for the media industry
CO3: To highlight the major current issue of development for international level
CO4: To understand the Indian polity and its function in a democratic country.

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

- Indian constitution
- Major political parties in India
- Election Commission structure & functioning
- Current economic & social issues in India

Unit-II

- Regulation of media content
- Plurality, diversity and objectivity in media
- Accountability and credibility of media
- Status of media persons in India
- Code of ethics for working journalist
- Editor Guild of India

Unit-III

- Media and violence
- Media and Rising Crime
- Media and Democracy
- Media and Development
- Media and Environment issues
- Media and Culture

Unit-IV

- Media Accountability
- Media and Economic Development
- Media and nation building/ Popular culture and Media
- Important issues in Media

- Gender and Media
- Social, Political Issues and Media

References:

1. Berger ,ASA, Arthur, Media and Society: A Critical Perspective, Rowan & Littlefield Publisher, 2012
2. Mershin, Debra L: Mass Media and society, Sage Publication, 2019
3. Understanding Media and Culture : An introduction to Mass communication, University of Minnesota Publishing, 2016
4. Waisbord,Silvio, Media Sociology, Polity Publication, 2014
5. Curran James: Media and Power, Taylor & Francis Ltd., 2012
6. Dewdney Andrew & Ride Peter, The New Media Handbook, Routledge, 2006
7. Sevaes Jan, Communication for Development & Social Change, Sage Publication, 2008
8. Melkote Srinivas Raj & Steeves H. Lesline, Communication for Development, 2015
9. Narula Uma, Development Communication, HAR-ANAND Publication Private Limited, 2019
10. Thakurta Pranajoy Guha, Media Ethics, Oxford University Press, 2011

Paper-MAMC 105: Computer Applications

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75

Course Objectives:

This course is designed for theoretical understanding of computer system and its components, functioning and its application software.

Course Learning Outcomes:
After completing the course, the student will be able:

CO1: To develop the origin and growth of computer.
CO2: To know about the functioning of different parts of the computer.
CO3: To understand the basic concept of the internet and computer networks.
CO4: To understand the importance and application of computer for media industry.

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit I

Basics of Computer:

Origin and growth of computer
Devices of computer system
Computer memory and its types
Operating system and its types

Unit II

Computer Languages:

Natural language
Machine language
Assembly language
High level languages

Unit IIII

MS Word, MS PowerPoint

MS. Word
Title bar, menu bar, status bar, tool bar,
English and Hindi typing
All options of file menu, edit menu, view menu, insert menu,
Format menu, tools menu, table menu, window menu and help menu.
MS. PowerPoint
Title bar, menu bar, status bar, tool bar,
How to make a PowerPoint presentation
All options of file menu, edit menu, view menu, insert menu,
Format menu, tools menu, slide show menu, window menu and help menu.

Unit-IV

DTP
Page Maker
Quark-Xpress
In-design

References:

1. Ram, B. 4th ed New Age: Computer Fundamentals: Architecture & Organization, 200
2. Sinha, P. K. BPB; Computer Fundamentals: Concepts, Systems & Applications, 200
3. Behrouz A. Forouzan & Fegan Sophia Chung: Data Communications and Networking, McGraw Hill, 2004
4. Goel, Anita Pearson; Computer Fundamentals, Person Publication, 2010

Paper-MAMC201: Reporting

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives: This course introduces the basic concepts of news writing and reporting among the budding journalists

Course Learning Outcomes:
After completing the course, the student will be able:

CO1: To be efficient in news writing and reporting.
CO2: To report and write stories in various formats of news writing.
CO3: To develop skills for reporting crime, health and sports stories.
CO4: To develop skills for reporting science and technology, business and life style reporting.

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

- Concept and definition of news
- News values
- News sources Basic tools of information gathering, research and references, maintaining a diary use of computer, internet, mobile and other gadgets
- Cultivating the sources
- Structure of news- 5W and 1H
- Organizing a news story
- Importance of Intro and types of intro
- Inverted pyramid pattern need and usefulness
- Alternate formats of news writing
- Developing a news story
- Organization of reporting staff in a daily newspaper
- Ethics and fairness in reporting

Unit-II

- Interview
- Types of interview
- Conducting interview
- Reporting press conference
- On the spot coverage
- Advance stories
- Follow up stories
- Post event descriptive coverage

Unit –III

Reporting

- Crime
- Court
- Education
- Sports

- Weather and Disaster
- Politics
- Agriculture
- Health
- Covering Sensitive issues

Unit –IV

Specialize Reporting

- Business
- Parliament
- Science and Technology
- Life style and entertainment
- Web
- Investigative

References :

1. Kamath, M.V: Professional Journalism; Vikas Publishing, New Delhi, 2009
2. Srivastava, K.M. News Reporting and Editing, Sterling Publishers, 2015
3. Harcup Tony: Journalism: Principles and Practice; Sage. Publication, 2015
4. Parthasarathy Rangaswami, Here is the News: Reporting for Media, Sterling Publishers, 2015
5. Richard, K. The Newspaper's Handbook, Routledge Publication, 2000
6. Frost, C. Reporting for Journalists, Routledge, 2001.
7. Dr. Ashok Kumar Samachar Lekhan avem Reporting, Shivalik Prakashan New Delhi, 2018
8. Dr. Surbhi Dahiya and Sambhu Sahu, Beat Reporting, Sage Publication, New Delhi, 2021
9. Subhash Dhulia & Anand Pardhan, Samachar Lekhan avem Avdharna, IIMC Publications, 2010

Paper-MAMC 202: Advertising

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:
The main objectives of this course are understood the basic concepts and process of advertising. Students will acknowledge the history, structure and various functions of advertising agencies in world.

Course Learning Outcomes:
After completing the course, the student will be able to:

CO1: To understand the basics of advertising.
CO2: To identify the social and economic aspects of advertising.
CO3: To plan and understand various methods of advertisement campaigning.
CO4: To understand the various techniques of advertising research.

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

- Definition, concept and process of advertising
- Growth and development of advertising
- Economic and social aspects of advertising
- Media of advertising, characteristics of each medium

Unit-II

- Types of advertisements and their elements
- Advertising industry: advertising agencies and the media of advertising
- Market mix and market segmentation
- Creative strategy and creative process

Unit-III

Media planning and budgeting
Organizing advertising campaigns
Case studies of advertising campaign
Social advertising

Unit-IV

- Social marketing and development
- Communication strategies for NGOs
- Advertising standards council of India and other organisation in advertising
- Ethics in advertising
- Advertising research

References:

1. Ogilvy, David: Confessions of an Advertising Management, Atheneum, 1963
2. Douglas,Torin: The Complete Guide to Advertising, Macmillan, 1985
3. Cohen, Dorothy: Advertising Johan, Wiley & Sons, 1972
4. Jethwaney, Jaishri ,Jain Shruti Advertising ,Oxford University Press, 2007
5. Bajpaye, Alok Advertisement Management, Authors Press,2007
6. Philip R Cateora and John L Graham, International Marketing Irwin McGraw Hill, 1999.
7. William F Arens and Courtland L Bovee, Contemporary Advertising-Irwin, 1994.
8. Philip Kotler and Eduardo L Roberto, Social marketing strategies for changing public behaviour- The freePress, 1989.
9. Jib Fowles, Advertising and popular culture, Sage Publications, 1996
10. Mary Cross, Advertising and Culture-Prentice Hall 2001
11. George E. Belch, Micheal A. Belch, KeyoorPurani: Advertising and Promotion; Tata McGraw Hill, 2011
12. Jethwaney, Jaishri & Jain Shruti, Advertising Management, Oxford University Press, 2013

Paper-MAMC 203: Radio Journalism

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:

The students understand the various applications and characteristics of radio journalism. They will acquire knowledge about radio programme production, audio editing, various types of News bulletins and its importance for the listeners.

Course Learning Outcomes:
After completing the course, the student will be able:

CO1: To develop the basics understanding about radio journalism.
CO2: To develop skills for radio news writing and reporting.
CO3: To understand radio program production.
CO4: To know and understand various techniques of radio interviewing.

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit I

- Invention and development of radio
- Strength and weaknesses of the medium
- Sound recording and editing, skills of a radio news reporter: developing sources,
- gathering news
- Anchoring and news reading skills: general awareness, presence of mind; clarity, diction, pronunciation etc.

Unit -II

- Characteristics of radio writing style: simple, conversational style; norms regarding use of adjectives, adverbs, numerals etc.
- Writing radio news: rewriting news to suit brevity and clarity in radio news
  Editing news, types of leads; function of headlines in a news bulletin, writing headlines for radio news

Unit -III

- Types of bulletins
- Editing news for different Bulletins
- Using voice-dispatches and other elements in a bulletin
- Sequencing, updating etc.
- News updates and reports

- Newsreel etc.

Unit IV

- Types: interview for news gathering,
- Vox-pop
- Structuring interview
- Programmes: personality, informative, issue based
- Skills of an interviewer: personality, language, knowledge, curiosity, communication skills; research
- Interview; from planning to production.
- Overview of all programme formats fiction, non-fiction/news base, entertainment

References:

1. Chantler Paul & Stewart Peter: Basic Radio Journalism, Focal Press, 2003
2. Ravindran, R K: Handbook of Radio, Television and Broadcast Journalism, Anmol Publication, 2007
3. Trewin,Janet: Presenting on TV and Radio, Focal press, 2013
4. Boyd, Andrew: Broadcast Journalism: Technique of Radio and TV News, Heinemann Professional Publishing, 1990
5. Robert: The Techniques of Radio Production, Focal Press, 2015
6. Mitchell Stephon Holt, Broadcast News - Radio Journalism, Rineheast Winston NY 1980
7. While T. Broadcast, News writing Macmillan NY, 1984
8. Wills Edgar and Holt, Writing TV and radio programmes, R & W Publication 1967
9. Rivers Williams and work Alison Writing for the Media, 1988.
10. Carl Warren, Radio News Writing and Editing, 2006
11. Report L. Hillard Radio Broadcasting, 2012
12. Boyd, Andrew Broadcast Journalism (Oxford: Focal Press, 1997). 2. Dominick, Josef R.
13. The Dynamics of mass communication. Media in the digital age (University of Georgia
14. Athens, Mc Graw Hill. New York, 2002). Reference books 1.Fraser, Colin & Estrada Rastrepo
15. Sonia. Community Radio Handbook (UNESCO, 2001).
16. .Tabing Louie. How to do community radio (UNESCO Publication, New Delhi,2002).

Paper-MAMC 204: Photo Journalism

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:

The students will know about the importance of visuals in present journalism scenario and they will understand various techniques of photography to become skilled photo journalists.

Course Learning Outcomes:
After completing the course, the student will be able:

CO1: To understand the basic tools and techniques of photography.
CO2: To develop basic knowledge about the camera.
CO3: To learn and understand the basic quality and attributes of a good photograph.
CO4: To know about ethical issues related to photography.

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit- I

- Concept of photojournalism
- Power of visuals
- Attributes of a good photograph (Aesthetic and technical)
- Photo editing ,resolution and correction
- Visuals News
- Text vs. photo
- Attributes of a news photo, events, action, mood, profile and other categories

Unit-II

- Use of photographs in newspapers
- Photo editing: coordination between photographer, reporter and sub-editor, instructing and
- Guiding photographers
- Selection, placement of photos in newspapers
- Ethics of photojournalism

Unit-III

- Photo features, stories and photo essays
- Archive photos, photos from readers
- Caption writing formats and outlines

- Selection of photos for magazines
- Responsibilities of photo editor

Unit IV

- Uses of illustration and graphics in photo journalism,
- Use of numbers and maps, teamwork of sub-editor and photographer
- Issues of invasion of privacy, copyright, authenticity of digital photos available on web portrayal of nudity, violence, accidents and gruesome events
- Lifestyle and fashion photography
- Case study of Indian magazine photography.

References:

1. Richard Zakia, Leatie Stroebel, The encyclopedia of photography (3rd Ed.) Focal Press, London, 1993
2. Ralph E Jacobson/Geoffrey G Attridge/Sidney F Ray, The Manual of Photography, Focal Press, 2000
3. Understanding Digital Photography by Joseph A .Ippolito, Thomson Press, New Delhi, 2005
4. The Photography Book, Jeffrey, Ian, Phaidon Press, London, 2005
5. Practical Photo Journalism A professional guide , Martin Keene, Ammonite Press, 2015
6. Photo Journalism and Communication Technology, Navyug Publishers & Distributors, 2008
7. Fred S Parrish Photo Journalism, Wadsworth Publication, 2001
8. Millar Katic, Photography for the 21st century, Course Technology, 2007

Paper-MAMC 205: Media Laws and Media Management

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:
The objective of this special paper to create knowledge about laws related to media industry among budding media professionals. It will give a comprehensive knowledge about the ethical issue relate to media industry.

Course Learning Outcomes:
After completing the course, the student will be able:

CO1: To understand the Indian Constitution and its features.
CO2: To understand journalistic ethics various regulatory bodies related to media.
CO3: To understand the laws related to print electronic and digital media.
CO4: To create knowledge and understanding about ownership pattern of media industry.

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

- Constitution of India: fundamental rights
- Freedom of speech and expression
- Press and books registration act 1867
- Cinematograph act 1952
- Copy right act 1957
- Law of defamation
- Contempt of court and legislature

Unit-II

- Official secrets act 1923
- Right to information Act 2005
- Prasar Bharti Act 1990
- Cable TV networks regulation act 1995
- Information technology Act 2000
- Code of ethics by editor's guild of India
- Code of conduct for Journalists by press council and media houses

Unit-III

- Management : concept and scope and principles
- Media Management : concept, need and scope
- Operations and structure of news media companies
- New trends in media business
- Legal issues in media business

Unit-IV

- Media ownership patterns in India- individual, joint, public and private limited companies, group, trust, vertical-ownership, cross- media ownership, media conglomerates etc.
- Overview of media industry in India

References:

1. Basu, Durgadas: Law of the Press in India, Prentice Hall, London, 1980.
2. Nayar, B. S: Law of Contempt of Court in India, , Atlantic New Delhi, 2004
3. Iyer, Venkat, Mass media Law and Regulation in India AMIC publication, 2000
4. Venkateswaran, K.S: Mass Media law and Regulations in India, AMIC Publication, 1993
5. Basu, Durga Dass; Laws and Press, lexis Niise, 2000
6. Myneni, S.R; Media Law, Aisa Law House, 2017
7. Chaturvedi, B.K: Media Management, Global Vision Publishing House, 2009
8. Phadke, S.P, Media and Journalism Ethics, ABD Publication, 2008
9. Thakurta Pranajoy Guha, Media Ethics, Oxford University Press, 2011
10. Frankena, William K. Ethics (Prentice Hall India, 2002).
11. Singh, P.P. et. al.Media, Ethics and Laws (Anmol, 1998).
12. Lillie, William. Introduction to Ethics (Allied Publishers, 2003).
13. Prabhakar, M. et. al.A Compendium of Codes of Conduct for Media Professional (University Book House, 1999)

Paper-MAMC: 301 Editing

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:

The course will enhance the knowledge and skills about print editing. The media professional will be able to know about the structure of the print media industry and they will acquire knowledge about the various designing software's which is used for newspaper designing.

Course Learning Outcomes:
After completing the course, the student will be able:

CO1: To understand the basics skills of editing
CO2: To understand the process of editing
CO3: To understand how to design the newspaper
CO4: To understand the structure and setup of web portal

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

- Need and purpose for editing
- Principle of editing
- Organization and operation of the newsroom of a daily newspaper, duties of Sub editor, News editor, chief sub editor and editor in chief in a news organization

Unit-II

- Intro: purpose and kinds
- Headline and its types
- Headline significance and function
- Introduction to typography
- Style sheet
- Translation
- Proof reading
- Editing and designing on computer
- Selection and editing photos
- Cropping and caption writing

Unit III

- Newspaper production- principles of design
- Newspaper makeup
- Design elements

- Front page, editorial page, colour page, special pullouts and supplements
- Graphics and illustration production for newspaper
- Magazine production- layout and design

Unit-IV

- Structure and function of web portal
- Web team members
- Basic structure of HTML
- Creation of web page
- Hyperlinks
- Editing on line stories

References:

1. Shrivastava, K.M: News Reporting and Editing, Sterling publishers Pvt. Ltd, New Delhi, 2003.
2. Kamath M.V: Professional Journalism, Vikas publishing House, New Delhi.1980.
3. Joseph M.K: Outline of Editing, Anmol Publications, New Delhi, 2002.
4. Hodgson, F.W: Subediting: A Handbook of Modern Newspaper Editing& Production, Focal Press, 1987
5. Sarkar, N.N, Art and Production, Oxford publication, 2013
6. Click & Baird, Magazine Editing & Production, WCB Brown & Benchmark, 1994
7. Hicks &Homes, Sub-editing for Journalists, Routledge, 2001
8. John, Marydasan, Editing Today: Rules, Tools and Styles, Media House, New Delhi, 2015
9. George, TS, Editing, sterling publications, New Delhi, 2003
10. Verma, M.K, News Reporting and Editing, APH Publication, 2009
11. dqekj v”kksd] lekpkj i=ksa dh iBuh;rk ,oa lkt&lTtk] dfu’d ifCy”klZ] fMLVªhC;wVlZ] 2015

Paper-MAMC 302: T V Journalism

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:

The objective of this course is to give a comprehensive knowledge about television broadcasting in India. The students will learn various techniques and stages to produce good quality content for television industry.

Course Learning Outcomes:
After completing the course, the student will be able:

CO1: To know the importance of television in a democratic country like India
CO2: To know the structure and setup of studio
CO3: To train the students about television production
CO4: To understand the various formats of television programme production

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

- Major Indian and international news channels
- Regional language Indian channels: their role, importance and impact
- Local TV news operations; management of news channels
- Organisational structure of the news channel

Unit-II

- Television studio set up
- Process of television production- pre production, production, post production
- Various shots and camera movement
- Types of interviews
- Vox-pop, eye-witness, during a news bulletin
- Role and responsibility of the interviewer

Unit-III

- TV interview as a separate programme format: indoor/outdoor; personality, opinion, sports, informative interviews
- Single camera, multi camera shoot. Talk shows, discussions, debate etc.
- Production equipment: camera, mixer, lights, recorders
- Editing process
- Recording

- Planning, shooting script,
- Editing, narration, background music
- Advanced post-production

Unit-IV

- Doordarshan and its expansion;
- SITE and Kheda project
- Entry and expansion of satellite TV
- Laws governing TV broadcasting, future trends
- Overview of an Introduction to all programme formats in fiction, non-fiction/ news based/ entertainment
- Role and effect of TV on society

References:

1. Robert, Schihl J: Video production Handbook, McGraw-Hill, 1989
2. Luthra H.R.: Indian Broadcasting, Publications Division, 1986
3. Srivastva K.M : Radio and TV Journalism, Sterling Publishers, 1989
4. Singh, Kaushalendra Saran: History of Broadcasting in India, Kanishka Publishers, 2013
5. Zettl, Herbert : Handbook Television Production, Wadsworth Co. Ltd, 2016
6. Owens, Jim: Television Production 16th Edition, Asbury University, New York City,2016.
7. Gawlinski, Mark: Interactive Television Production, Focal Press, MA, 2003.
8. Chatterji, P.C: Broadcasting in India, Sage Publication, London, 1987
9. Noll,Michel: TV technology : Fundamentals and future prospects, Artech House Publishers, 1988
10. Rudin Richard & Ibbotson Trevor, An Introduction to Journalism: Essentials Technologies and Background Knowledge, Elsevier, 2002
11. Kumar Dibyanshu, Mass Media and Communication, KK Publication, 2014
12. Zettl, H.(2006). Handbook of Television Production. Wadsworth.
13. Shelley, S.L. (1999). A Practical Guide to Stage Lighting. Focal Press
14. Ronald J Compesi et.al. Video Field Production and Editing (Allyn & Bacon, 1997).
15. Stuart Hyde. Television and Radio Announcing (Houghton Mifflin, 2001).

Paper-MAMC 303: Public Relations

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:

The objective of this course is to produce good PR Professionals for the media industry. The paper will give a comprehensive knowledge and skills about the PR industry and its various practices.

Course Learning Outcomes:
After completing the course, the student will be able:

CO1: To understand the basic skill of PR
CO2: To learn and understand PR practices to be a better PR professional
CO3: To know about need and importance of corporate communication
CO4: To acquire the knowledge and skills about how to handle a crisis situation

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

- Public Relations – concept and definition :
- Evolution and growth of public relations
- Functions of public relations
- PR in relation to marketing, advertising, publicity, propaganda and rumours

Unit-II

- PR tools & methods
- Public relations writing
- PR campaign

Unit-III

- Principles of PR
  - Laws and ethics in PR, PRSI code
  - PR organizations- PRSI, IPRA etc.
- PR Setup in central and state government
- PR in public and private sector
- Functions and responsibilities of PRO

Unit-IV

- Corporate communication- concept and scope
  - Corporate identity for image building
  - PR and corporate advertising
  - PR in crisis management
- Case studies : corporate communication
- Event management

- Special Applications of PR
  - Welfare agencies
  - Business and professional association
  - Armed forces
  - International public relations
  - Educational institutes

References:

1. Kaul, J.M: Public relations in India, Naya Prokash, 1976
2. Seitel, P. Fraser: The Practice of Public relations, Pearson, 2013
3. Mehta, D.S.: Handbook of Public Relations in India, Allied Publishers, 2011
4. Wragg, David.W, An introduction to Public relations, Blackwell Publication, 1992
5. Bivins, Thoman H: Public Relations Writing, Mc GrawHill, 2014
6. Jethwaney & Sarkar: Public Relations Management Sterling New Delhi, 2009
7. Kaul, J.M: Public Relations in India, General Publishers, 1976
8. Sharama, Kumud: Jansampark Prabandan,Gyan Ganga Publication, 2016
9. Sachdeva Iqbal : Public Relations Principles and Practices, Oxford Higher Education, 2009
10. Jethwaney, Jaishri & Jain Shruti, Advertising Management, Oxford University Press, 2012
11. Ogilvy, David. Ogilvy on Advertising (Prion, 2001). 2.
12. Jethwaney, J.N. & Sarkar, Narendra Nath. Public Relations (Sterling Publishers, 2002).
13. Wells, Mehta, D.S. Handbook of Public Relations in India (Allied Publishers, 1980).
14. Valladares, June A.The Craft of Copywriting (Sage Publications, 2000).

Paper-MAMC 304: Communication Research

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:
The paper will give a comprehensive understanding and knowledge about communication research and its importance in a media Industry. The objective of this paper is to make media professional as a good researcher.

Course Learning Outcomes:
After completing the course, the student will be able:

CO1: To understand the basic methods and techniques of Communication Research
CO2: To learn and understand about research design
CO3: To acquire the knowledge about data collection, data coding and data analysis and presentation
CO4: To understand the various measurement scales used in social science researches

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

- Research: concept, definition, role and scope
- Social research, communication research, media research
- Basic elements of research.
- SITE, NRS, IRS, TRPs

Unit-II

- Need and scope of media research
- Fundamental research and applied research
- Experimental design and semi experimental design
- Exploratory, descriptive design, benchmark studies, panel studies

Unit-III

- Methods of communication research: observation, case studies, census, random sample survey, content analysis
- Data collection tools
- Questionnaire-preparation and pre-testing
- Art of conducting research interview
- Feed forward and feedback

Unit-IV

- Sources of data, data coding, tabulation, graphs and tables.
- Statistical methods: mean, median, mode, standard deviation, chi-square test
- Interpretation of data, research report writing
- Problems in communication research.

References:

1. Arthur Asa Berger, Media Research Techniques, Sage Publications, New Delhi, 1998
2. Roger D.Wimmer : Mass Media Research, Cengage learning India Pvt. Ltd., 2015
3. Wrench.et al. Qualitative Research Methods for Communication, Oxford University Press, 2018
4. Mass Communication Research Methods, Volume 1 Anders Hansen, SAGE Publication 2009
5. Reinard, John: Introduction to Communication Research, McGraw Hill, 2009
6. Anderson, J.A. Communication Research: Issues and Methods, McGraw Hill, 1987
7. Dayal, Manoj Media Metrics: An Introduction to Quantitative Research in Mass Communication, Sage Publications, 2017
8. Jensen, Klaus Bruhn. (2002). A Handbook of Media and Communication Research- Qualitative and Quantitative Methodologies. Routledge.
9. Hansen Anders, Cottle Simon, Newbold Chris, (1998), Mass Communication Research Methods. New York University Press.
10. . Kaul, Lokesh. Methodology of Educational Research (Bikash, 2001).
11. Patnaik, Asit Kr. Research Methodology in Social Sciences (Commonwealth, 2001). 3. Sharma, S.R. Research in Mass Media (Radha Publishers, 1996).

Paper-MAMC 305: Communication Technology

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:

The paper will give a comprehensive knowledge and skills about the basic technology used in the media industry they will acquire knowledge about broadcasting, Computer, the Printing and new information and communication technology.

Course Learning Outcomes:
After completing the course, the student will be able:

CO1: To know about importance of technology in media industry
CO2: To understand radio and television broadcasting techniques
CO3: To develop knowledge about how the different printing processes used in print production
CO4: To understand the importance and impact of new technology on media industry

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

Broadcasting Technology

- Signal generation &transmission
- Microwave links, terrestrial transmission
- Optic fiber, wireless & advanced telephony
- AM & FM transmission
- Radio and television broadcasting
- Satellite: history, types &functions
- Cable TV transmission, DTH, digital transmission

Unit-II

Computer Technologies

- Computers, LAN, WAN
- Internet, e-mail
- Role of computer in various mass media
- Facsimile, videotext, teletext, multimedia

Unit-III

Printing Technologies

- Printing Process
- Letter press, offset printing and screen printing
- Other printing methods

Unit-IV

Telecommunication Technology

- Land telephone
- Mobile telephone
- Internet
- Fax
- Convergence
- Application of convergence

References:

1. Raman, V. Raja: Fundamentals of Computers, PHI Learning Pvt Ltd, 2015
2. Bradbeer, Robin: Personal Computer, Book, Ashgate Publishing Ltd, 1982
3. Dutton, William H,Peltu Malcolm: Information and Communication Technologies: Visions and Realities, Oxford University Press, 1996
4. Mannan, Abdul: Information and Communication Technology, Himalaya Publishing House, 2015
5. Shrivastava, Chetan: Fundamental of Information Technology, Kalyani Publication, 2010
6. Chakravarthy Jagdish, Cyber Media Journalism: Emerging Technologies, Authors Press, 2003
7. Gupta, Om & Jasra, Ajay, Information Technology in Journalism, Kanishka Publishers, 2006
8. gfjeksgu] Lkwpuk izkS|ksfxdh vkSj tuek/;e] r{kf”kyk izdk”ku] 2015

Paper-MAMC 401: Print Media Production

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:

This paper will give a good knowledge and skills about the print media production to the students. They will be able to understand various production techniques used in print media industry. They will acquire knowledge about various designing software used for print media production.

Course Learning Outcomes:
After completing the course, the student will be able to:

CO1: To understand the basic principle of newspaper designing
CO2: To acquire knowledge about PR Production
To understand how to produce print advertisements
CO4: To develop skills about how to use visuals in print production

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

- Printing processes
- Desktop publishing
- Newspaper production- principles of design, newspaper makeup, dummy, effect of television and new media on newspaper makeup, newspaper form, design elements
- Magazine production- layout and design

Unit-II

- Press release and press handout
- Backgrounders and rejoinders
- Interviews
- Exhibitions
- House journals
- Brochure
- Annual reports
- Bulletin boards
- Pamphlets/handbills
- Posters

Unit-III

- Classified, display and display classified ad
- Magazine advertisement

- Outdoor and other forms advertisement
- New trends in advertisement production
- Point of purchase material production

Unit-IV

- Basic principles of photography
- Photographic equipments, still camera, lens, films and light
- Visualization of shot, composing a shot
- Photography for newspaper and magazine

References:

1. Keene, Martin: Practical Photo Journalism A professional guide, Ammonite Press, 2015
2. Sethi, Pankaj: Photo Journalism and Communication Technology, Navyug Publishers & Distributors, 2008
3. Martin, Parul: Visual Communications Global Vision Publishing House, 2006
4. Sarkar, N.N : Art and Production , Second Edition, Oxford University Press, 2013
5. Bajpaye, Alok: Advertisement Management, Authors Press, 2007
6. George, A. H. News Writing, Kanishka Publications, 1990
7. Stein, P. & Burnett, News writer's Handbook: An Introduction to Journalism, Blackwell Publishing, 2000

Paper -MAMC 402: Electronic Media Production

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:

The course will give knowledge and skills for producing content for electronic media. The students will be able to learn planning and various production techniques used in the electronic media industry. It will help them to become an efficient content producer for the media industry.

Course Learning Outcomes:

After completing the course, the student will be able:

CO1: To know about the various equipment's and techniques used for radio production
To learn equipment required for the television production
CO3: To get familiar with the tools and techniques of video editing
CO4: To acquire basic knowledge about the web production

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

- Radio Studio
- Audio equipments-recorders, audio console, microphones,
- Recording, editing
- Planning and production of radio programme
- Talks, interview
- News bulletin, news reports, news reels

Unit-II

- Television studio set up
- Process of television production- pre production, production, post production
- Production personal and their responsibility
- Production equipment: camera, mixer, lights, recorders

Unit-III

- Various shots and camera movements
- Editing process
- Planning and production of TV programme
- News bulletin
- Documentary
- Interview

Unit-IV

Web Production:

- Structure and function of web portal
- Web team members
- Basic structure of HTML
- Creation of web page,
- Hyperlinks

References:

1. Stovall James G: Web Journalism: Practice and Promise of a New Medium, Pearson Education, 2004
2. Musburger: An Introduction to Writing for Electronic Media, Focal Press, 2013
3. Zettl, Herbert, Television Production Hnadbook, Wadsworth Pub Co, 2012
4. Owens, Jim: Video Production Handbook, Gerald Millerson, 2012
5. Keith: The Radio Station, Focal Press, 2009
6. Wilby, Pete: The Radio Handbook, Routledge, 2002
7. Millerson, Gerald: Television Production, Focal Press, 1976
8. Belavadi , Vasuki :Video Production, Oxford University Press, 2007
9. Gupta, Om & Jasra, Ajay, Information Technology in Journalism, Kanishka Publishers, 2006
10. Zettl, H.(2006). Handbook of Television Production. Wadsworth.
11. Shelley, S.L. (1999). A Practical Guide to Stage Lighting. Focal Press
12. Ronald J Compesi et.al. Video Field Production and Editing (Allyn & Bacon, 1997
13. Stuart Hyde. Television and Radio Announcing (Houghton Mifflin, 2001).

Paper-MAMC403: Cyber Journalism

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:

The objective of this course is to prepare digital content creator and producer for the media industry. It will give a comprehensive knowledge about the digital media industry around globe. They will acquire the knowledge and skills about the digital media production.

Course Learning Outcomes:

After completing the course, the student will be able:

CO1: To know about the digital news room structure
CO2: To understand various tools and techniques used for digital production
CO3: To acquire knowledge how to become
a digital content creator
CO4: To understand the economic model of the digital media in India

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

- The new breaking news medium
- Changing role of E-journalist:
- Impact on news values
- Global, Local or Global
- Presenting the news and views
- Basics of web designing

Unit-II

- New Social Media
- Dynamics of social media networks, novelty, strength and weakness
- Growing personal sphere and online communities
- New business model: advertisements, marketing online revenue; Future trends

Unit-III

- Multimedia storytelling on individual and group
- Multimedia journalism
- Blogs
- Media research and Internet.
- Problem of access and other issues
- Use of internet for development, by NGOs and E-governance;
- Politics and Virtual Democracy

Unit-IV

- Social sharing to social activism ;other issues
- Ethics of web journalism: Security and privacy concerns
- Nature of Cybercrimes and Cyber laws
- Need for a national ICT policy.

References:

1. Chakarvarthy, Jagadish : Cyber Media Journalism Emerging Technologies, Authors Press, 2003
2. Jain, Ravi Kumar, Cyber Forensics: Tools & Practices, ICFAI University Press, 2006
3. Srivastav, H.O: Broadcasting Technology, Gyan Publishing House, 2000
4. Ganesh, T.K. Digital Media, Gnosis Publication, 2006
5. Friend ,Cecilia and Singe, Jane B.R : Online Journalism Ethics, PHI learning Pvt. Ltd, 2015
6. Ray, Tapas: Online Journalism: A Basic Text, Cambridge University Press,2006
7. Gupta, Om & Jasra, Ajay, Information Technology in Journalism, Kanishka Publishers, 2006
8. Chaturvedi B. K. New Media Technology and Communication (Global Vision Publishing House 2010).
9. Wilson P. Jr. Dizard. Old Media New Media: Mass Communications in the Information Age (Allyn & Bacon, 1999).
10. Collins Richard, Murroni Cristina, New Media, New Policies: Media and Communications Strategy for the Future (Polity Press 12-1996).
11. Covell Andy. Digital Convergence (Firewall, 2002). 3. Vince John A.,Digital Convergence: The Information Revolution (University Of Bournemouth UK: Springer-Verlag)

Paper-MAMC 404: Development Communication

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:
This course defines understanding of development theories and modals, to equip them an understanding of the various development programmes and the policies of Government development in India.

Course Learning Outcomes:
After completing the course, the student will be able:

CO1: To understand the concept of development journalism
CO2: To understand the role of media in social developments
CO3: To study need and importance of developmental journalism
CO4: To understand the role and importance of public and private sector in development

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

Development: Concept and meaning

- Social change, modernization and development
- Characteristics of developed and developing society
- Theories of development : social, political and economic theory
- Models of development : western, eastern, Gandhian,
- Schumacher's development communication-concept and meaning
- Spiritual vs. materialistic development

Unit-II

- Family Planning
- National integration
- Women and child development
- Uplift of weaker sections
- Education literacy
- Poverty alleviation programmes and unemployment
- Human rights
- Environment and ecology
- Health, hygiene and nutrition
- The concept of social marketing and media
- Development Indices

Unit-III

- Government sector
- Public Sector
- Corporate Sector
- Non-Government organizations (NGOs) and social service organizations
- National and international bodies
- Media for development communication

Unit-IV

- Panchayati Raj
- Rural journalism
- Media and agricultural development programmes
- Role of community radio and local media in development

References:

1. Schramm,Wilbur: Mass Media and National Development, Standford University Press, 1971
2. Raghavan, G.N.S : Development and communication in India, Gian Publication, New Delhi, 1974
3. Nair, Sadanand : Perceptive on Development Communication, Sage Publication, 1993
4. Gupta Baldev Raj: Mass communication & Development, Vishwavidyalaya Prakashan, 1997
5. Sinha, Dipankar: Communicating Development in the New World Order, Kanishka Publication, 1999
6. Rogers & Singal: India communication Revolution, Sage Publication, 2001
7. Gupta, V.S: Development and Communication, Concept Publishing, 2000
8. Sevaes Jan, Communication for Development & Social Change, Sage Publication, 2008
9. Mlkote Srinivas Raj & Steeves H. Lesline, Communication for Development, 2015
10. Narula Uma, Development Communication, HAR-ANAND Publication Private Limited, 2010

Paper-MAMC 405: Films and Entertainment Industry

Credits: 4
Time: 3 Hrs.
Total Marks: 100
Theory: 75
Internal Assessment: 25

Course Objectives:
This course defines understanding of concept and role of cinema in society. The students develop skill in film making, creative writing and film research.

Course Learning Outcomes:
After completing the course, the student will be able:

CO1: To be able know about basic knowledge about film and entertainment industry
CO2: To understand the need and importance of cinema
CO3: To understand the vocabulary of cinema
CO4: To know about various types of programme formats used in entertainment industry

Question No.1 shall be compulsory containing short notes from entire syllabus. Attempt any four questions from the remaining four units selecting one question from each unit. All questions carry equal marks.

Unit-I

- Entertainment: concept, definitions and role
- Functions of entertainment in human society
- Basic elements of entertainment- music (vocal, instrumental and dance), characters, action, spectacle, idea
- Infotainment and its formats

Unit-III

- Introduction to major fictional programmes formats- soap opera, sitcom and series etc.
- Development storyline and writing script for Soap operas/serials
- Preparing a production plan for any one of the following reality shows:
- games show, quiz show
- talent show
- Laughter show/variety show
- Case studies of any one popular fictional programme

Unit-III

- Definition of cinema
- Introduction to Indian cinema
- Development of films in Europe & US (Introduction to word cinema)
- Vocabulary of films: Shot scene, sequence, frame, composition of depth, point of view, transition, Mise-en-scene etc.
- Important directors and there contribution to world cinema, film companies and films
- Film Institution, NFDC, NFAI, FTII, Children film society,
- Growth of regional cinema in India

Unit-IV

- Film appreciation, Film analysis, criticism,
- Reviewing films for various media
- Censorship and certification: need, relevance
- Censor Board
- Influence of cinema on society
- Film as Industry
- Inter relationship of film industry with other media

References:

1. Hill, John & Gibson, Pamela Church. Film Studies (Oxford Univ. Press, 2000).
2. Roberts, Graham & Wallis, Heather. Introducing Film (Arnold Publishers, 2003).
3. Stam, Robert. Film Theory: An Introduction (Blackwell Publishers, 2000).
4. Hood, John W. The Essential Mystery- the major film makers of Indian art cinema (Orient Longman, 2000).
5. Turner, Graeme. The Film Cultures Reader (Routledge, 2002). 3. Ray, Satyajit. Our Films Their Films (Orient Publishers, 1993).
6. Curran, James and Morley David. Media and Cultural theory, Routledge Publication, 2006
7. Dwyer, Rachel. Filming the Gods, Routledge Group, 2006
8. Huda, Anwar. The Art and Science of Cinema, Atlantic Publishers & Distributors, 2004.
9. Jain, Jasbir and Rai, Sudha, Films and Feminism, Rawat Publication, 2009.
10. Scannell Paddy, Media and Communication, Sage Publication, 2007
11. Sell now, D. Deanna. The Rhetorical Power of Popular culture, Sage Publication, 2010.
12. Per Persson, Understanding Cinema, Cambridge University Press, 2009

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Kurukshetra University, Kurukshetra

POST GRADUATE DIPLOMA IN TAXATION (PGDT)
(DISTANCE EDUCATION)

(w.e.f. Session 2018-19)

SCHEME OF EXAMINATION

Paper Code	Nomenclature	Maximum Marks		Total Marks
		External	Internal	
PGDT-101	Income Tax Law & Practice	80	20	100
PGDT-102	Goods & Services Tax	80	20	100
PGDT-103	Computerized Accounting System	40	10	100
	Practical	50		
PGDT-104	Corporate Taxation	80	20	100
PGDT-105	Indian Customs Act	80	20	100
PGDT-106	Training Report	50	---	100
	+			
	Viva-Voce	50		

PGDT-101

INCOME TAX LAW & PRACTICE

External Marks: 80
Internal Marks: 20
Time: 3 Hours

Note: Paper setter will set nine questions in all. Question No. 1 comprising of five short types questions carrying four (4) marks each is compulsory. It covers the entire syllabus. Answer to each question should not be more than one page. Candidate is required to attempt four questions from the remaining eight questions carrying 15 marks each.

Introduction to income tax: concept of tax, person, income, agricultural income, casual income, previous year, financial year, assessment year, gross total income, total income; tax management: tax evasion, avoidance, and tax planning.

Basis of charges: Scope of total income, residential status and Incidence of tax, exempted income

Heads of income: income from salary, house property; profit and gains from business and profession, capital gains and other sources.

Clubbing and aggregation of income.

Provisions regarding set-off and carry forward of losses

Deductions under section 80C to 80U in computing total income.

Computation from gross total income and tax liability of an individual, H.U.F. and Firm, AOP and BOI, Co-op. Society, Charitable and other trusts.

Return of Income, e-filing procedures

Assessment and re-assessment, search and seizures,

Deduction of tax at source; advance payment of tax.

Refund of Income Tax

Penalties and Prosecution under Income Tax Act

Appeals and Revisions, Income Tax Authorities

REFERENCES

- Gaur and Narang, Income Tax Law & Practice, Kalyani Publishers, Jalandhar.
- Girish Ahuja and Ravi Gupta, Systematic Approach, C.C.H. India Publications, New Delhi.
- Mehrotra H.C., Income Tax Law & Account, Sahitya Bhawan Publications, Agra.
- Prasad, Bhagwati, Income Tax Law & Practice, Vishwan Prakashan, Bhopal.
- Singhania V.K., Student's Guide to Income Tax, Taxmann Publications Pvt. Ltd., New Delhi.

PGDT-102

GOODS & SERVICES TAX

External Marks: 80
Internal Marks: 20
Time: 3 Hours

Note: Paper setter will set nine questions in all. Question No. 1 comprising of five short types questions carrying four (4) marks each is compulsory. It covers the entire syllabus. Answer to each question should not be more than one page. Candidate is required to attempt four questions from the remaining eight questions carrying 15 marks each.

GST: Meaning, taxable person, registration: procedure and documents required.

Levy and collection of GST

Time and place of supply of goods and services, value of taxable supply

Reverse Charge under GST

Computation of input tax credit and transfer of input tax credit

Electronic Ledgers under GST

Tax invoice credit and debit note

Various returns to be filed under GST

Payment of tax including TDS, Interest Provisions on delayed payment

Offences and penalties & Administration under GST

REFERENCES

- Basics of GST (2016), TAXMAN'S PUBLICATIONS
- GST Practice Manual, TAXMANN's PUBLICATIONS
- Ahuja Girish & Gupta Ravi Practical approach to Income tax, Wealth Tax and Central sales tax (Problems and Solutions with Multiple choice questions); Bharat Law House Pvt.Ltd., New Delhi.
- Central Excise Act
- Central Sales Tax Act.
- Customs Act.
- Goods and Services Tax Act.

4/8/18 4/8/18 4/8/18 04/8/18 4-8-2018 04-08-2018

PGDT-103

COMPUTERIZED ACCOUNTING SYSTEM

External Marks: 40
Internal Marks: 10
Practical: 50
Time: 3 Hours

Note: Paper setter will set nine questions in all. Question No. 1 comprising of five short types questions carrying four (4) marks each is compulsory. It covers the entire syllabus. Answer to each question should not be more than one page. Candidate is required to attempt four questions from the remaining eight questions carrying 10 marks each.

Need of computerized accounting system, various software's for computerized accounting system. Tally ERP 9 - Installation, Licensing configurations – Tally Vault Password – Security Control in Tally, ERP9 – Splitting Company Data – Backup and Restore.

Accounting: translation, voucher entry, budget, cost center, balance sheet, profit and loss account, currency, debit note, credit note, interest calculation.

Inventory: stock item, sales order, purchase order, delivery note, rejection out.

Computerized Tax Liability Contribution and E-filing in respect of GST.

Payroll and Salary Accounting: Introduction to Payroll, Payroll Masters, Payroll Vouchers, Overtime Payment, Gratuity. Advanced Payroll Transactions Basic Salary, Overtime, Bonus, Gratuity, Loan, ESI, Provident Fund, Pension, Commission.

Practical: The candidates should be able to prepare journal, ledger, trial balance, balance sheet and other accounts using computerized accounting softwares such as Tally ERP (Latest Version).

REFERENCES

- Ashok, K. Nadhavi, Kishor K. Nadhavi, Implementary Tally 9. BPB Publications, New Delhi.
- A.K. Nadhavi, K.K. Nadhavi, Tally Instant Reference (Accounts, Inventory, Advanced), BPB Publications, New Delhi.
- Ashok K. Nadavi, Tally Training Guide (Financial Accounting, Invoicing & Inventory), BPB Publications, New Delhi.
- A.K. Nadhavi, Managing VAT with Tally 9 (Taxation), BPB Publications, New Delhi.
- A.K. Nadhavi, K.K. Nadhavi, Implementing Tally Payroll, BPB Publications, New Delhi.

PGDT-104

CORPORATE TAXATION

External Marks: 80
Internal Marks: 20
Time: 3 Hours

Note: Paper setter will set nine questions in all. Question No. 1 comprising of five short types questions carrying four (4) marks each is compulsory. It covers the entire syllabus. Answer to each question should not be more than one page. Candidate is required to attempt four questions from the remaining eight questions carrying 15 marks each.

Assessment of companies: concept of corporate taxation; residential status and incidence of tax; tax management: tax evasion, tax avoidance and tax planning.

Computation of gross total income of companies, permissible deductions; computation of tax liability.

Minimum Alternative Tax (MAT)

Dividend distribution tax: tax on Buy back of unlisted shares

Tax planning regarding new business: form of business organization, tax factors affecting choice of form of business organization, location of business and nature of business.

Tax planning and managerial decisions regarding own or lease, make or buy, shut down or continue decisions.

Tax planning regarding capital structure decisions: dividend policy; inter-corporate dividends and bonus shares.

Special tax provisions for units in Special Economic Zones / Export Oriented Units.

Taxation provisions for amalgamation of companies, merger & demerger.

Tax payment; tax deduction at source, tax collection at source, advance payment of tax.

Tax planning in respect of managerial remuneration.

REFERENCES

- Singhania, Vinod K. and Singhania Monika, "Corporate Tax Planning and Business Tax Procedures", Taxmann publications Pvt. Ltd. New Delhi.
- Gaur V.P., Gaur Puja and Puri Rajeev, "Corporate Tax Law & Planning" Kalyani Publications.
- Sriniwas, E A, "Handbook of Corporate Tax Planning", Tata McGraw Hill.

4/8/18

04-08-2018

PGDT-105

INDIAN CUSTOMS ACT

External Marks: 80
Internal Marks: 20
Time: 3 Hours

Note: Paper setter will set nine questions in all. Question No. 1 comprising of five short types questions carrying four (4) marks each is compulsory. It covers the entire syllabus. Answer to each question should not be more than one page. Candidate is required to attempt four questions from the remaining eight questions carrying 15 marks each.

Legal framework: Customs Act 1962 and Customs Tariff Act 1975, Recent Foreign Trade Policy

Customs duty- concept, scope, nature and types of customs duty, classification of customs tariffs in India

Valuation of customs duty- valuation of imports, valuation of import duty; inclusions in customs value, methods of valuation for customs; under valuation in customs value.

Customs clearance of export and import cargo- documentary requirements; Custom clearance for shipment through air, ship, ICDs, post parcel, and courier; EDI initiatives and customs clearance

Exemptions, remission, demand, recovery and refund in customs, export incentives under customs tax provisions, penalties and offences under customs tax rules.

Penalties and Offences under Customs Act.

Customs Tax Planning: An overview

REFERENCES

- Datey, V. S.: "Indirect Taxes Law and Practice", Taxmann Publishers, New Delhi.
- Bare Act on Indirect Tax Laws (updated only)

4/8/18

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04-08-2018

4.8.2018

PGDT-106

PRACTICAL TRAINING REPORT + VIVA-VOCE

Project Report: 50 Marks
Viva-Voce: 50 Marks

The candidate should have proper understanding about the complete tax system and administration in India. In order to add the practical exposure, the candidate has to join a Company / CA Firm for practical training 3-weeks duration during the course of the study. The proposal for practical training has to be approved by the Course Coordinator on Prescribed Proforma. The candidate shall submit Training Report during the course of the study for PG Diploma in Taxation but before 31st March. The comprehensive viva-voce will be conducted by an External Examiner appointed by the University to evaluate the Training Report.

KURUKSHETRA UNIVERSITY, KURUKSHETRA

B.A. VOCATIONAL (TOURISM) PROGRAMME -3 YEARS

(MULTIPLE ENTRY-EXIT, INTERNSHIPS AND CHOICE BASED CREDIT SYSTEM)

SYLLABUS OF SEMESTER I & II

Under NEP 2020

W.e.f. SESSION: 2022-2023

Kurukshetra University Kurukshetra

Programme Structure Template for B.A. Vocational (Tourism)Programme of 3 year duration as per NEP 2020

(Multiple Entry-Exit, Internships and Choice Based Credit System)

Semester	Core course(CC) @6credits Subject-1	Core course (CC)@6credits Subject-2	Core course (CC@6credits) Subject-3	Ability enhancement compulsory course (AECC)@2credits	Skill Enhancement Course (SEC) @2-6 credits	Discipline Specific Course (DSE)@6credits	Activity/Hobby @2 credits (Audit)	Total credits	Exit option
I Level-5	CC-1A	CC-2A	CC-3A Introduction to Tourism Business	(Language communication)/Environmental Studies	SEC-1 Human Values and Ethics/Computer Science Level-1 @2credits	X	2	24	Certificate in Arts, Science/Commerce @58 credits
II Level-5	CC-1B	CC-2B	CC-3B Travel Agency and Tour Operation Business	(Language communication)/Environmental Studies	SEC-2 Human Values and Ethics/Computer Science Level-1 @2credits	X	2	24	
Internship 10 Credits {(Field Trip of 4 Credits for all students) and (Industrial training 6 Credits- only for Exit option)}									
Semester	**Core course (CC) @6credits Subject-1**	**Core course (CC) @6credits Subject-2**	**Core course (CC @6credits) Subject-3**	**General Elective* course @ credits**	**Skill Enhancement Course (SEC) @ 2-6credits**	**Discipline Specific Course (DSE)@6credits**	**Activity/Hobby @2 credits-Audit**	**Total credits**	**Exit option**
III Level-6	CC-1C	CC-2C	CC-3C Travel Documentation	GE-1*@6Credits of level 5	SEC-3- Community Development/Personality Development/MOOC **	X	2	22+6*	Diploma in Arts, Science/Commerce @ 102

IV Level-6	CC-1D	CC-2D	CC-3D Marketing for Tourism and Hospitality Industry	GE-2*@6Credits of level 5	SEC-4 -Community Development/Personality Development/MOOC **	X	2	22+6*	credits
Internship @10 credits after 4th semester (compulsory for all)									
Semester	**Core course(CC) @6credits Subject-1**	**Core course (CC)@6credits Subject-2**	**Core course (CC@6credits) Subject-3**	**General Elective* course @6 credits**	**Skill Enhancement Course (SEC) @ 6credits**	**Discipline Specific Course (DSE)@ 6credits**	**Activity/Hobby/ clubs @2 credits (Audit)**	**Total credits**	**Exit option**
V Level-7	CC-1H1 subject **H**	X	X	GE-3*@6Credits of level 5/6	SEC-5 (Major Subject-1) **@**6credits Itinerary preparation and tour Packaging	DSE-1(Major subject-1) DSE-2(Major Subject-2)	2	20 + 10 of Internship +6 ^{H}+6*	Graduation in Arts/ Science/Commerce @142 credits/ Honors in subject @154 credits
VI Level-7	CC-1H2 subject **H**	X	X	GE-4*@6credits of level 5/6	SEC-6 (Major Subject-2)@ 6 Credits Local Attractions, Tours and Guiding	DSE-3 (Major subject-1) DSE-4 Major Subject-2)	2	20+6 ^{H}+6*	
Semester	**Core Courses @ 6 Credits**	**Research ability enhancement courses(RAEC) and thesis**			**Research Progression Seminars**			**Credits**	**Exit**
VII	CC-1H1	Research Ethics @4 credits			Review of literature General Seminar @ 4 Credits			16	Graduati

Level-8	and CC 1H2 (of level 7 to be completed by Graduate students without Honours)	Research Methodology @4 credits	Synopsis writing and Seminar @ 4 credits		on in Subject (Honors & Research) @ 194 credits
VII Level-8		Dissertation/Thesis Preparation/ Writing @ 20 credits	Midterm seminar @ 2 Credits	24	
			Pre- submission Seminar @ 2 Credits		

Notes:

1. Credits (C), Core Courses (CC); Discipline Specific Elective Courses (DSE); General Elective Courses (GE); Skill Enhancement Courses (SEC), Ability Enhancement Compulsory Courses (AECC).
2. Major, Minor, Generic Elective subjects and DSE options will be offered depending upon the availability of faculty/infrastructure /timetable of the Institute/College.
3. At least one of the subjects opted at level 5 and level 6 should be language UG with major subjects in Arts
4. Students can opt exit after completing internship after 2nd semester and earn a Certificate. Continuing students can do internship after 4th semester.
5. Students can opt for one course from other programmes as General Elective @ 6 credits in IIIrd, IVth, Vth and VIth semesters subject to the eligibility, availability of seats and class timings not overlapping.
6. ^{H} **Honors courses.** CC- 1H1 and CC-1H2 are honors courses to be taken if students opt for Honors course in third year and will have to be taken compulsorily by the students opting for 4^{th} year of the programme (Honors and Research) if these courses are not completed earlier at level 7.
7. All the field work, Internship, dissertation/thesis will be effected through guided learning by allotting a teacher as guide to every student.
8. Each candidate shall be examined in the courses through a system of Comprehensive Continuous Assessment using a mix of Internal and End term evaluation. The Internal Assessment and End term evaluation for different courses of programme shall carry weightage of 50% each. Internal assessment (50%) shall be based on clearly defined components of class attendance and participation (10%) ,mid term exam of 2 hour duration (30%) and assignments-presentations (10%) of the credit and the rest (50 %) through End term Examination .

9. Evaluation rubrics shall be followed as per Annexure -1
10. Hobby/activity courses are audit courses and shall be evaluated by the instructor as prescribed in syllabi. The grades will be as Completed/Non-completed. These grade will not contribute to the calculations of SGPA/CGPA
11. The codes of the courses shall be identifiable with the following format;

B-ENG-N101 B-HIN-N101 and so on (Prefix N before number to distinguish from the earlier course codes)

*DSE Selection- Options from following buckets will be offered for Majors at level 7 subject to availability.

Semester	Tourism Business Operations	Tourism Product Development	General Tourism Management
Semester V	1. Entrepreneurship in Tourism 2. Tour Planning and Management 3. Destination Management	1. Event Tourism 2. Adventure tourism 3. Domestic Tourism 4. Wellness tourism 5. Wildlife Tourism	1. Accounting for Tourism Professionals 2. Human Resource Management 3. Tourism Economics 4. Transport Management and Operations
Semester VI	1. Online Travel Business 2. Successful Tourism Business- case studies 3 Cruise Tourism	1. Eco Tourism 2. Alternate and New Tourism 3. Leisure Tourism 4. Haryana Tourism	1. Digital Marketing 2. Tourism Financial Management 3. Tourism Business Ethics and Laws 4. Sales Management for Tourism

Annexure-1

Evaluation rubrics

Class participation: **D**iscussions, raising relevant issues, analysis, synthesis, updated readings	Never	Rarely	Sometimes	Always
Learning level Evaluation scale (1-4) (1; <30%, 2; 30-59%, 3;60-70 %, 4; > 70 %)[% denotes marks on absolute scale]	**Beginner (1)**	**Progressing (2)**	**Proficient (3)**	**Excellent (4)**
Training/ Internship report (Content, organization, writing, visual appeal)	Very little understanding and application	Somewhat understanding and application	Good understanding and application	Excellent understanding and application
Dissertation (Format, content, Methodology, analysis, Visuals, Citation)	Very little understanding and application of research	Somewhat understanding and application of research	Good understanding and application of research	Excellent understanding and application of research
Assignment and presentation (Introduction, Research, Conclusions, Writing, speaking/body language, use of power point)	Vague/irrelevant	Somewhat clear and relevant	Clear and relevant	very Clear and relevant
Mid term Exam (Completeness, Understanding, Argument, Structure and writing)	Poor	Average	Good	Very good
End term Exam (Completeness, Understanding, Argument, Structure and writing)	Poor	Average	Good	Very good

Template

Learning Outcome-based evaluation - [Name of the Course]

Number of Credits

Students	Student scores and learning levels against Course Outcomes (CO's) (Evaluation scale 1-4 (1; <30%, 2; 30-59%, 3; 60-70 %, 4; > 70 %) [% to be computed on absolute marks]				
	Class Participation (Marks between 0-10)	**Assignments and presentations (Marks between 0-15)**	**Mid-Term Exam (Marks between 0-25)**	**End-Term Exam (Marks between 0-50)**	**Aggregated (Marks between 0-100)**
1.	CO1- CO2- CO3- and so on	CO1- CO2- CO3- and so on	CO1- CO2- CO3- and so on	CO1- CO2- CO3- and so on	CO1- CO2- CO3- and so on
2.					
3.					
4.					
5.					
6. and more					

Course Outcomes

CO 1- As per the syllabus.
CO 2- As per the syllabus
CO 3- As per the syllabus
CO 4 and more- As per the syllabus

Kurukshetra University Kurukshetra
Scheme of Examination for Tourism Subject for B.A. Vocational (Tourism)

under
Choice Based Credit System (CBCS-LOCF) in accordance to NEP-2020
w.e.f. 2022-23

Semester	Course	Paper	Nomenclature of paper	Credits (5+1)	Internal Marks	External Marks	Total		Duration of Exam (Hours)
							With Exit	Without Exit	
I Level 5	CC-1	BA- Voc Tourism-101	Introduction to Tourism Business	6	75	75	150	150	3
II Level 5	CC-2	BA- Voc Tourism-201	Travel Agency and Tour Operation Business	6	75	75	150	150	3
Internship 10 Credits {(Field Trip of 4 Credits for all students) and (Industrial training 6 Credits- only for Exit option)}				10		100 for Field Trip + 150 for Internship	250	100	Field Trip Report Viva voce + Industrial Report and Viva voce
III Level 6	CC-3	BA Voc-Tourism-301	Travel Documentation	6	75	75	150	150	3
IV Level 6	CC-4	BA Voc-Tourism-401	Marketing for Tourism and Hospitality Industry	6	75	75	150	150	3

Internship @10 credits after 4th semester (compulsory for all)				10		250	250	250	Internship Report and Viva voce
V Level 7	*DSE	BA Voc-Tourism-501		6	75	75	150	150	3
		BA Voc-Tourism-502		6	75	75	150	150	3
	SEC-1	BA Voc-Tourism-S1	Itinerary Preparation and Tour Packaging	6	75	75	150	150	3
VI Level 7	*DSE	BA Voc Tourism 601		6	75	75	150	150	3
		BA Voc Tourism 602		6	75	75	150	150	3
	SEC-2	B-Tourism-S2	Local Attractions, Tours and Guiding	6	75	75	150	150	3

*DSE Selection- Options from following buckets will be offered for Major at level 7 subject to availability.

Semester	Tourism Business Operations	Tourism Product Development	General Tourism Management

Semester V	1. Entrepreneurship in Tourism 2. Tour Planning and Management 3. Destination Management	1. Event Tourism 2. Adventure tourism 3. Domestic Tourism 4. Wellness tourism 5. Wildlife Tourism	1. Accounting for Tourism Professionals 2. Human Resource Management 3. Tourism Economics 4. Transport Management and Operations
Semester VI	1. Online Travel Business 2. Successful Tourism Business- case studies 3 Cruise Tourism	1. Eco Tourism 2. Alternate and New Tourism 3. Leisure Tourism 4. Haryana Tourism	1. Digital Marketing 2. Tourism Financial Management 3. Tourism Business Ethics and Laws 4. Sales Management for Tourism

FIRST SEMESTER

INTRODUCTION TO TOURISM BUSINESS
Paper: CC-3 A

External Marks - 75
Internal Marks - 75
Total marks – 150

Time Duration of External Exam: 3Hours

COURSE OBJECTIVES:

CO 1 : To familiarize with the basic concepts and terminology used in Tourism
CO 2 : To gain knowledge of various types of tourism and factors responsible for the development of tourism
CO 3 : To be able to identify different components of tourism
CO 4 : To be able to work with and for tourism services in tourism chain

UNIT- I	**Basic Concept and Terminology used in Tourism** Meaning and Nature of Tourism, Concepts of tourist and tourism as per UNWTO classification. International Tourist, Domestic Tourist, Typologies of Tourist Tourism Market; Tourism Resources; Tourism Product; Destination; Recreation; Pleasure and relaxation
UNIT- II	**Types of Tourism and Factors of Development of Tourism** Tourism as an Industry, Types and Characteristics of Tourism, Linkages of Tourism, Impacts of Tourism Motivations in Tourism - Push and Pull factors Problems and Prospects of Tourism, Factors affecting the future of tourism business
UNIT-III	**Components of Tourism** Transportation: Types and their significance for tourism Accommodation: Types and their significance for tourism Travel Agencies & Tour Operators: Types and their significance for tourism, Tourist Information Centers, Tourist guide services and other related services, Various Travel Documents: Passport, VISA, Insurance
UNIT- IV	**Tourism Services and Tourism Chain** Characteristics of tourism and hospitality services- Perishability, Variability, Investment and Immobility, Inseparability, Intangibility, Imitability ,Seasonality Tourism Chain: Vertical and Horizontal Integration, The power and potential of tourism

REFERENCE :

1. Christopher J. Holloway- The Business of Tourism Macdonald and Evans.
2. A.K. Bhatia- Tourism Development Principles and Practices Sterling Publishers, New Delhi.
3. Anand M.M.- Tourism and Hotel Industry in India: Sterling Publishers, New Delhi.
4. Kaul R.H. Dynamics of Tourism: A Terilogy, Sterling Publishers, New Delhi.

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	1	2	2	1	1	1	1	2	1	1	1	2	2
CO 2	2	2	2	3	1	3	2	3	3	3	3	3	3
CO 3	1	2	2	2	1	3	2	3	3	2	3	3	2
CO 4	2	2	2	2	1	2	2	2	2	2	1	3	2
	1.50	2	2	2	1	2.25	1.75	2.50	2.25	2	2	2.75	2.25

PAPER: AECC 1

Language Communication

Syllabus as approved by Academic Council for UG Programme

PAPER: AECC 1

Environmental Studies

Syllabus as approved by Academic Council for UG Programme

Paper: SEC-1
Human Value and Ethics

Syllabus as approved by Ad Hoc Committee IIHS, KUK

Paper: SEC-1
Computer Science Level-1
Credits – 2
Syllabus as approved by Academic Council for UG Programmes

SECOND SEMESTER

TRAVEL AGENCY & TOUR OPERATIONS BUSINESS
Paper: CC-3B

External Marks - 75
Internal Marks - 75
Total marks – 150

Time Duration of External Exam: 3Hours

Course Objectives:

CO 1: Introducing about the concept of travel agency and tour operation
CO 2 : Enabling to identify functions and linkages in travel agencies and tour operators
CO 3 :Knowledge about significance of travel agency and procedure to follow for government approval
CO 4: Understanding the activities of Travel Trade Associations.

UNIT- I	**Introduction to Travel Agency and Tour Operation** • Travel Agency and Tour Operations: concept, meaning, definition, types, significance and growth over the years. Emerging terminology in Travel Agency and Tour Operation.	**CO 1**
UNIT- II	**Functions and Linkages in Travel Agencies and Tour Operators** • Functions of Travel Agencies and tour operators. • Linkages and integrations in tour operation business.	**CO 2**
UNIT-III	**Significance of Travel agency and Procedure for Government Approval** • Travel Agency: Organization Structure and significance and types. • Procedure for recognitions of Travel Agency and tour operations from Ministry of tourism, Govt. of India.	**CO 3**
UNIT- IV	Travel Trade Associations-TAAI, IATO , IATA, WATA , PATA Role, functions and activities in travel trade business.	**CO4**

REFERENCE :

1. Foster, D., the Business of Travel Agency, Pitman, 1990.
2. Aggarwal, Surrender, Travel Agency Management (Communication India, 1983).
3. Geo, Chack, Professional Travel Agency Management: (Prentice Hall, London, 1990).
4. Mohinder Chand , Travel Agency Management – An Introductory Text, Anmol Publications, New Delhi, 2006
5. IATA, IATO, TAAI manual./
6. Jag Mohan, Negi, Travel Agency and tour operation, Kanishka Publication New Delhi, 1990.

MAPPING OF COURSE OBJECTIVE, PROGRAM OBJECTIVE AND PROGRAM SPECIFIC OBJECTIVE

Mapping: CO-PO-PSO													
	PO 1	PO 2	PO 3	PO 4	PO 5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
Co 1	3	2	3	1	1	1	3	3	3	3	3	1	2
Co 2	3	3	3	2	2	2	3	3	3	3	3	2	2
Co 3	3	2	3	2	2	3	3	3	3	3	3	2	2
Co 4	3	2	3	2	3	3	3	3	3	3	3	3	3
	3	2.25	3	2.25	2	2.75	3	3	3	3	3	2	2.75

PAPER: AECC 1

Language Communication

Syllabus as approved by Academic Council for UG Programme

PAPER: AECC 1

Environmental Studies

Syllabus as approved by Academic Council for UG Programme

Paper: SEC-2
Human Value and Ethics

Syllabus as approved by Ad Hoc Committee IIHS, KUK

Paper: SEC-2
Computer Science Level-1

Syllabus as approved by Academic Council for UG Programmes

KURUKSHETRA UNIVERSITY, KURUKSHETRA

BACHELOR OF TOURISM AND TRAVEL MANAGEMENT (BTTM) -4 YEARS

PROGRAMME STRUCTURE, DETAILS OF COURSES/ SYLLABUS (LOCF-CBCS, MULTIPLE ENTRY –EXIT) AND SCHEME OF EXAMINATION,

Under NEP 2020

W.e.f. SESSION: 2022-2023

1. Programme Structure

BACHELOR IN TOURISM AND TRAVEL MANAGEMENT (BTTM)

Course Structure under Learning Outcome Based Curriculum Framework (LOCF-CBCS) and Multiple Entry Exit

Semester	Core Course(CC) @6credits Subject-1	Core Course (CC)@6credits Subject-2	Core Course @6credits Subject-3	Ability Enhancement Compulsory Course (AECC) @2credits	Skill Enhancement Course (SEC) @2-6credits	Discipline Specific Course (DSE)**@6credits	Activity/Hobby/ Clubs @2 credits (Audit courses)	Total Credits	Exit Option
	Tourism Business Operations	**Tourism Products Development**	**General Tourism Management**						
I Level 5	CC-1A Introduction to Tourism Business	CC-2A Natural Tourism Resources and Products of India	CC-3A Tourism Business Environment	(Business Communication for Tourism Professionals)/ Environmental Studies	SEC-1 Human Values and Ethics/Compute r Science Level-1 @2credits		2	24	Certificate in Tourism and Travel Management @ 58 credits
II Level 5	CC-1B Travel Agency and Tour Operations Business	CC-2B Cultural Tourism Products of India	CC-3B International Tourism	(Business Communication for Tourism Professionals)/ Environmental Studies	SEC-2Human Values and Ethics/Compute r Science Level-1 @2credits		2	24	

Internship 10 Credits {(Field Trip of 4 Credits for all students) and (Industrial training 6 Credits- only for Exit option)}

Semester	Core Course (CC) @6credits Subject-1	Core Course (CC)@6credits Subject-2	Core Course @6credits Subject-3	General Elective course @ credits	Skill Enhancement Course (SEC) @2-6credits	Discipline Specific Course (DSE)**@6 credits	Activity/Hobby/ Clubs @2 credits (Audit courses)	Total Credits	Exit Option
	Tourism Business Operations	**Tourism Products Development**	**General Tourism Management**						
III Level 6	CC-1C Hotel Management and Operations	CC-2C Travel Documentation	CC-3C Principals Of Management	GE-1*@6Credits (level 5)	SEC-3 (Open Elective) @ 2 credits Community Development/Personality Development for tourism professionals /MOOC**		2	22+ 4 of Field trip+ 6*	Diploma in Tourism and Travel Management @ 106 Credits
IV Level 6	CC-1D Airlines Management, Operations and Ticketing	CC-2D Marketing for Tourism and Hospitality Industry	CC-3C Tourism Development International and National Organizations	GE-2*@6Credits (level 5)	SEC-4 (Open Elective) @ 2 credits Community Development/Personality Development for tourism professionals /MOOC**		2	22+6*	
Summer Internship of 10 Credits (Compulsory for all students)									

Semester	Core Course (CC) @6credits Subject-1	Core Course (CC)@6credits Subject-2	Core Course @6credits Subject-3	General Elective course @ credits	Skill Enhancement Course (SEC) @2-6credits	Discipline Specific Course (DSE)**@6 credits	Activity/Hobby/ Clubs @2 credits (Audit courses)	Total Credits	Exit Option
V Level 7	CC- $1H^{H}$ Sustainable Tourism @ 6 Credits			GE-3*@6Credits (level 5/6)	SEC-5(Major subject) @6credits Itinerary preparation and tour Packaging	DSE-1 (Major subject-1) DSE-2 (Major Subject-2)	2	20 + 10 of Summer Internship +6 ^{H}+6*	Graduation in Tourism and Travel Management @ 146 Credits and with Honours @ 158 Credits
VI Level 7	CC- $2H^{H}$ Information and Communication Technologies in Tourism @ 6 Credits			GE-4*@6Credits (level 5/6)	SEC-5(Major subject) @6credits Local Attractions, Tours and Guiding	DSE-1 (Major subject-1), DSE-2 (Major Subject - 2)		20+6 ^{H}+6*	
Semester	**Core Courses**	**Research Courses and Thesis**			**Research Progression Seminars**			**Credits**	**Exit**
VII Level 8	CC-$1H^{H}$ and CC-$2H^{H}$ of level 7 to be completed by Graduate students without Honours	Research Ethics @4 credits Research Methodology @4 credits			Review of literature General Seminar @ 4 Credits Synopsis writing and Seminar @ 4 credits			16	Graduation in (Tourism and Travel Management) Honours with Research @ 198 Credits
VIII Level 8		Dissertation/Thesis Preparation/ Writing @ 20 credits			Midterm seminar @ 2 Credits Pre- submission Seminar @ 2 Credits			24	

Notes:

1. Credits (C), Core Courses (CC); Discipline Specific Elective Courses (DSE); General Elective Courses (GE); Skill Enhancement Courses (SEC), Ability Enhancement Compulsory Courses (AECC).
2. *Students can opt for one course from other programmes as General Elective @ 6 credits in IIIrd, IVth, Vth and VIth semesters subject to the availability of seats and class timings not overlapping.

3.[H] Honours courses. CC- 1H and CC-2H are Honours courses to be taken if students opt for Honours course in third year and will have to be taken compulsorily by the students opting for 4th year of the programme (Honours and Research) if these courses are not completed earlier at level 7.

4. All the field work, Internship, dissertation/thesis will be effected through guided learning by allotting a teacher as guide to every student. Workload of above shall be computed per student as per Credit hours of above defined in ordinance.

5. Each candidate shall be examined in the courses through a system of Comprehensive Continuous Assessment using a mix of Internal and End term evaluation. The Internal Assessment and End term evaluation for different courses of programme shall carry weightage of 50% each. Internal assessment (50%) shall be based on clearly defined components of class attendance and participation (10%) ,mid term exam of 2 hour duration (30%) and assignments-presentations (10%) of the credit and the rest (50 %) through End term Examination .
6. DSE Selection- Options from following buckets will be offered for Majors at level 7 subject to availability.

Semester	**Tourism Business Operations**	**Tourism Product Development**	**General Tourism Management**
Semester V	1. Entrepreneurship in Tourism 2. Tour Planning and Management 3. Destination Management	1. Event Tourism 2. Adventure tourism 3. Domestic Tourism 4. Wellness tourism 5. Wildlife Tourism	1. Accounting for Tourism Professionals 2. Human Resource Management 3. Tourism Economics 4. Transport Management and Operations
Semester VI	1. Online Travel Business 2. Successful Tourism Business- case studies 3 Cruise Tourism	1. Eco Tourism 2. Alternate and New Tourism 3. Leisure Tourism 4. Haryana Tourism	1. Digital Marketing 2. Tourism Financial Management 3. Tourism Business Ethics and Laws 4. Sales Management for Tourism

BACHELOR IN TOURISM AND TRAVEL MANAGEMENT (BTTM)

Course Structure under Learning Outcome Based Curriculum Framework (LOCF-CBCS) and Multiple Entry Exit

SEMESTER-I							
Course Code	Course Title	T	P	C	Max marks		Total Marks
					Internal	External	
Core Course(CC) @6credits							
CC-1A	Introduction to Tourism Business	T		6	75	75	150
CC-2A	Natural Tourism Resources and Products of India	T		6	75	75	150
CC-3A	Tourism Business Environment	T		6	75	75	150
Ability Enhancement Compulsory Course (AECC) @2credits							
AECC-1	Business Communication for Tourism Professionals/ Environmental Studies	T T	 P	2 2	50 25	 25	50 50
Skill Enhancement Course (SEC) @2-6credits							
SEC-1	Human Values and Ethics/ Computer Science Level-1	T T	 P	2 2	50 25	 25	50 50
SEMESTER-II							
Core Course(CC) @6credits							
CC-1B	Travel Agency and Tour Operations Business	T		6	75	75	150
CC-2B	Cultural Tourism Products of India	T		6	75	75	150

CC-3B	International Tourism	T		6	75	75	150
Ability Enhancement Compulsory Course (AECC) @2credits							
AECC-2	(Business Communication for Tourism Professionals)/ Environmental Studies	T T	 P	2 2	 25	50 25	50 50
Skill Enhancement Course (SEC) @2-6credits							
SEC-2	Human Values and Ethics/ Computer Science Level-1	T T	 P	2 2	 25	50 25	50 50
Internship 10 Credits {(Field Trip of 4 Credits for all students) and (Industrial training 6 Credits- only for Exit option)}							100 250(if taking exit)
SEMESTER-III							
Core Course (CC) @6credits							
CC-1C	Hotel Management and Operations	T		6	75	75	150
CC-2C	Travel Documentation	T		6	75	75	150
CC-3C	Principals of Management	T		6	75	75	150
Skill Enhancement Course (SEC) @2-6credits							
SEC-3	Community Development/Personality Development for tourism professionals	T		2	25	25	50
SEMESTER-IV							

Core Course (CC) @6credits							
CC-1D	Airlines Management, Operations and Ticketing	T		6	75	75	150
CC-2D	Marketing for Tourism and Hospitality Industry	T		6	75	75	150
CC-3C	Tourism Development International and National Organizations	T		6	75	75	150
Skill Enhancement Course (SEC) @2-6credits							
SEC-4	Community Development/Personality Development for tourism professionals	T		2	25	25	50
Summer Internship of 10 Credits (Compulsory for all students)							250
SEMESTER-V							
Core Course (CC) @6credits							
CC- $1H^{H}$	Sustainable Tourism	T		6	75	75	150
Skill Enhancement Course (SEC) @2-6credits							
SEC-V	Itinerary preparation and tour Packaging	T		6	75	75	150
Discipline Specific Course (DSE)@6 credits**		T		6	75	75	150
SEMESTER-VI							
Core Course (CC) @6credits							
CC- $2H^{H}$	Information and Communication Technologies in Tourism	T	P	6	75	75	150

General Elective course							
Skill Enhancement Course (SEC)							
SEC-6	Local Attractions, Tours and Guiding	T	P	5	50	50	100
SEMESTER-VII							
Core Courses							
CC-1H[H] and CC-2H[H] of level 7 to be completed by Graduate students without Honours							
	Research Ethics @4 credits			4	100		100
	Research Methodology @4 credits			4	100		100
Research Progression Seminars							
	Review of literature General Seminar @ 4 Credits			4	100		100
	Synopsis writing and Seminar @ 4 credits				100		100
SEMESTER-VIII							
Dissertation/Thesis Preparation/ Writing @ 20 credits				20	500		500
Midterm seminar @ 2 Credits				2	50		50
Pre- submission Seminar @ 2 Credits				2	50		50

2. Details of the Course/Syllabus

2.1 Teaching and Evaluation Guidelines

Approaches to teaching

Lectures, Group Discussion, Presentations, Practical, Case studies, Business Games, Field visits

Requirements

Regular attendance and active participation during the course of the semester; Books and literature Surveys, Long essays and assignments; seminar presentations etc

Evaluation

The performance of the students will be evaluated through a Continuous and comprehensive assessment (CCA) against course objectives on the basis of class participation(10%), mid-term exam (2 hour duration)-25 % and assignments-presentations (15 %) carrying 50 percent of the credit and the rest (50 %) through End term Examination (3 hours duration).

The distribution of marks will be 50 % for internal evaluation and 50 % for end term examination.

Class participation, mid-term exam, assignments and end term exam will have a mix of theory and practical as per the course requirements as specified in the scheme of the examination.

Guidelines for examination/paper setting

Mid-Term Examination

Mid-term examination shall be conducted by the department after the completion of minimum 75 percent syllabus using a mix of short and long questions or case studies.

End term Examination

There will be **nine** questions in all. The candidate has to attempt five questions. Question No. 1 of 15 marks (5 short-answer type questions of 3 marks each) shall be compulsory. The question No. 1 shall cover all the units of the syllabus. The candidate has to attempt four other questions selecting one question from each Unit. Each question shall be of 15 marks. Case study may also be given in lieu of questions and a comprehensive case study may cover more than one units.

Practicals, Reports, Dissertation, Seminar and Viva-voce

These will be conducted internally and externally as specified in the syllabus and ordinance.

Evaluation Rubrics for CCA

Learning level Evaluation scale (1-4) (1; <30%, 2; 30-59%, 3;60-70 %, 4; > 70 %) [% denotes marks on absolute scale]	**Beginner** **(1)**	**Progressing** **(2)**	**Proficient(3)**	**Excellent** **(4)**
Class participation (discussions, raising relevant issues, analysis, synthesis, updated readings)	Never	Rarely	Sometimes	Always
Assignment and presentation (Introduction, Research, Conclusions, Writing, speaking/body language, use of power point)	Vague/irrelevant	Somewhat clear and relevant	Clear and relevant	very Clear and relevant
Practicals (Set up experiment, demonstrate, explain, write journal)	Not able to complete tasks	Good ability to perform tasks	High ability to perform tasks	Very high ability to perform tasks
Mid term Exam (Completeness, Understanding, Argument, Structure and writing)	Poor	Average	Good	Very good
End term Exam (Completeness, Understanding, Argument, Structure and writing)	Poor	Average	Good	Very good
Training/ Internship report (Content, organization, writing, visual appeal)	Very little understanding and application	Somewhat understanding and application	Good understanding and application	Excellent understanding and application
Dissertation (Format, content, Methodology, analysis, Visuals, Citation)	Very little understanding and application of research	Somewhat understanding and application of research	Good understanding and application of research	Excellent understanding and application of research

CCA- Learning Outcome based evaluation (Template for 2 Credit Course*)- [Name of the Course]

Number of Credits

[1 Credit will carry 25 marks]

Students	**Students' scores and learning levels against CO's** **(Evaluation scale 1-4 (1; <30%, 2; 30-59%, 3; 60-70 %, 4; > 70 %)** **[% denotes marks on absolute scale]**				
	Aggregated (Marks between 0-100)	**Class Participation (Marks between 0-10)**	**Assignments and presentations (Marks between 0-15)**	**Mid-term Exam (Marks between 0-25)**	**End term exam (Marks between 0-50)**
1.					
2.					
3.					
4.					
5.					
6.					

*Template can be amended by concerned department/institute as per credits of the course(s)

Course Objectives

CO 1- To be specified

CO 2- To be specified

CO 3- To be specified

CO 4 and more- To be specified and to more

3.1. Programme Outcomes, Programme Specific Outcomes and Course Outcomes

3.1.1 Program Outcomes (PO) for the Faculty of Commerce and Management

On successful completion of a program under Faculty of Commerce and Management, students will be able to develop:

PO1: Soft skills and Working Skills: To comprehend, communicate, and execute effectively and efficiently in all of their dealings.

PO2: Leadership: To develop abilities to both lead and respect the views, positions, and beliefs of others and to plan and manage effectively.

PO3: Innovativeness and Entrepreneurship: To explore issues and problems that need solutions and entrepreneurial orientation.

PO4: Ethics and values: To recognize, appreciate and follow ethical standards in all walks of life

PO5: Adaptability and Sociability: Ready to understand and adapt to the changing environment

PO6: Research and Analytical Abilities: To explore, analysis and provide solutions on emerging issues concerning various fields including public policy

PO7: Practical Exposure and Employability: Exposure to the actual working environment leading to employability

PO8: Environmental Consciousness: In every action, dealing, service and manifestation

3.1.2 Program Specific Objectives (PSO) of BTTM Program:

PSO 1:To prepare students with professional and academic inputs to adapt the changing requirements of tourism industry.

PSO 2:To demonstrate knowledge and skills required to work in different departments of tourism industry.

PSO 3: Apply the concepts and skills necessary for different job functions.

PSO 4:To demonstrate respect of host culture

PSO 5: Use knowledge of best practices to further sustainability in tourism sector.

4.0 Detailed Syllabus of the Course

FIRST SEMESTER

INTRODUCTION TO TOURISM BUSINESS
Paper: CC-1A

External Marks - 75
Internal Marks - 75
Total marks – 150

Time Duration of External Exam: 3Hours

COURSE OBJECTIVES:

CO 1 : To familiarize with the basic concepts and terminology used in Tourism
CO 2 : To gain knowledge of various types of tourism and factors responsible for the development of tourism
CO 3 : To be able to identify different components of tourism
CO 4 : To be able to work with and for tourism services in tourism chain

UNIT- I	**Basic Concept and Terminology used in Tourism** Meaning and Nature of Tourism, Concepts of tourist and tourism as per UNWTO classification. International Tourist, Domestic Tourist, Typologies of Tourist Tourism Market; Tourism Resources; Tourism Product; Destination; Recreation; Pleasure and relaxation
UNIT- II	**Types of Tourism and Factors of Development of Tourism** Tourism as an Industry, Types and Characteristics of Tourism, Linkages of Tourism, Impacts of Tourism Motivations in Tourism - Push and Pull factors Problems and Prospects of Tourism, Factors affecting the future of tourism business
UNIT-III	**Components of Tourism** Transportation: Types and their significance for tourism Accommodation: Types and their significance for tourism Travel Agencies & Tour Operators: Types and their significance for tourism, Tourist Information Centers, Tourist guide services and other related services, Various Travel Documents: Passport, VISA, Insurance
UNIT- IV	**Tourism Services and Tourism Chain** Characteristics of tourism and hospitality services- Perishability, Variability, Investment and Immobility, Inseparability, Intangibility, Imitability ,SeasonalityTourism Chain: Vertical and Horizontal Integration, The power and potential of tourism

REFERENCE :

1. Christopher J. Holloway- The Business of Tourism Macdonald and Evans.
2. A.K. Bhatia- Tourism Development Principles and Practices Sterling Publishers, New Delhi.
3. Anand M.M.- Tourism and Hotel Industry in India: Sterling Publishers, New Delhi.
4. Kaul R.H. Dynamics of Tourism: A Terilogy, Sterling Publishers, New Delhi.

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	1	2	2	1	1	1	1	2	1	1	1	2	2
CO 2	2	2	2	3	1	3	2	3	3	3	3	3	3
CO 3	1	2	2	2	1	3	2	3	3	2	3	3	2
CO 4	2	2	2	2	1	2	2	2	2	2	1	3	2
	1.50	2	2	2	1	2.25	1.75	2.50	2.25	2	2	2.75	2.25

NATURAL TOURISM RESOURCES AND PRODUCTS OF INDIA
Paper: CC 2A

Max. Marks-150
External marks: 75
Internal Marks: 75
Time Duration of External Exam: 3Hours

Course Objectives:

-CO1: To understand the basics of the geography of tourism

-CO2: To describe the general geography of India

-CO3: To analyses the natural tourism potential in India

-CO4: To explain and connect with the nature based tourism attractions in India

UNIT I	**Introduction to Natural Tourism Resource of India** India: Physiographic regions, Northern Mountains, Northern Plains, Peninsula Plateau, Coastal Regions, Great Indian Dessert, Islands. Touristic significance of various Physiographic regions.	CO1

UNIT II	**Major Natural Tourism Resources of India** Wildlife Tourism Potential in India – Case studies of Ranthambore National Park, Great Himalayan National Park, Jim Corbett National Park, Gir National Park and Bhandhavgarh National Park, Kaziranga National park.	CO2
UNIT III	**Nature Based Tourism Products of India** Major Hill Stations and Adventure Tourism in India: Case Study from Jammu & Kashmir, Himachal Pradesh, Uttarakhand and Sikkim.	CO3
UNIT-IV	**Nature Based Tourism Products of India** Coastal and Beach Tourism Potential in India: Case Study from Goa, Kerala, Karnataka and Tamilnadu.	CO4

SUGGESTED READINGS

TEXTBOOKS:

1. Burton, R. (1995). *Travel Geography*. Pitman Publishing, Marlow Essex.
2. Boniface B. & Cooper, C. (2009). *Worldwide Destinations: The Geography of Travel & Tourism*. Oxford Butterworth Heinemann, London. 3.Goh Chong Leong,'An Economic Atlas of India, Oxford University Press, Singapore.
4. Husain, M (2013) - Geography of India, Tata McGraw Hill, New Delhi.
5. Singh Gopal, 'Geography of India', Atma Ram and sons, New Delhi, 1994
6. Singh, R.L., India: A regional Geography, National Geographical Society, Varanasi, 1990
7. Qureshi, Imtiaz,(ed) World Geography, NCERT, New Delhi
8. Quereshi, Imtiaz, (ed) Physical geography of India, NCERT, New Delhi

REFERENCE BOOKS:

1. Hall, M (1999), *Geography of Travel and Tourism*, Routledge, London.
2. C. Michael Hall & Stephen J. Page (2006). *The Geography of Tourism and Recreation- Environment, Place and Space*. Third Edition, Routledge, London.
3. Robinson H.A. (1976), *Geography of Tourism*. Mac Donald & Evans Ltd
4. Travel Information Manual, IATA, Netherlands, 2012.
5. World Atlas.
6. Lonely Planet Series on all countries mentioned in the syllabus
7. Latest web sites of all related countries

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	1	2	2	1	1	1	1	2	1	1	1	2	2
CO 2	2	2	2	3	1	3	2	3	3	3	3	3	3
CO 3	1	2	2	2	1	3	2	3	3	2	3	3	2
CO 4	2	2	2	2	1	2	2	2	2	2	1	3	2
	1.50	2	2	2	1	2.25	1.75	2.50	2.25	2	2	2.75	2.25

TOURISM BUSINESS ENVIRONMENT

CC-3A

External Marks - 75
Internal Marks - 75
Total marks – 150
Time Duration of External Exam: 3Hours

Course Objectives:

-CO1: To understand the concept of business environment

-CO2: To describe the economic environment for tourism

-CO3: To analyses the industrial policies concerning the tourism

-CO4: To explain different tourism reforms in India

UNIT I	**An Overview of Business Environment** Tourism Business Environment- Nature, Concept, scope, characteristics, components and determinants. Assessing business environment risk- country risk and political risk and limitations.	CO 1
UNIT II	**Economic Environment** Assessing current state of tourism business environment in India: Economic Reforms, Liberalization, Privatization and globalization. Small Scale tourism Enterprises: Meaning, Significance to the Indian economy, problems and various incentives given to these.	CO 2
UNIT III	**Industrial Policy concerning Tourism** Various Industrial Policies of India with special emphasis on new industrial policy with various amendments related with tourism business, Competition Act, Consumer protection act and its impact on Indian tourism business.	CO 3

UNIT-IV	**Tourism Reforms** Various tourism & travel Trade Reforms announced in India in recent times. Trends in tourism business in India; Foreign Direct Investment in tourism - significance, policy and current position of India, future prospects.	CO 4

SUGGESTED READINGS/REFERECES

Suggested reading:

1. Daniel, John D and Radebangh, Lee H : International Business, 5th ed., New York, Addison Weley, 2007
2. Charles W. Hill, International Business, fourth edition, Tata McGraw Hill Publications Companies.2010.
3. AK. Sundaram J. StemartBlock : The International Business Environment PHI,2008
4. Rangarajan, C.A.; Perspective in Economics, S.Chand& Sons, New Delhi
5. Cherunilam, Francis; Business Environment - Text and Cases, Himalaya Publishing House.
6. Aswathappa, K.; Essentials of Business Environment, Himalaya Publishing House, New Delhi.

MAPPING OF COURSE OBJECTIVES, PROGRAM OBJECTIVES, AND PROGRAM SPECIFIC OBJECTIVES

Mapping: CO-PO-PSO													
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
Co 1	1	1	1	1	1	1	1	2	2	2	2	1	2
Co 2	2	3	3	1	3	3	2	2	3	3	3	3	2
Co 3	1	3	2	1	3	2	2	2	3	3	2	3	2
Co 4	2	2	2	1	1	2	2	2	2	3	2	2	2
Average	1.50	2.25	2	1	2	2	1.75	2	2.50	2.75	2.25	2.25	2

BUSINESS COMMUNICATION FOR TOURISM PROFESSIONALS(AECC) **Credits – 2** **Internal Marks - 50** **Total marks – 50**		
COURSE OBJECTIVES CO 1 : Learning and practicing to write common business documents in a clear, concise and persuasive manner CO 2 :To develop effective oral skills to speak confidently, interpersonally as well as in large groups		
UNIT- I	**Basic Written Communication** Principles and Qualities of good written Communication Writing different types of business letters and memos. Writing email and developing Curriculum Vitae Writing Business Reports.	**CO 1**
UNIT- II	**Basic Oral Communication** Principles and Qualities of effective Oral Communication Learning and practicing public speaking and presentations, telephonic conversation, face to face conversation and handling interviews Art of effective listening	**CO 2**

References

1. Business Writing For Dummies by Natalie Canavor, ISBN 9781118583623 WileyPublications(2013)
2. Business Writing Today: A Practical Guide by Natalie Canavor,ISBN9781506388328, SAGE Publications (2018)
3. Fundamentals of Oral Communication by Roy Schwartzman, ISBN 9781465299321, Kendall Hunt Publishing Company(2016)
4. Public Speaking for Dummies by Malcolm Kushner, ISBN 9781118054093, Wiley Publications (2010)
5. Oral Communication: Speaking Across Cultures by Larry A. Samovar, ISBN 9781891487286, Roxbury Pub (2000)

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	1	2	2	1	1	1	1	2	1	1	1	2	2
CO 2	2	2	2	3	1	3	2	3	3	3	3	3	3
Average	1.50	2	2	2	1	2	1.50	2.50	2	2	2	2.50	2.50

Paper: AECC-1

Environmental Studies

Credits – 2
Internal Marks –25
External marks-25
Total marks – 50

Syllabus as approved by Academic Council for UG Programmes

Paper: SEC-1
Human Value and Ethics

Credits – 2
Internal Marks - 50
Total marks – 50

Syllabus as approved by Ad Hoc Committee IIHS, KUK

Paper: SEC-1
Computer Science Level-1

Credits – 2
Internal Marks –25
External Marks: 25
Total marks – 50

Syllabus as approved by Academic Council for UG Programmes

SECOND SEMESTER

TRAVEL AGENCY & TOUR OPERATIONS BUSINESS
Paper: CC-1B

External Marks - 75
Internal Marks - 75
Total marks – 150

Time Duration of External Exam: 3Hours

Course Objectives:

CO 1: Introducing about the concept of travel agency and tour operation
CO 2 : Enabling to identify functions and linkages in travel agencies and tour operators
CO 3 :Knowledge about significance of travel agency and procedure to follow for government approval

CO 4: Understandingthe activities of Travel Trade Associations.		
UNIT- I	**Introduction to Travel Agency and Tour Operation** • Travel Agency and Tour Operations: concept, meaning, definition, types, significance and growth over the years. Emerging terminology in Travel Agency and Tour Operation.	**CO 1**
UNIT- II	**Functions and Linkages in Travel Agencies and Tour Operators** • Functions of Travel Agencies and tour operators. • Linkages and integrations in tour operation business.	**CO 2**
UNIT-III	**Significance of Travel agency and Procedure for Government Approval** • Travel Agency: Organization Structure and significance and types. • Procedure for recognitions of Travel Agency and tour operations from Ministry of tourism, Govt. of India.	**CO 3**
UNIT- IV	Travel Trade Associations-TAAI, IATO , IATA, WATA , PATA Role, functions and activities in travel trade business.	**CO4**

REFERENCE :

1. Foster, D., the Business of Travel Agency, Pitman, 1990.
2. Aggarwal, Surrender, Travel Agency Management (Communication India, 1983).
3. Geo, Chack, Professional Travel Agency Management: (Prentice Hall, London, 1990).
4. Mohinder Chand , Travel Agency Management – An Introductory Text, Anmol Publications, New Delhi, 2006
5. IATA, IATO, TAAI manual./
6. Jag Mohan, Negi, Travel Agency and tour operation, Kanishka Publication New Delhi, 1990.

MAPPING OF COURSE OBJECTIVE, PROGRAM OBJECTIVE AND PROGRAM SPECIFIC OBJECTIVE

Mapping: CO-PO-PSO													
	PO 1	PO 2	PO 3	PO 4	PO 5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
Co 1	3	2	3	1	1	1	3	3	3	3	3	1	2
Co	3	3	3	2	2	2	3	3	3	3	3	2	2

2													
Co 3	3	2	3	2	2	3	3	3	3	3	3	2	2
Co 4	3	2	3	2	3	3	3	3	3	3	3	3	3
	3	2.25	3	2.25	2	2.75	3	3	3	3	3	2	2.75

CULTURAL TOURISM PRODUCT OF INDIA **Paper: CC-2B** **External Marks - 75** **Internal Marks - 75** **Total marks – 150** Time Duration of External Exam: 3Hours		
Course Objectives: -CO1: To understand the basics of Indian culture -CO2: To describe the general features of Indian culture -CO3: To analyses the tourism potential Indian culture -CO4: To explain and connect with the different cultural attractions in India		
UNIT I	**Introduction to Culture** Culture: Concept,types and its essential features, Indian Culture: Elements of Indian Culture; Indian culture through the Ages, Geographical variation of Indian culture. Cultural as tourist attractions with special reference to India.	CO 1
UNIT-II	**Religions and Pilgrimage Places in India.** Major Religions of India and their features. Major Pilgrimage Places related to all religions.Four Dhams of India, Islam-Ajmer, Buddhism-Bodh Gaya, Sarnath, Jainism-Mount Abu, Sikhism-Amritsar. Christianity-Goa.	CO 2
UNIT III	**Indian Architecture and Monuments** Main types of Indian architecture, Buddhist Architecture:main features, Ajanta, Ellora and Sanchi. Hindu Architecture: main features,Khajuraho temples, Sun temple of Konark, Tanjavur Temple,Medieval Architecture: TajMahal, Red Fort of Delhi	CO 3

UNIT IV	**Dances, Music and Fairs of India** Classical Dances of India, Classical Music of India, Major tourism oriented fairs and festivals of India and their significance for tourism: Kullu-Dussehra, Pongal, Bihu,Desert festivals, Surajkund Craft fair, International Trade Fair-NewDelhi. KumbhMelas, Gita Jayantimela Kurukshetra.	CO 4

SUGGESTED READINGS

Textbooks:

1. AbidHussain, S. 2003 (reprint) The National Cultural of India. National Book Trust, Delhi.
2. The Wonder that was India- A Survey of the History and Culture of the Indian Sub-continent Before the Coming of the Muslims by Arthur L. Basham, ISBN 9780836429138, Rupa Publications,1964
3. Of Past Dawns and Future Noons-Towards a Resurgent India by Shonar, ISBN 9788174765369, Published by Sri Aurobindo Society (2006)
4. Gupta, S.P.et.al 2002, Cultural Toursim in India, D.K. Printworld, New Delhi
5. Hay,Stephen (Ed.) 1992, Sources of Indian Tradition, 2 vols, Penguin Books, Delhi .
6. Krishana Deva, 2002 (reprint) Temples of North India. National Book Trust, Delhi –
7. Pande, G.C. 1990 (2nd ed.) Foundations of Indian Culture, 2 vols. MotiLalBanarasi Das Publisher, Delhi.
8. Samson, Leela, 2002. The joy of Classical Dances of India, National Book Trust, India, New Delhi.
9. Sharma, Chandradhar, 1991 (reprint), A Critical Survey of Indian Philosophy MotiLalBanarasi Das Publishers, Delhi .
10. Upadhyaya, B.S. 1989, (reprint), Feeders of Indian Culture People,s Publishing House.

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	1	2	2	1	1	1	1	2	1	1	1	2	2
CO 2	2	2	2	3	1	3	2	3	3	3	3	3	3
CO 3	1	2	2	2	1	3	2	3	3	2	3	3	2
CO 4	2	2	2	2	1	2	2	2	2	2	1	3	2
	1.50	2	2	2	1	2.25	1.75	2.50	2.25	2	2	2.75	2.25

INTERNATIONAL TOURISM **Paper: CC-3B** **External Marks - 75** **Internal Marks - 75** **Total marks – 150** Time Duration of External Exam: 3Hours		
Course Objectives: -CO1: To understand the concept of international tourism -CO2: To describe the tourism trends at international level -CO3: To analyses the potential of tourism in different regions of the world -CO4: To explain different destinations in various nations of the world		
UNIT I	**Concept and Current Status of International Tourism** Concept of International tourism. Global tourism statistics in terms of international tourist arrivals and international tourism receipts in UNWTO regions (Africa, Americas, Asia and the Pacific, Europe, Middle east). Factors affecting growth of tourism in each region.	CO 1
UNIT II	**Regional Dimension of International Tourism-Americas** Destinations in North America - United States of America: New York, Washington DC, Canada: Montreal, Toronto , South America: Peru, Argentina, Brazil.	CO 2
UNIT III	**Regional Dimension of International Tourism-Europe & Asia-Pacific** **Europe:** England, France, Italy, Switzerland **Asia-Pacific:** Thailand, Singapore , Australia	CO 3
UNIT-IV	**Regional Dimension of International Tourism-Middle-East & Africa** **Middle-East:** Saudi Arabia, UAE, Egypt **Africa:** South Africa,Kenya , Mauritius,	CO 4

REFERENCES

1. Bhatia, A. K. (1991). International tourism: fundamentals and practices. Sterling Publishers.
2. Chand, M. (2004). Basics of tourism: theory, operation and practice. Kanishka Publishers.
3. Hudman, L. E., & Hawkins, D. E. (1989). Tourism in contemporary society: an introductory text. Prentice Hall.
4. Lonely Planet – Singapore, Malaysia, Thailand, China, Hong Kong, Australia, New Zealand, UK, France, Switzerland, Germany, Italy, Greece, Austria, USA, CANADA, Brazil, UAE, South Africa, Kenya, Tanzania.

5. McIntosh, R., Goeldner, W., &Charles,R.(1990). Tourism: Principles, Practices and Philosophies.John Wiley and Sons Inc. New York.

MAPPING OF COURSE OBJECTIVES, PROGRAM OBJECTIVES, AND PROGRAM SPECIFIC OBJECTIVES

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	1	2	2	1	1	1	1	2	1	1	1	2	2
CO 2	2	2	2	3	1	3	2	3	3	3	3	3	3
CO 3	1	2	2	2	1	3	2	3	3	2	3	3	2
CO 4	2	2	2	2	1	2	2	2	2	2	1	3	2
Average	1.50	2	2	2	1	2.25	1.75	2.50	2.25	2	2	2.75	2.25

Paper: AECC-2

Environmental Studies

External Marks - 25
Internal Marks - 25
Total marks – 50

Course Outcomes (COs) for Theory:

COs	On successful completion of the course, the students will be able to:
CO 1	Understand the concept of environmental studies, its scope and importance in the conservation of environment. Understand the concept of ecosystem and different types of natural and artificial eco-systems in the world, the biogeochemical cycling and energy flow in an ecosystem.

CO 2	Describe the various renewable and non-renewable natural resources and their over-exploitation due to increasing demands of rising population. Become aware about biodiversity, its importance and the various threats for biodiversity. Have knowledge of the endangered species and their conservation measures that are needed to be adopted at different levels.
CO 3	Have understanding about the types of pollution and how to reduce pollution levels in air, soil, water, land and from marine bodies, as to develop interest in reducing the solid waste generation as well as its management at household level. Gain knowledge of various global environmental issues like climate change, global warming and ozone depletion and also about different environmental laws implemented to conserve the environment.
CO 4	Understand the concept of population growth, disaster management, impacts of drug abuse and various environmental movements.

Course outcome for practical/field work:

CO 1	To get practical knowledge of various environmental issues through project file/assignment with case studies.

Mode of Paper Setting: Total number of questions set will be nine. Questions no. 1 is compulsory covering the entire syllabus. Two questions will be set from each unit. Students have to attempt five questions in all, one question from each unit including the compulsory question. Each question is of 5 marks. All questions carry equal marks. Final theory exam time allowed will be of 3 hours.

Unit I

Introduction to environmental studies: Multidisciplinary nature of environmental studies; Scope and importance; Concept of sustainability and sustainable development.

Ecosystems: What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems: a) Forest ecosystem, b) Grassland ecosystem, c) Desert ecosystem, d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

(8 lectures)

Unit II

Natural Resources: Renewable and Non-renewable Resources

•Land resources and landuse change; Land degradation, soil erosion and desertification.

•Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.

•Water: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).

•Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy

needs, case studies.

Biodiversity and Conservation

•Levels of biological diversity: genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots

•India as a mega-biodiversity nation; Endangered and endemic species of India

•Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

•Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

(16 lectures)

Unit III

Environmental Pollution

•Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution

•Nuclear hazards and human health risks

•Solid waste management: Control measures of urban and industrial waste, Pollution case studies.

Environmental Policies & Practices

•Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture

•Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).

•Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

(15 lectures)

Unit IV

Human Communities and the Environment

•Human population growth: Impacts on environment, human health and welfare.

•Resettlement and rehabilitation of project affected persons; case studies.

•Disaster management: floods, earthquake, cyclones and landslides.

•Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan.

•Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.

•Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Drugs and their effects; Useful and harmful drugs; Use and abuse of drugs; Stimulant and depressant drugs. Concept of drug de-addiction. Legal position on drugs and laws related to drugs.

(6 lectures)

Practical/Field work

•Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.

•Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.

•Study of common plants, insects, birds and basic principles of identification.

•Study of simple ecosystems-pond, river, Delhi Ridge, etc. (Equal to 5 lectures)

Suggested Readings:

1.Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt.

2.Gadgil, M., & Guha, R. 1993. This Fissured Land: An Ecological History of India. Univ. of California Press.

3.Gleeson, B. and Low, N. (eds.) 1999. Global Ethics and Environment, London, Routledge.

4.Gleick, P. H. 1993. Water in Crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.

5.Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. Principles of Conservation Biology. Sunderland: Sinauer Associates, 2006.

6.Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. Science, 339: 36-37.

7.McCully, P. 1996. Rivers no more: the environmental effects of dams (pp. 29-64). Zed Books.

8.McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.

9.Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders.

10.Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.

11.Rao, M.N. & Datta, A.K. 1987. Waste Water Treatment. Oxford and IBH Publishing Co. Pvt. Ltd.

12.Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. Environment. 8th edition. John Wiley & Sons.

13.Rosencranz, A., Divan, S., & Noble, M. L. 2001. Environmental law and policy in India. Tripathi 1992.

14.Sengupta, R. 2003. Ecology and economics: An approach to sustainable development. OUP.

15.Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.

16.Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. Conservation Biology: Voices from the Tropics. John Wiley &

Sons.

17.Thapar, V. 1998. Land of the Tiger: A Natural History of the Indian Subcontinent.

18.Warren, C. E. 1971. Biology and Water Pollution Control. WB Saunders.

19.Wilson, E. O. 2006. The Creation: An appeal to save life on earth. New York: Norton.

20.World Commission on Environment and Development. 1987. Our Common Future. Oxford University

Paper: SEC-2
Human Value and Ethics

Credits – 2
Internal Marks - 50
Total marks – 50

Syllabus as approved by Ad Hoc Committee IIHS, KUK

Paper: SEC-2
Computer Science Level-1

Credits – 2
Internal Marks – 25
External Marks: 25
Total marks – 50

Syllabus as approved by Academic Council for UG Programmes

Semester-5

RA-301A	DESIGN OF MACHINE ELEMENTS AND TRANSMISSION SYSTEMS						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time (Hrs)**
3	**0**	**0**	**3**	**75**	**25**	**100**	**3**
Purpose	To understand the fundamentals for solving engineering problems relating to design of machine components and transmission systems.						
Course Outcomes							
CO1	The students will understand the design procedures and methods, properties of engineering materials and their selection, design against static and fluctuating loads.						
CO2	The students will be able to solve the design problems of different types of joints i.e. bolted, riveted joint and welded joint and the problems related to the design of shafts and couplings under different loading conditions.						
CO3	Students could solve the design problems of gears and springs.						
CO4	Students will be able to select the bearings for a particular application.						

UNIT-I

Introduction: Fundamentals of Machine Design-Engineering Design, Phases of Design, Design Consideration - Standards and Codes - Selection of Materials –Design against Static and Dynamic Load –Modes of Failure, Factor of Safety, Principal Stresses, Theories of Failure-Stress Concentration, Stress Concentration Factors, Variable Stress, Fatigue Failure, Endurance Limit, Design for Finite and Infinite Life, Soderberg and Goodman Criteria.

UNIT-II

Detachable and Permanent Joints: Design of Bolts under Static Load, Design of Bolt with Tightening/Initial Stress, Design of Bolts subjected to Fatigue – Keys -Types, Selection of Square and Flat Keys-Design of Riveted Joints and Welded Joints

UNIT–III

Shafts and Coupling: Design of Shaft –For Static and Varying Loads, For Strength and Rigidity-Design of Coupling-Types, Flange, Muff and Flexible Rubber Bushed Coupling

UNIT–IV

Gears and Belt Drives: Design of Spur and Helical Gear Drives-Design of Belt Drives-Flat and V Belts
Springs and Bearings: Design of Helical Spring-Types, Materials, Static and Variable Loads-Design of Leaf Spring-Design of Journal Bearing -Antifriction Bearing-Types, Life of Bearing, Reliability Consideration, Selection of Ball and Roller Bearings

TEXT BOOKS:

1. Joseph Edward Shigley, Charles R. Mischke " Mechanical Engineering Design", McGraw Hill, International Edition, 1992
2. Bhandari. V.B., "Design of Machine Elements", Tata McGraw-Hill Publishing Company Limited, 2003.

REFERENCE BOOKS:

1. Sharma. C.S. and Kamlesh Purohit, "Design of Machine Elements", Prentice Hall of India Private Limited, 2003
2. Robert L. Norton, "Machin Design – An Integrated Approach", Prentice Hall International Edition, 2000.

Note: The paper setter will set the paper as per the question paper templates provided.

RA-303A	DIGITAL ELECTRONICS						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time (Hrs)**
3	**0**	**0**	**3**	**75**	**25**	**100**	**3**
Purpose	To make the students understand the concepts of digital electronics and its applications in different fields.						
Course Outcomes							
CO1	Students will be able to understand the number systems and its arithmetic operations and Illustrate Use of Boolean algebra.						
CO2	Students will be able to formulate and apply Karnaugh Map to reduce Boolean expressions and logic circuits to their simplest POS and SOP forms						
CO3	Students will be able to design various combinational digital circuits using logic gates						
CO4	Students will be able to do the analysis and design procedures for synchronous and asynchronous sequential circuits						

UNIT-I

Binary Codes and Boolean Algebra

Signals: Analog and Digital, Binary Number System. Addition, Subtraction, Multiplication, Division of binary numbers, Subtraction using 2's complement method. Binary codes: weighted and non-weighted codes, self-complementary.

Codes, BCD, Excesses-3, Gray codes, Alphanumeric codes, ASCII Codes.

Boolean algebra: Boolean Laws and Expression using Logic Gates, Realization of different gates using Universal gates, De- Morgan's Theorem, Duality Theorems.

UNIT-II

Boolean Function Minimization Techniques: Standard forms: SOP, POS, Simplification of Switching function & representation (Maxterm & Minterm), Boolean expression & representation using logic gates, Propagation delay in logic gate. Karnaugh map: K-map, mapping and minimization of SOP and POS expression, don't care condition, conversion from SOP to POS and POS to SOP form using K-map, Minimization of multiple output circuits,

UNIT–III

Combinational Circuits Design: Adder & Subtractor (Half and Full), Parallel Binary adder, BCD Adder, Binary multipliers, Code Converters, parity bit generator, Comparators, Decoder, BCD to 7-segment Decoder, Encoders, Priority Encoders, Multiplexers, De- Multiplexers.

Sequential Circuits Elements: Introduction to Sequential Circuit, Flip-flop and Latch: SR latch, JK flip-flop, Master Slave JK Flip-flop, T flip-flop, D flip-flop and latch, Master-slave RS flip-flop, Master-slave JK flip-flop, asynchronous inputs.

UNIT–IV

Shift Registers and Counters: Shift registers: buffer register, controlled buffer register. Data transmission in shift resistor SISO, SIPO, PISO, PIPO, Bidirectional shift register, universal shift registers. Counter: Classification, Ripple or asynchronous counter, Effect of propagation delay in ripple counters, up-down counter, Design of Mod-n counter, synchronous counter, Ring counter, Johnson counter.

Text books:

1. R.P. Jain, "Modern digital Electronics", Tata McGraw Hill, 4th edition, 2009.
2. Douglas Perry, "VHDL", Tata McGraw Hill, 4th edition, 2002.
3. W.H. Gothmann, "Digital Electronics- An introduction to theory and practice", PHI, 2nd edition, 2006. 2012
4. Modern digital Electronics, 4rd Edition by R.P. Jain, Tata McGraw Hill, 2009.
5. VHDL, 4rd Edition by Douglas Perry, Tata McGraw Hill, 2002
6. Digital Electronics- An introduction to theory and practice, 2nd edition by W.H. Gothmann, PHI, 2012

Reference Books:

1. Digital Circuits and Systems, D.V. Hall, Tata McGraw Hill, 1989

2. Digital System Design using VHDL, 2nd edition, by Charles Roth, Tata McGraw Hill,

Note: The paper setter will set the paper as per the question paper template provided.

RA-305A	HYDRAULICS AND PNEUMATICS						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time (Hrs)**
3	**0**	**0**	**3**	**75**	**25**	**100**	**3**
Purpose	To provide student with knowledge on the application of fluid power in process, construction and manufacturing Industries and an understanding of the fluids and components utilized in modern industrial fluid power system. To develop a measurable degree of competence in the design, construction and operation of fluid power circuits.						
Course Outcomes							
CO1	Students will be able to explain the fluid power and operation of different types of pumps						
CO2	Students will be able to summarize the features and functions of hydraulic motors, actuators and flow control valves						
CO3	Students will be able to explain the different types of hydraulic circuits and systems and Explain the working of different pneumatic circuits and systems						
CO4	Students will be able to understand various trouble shooting methods and applications of hydraulic and pneumatic systems.						

UNIT-I

Fluid Power Principles and Hydraulic Pumps: Introduction to Fluid power – Advantages and Applications – Fluid power systems – Types of fluids - Properties of fluids and selection – Basics of Hydraulics – Pascal's Law – Principles of flow - Friction loss – Work, Power and Torque Problems, Sources of Hydraulic power : Pumping Theory – Pump Classification – Construction, Working, Design, Advantages, Disadvantages, Performance, Selection criteria of Linear and Rotary – Fixed and Variable displacement pumps – Problems.

UNIT-II

Hydraulic Actuators and Control Components Hydraulic Actuators: Cylinders – Types and construction, Application, Hydraulic cushioning – Hydraulic motors - Control Components: Direction Control, Flow control and pressure control valves – Types, Construction and Operation – Servo and Proportional valves – Applications – Accessories: Reservoirs, Pressure Switches – Applications – Fluid Power ANSI Symbols – Problems.

UNIT–III

Hydraulic Circuits and Systems Accumulators, Intensifiers, Industrial hydraulic circuits – Regenerative, Pump Unloading, Double- Pump, Pressure Intensifier, Air-over oil, Sequence, Reciprocation, Synchronization, Fail-Safe, Speed Control, Hydrostatic transmission, Electro hydraulic circuits, Mechanical hydraulic servo systems.

UNIT–IV

Pneumatic And Electro Pneumatic Systems Properties of air – Perfect Gas Laws – Compressor – Filters, Regulator, Lubricator, Muffler, Air control Valves, Quick Exhaust Valves, Pneumatic actuators, Design of Pneumatic circuit – Cascade method – Electro Pneumatic System – Elements – Ladder diagram – Problems, Introduction to fluidics and pneumatic logic circuits.

Trouble Shooting and Applications Installation, Selection, Maintenance, Trouble Shooting and Remedies in Hydraulic and Pneumatic systems, Design of hydraulic circuits for Drilling, Planning, Shaping, Surface grinding, Press and Forklift applications. Design of Pneumatic circuits for Pick and Place applications and tool handling in CNC Machine tools – Low-cost Automation – Hydraulic and Pneumatic power packs.

Text Books:

1. Anthony Esposito, "Fluid Power with Applications", Pearson Education 2005.
2. Majumdar S.R., "Oil Hydraulics Systems- Principles and Maintenance", Tata McGraw-Hill, 2001.

Reference Books:

1. Anthony Lal, "Oil hydraulics in the service of industry", Allied publishers, 1982.
2. Dudelyt, A. Pease and John T. Pippenger, "Basic Fluid Power", Prentice Hall, 1987.
3. Majumdar S.R., "Pneumatic systems – Principles and maintenance", Tata McGraw Hill, 1995
4. Michael J, Prinches and Ashby J. G, "Power Hydraulics", Prentice Hall, 1989.
5. Shanmugasundaram.K, "Hydraulic and Pneumatic controls", Chand & Co, 2006

Note: The paper setter will set the paper as per the question paper templates provided.

RA-307A	Microcontroller and Embedded System Design						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time (Hrs)**
3	**0**	**0**	**3**	**75**	**25**	**100**	**3**
Purpose	To understand the architectures and the instruction set of different microcontrollers and interfacing of microprocessors and microcontrollers with various peripheral. To introduce embedded systems, its hardware, software, devices and buses used for embedded networking.						
Course Outcomes							
CO1	Students will be able to interpret the architecture & instruction set of 8085, 8086, 8051 microcontroller to develop assembly language programs						
CO2	Students will be able to understand the application of 8051 microcontroller on chip peripherals to implement the functions of I/O port, timer/Counter, serial port & interrupts.						
CO3	Students will be able to know about the peripheral devices 8255 PPI and 8279 for integrating keyboard, 7 segment display, LCD display and traffic light controller & 8259 PIC for handling multiple interrupts I/O.						
CO4	Students will be able to design 8051 Microcontroller based systems for measuring electrical and physical quantities & Motor control. Interpret the hardware and software components of an embedded system for an application and infer the architecture and programming model of ARM processor						

UNIT I

INTEL 8085 MICROPROCESSOR

Intel 8085 Hardware - Architecture – Pin description and addressing modes; Intel 8086 Hardware – Pin description and addressing modes; Intel 8051 Microcontroller: Introduction – Architecture – Memory Organization – Special Function Registers – Pins and Signals – Timing and control – Port Operation – Memory and I/O interfacing – Interrupts – Instruction Set and Programming.

UNIT II

ON-CHIP PERIPHERALS & PERIPHERAL DEVICES I/O Port Programming - Timer Registers -Timer Modes - Overflow Flags – Clocking Sources -Timer/ Counter Interrupts – Timer Programming - Baud Rate Generation – Serial Port Register -Modes of Operation - Serial Port Programming- Interrupt Organization Processing Interrupts - Interrupt Programming- Programmable Peripheral Interface (8255) - Keyboard / Display Controller (8279) - Programmable Interrupt Controller (8259).

UNIT III

DESIGN OF MICROCONTROLLER BASED SYSTEM

Voltage, Current and Frequency Measurement - DC Motor Control - Stepper Motor control - Case Studies: Arduino Board Overview - Arduino IDE - Temperature Control.

UNIT IV

EMBEDDED SYSTEMS & ARCHITECTURE OF ARM PROCESSOR

Processor Embedded into a system - Embedded Hardware units and devices in a system - Embedded Software in a System -Classification of Embedded Systems - Embedded Design Life Cycle - Design Example: Model Train Controller. ARM Embedded System - CISC and RISC Processors - ARM Architecture - Programming Model - Operating Modes.

ARM PROGRAMMING

ARM Instruction Set - ARM Instruction Types: Data Transfer, Data Processing and Control, Flow Instructions - Interrupts – Exceptions types - NVIC Registers for interrupt control.

TEXT BOOKS:

1. Krishna Kant, ―Microprocessors and Microcontrollers – Architectures, Programming and System Design 8085, 8086, 8051, 8096‖, PHI, 2014.
2. Muhammad Ali Mazidi, Janice Gillispie Mazidi and Rolin D. McKinley, "The 8051 Microcontroller and Embedded Systems Using Assembly and C ", 2nd Edition, Pearson Education 2013.
3. Kenneth J. Ayala, "The 8051 Microcontroller. Architecture, Programming and Applications", 3rd Edition, West publishing company 2014
4. Andrew N.Sloss, Dominic Symes and Chris Wright, "ARM System Developer's Guide: Designing and Optimizing System Software", Morgan Kaufmann Publishers, 1st Edition, 2004.
5. Raj Kamal, "Embedded Systems Architecture, Programming and Design", Tata McGraw Hill, 2nd Edition, 2009

REFERENCE BOOKS:

1. Soumitra Kumar Mandal "Microprocessors and Microcontrollers Architecture Programming and Interfacing using 8085, 8086 & 8051" Tata McGraw Hill Publishing Co Ltd, 1st Edition, 2011.
2. Myke Predko, "Programming and Customizing the 8051 Microcontroller", 1st Edition, 2012.
3. Chris Braith, "8051 Microcontroller Application based Introduction", Elsevier 2004.
4. Manish K Patel, "The 8051 Microcontroller Based Embedded Systems "Tata McGraw Hill Publishing Co Ltd, Ist Edition, 2014.
5. Jonathan W Valvano, "Embedded Systems: Introduction to Arm® Cortex TM-M Microcontrollers", 5th Edition, 2015.
6. Shibu K.V, "Introduction to Embedded Systems", Tata Mc Graw Hill, 1st Edition, 2009.
7. Jean J.Labrosse, "Embedded Systems Building Blocks", CMP Books, 2nd Edition, 2010.

Note: The paper setter will set the paper as per the question paper templates provided.

RAP-301A	Robot Kinematics and Dynamics						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time (Hrs)**
3	**0**	**0**	**3**	**75**	**25**	**100**	**3**
Purpose	To understand the basic knowledge about kinematics of machines. To understand the basic components and layout of linkages in the assembly of a system/machine. To understand the principles in analyzing the assembly with respect to the displacement, velocity, and acceleration at any point in a link of a mechanism. To understand the motion resulting from a specified set of linkages, design few linkage mechanisms and cam mechanisms for specified output motions. To understand the basic concepts of toothed gearing and kinematics of gear trains and the effects of friction in motion transmission and in machine components.						
Course Outcomes							
CO1	Students will be able to understand the basic knowledge of kinematics of machines						
CO2	Students will be able to apply fundamentals of mechanism for the design of new mechanisms						
CO3	Students will be able to know about the linkages, design few linkage mechanisms and cam mechanisms for specified output motions.						
CO4	Students will be able to impart knowledge about the gears and gear trains.						

UNIT I

INTRODUCTION

Specifications of Robots- Classifications of robots – Work envelope - Flexible automation versus Robotic technology – Applications of Robots.

DIRECT & INVERSE KINEMATICS

Dot and cross products, Co-ordinate frames, Rotations, Homogeneous Coordinates, Link coordinates, D-H Representation, Arm equation -Two axis, three axis, four axis, five axis and six axis robots. Inverse Kinematic problem, General properties of solutions, Tool configuration, Inverse Kinematics of Two axis Three axis, Four axis and Five axis robots.

UNIT II

WORKSPACE ANALYSIS

Workspace analysis of Four axis, Five axis and Six axis robots, Perspective transformation, structured illumination, Camera calibration, Work envelope of Four and Five axis robots, Workspace fixtures.

UNIT III

DIFFERENTIAL MOTION AND STATICS

The tool Configuration jacobian matrix for three axis and, four axis robots, joint space singularities, resolved motion rate control, manipulator jacobian for three and four axis joint space singularities, induced joint torques and forces.

UNIT IV

DYNAMIC ANALYSIS AND FORCES

Introduction, Langrangian mechanics, Effects of moments of Inertia, Dynamic equation for two axis planar articulated robot. Trajectory planning, Pick and place operations, Continuous path motion, Interpolated motion, Straight line motion.

Text Books

1. Robert J. Schilling, ―Fundamentals of Robotics Analysis and Control‖, PHI Learning, 2011.

2. Niku S B, ―Introduction to Robotics, Analysis, Systems, Applications‖, Prentice Hall, 2001.

Reference Books

1. John J Craig, ―Introduction to Robotics: Mechanics and control, Pearson, 2009,4th Ed, 2018.

2. Deb S R and Deb S, ―Robotics Technology and Flexible Automation‖, Tata McGraw Hill Education Pvt. Ltd, 2010.

3. Richard D Klafter, Thomas A Chmielewski, Michael Negin, "Robotics Engineering – An Integrated Approach", Eastern Economy Edition, Prentice Hall of India P Ltd., 2006.

4. Saha S K, ―Introduction to Robotics‖, Tata McGraw Hill Education Pvt. Ltd,2010, 2nd Ed, 2014.

Note: The paper setter will set the paper as per the question paper templates provided.

RAP-303A	Electrical Drives Control Systems						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time (Hrs)**
3	**0**	**0**	**3**	**75**	**25**	**100**	**3**
Purpose	To understand the basic concepts of different types of electrical machines and their performance. To study the different methods of starting D.C motors and induction motors. To study the conventional and solid-state drives						
Course Outcomes							
CO1	Students will be able to know the basics of electrical drives, selection and applications.						
CO2	Students will be able to know the drive motor characteristics.						
CO3	Students will be able to understand different starting methods.						
CO4	Students will be able to understand the speed control of DC drives and AC drives.						

UNIT I

INTRODUCTION

Basic Elements – Types of Electric Drives – factors influencing the choice of electrical drives – heating and cooling curves – Loading conditions and classes of duty – Selection of power rating for drive motors with regard to thermal overloading and Load variation factors

UNIT II

DRIVE MOTOR CHARACTERISTICS

Mechanical characteristics – Speed-Torque characteristics of various types of load and drive motors – Braking of Electrical motors – DC motors: Shunt, series and compound – single phase and three phase induction motors.

UNIT III

STARTING METHODS

Types of D.C Motor starters – Typical control circuits for shunt and series motors – Three phase squirrel cage and slip ring induction motors.

UNIT IV

CONVENTIONAL AND SOLID STATE SPEED CONTROL OF D.C. DRIVES

Speed control of DC series and shunt motors – Armature and field control, Ward-Leonard control system – Using controlled rectifiers and DC choppers –applications.

CONVENTIONAL AND SOLID STATE SPEED CONTROL OF A.C. DRIVES

Speed control of three phase induction motor – Voltage control, voltage / frequency control, slip power recovery scheme – Using inverters and AC voltage regulators – applications.

Text Books:

1. G.K. Dubey, Fundamentals of Electric Drives, Narosa publishing House.
2. S.K.Pillai, A First Course on Electric Drives, New Age International.
3. V Subrahmanyam, Electric Drives, Mcgrawhill Education.

Reference Books:

1. M.Chilkin, Electric Drives,Mir Publishers, Moscow.
2. Mohammed A. El-Sharkawi, Fundamentals of Electric Drives, Thomson Asia, Pvt. Ltd. Singapore.
3. N.K. De and Prashant K.Sen, Electric Drives, Prentice Hall of India Ltd.
4. V.Subrahmanyam, Electric Drives: Concepts and Applications, Tata McGraw Hill.

Note: The paper setter will set the paper as per the question paper templates provided.

RA-305 A	INDUSTRIAL DESIGN AND APPLIED ERGONOMICS						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time (Hrs)**
3	**0**	**0**	**3**	**75**	**25**	**100**	**3**
Purpose	To explain the general principles that governs the interaction of humans in their working environment for improving worker performance and safety. To know about the environmental conditions in the industry. To know about bio thermodynamics and bioenergetics To know about the human factors in industrial aspects						
Course Outcomes							
CO1	Students will be able to know about ergonomic principles to design workplaces						
CO2	Students will be able to improve human performance and judge the environmental conditions in the work place						
CO3	Students will be able to know about bio thermodynamics and bioenergetics						
CO4	Students will be able to implement latest occupational health and safety to the work place.						

UNIT-I

INTRODUCTION: Definition, human technological system, multidisciplinary engineering approach, human–machine system, manual, mechanical, automated system, human system reliability, conceptual design, advanced development, detailed design and development. INFORMATION INPUT: Input and processing, text, graphics, symbols, codes, visual display of dynamic information, auditory, tactual, olfactory displays, speech communications.

UNIT-II

HUMAN OUTPUT AND CONTROL: Physical work, manual material handling, motor skill, human control of systems, controls and data entry devices, hand tools and devices. WORKPLACE DESIGN: Applied anthropometry, workspace design and seating, arrangement of components within a physical space, interpersonal aspects of work place design, design of repetitive task, design of manual handling task, work capacity, stress, and fatigue.

UNIT–III

ENVIRONMENTAL CONDITIONS: Illumination, climate, noise, motion, sound, vibration, colour and aesthetic concepts. BIOMECHANICS: Biostatic mechanics, statics of rigid bodies, biodynamic mechanics, human body kinematics, kinetics, impact and collision.

UNIT–IV

BIOTHERMODYNAMICS AND BIOENERGETICS: Biothermal fundamentals, human operator heat transfer, human system bioenergetics, thermoregulatory physiology, human operator thermo regularity, passive operator, active operator, heat stress.
HUMAN FACTORS APPLICATIONS: Human error, accidents, human factors and the automobile, organizational and social aspects, steps according to ISO/DIS6385, OSHA‟s approach, virtual environments.

Text Books:

1. Chandler Allen Phillips, “Human Factors Engineering”, John Wiley and Sons, New York, 2000.

Reference Books:

1. Bridger R S, “Introduction to Ergonomics”, Taylor and Francis, London, 2003.
2. Mayall W H, “Indus trial Design for Engineers”, London ILIFFEE Books Ltd., UK, 1998.
3. Mark S Sanders, “Human Factors in Engineering and Design”, McGraw Hill, New York, 1993.

Note: The paper setter will set the paper as per the question paper templates provided.

RA 309 LA	DIGITAL ELECTRONICS LAB							
Lecture	**Tutorial**	**Practical**	**Credits**	**Major Test**	**Minor Test**	**Practical**	**Total**	**Time (Hrs.)**
0	**0**	**2**	**1**	**0**	**40**	**60**	**100**	**3**
Purpose	To impart the basic practical aspects of Digital Electronics. To make a differentiation between the Analog Electronics and Digital electronics through practical modes. To lay the foundation for the courses in electronics related to microprocessors, microcomputers and computers which are more advanced courses based on digital electronics and the revolution in electronics.							
Course Outcomes								
CO 1	Students will be able to know the fundamentals and the parameters of digital components related to their fabrication and internal circuitry.							
CO 2	Students will be able to design various logic circuits.							
CO 3	Students will be able to design synchronous and asynchronous sequential circuits.							
CO 4	Students will be able to verify the Truth Table.							

LIST OF EXPERIMENTS:

1. Digital Signals Interface Compare analog and digital electronics systems (Tutorial)
2. Realization of basic and universal logic gates using ICS 7400, 7432, 7402, 7408, 7486, 7404.
3. Derived Basic gate using NAND and NOR Gate
4. Verification of Demorgan's theorem.
5. Develop Verification of Truth Table of 4:1 mux & 1:4 demux using IC's.
6. Verification of Truth Table of flip flops
7. Verification of Truth Table of shift registers (7495)
   a. SISO
   b. SIPO
   c. PISO
   d. PIPO
8. Verification of 4-bit Asynchronous mod-10 (decade) counter (IC 7490)
9. Verification of 4-bit synchronous up/down counter ((IC 74193)
10. Segment Display Decoder.

.**Note:** At least eight experiments are required to be performed by students from the above list and two may be performed from the experiments developed by the institute.

RA-311LA	Microcontroller and Embedded System Design Lab							
Lecture	**Tutorial**	**Practical**	**Credits**	**Major Test**	**Minor Test**	**Practical**	**Total**	**Time (Hrs.)**
0	**0**	**2**	**1**	**0**	**40**	**60**	**100**	**3**
Purpose	To enable the students to program, simulate and test the 8085, 8051, PIC 18 and ARM processor based circuits and their interfaces To introduce students to embedded systems design tools and hardware							
Course Outcomes								
CO 1	Students will be able to develop 8051 Assembly Language Programs for Arithmetic, Logic, Bit manipulation, String operations							
CO 2	Students will be able to demonstrate an application for 8051 microcontroller using Traffic light controller, ADC & DAC interfacing boards							
CO 3	Students will be able to perform 8051 Embedded C Coding for Programming the GPIO, Timer, Interrupts & Serial Port.							
CO 4	Students will be able to perform temperature monitoring using Arduino target board.							

LIST OF EXPERIMENTS:

Microcontroller Lab:

Developing Assembly Language Programs using 8051 Microcontroller Kits

- Data manipulating Operations and Delay Routines
- String operations
- Interfacing Traffic light controller
- Interfacing ADC
- Interfacing DAC

Embedded Laboratory

1. Voltage Measurement with display

Designing a voltmeter to measure voltage from 0 to 5 volts and displaying the measured value using 7 segment displays

2. Design of Water Pump Controller to sense the water level in a tank
3. Digital Clock with LCD display
4. Temperature Measurement with 7 segment display
5. PC Communication

Interfacing the microcontroller to a PC through RS232 interface and displaying the messages sent by the microcontroller on the PC using Visual Basic program running in PC

6. Remote Control through FM Link

Establishing an FM link between two microcontrollers for data transfer.

7. Hot Chamber Controller to maintain the temperature at the set point.
8. Obstacle Detector using ultrasonic transmitter- receiver
9. Moisture sensor and sprinkler controller design
10. Designing a lamp controller having a light sensor and a timer

RA-313LA	HYDRAULIC PNEUMATICS LAB							
Lecture	**Tutorial**	**Practical**	**Credits**	**Major Test**	**Minor Test**	**Practical**	**Total**	**Time (Hrs.)**
0	**0**	**2**	**1**	**0**	**40**	**60**	**100**	**3**
Purpose	To develop required skills in the students so that they are able to acquire knowledge to Identify and solve various Hydraulic and Pneumatic problems.							
Course Outcomes								
CO 1	Students will be able to acquire required learning out comes in cognitive, psychomotor and affective domain							
CO 2	Students will be able to operate different types of valves used in hydraulic systems.							
CO 3	Students will be able to maintain different valves and auxiliaries.							
CO 4	Students will be able to assemble pumps and motors to rectify problems							

LIST OF EXPERIMENTS:

1. Demonstrate application of Pascal's law in hydraulic system
2. Demonstrate various accessories and their uses in hydraulic system.
3. Demonstrate use of directional control valves
4. Demonstrate use of pressure control valves
5. Demonstrate use of pressure intensifier
6. Demonstrate application of flow control valves
7. Demonstrate applications of various types of pumps
8. Demonstrate use of hydraulic motors
9. Demonstrate application of injection control circuit
10. Demonstrate use of clamp control and reciprocating screw circuits.
11. Demonstrate application of single stage compressors

Note: At least eight experiments are required to be performed by students from the above list and two may be performed from the experiments developed by the institute.

RA-315LA	PROJECT-I							
Lecture	**Tutorial**	**Practical**	**Credits**	**Major Test**	**Minor Test**	**Practical**	**Total**	**Time (Hrs.)**
0	**0**	**4**	**2**	**--**	**-**	**100**	**100**	**3**
Purpose:	To implement the engineering principles and theories into innovative practical projects for solving real world problems.							
Course Outcomes								
CO1	Students will be able to apply the theoretical knowledge into practical/software projects.							
CO2	Students will be able to design new products related to robotics and automation using latest technologies.							

The project work could be done for the problem statement of an industry or practical project in the institute. The students may also opt for the analysis-based software projects with proper validation. Participation in any technical event/ competition to fabricate and demonstrate an innovative machine or product could be encouraged under this course.

Note: The maximum number of students in a group should not exceed four.

RA-317A	INDUSTRIAL TRAINING-II							
Lecture	**Tutorial**	**Practical**	**Credits**	**Major Test**	**Minor Test**	**Practical**	**Total**	**Time (Hrs.)**
0	**0**	**2**	**--**	**--**	**100**	**--**	**100**	**3**
Purpose	To provide an industrial exposure to the students and enhance their skills and creative capability for conversion of their innovative ideas into physical reality.							
Course Outcomes								
CO 1	Students will be able to self-improve through continuous professional development and life-long learning.							
CO 2	Students will be able to develop social, cultural, global and environmental responsibility as an engineer.							
CO 3	Students will be able to weigh all the latest changes in technological world.							

Note: INDUSTRIAL TRAINING-II is a mandatory non-credit course in which the students will be evaluated for the industrial training undergone after 4th semester and students will be required to get passing marks to qualify.

The candidate has to submit a training report of his/her work/project/assignment completed in the industry during the training period. The evaluation will be made on the basis of submitted training report and viva-voce/presentation.

MC 903A	ESSENCE OF INDIAN TRADITIONAL KNOWLEDGE							
Lecture	**Tutorial**	**Practical**	**Credits**	**Major Test**	**Minor Test**	**Practical**	**Total**	**Time (Hrs.)**
3	**0**	**0**	**--**	**100**	**--**	**--**	**100**	**3**
Purpose	To impart basic principles of thought process, reasoning and inferencing.							
Course Outcomes								
CO 1	Students will be able to understand, connect up and explain basics of Indian traditional knowledge in modern scientific perspective.							

Course Contents

- Basic structure of Indian Knowledge System: अष्टादशविद्या -४वेद,४उपवेद (आयुर्वेद, धनुर्वेद, गन्धर्ववेद, स्थापत्य आदि) ६वेदांग (शिक्षा, कल्प, निरुक्त, व्याकरण, ज्योतिष, छंद) ४ उपाङ्ग (धर्मशास्त्र, मीमांसा, पुराण, तर्कशास्त्र)
- Modern Science and Indian Knowledge System
- Yoga and Holistic Health care
- Case studies

References

- V. Sivaramakrishnan (Ed.), *Cultural Heritage of India-course material*, Bharatiya Vidya Bhavan, Mumbai. 5th Edition, 2014
- Swami Jitatmanand, *Modern Physics and Vedant*, Bharatiya Vidya Bhavan
- Swami Jitatmanand, *Holistic Science and Vedant*, Bharatiya Vidya Bhavan
- Fritzof Capra, *Tao of Physics*
- Fritzof Capra, *The Wave of life*
- VN Jha (Eng. Trans.), *Tarkasangraha of Annam Bhatta*, International Chinmay Foundation, Velliarnad, Arnakulam
- *Yoga Sutra of Patanjali*, Ramakrishna Mission, Kolkata
- GN Jha (Eng. Trans.), Ed. RN Jha, *Yoga-darshanam with Vyasa Bhashya*, Vidyanidhi Prakashan, Delhi 2016
- RN Jha, *Science of Consciousness Psychotherapyand Yoga Practices*, Vidyanidhi Prakashan, Delhi 2016
- P B Sharma (English translation), *Shodashang Hridayan*

Pedagogy: Problem based learning, group discussions, collaborative mini projects.

Note: The paper setter will set the paper as per the question paper template provided.

Semester-6

RA-302 A	PLC & Industrial Automation						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time (Hrs)**
3	**0**	**0**	**3**	**75**	**25**	**100**	**3**
Purpose	To make the students understand about the PLC, PLC programming and SCADA and their applications.						
Course Outcomes							
CO1	Students will be able to know about the PLC, its architecture, selection and applications.						
CO2	Students will be able to perform PLC programming.						
CO3	Students will be able to know PLC networking standards.						
CO4	Students will be able to know about SCADA and communication protocols.						

UNIT-I

Industrial Automation -review, Control elements of Industrial Automation-IEC/ ISA Standards for Control Elements, Selection criteria for control elements-Construction of relay logic circuits with different control elements-Need for PLC -PLC evolution. PROGRAMMABLE LOGIC CONTROLLERS: Architecture of PLC -Types of PLC –PLC modules, Input and Output modules –Digital and Analog Input/Output- examples of Digital and Analog Inputs/Outputs- PLC Configuration -Scan cycle -Capabilities of PLC-Selection criteria for PLC –PLC Communication with PC and software-PLC Wiring-Installation of PLC and its modules.

UNIT-II

PROGRAMMING OF PLC: – Ladder Programming –Realization of simple logic circuits, Timers and counters– arithmetic and logic functions- PTO / PWM generation-Programming examples- High Speed Counter –Analog Scaling –Encoder Interfacing-Servo drive control – Stepper Motor Control. Other programming types: Functional Block Diagram FBD (most commonly used in industries) -Sequential Flow Chart SFC -Structured Text (Textual) -Instruction List (Textual).

UNIT-III

NETWORKING: PLC Networking-Networking standards & IEEE Standards -Protocols –Ethernet- Process field bus (PROFIBUS)-CAN open, different methods of interfacing with a PLC.

Case studies- PLC based traffic light system, stepper motor & servo motor control using PLC, Analog sensor interfacing with PLC, encoder interfacing with PLC. HMI SYSTEMS: Need for HMI in Industrial Automation, Types of HMI –Configuration of HMI, Screen development and navigation, Configuration of HMI elements/objects and interfacing with PLC.

UNIT-IV

APPLICATIONS OF PLC: Case studies of manufacturing automation and process automation. ROBOTICS & AUTOMATION SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA):Overview –Developer and runtime packages –Architecture –Tools –Tags–Graphics -Alarm logging –Tag logging – Trends –History – Report generation, VB & C Scripts for SCADA application.

COMMUNICATION PROTOCOLS OF SCADA: Proprietary and open Protocols –OLE/OPC –DDE – Server/Client Configuration –Messaging –Recipe –User administration –Interfacing of SCADA with PLC, drive, and other field devices. DISTRIBUTED CONTROL SYSTEMS (DCS): DCS –architecture –local control unit programming language - communication facilities -operator interface -engineering interfaces. Case studies- Design of conveyor automation system using PLC, SCADA and Electrical drive; Design of inspection automation system using sensors, PLC, HMI/SCADA; Design of simple water management system using PLC, SCADA and Electrical drive.

Text Books:

1. Programmable Logic Devices and Logic Controllers, Enrique Mandado, Jorge Marcos, Serafin A. Peres, Prentice Hall, 1996.

2. Practical SCADA for industry, David Bailey, Edwin Bright, Newnes, Burlington, 2003.

Reference Books:

1. Introduction to Programmable Logic Controllers, Gray Dunning, Delamar Thomson Learning, 1998.
2. Programmable Controllers- AnEngineers's Guide, 2nd Edition, E.A. Parr, Newness, 1999.
3. Programmable controllers, Hardware, Software & Applications, George L. Batten Jr., McGrawHill, 2nd Edition, 1994.
4. Programmable logic controllers, W. Bolton, Elsevier Ltd, 2015.
5. Programmable logic controllers,Frank D Petruzella, McGraw-Hill, 2011.
6. Programmable Logic Controllers: Programming Methods and Applications. John R Hackworth and Fredrick D Hackworth Jr., Pearson Education, 2006.
7. Practical Modern SCADA Protocols: DNP3, 60870.5 and Related systems, Gordon Clarke, Deon Reyneders, Edwin Wright, Newnes Publishing, 2004.48
8. Designing SCADA Application Software, Stuart G McCrady, Elsevier, 2013.

RA-304 A	PRINCIPLES OF ROBOTICS						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time (Hrs)**
3	**0**	**0**	**3**	**75**	**25**	**100**	**3**
Purpose	To introduce the functional elements of Robotics. To impart knowledge on the direct and inverse kinematics To introduce the manipulator differential motion and control To educate on various path planning techniques and to introduce the dynamics and control of manipulators						
Course Outcomes							
CO1	Students will be able to understand basic concept of robotics.						
CO2	Students will be able to analyse the instrumentation systems and their applications to various and to know about the dynamics and control in robotics industries.						
CO3	Students will be able to know about the differential motion, add statics in robotics						
CO4	Students will be able to know about the various path planning techniques.						

UNIT-I

Basic Concepts: Brief History-Types of Robots–Technology-Robot classifications and specifications-Design and control issues- Various manipulators – Sensors - work cell - Programming languages.

Coordinate Frames, Mapping and Transforms: Coordinate Frames, Description of Objects in Space, Transformation of Vectors, inverting a Homogeneous Transform, Inverting a Homogeneous Transform, Fundamental Rotation Matrices

UNIT-II

Direct and Inverse Kinematics: Mathematical representation of Robots - Position and orientation – Homogeneous transformation- Various joints- Representation using the Denavit Hattenberg parameters - Degrees of freedom-Direct Kinematics-Inverse kinematics- SCARA robots- Solvability – Solution Methods-Closed form solution.

UNIT–III

Manipulator Differential Motion and Statics: Linear and angular velocities-Manipulator Jacobian-Prismatic and rotary joints–Inverse -Wrist and arm singularity - Static analysis - Force and moment Balance. PATH PLANNING: Definition-Joint space technique-Use of p-degree polynomial-Cubic polynomial-Cartesian space technique - Parametric descriptions - Straight line and circular paths - Position and orientation planning.

UNIT–IV

Dynamics and Control: Lagrangian mechanics-2DOF Manipulator-Lagrange Euler Formulation-Dynamic model – Manipulator control problem-Linear control schemes-PID control scheme-Force control of robotic manipulator

Text Books:

1. R.K.Mittal and I.J.Nagrath, Robotics and Control, Tata McGraw Hill, New Delhi, 4th Reprint, 2005.
2. JohnJ.Craig, Introduction to Robotics Mechanics and Control, Third edition, Pearson Education, 2009.
3. M.P.Groover, M.Weiss, R.N. Nageland N. G.Odrej, Industrial Robotics, McGraw-Hill Singapore, 1996.

References Books:

1. Ashitava Ghoshal, Robotics-Fundamental Concepts and Analysis', Oxford University Press, Sixth impression, 2010.
2. K. K.Appu Kuttan, Robotics, I K International, 2007.

3. Edwin Wise, Applied Robotics, Cengage Learning, 2003.
4. R.D.Klafter,T.A.Chimielewski and M.Negin, Robotic Engineering–An Integrated Approach, Prentice Hall of India, New Delhi, 1994.
5. B.K.Ghosh, Control in Robotics and Automation: Sensor Based Integration, Allied Publishers, Chennai, 1998. 6. S.Ghoshal, "Embedded Systems & Robotics" – Projects using the 8051 Microcontroller", Cengage Learning, 2009.

Note: The paper setter will set the paper as per the question paper templates provided.

RA-306 A	Digital Image Processing & Vision System						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time (Hrs)**
3	**0**	**0**	**3**	**75**	**25**	**100**	**3**
Purpose	To impart the basic concepts of image segmentation and shaping To apply different types signal processing techniques in image processing						
Course Outcomes							
CO1	Students will be able know basics of image formation and transformation using sampling and quantization						
CO2	Students will be able to define different types of signal processing techniques used for image sharpening and smoothing						
CO3	Students will be able to perform and demonstrate the compression and coding techniques used for image data						
CO4	Students will be able to perform the shape analysis.						

UNIT I

Introduction to Image Processing

Image formation, image geometry perspective and other transformation, sterio imaging elements of visual perception. Digital Image-sampling and quantization serial & parallel Image processing.

Signal Processing

Signal Processing – Fourier, Walsh-Hadmard discrete cosine and Hotelling transforms and their properties, filters, correlators and convolvers. Image enhancement-Contrast modification. Histogram specification, smoothing, sharpening, frequency domain enhancement, pseudo-colour Enhancement.

UNIT II

Image Restoration

Image Restoration-Constrained and unconstrained restoration Wiener filter , motion blur remover, geometric and radiometric correction Image data compression-Huffman and other codes transform compression, predictive compression two tone Image compression, block coding, run length coding, and contour coding.

UNIT III

Segmentation Techniques

Segmentation Techniques-thresholding approaches, region growing, relaxation, line and edge detection approaches, edge linking, supervised and unsupervised classification techniques, remotely sensed image analysis and applications.

UNIT IV

Shape Analysis

Shape Analysis – Gestalt principles, shape number, moment Fourier and other shape descriptors, skelton detection, Hough transform, topological and texture analysis, shape matching. Practical Applications – Finger print classification, signature verification, text recognition, map understanding, bio-logical cell classification.

Text Books

1. Ganzalez and Wood, “Digital Image Processing”, Addison Wesley, 1993
2. Anil K.Jain, “Fundamental of Image Processing”, Prentice Hall of India

Reference Books

1. Rosenfeld and Kak, “Digital Picture Processing” vol.I & vol.II, Academic,1982
2. Ballard and Brown, “Computer Vision”, Prentice Hall, 1982.
3. Wayne Niblack, “An Introduction to Digital Image Processing”, Prentice Hall, 1986
4. Milan Sonka, Vaclav Hlavac, Roger Boyle, “Image Processing, Analysis and Machine Vision”, Vikas Publications.

Note: The paper setter will set the paper as per the question paper templates provided.

HM-302A	Research Methodology & IPR						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time (Hrs)**
3	**0**	**0**	**3**	**75**	**25**	**100**	**3**
Purpose	To impart knowledge on formulation of research problem, research methodology, ethics involved in doing research and importance of IPR protection.						
Course Outcomes							
CO1	Students will be able to understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.						
CO2	Students will be able to understand research problem formulation & Analyze research related information and Follow research ethics						
CO3	Students will be able to write a review article in the field of engineering.						
CO4	Students will be able to appreciate the importance of IPR and protect their intellectual property. Understand that IPR protection provides an incentive to inventors for further research work and investment in R & D, which leads to creation of new and better products, and in turn brings about, economic growth and social benefits						

UNIT I

RESEARCH METHODOLOGY

Meaning of research problem, Sources of research problem, Criteria Characteristics of a good research problem, Errors in selecting a research problem, Scope and objectives of research problem, Approaches of investigation of solutions for research problem, data collection, analysis, Plagiarism, Research ethics.

UNIT II

RESULTS AND ANALYSIS

Importance and scientific methodology in recording results, importance of negative results, different ways of recording, industrial requirement, artifacts versus true results, types of analysis (Analytical, objective, subjective), outcome as new idea, hypothesis, concept, theory, model etc.

UNIT III

TECHNICAL WRITING

Effective technical writing, how to write a manuscript/ response to reviewers' comments, preparation of research article/ research report, Writing a Research Proposal - presentation and assessment by a review committee

UNIT IV

INTELLECTUAL PROPERTY RIGHTS

Nature of Intellectual Property: Patents, Designs, Trade Mark and Copyright. Process of Patenting and Development: technological research, innovation, patenting & development. Procedure for grants of patents,

Patenting under PCT.

PATENT RIGTS AND NEW DEVELOPMENTS IN IPR

Scope of Patent Rights. Licensing and transfer of technology, Patent information and databases. Geographical Indications. New Developments in IPR: Administration of Patent System.

Text Books

1. Ranjit Kumar, Research Methodology- A step by step guide for beginners, Pearson Education, Australia, 2005.

2. Ann M. Korner, Guide to Publishing a Scientific paper, Bioscript Press 2004.

3. T. Ramappa, "Intellectual Property Rights Under WTO", S. Chand, 2008

Reference Books

1. Kothari, C. R. Research Methodology - Methods and Techniques, New Age International publishers, New Delhi, 2004.

2. Stuart Melville and Wayne Goddard, "Research methodology: an introduction for science & engineering students', Juta & Company, 1996.

3. Robert P. Merges, Peter S. Menell and Mark A. Lemley, "Intellectual Property in New Technological Age", Aspen Publishers, 2016.

4. Halbert, "Resisting Intellectual Property", Taylor & Francis Ltd ,2007.

5. Mayall , "Industrial Design", McGraw Hill, 1992.

6. Niebel , "Product Design", McGraw Hill, 1974.

7. Asimov , "Introduction to Design", Prentice Hall, 1962.

Note: The paper setter will set the paper as per the question paper templates provided.

RAP-302A	Neural Network and Fuzzy System						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time (Hrs)**
3	**0**	**0**	**3**	**75**	**25**	**100**	**3**
Purpose	The purpose of this course is to familiarize with the Artificial Neural Networks & Fuzzy Logic and to understand the importance of tolerance of imprecision and uncertainty for design of robust & low cost intelligent machines.						
Course Outcomes							
CO1	Students will be able to identify and describe Fuzzy Logic and Artificial Neural Network techniques in building intelligent machines						
CO2	Students will be able to apply Artificial Neural Network models to handle uncertainty and solve engineering problems						
CO3	Students will be able to apply Fuzzy Logic models to handle uncertainty and solve engineering problems						
CO4	Students will be able to recognize the feasibility of applying a Neuro-Fuzzy model for a particular problem						

UNIT I

Introduction to Artificial Neural Network

Artificial neural networks and their biological motivation: Terminology, Models of neuron, Topology, characteristics of artificial neural networks, types of activation functions; learning methods: error correction learning, Hebbian learning, Perceptron: XOR Problem, Perception learning rule convergence theorem; Adaline.

UNIT II

Feedforward and Recurrent Neural Networks

Architecture: perceptron model, solution, single layer artificial neural network, multilayer perceptron model; back propagation learning methods, effect of learning rule co-efficient ;back propagation algorithm, factors affecting backpropagation training, applications; Recurrent neural networks: Linear auto associator – Bi-directional associative memory – Hopfield neural network.

UNIT III

Fuzzy Logic & Fuzzy Sets

Introduction to Fuzzy Logic, Classical and Fuzzy Sets, Membership Function, Membership Grade, Universe of Discourse, Linguistic Variables, Operations on Fuzzy Sets: Intersections, Unions, Negation, Product, Difference, Properties of Classical set and Fuzzy sets, Fuzzy vs Probability, Fuzzy Arithmetic, Fuzzy Numbers.

UNIT IV

Fuzzy Relations & Aggregations

Essential Elements of Fuzzy Systems, Classical Inference Rule, Classical Implications and Fuzzy

Implications, Crisp Relation and Fuzzy Relations, Composition of fuzzy relations, Cylindrical Extension and

Projection. Fuzzy IF-THEN rules, Inference: Scaling and Clipping Method, Aggregation, Fuzzy rule-based Model: Mamdani Model, TSK model, Fuzzy Propositions, Defuzzification: MOM, COA

Fuzzy Optimization and Neuro Fuzzy Systems

Fuzzy optimization –one-dimensional optimization. Introduction of Neuro-Fuzzy Systems, Architecture of Neuro Fuzzy Networks.

Text Books

1. Ross, Timothy J. Fuzzy logic with engineering applications. John Wiley & Sons, 2009.
2. Yegnanarayana, B. Artificial neural networks. PHI Learning Pvt. Ltd., 2004.

Reference Books

1. Zurada, Jacek M. Introduction to artificial neural systems, West St. Paul, 1992.
2. Hagan, Martin T., Howard B. Demuth, and Mark H. Beale. Neural network design. Boston: Pws Pub., 1996.
3. Haykin, Simon. Neural networks: a comprehensive foundation. Prentice Hall PTR, 1994.
4. Passino, Kevin M., and Stephen Yurkovich. Fuzzy control. Vol. 42. Menlo Park, CA: Addison-Wesley, 1998.

Note: The paper setter will set the paper as per the question paper templates provided.

RAP-304A	SENSORS TECHNOLOGY						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time (Hrs)**
3	**0**	**0**	**3**	**75**	**25**	**100**	**3**
Purpose	To make students familiar with the constructions and working principle of different types of sensors and transducers. To make students aware about the measuring instruments and the methods of measurement and the use of different transducers.						
Course Outcomes							
CO1	Students will be able to use concepts in common methods for converting a physical parameter into an electrical quantity						
CO2	Students will be able to use concepts in common methods for converting a physical parameter into an electrical quantity						
CO3	Students will be able to choose a proper sensor comparing different standards and guidelines to make sensitive measurements of physical parameters like pressure, flow, acceleration, etc.						
CO4	Students will be able to predict correctly the expected performance of various sensors						

UNIT-I

Sensors: Principles and classification of transducers, guidelines for selection and application of transducers, basic requirements of transducers. Different types of transducers,
displacement, strain gauge, LVDT, potentiometer, capacitive & inductive, Piezoelectric, temperature, optical, Hall effect transducers.
Measurement of parameter: Measurement of length, angle, area, temperature, pressure flow, speed force, torque, vibration, level, concentration (conductivity and ph.)
measurement- sensors in robotics-tactile sensors-proximity and range sensors- miscellaneous sensors and sensor based systems-use of sensors in robotics.

UNIT-II

Fundamentals of Electric drives - Components of electric drives, factors affecting choice of drives, fundamental torque equation, speed-torque conventions, steady state stability, multi-quadrant operation of electric drives, load torque components, nature and classification of load torque, equivalent moment of inertia, modes of operation.

UNIT–III

Control Speed control and drive classification, closed loop control, current limit control, speed control, position control, torque control, PLL control, multi-motor drive control, digital control. DC motor control, speed control, position control, proportional control, PID controllers.

UNIT–IV

Merits of Fluid power & its utility for increasing productivity through Low-Cost Automation, Transmission of Fluid Power through various types of Cylinders), Symbolic representation of Pneumatic elements (CETOP), Compressors and Air supply system including airline installations, signalling & control system. Pneumatic control elements (control valves & remote-control system), Basic pneumatic circuits for controlling single & double acting cylinder, Basic pneumatic circuits, Advanced pneumatic circuits for controlling multi-cylinders (operable). Advanced pneumatic circuits for controlling multi-cylinders (inoperable circuits), Electro pneumatics with relay logic, and Pneumatics system with PID controls, Application of fluidics a non-moving part logic.

Text Books

1. Sensors And Transducers By D. Patranabi W. Shepherd, and L. N. Hully, "Power Electronics and Motor control", (2e), Cambridge University, 1995.
2. Gopal K. Dubbey,"Fundamentals of Electric Drives", (2e), Narosa Publishers, 2001.

Reference Books

1. R. Krishnan, "Electric Motor Drives Modeling, Analysis, and Control", (2e), Prentice Hall, 2001.

Note: The paper setter will set the paper as per the question paper templates provided.

RAP-306A	INDUSTRIAL ROBOTICS AND MATERIAL HANDLING SYSTEMS						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time (Hrs)**
3	**0**	**0**	**3**	**75**	**25**	**100**	**3**
Purpose	To introduce the basic concepts, parts of robots and types of robots. • To make the student familiar with the various drive systems for robot, sensors and their applications in robots and programming of robots. • To select the robots according to its usage. • To discuss about the various applications of robot						
Course Outcomes							
CO1	Students will be able to learn about the basic concepts, parts of robots and types of robots.						
CO2	Students will be able to design automatic manufacturing cells with robotic control using the principle behind robotic drive system, end effectors, sensor, machine vision robot kinematics and programming.						
CO3	Students will be able to develop the ability in selecting the required robot and know various applications of robots						
CO4	Students will be able to apply their knowledge in handling the materials.						

UNIT-I

Introduction: Types of industrial robots, Load handling capacity, general considerations in Robotic material handling, material transfer, machine loading and unloading, CNC machine tool loading, Robot centered cell.

UNIT-II

Robots for Inspection: Robotic vision systems, image representation, object recognition and categorization, depth measurement, image data compression, visual inspection, software considerations.

UNIT III OTHER APPLICATIONS: Application of Robots in continuous arc welding, Spot welding, Spray painting, assembly operation, cleaning, robot for underwater applications.

UNIT–III

End Effectors: Gripper force analysis and gripper design, design of multiple degrees of freedom, active and passive grippers.

Selection Of Robot: Factors influencing the choice of a robot, robot performance testing, economics of robotization, Impact of robot on industry and society.

UNIT–IV

Material Handling: Concepts of material handling, principles and considerations in material handling systems design, conventional material handling systems - industrial trucks, monorails, rail guided vehicles, conveyor systems, cranes and hoists, advanced material handling systems, automated guided vehicle systems, automated storage and retrieval systems (ASRS), bar code technology, radio frequency identification technology.

TEXT BOOKS:

1. Richaerd D Klafter, Thomas Achmielewski and Mickael Negin, "Robotic Engineering – An integrated Approach" Prentice HallIndia, New Delhi, 2001.

2. Mikell P. Groover,"Automation, Production Systems, and Computer Integrated Manufacturing", 2nd Edition, John Wiley & sons, Inc, 2007.

REFERENCE BOOKS:

1. James A Rehg, “Introduction to Robotics in CIM Systems”, Prentice Hall of India, 2002.
2. Deb S R, "Robotics Technology and Flexible Automation", Tata McGraw Hill, New Delhi, 1994

Note: The paper setter will set the paper as per the question paper templates provided.

RA-308LA	ROBOTIC SIMULATION LAB							
Lecture	**Tutorial**	**Practical**	**Credits**	**Major Test**	**Minor Test**	**Practical**	**Total**	**Time (Hrs.)**
0	**0**	**2**	**1**	**0**	**40**	**60**	**100**	**3**
Purpose	a) To impart the fundamental knowledge on using various analytical tools b) To know various fields of engineering where these tools can be effectively used to improve the output of a product c) To impart knowledge on how these tools are used in Industries by solving some real time problems using these tools							
Course Outcomes								
CO 1	Students will be able to know the utility of the tools like robotics programming							
CO 2	Students will be able to use these tools for any engineering and real time applications							
CO 3	Students will be able to get the knowledge on utilizing these tools for a better project in their curriculum							
CO 4	Students will be able to handle industry problems with confidence when it matters to use these tools in their employment.							

LIST OF EXPERIMENTS:

1. Open solution with an empty station, Import Robot and use the 3D window navigation
2. Creating a Robot system from layout and use Jog function.
3. Use Import tool and create path functions
4. Use Path and Targets, import and position training object
5. Create work-object
6. Create geometry and save station.
7. Create complete Arc welding cell structure, import CAD files, build station and save station.
8. Create a station, use Jogging menu.
9. Create collision and use collision detection functionality in the station.
10. Understand and measure cycle time in station.
11. Create backup file and restoring back up.
12. Understand and use CAD/CAM software.

Note: At least eight experiments are required to be performed by students from the above list and two may be performed from the experiments developed by the institute.

RA-310LA	PLC SCADA and HMI Lab							
Lecture	**Tutorial**	**Practical**	**Credits**	**Major Test**	**Minor Test**	**Practical**	**Total**	**Time (Hrs.)**
0	**0**	**2**	**1**	**0**	**40**	**60**	**100**	**3**
Purpose	To familiarize the students with different applications of PLC, SCADA HMI.							
Course Outcomes								
CO 1	Students will be able to perform different functions using PLC.							
CO 2	Students will be able to perform different operations using SCADA-HMI.							

List of Experiments

1. To identify the given parts of the given PLC and front panel status indicators.
2. To develop the ladder program to test the START/STOP logic using two input and one output.
3. To develop the ladder program for blinking of LED.
4. To develop the ladder program for sequential ON-OFF control of lamps.
5. Use various functions of SCADA simulation editors to develop simple projects.
6. Develop a SCADA mimic diagram and tag database for ON-OFF control of lamps.
7. Develop a SCADA mimic diagram and tag database for traffic light control system.
8. To perform graphical animation of process data and alarming using SCADA-HMI.
9. To perform data logging, trending and report generation using SCADA-HMI

Note: At least eight experiments are required to be performed by students from the above list and two may be performed from the experiments developed by the institute.

RA-312LA	PROJECT-II							
Lecture	**Tutorial**	**Practical**	**Credits**	**Major Test**	**Minor Test**	**Practical**	**Total Time**	**Time (Hrs.)**
0	**0**	**6**	**3**	**--**	**0**	**100**	**100**	**3**
Purpose	To implement the engineering principles and theories into innovative practical projects for solving real world problems.							
Course Outcomes								
CO1	Students will be able to apply the theoretical knowledge into practical/software projects.							
CO2	Students will be able to design new products using latest technologies.							

The project work could be done for the problem statement of an industry or practical project in the institute. The analysis-based software projects undergone in the previous semester can be extended to its fabrication i.e. functional machine/product in this semester. Participation in any technical event/ competition to fabricate and demonstrate an innovative machine or product could be encouraged under this course.

Note: The maximum number of students in a group should not exceed four.

DEPARTMENT OF FOREIGN LANGUAGE
KURUKSHETRA UNIVERSITY, KURUKSHETRA

Scheme of Examination of One Year Certificate of Proficiency in German w.e.f. the Session 2023-24 under Credit Based System (CBS)

Paper No.	Name of the Subject	No. of Credit	Teaching Scheme (Hrs./Week)	Examination Scheme (Marks)			
				Theory Exam./ Viva-Voce	Internal Assessment	Total	Duration
CIG-101	Grammar & Written Expression	6	6	80	20	100	3 Hrs
CIG-102	Viva-Voce	4	-	100	-	100	--
Total Credit Marks		**10**	**6**	**-**	**-**	**200**	**--**

(a) 80 Marks for external Examination and 20 Marks for Internal Assessment.

(b) 100 Marks for Viva-Voce.

CIG-101
Grammar and Written Expression

Credit: 6 **Total: 100**
Duration : 3 hrs **Theory: 80, Internal Assessment: 20**

1. Basic elements of grammar as covered in the prescribed text book, such as 40

a) Wo, woher, wohin
b) Wer, was, wie.
c) Wie viel, wie viele, wie lange, Uhrzeiten..
d) Akkusativ, einen, keinen, doch usw.
e) Modalverben.
f) Wenn, weil, wann, warum.
g) Dativ
h) Praepositionen mit Akkusativ und Dativ wie aus, bei, durch, fuer usw.
i) Perfekt mit haben und sein.

2.Comprehension of two texts with questions to be answered on it in German (From the text book) 10x 2=20
3. Translation (English into German) 05
4. Translation (German into English) 05
5 A short essay on topics like meine Stadt, meine Universitaet, eine Reise, ein Ausflug usw. 10

Prescribed Text Book
Netzwerk A1 (Chapters 1-12) Kursbuch+Arbeitsbuch
Netzwerk A2 (Chapters 1-6) Kursbuch+Arbeitsbuch

Internal Assessment in each theory paper w.e.f. 2011-12 based on the following criteria:

(i) Two Handwritten Assignments : 10%
(Ist Assignment after one month & IInd Assignment after two months)

(ii) One Class Test : 5%
(one period duration)

(iii) Attendance : 5%
Marks for Attendance will be given as under:

(1) 91% onwards : 5 marks
(2) 81% to 90% : 4 marks
(3) 75% to 80% : 3 marks
(4) 70% to 75% : 2 marks*
(5) 65% to 70% : 1 mark*

*For students engaged in co-curricular activities of the colleges only/authenticated medical grounds duly approved by the concerned Principal.

CIG-102

Viva Voce

Credit: 4 **Total: 100**

The students will be examined by an external examiner. The students will be asked questions in German on day to day life.

DEPARTMENT OF FOREIGN LANGUAGE
KURUKSHETRA UNIVERSITY, KURUKSHETRA

Scheme of Examination of One Year Diploma of Proficiency in German
Session 2023-24 under Credit Based System (CBS)

Paper No.	Name of the Subject	No. of Credit	Teaching Scheme (Hrs./Week)	Examination Scheme (Marks)			
				Theory/ Viva-Voce Exam.	Internal Assessment	Total	Duration
DIG-201	Grammar & Written comprehension	3	3	80	20	100	3 Hrs
DIG-202	Written Expression and Translation	3	3	80	20	100	3 Hrs
DIG-203	Viva-Voce	2	-	100	-	100	--
Total Credit Marks		**8**	**6**	**-**	**-**	**300**	**--**

(a) 80 Marks for External Examination and 20 Marks for Internal Assessment in each theory paper.
(b) 100 marks for Viva-Voce.

DIG-201
Grammar and Written Comprehension

Credit: 3 **Total: 100**

Duration : 3 hrs **Theory: 80, Internal Assessment: 20**

1, Gammar 40

a) Nominativ, Akkusativ, Dativ.
b) Modalverben (present tense and past tens)
c) Perfekt mit haben und sein.
d) Praeteritum.
e) Passiv.
f) Praepositionen.
g) Adjektivendungen.

2. Two comprehensions (From the Text book)

20x2 = 40

Prescribed Text Book
Netzwerk B1 (Chapters 1-12) Kursbuch+Arbeitsbuch
Netzwerk A2 (Chapters 7-12) Kursbuch+Arbeitsbuch

DIG-202
Written Expression and Translation

Credit: 3 **Total: 100**
Duration : 3 hrs **Theory: 80, Internal Assessment: 20**

1. Paragraph writing: Two topics are to be attempted out of four on topics such as ein Fest, eine Reise, Schule, Universitaet usw. 10x2=20
2. Civilisation: Short questions on day to day life in Germany, Austria and Switzerland. 20
3. Translation: English to German. 20
4. Translation: German to English 20

Prescribed Text Book
Netzwerk B1 (Chapters 1-12) Kursbuch+Arbeitsbuch
Netzwerk A2 (Chapters 7-12) Kursbuch+Arbeitsbuch

Internal Assessment in each theory paper w.e.f. 2011-12 based on the following criteria:

(i) Two Handwritten Assignments : 10%
(Ist Assignment after one month & IInd Assignment after two months)

(ii) One Class Test : 5%
(one period duration)

(iii) Attendance : 5%
Marks for Attendance will be given as under:

(1) 91% onwards : 5 marks
(2) 81% to 90% : 4 marks
(3) 75% to 80% : 3 marks
(4) 70% to 75% : 2 marks*
(5) 65% to 70% : 1 mark*

*For students engaged in co-curricular activities of the colleges only/authenticated medical grounds duly approved by the concerned Principal.

DIG-203
Viva-Voce

Credit: 2 **Total: 100**

The students will be examined by an external examiner and are expected to answer all questions in German.

DEPARTMENT OF FOREIGN LANGUAGE
KURUKSHETRA UNIVERSITY, KURUKSHETRA

Scheme of Examination of Advance Diploma of Proficiency in German w.e.f. Session 2023-24 under Credit Based System (CBS)

Paper No.	Name of the Subject	No. of Credit	Teaching Scheme (Hrs./Week)	Examination Scheme (Marks)			
				Theory/ Viva-voce Exam.	Internal Assessment	Total	Duration
ADG-301	Grammar and written expression	2	2	80	20	100	3 Hrs
ADG-302	Introduction to German Literature	2	2	80	20	100	3 Hrs
ADG-303	History of Germany	2	2	80	20	100	3 Hrs
ADG-304	Viva-Voce	2	-	100	-	100	--
Total (Credit Marks)		**08**	**6**	**-**	**-**	**400**	**--**

(a) 80 Marks for External Examination and 20 Marks for Internal Assessment in each theory paper.

(b) 100 marks for Viva-Voce.

ADG-301
Grammar and Written Expression

Credit: 2 **Total: 100**
Duration : 3 hrs **Theory: 80, Internal Assessment: 20**

a. Applied Grammar	20
b. Essay or letter	20
c. Translation from German into English or Hindi	10
d. Translation from English/Hindi into German	10
e. Comprehension	20

Prescribed Text book: Netzwerk B2 (Chapters 1-12) Kursbuch+Arbeitsbuch

ADG-302
Introduction to German literature

Credit: 2 **Total: 80+20**
Duration : 3 hrs **Theory: 80, Internal Assessment: 20**

a. History of German literature	20
1) Romanticism	
2) Enlightenment	
b. Drama	20
1) Besuch der alten Dame. Duerrenmatt	
c. Prose	20
d. Poem	20

Prescribed Text book : Netzwerk B2 (Chapters 1-12) Kursbuch+Arbeitsbuch

ADG-303
History of Germany

Credit: 2 **Total: 100**
Duration : 3 hrs **Theory: 80, Internal Assessment: 20**

a. Reformation and 30 Year war.	16
b. Unification of Germany in 1871	16
c. Germany between 1871 and 1919	16
d. Germany between 1919 and 1933	16
e. World war I.	16

Prescribed Text book : Netzwerk B2 (Chapters 1-12) Kursbuch+Arbeitsbuch

Internal Assessment in each theory paper w.e.f. 2011-12 based on the following criteria:

(i) Two Handwritten Assignments : 10%
(Ist Assignment after one month & IInd Assignment after two months)

(ii) One Class Test : 5%
(one period duration)

(iii) Attendance : 5%
Marks for Attendance will be given as under:

(1) 91% onwards : 5 marks
(2) 81% to 90% : 4 marks
(3) 75% to 80% : 3 marks
(4) 70% to 75% : 2 marks*
(5) 65% to 70% : 1 mark*

*For students engaged in co-curricular activities of the colleges only/authenticated medical grounds duly approved by the concerned Principal.

ADG-304
Viva-Voce

Credit: 2 **Total: 100**

Dictation, Reading and Conversation

DEPARTMENT OF PHYSICAL EDUCATION
KURUKSHERTRA UNIVERSITY KURUKSHETRA
SCHEME OF EXAMINATION
B.A. Health and Physical Education according to CBCS& LOCF
W.E.F. Session 2020-21 in Phased Manner

1 credit = 25 marks, 1lecture = 1credit, 1Tutorial=1 credit ,2 Practical =1 credit

Semester	Papers Category	Paper Code	Nomenclature of paper	Credit			Contact Hours per week			Examination Scheme				Total
										Theory		Practical		
				Theory	Practical	Total	Theory	Practical	Total	External Evaluation	Internal Assessment	External Evaluation	Internal Assessment	
1st	Core Elective	BAHPHY - 101	Health and Physical Education	04	02	06	04	04	08	80	20	50	00	150
2nd	Core Elective	BAHPHY - 202	Health and Physical Education	04	02	06	04	04	08	80	20	50	00	150
3rd	Core Elective	BAHPHY - 303	Health and Physical Education	04	02	06	04	04	08	80	20	50	00	150
4th	Core Elective	BAHPHY - 404	Health and Physical Education	04	02	06	04	04	08	80	20	50	00	150
5th	Discipline specific Elective (DSE)	BAHPHY - 404 (Elective)	Health and Physical Education	04	02	06	04	04	08	80	20	50	00	150
6th	Core Elective	BAHPHY - 604	Health and Physical Education	04	02	06	04	04	08	80	20	50	00	150
	Skill Enhancemer Course (SEC)	BAHPHY - 605	Fitness Management	02	00	02	02	00	02	40	10	00	00	50

B.A. -6th Semester (Health & Physical Education)
Theory Syllabus according to CBCS & LOCF
w.e.f. Session 2022-23
BAHPHY-604: Health & Physical Education (Theory)

Max. Marks: 100 (External – 80 Marks + Internal Assessment- 20 Marks) Time- 3 hours

Instructions for Paper- Setter:

The question paper will consist of five Units I, II, III, IV and V. Units I, II, III & IV will have two questions from their respective Units of the Syllabus and will carry 15 marks each. Unit Vth will consists of 10 short answer type questions, which will cover the entire syllabus and will carry 2 marks for each question**.**

Instructions for Candidates

Candidates are required to attempt one question each from Unit I, II, III and IV. Unit - V is compulsory for all.

Course Objectives:

To familiarize the students with fundamental concepts of motivation and socialization and its relevance in the area of sports. To equipped with specialized functional technical concept of Sports Training and will enhance the awareness towards doping. To develop critical understanding of biomechanical fundamental concepts and digestive system.

Course Learning Outcomes:

After completing this course, the students will be able to:

- Understand motivation and socialization through participation in Physical Education and sports activities
- Acquaint with key concepts of Sports training and doping and their relevance to health
- Develop biomechanical perspective and knowledge.
- Identify and discuss the structure and functions of digestive system.

Unit-1 Concept of Motivation and Socialization

1. Meaning and definition of motivation.
2. Types of motivation and importance of motivation in sports.
3. Meaning of Socialization and Socialization through sports.
4. Effect of social behavior on performance of sports person.

Unit- II Concept of Sports Training and Doping

1. Meaning and definition of sports training
2. Factors affecting sports training
3. Types of sports training: Circuit training, Interval Training and Continuous Training
4. Doping: Meaning, types and its effects on health.

Unit – III Concept of Sports Biomechanics

1. Meaning and definition of sports biomechanics
2. Importance of Biomechanics in Sports
3. Newton's Laws of motion and their application in sports
4. Levers: Meaning, types and their application in Sports

Unit – IV Anatomy and Physiology

1.Organs of Digestive System

2. Structure of Digestive System
3. Mechanism of food digestion
4. Effects of exercise on Digestive System.

Text Books and References

- Kamlesh&Sangral, "Principles & History of Physical Education", Parkash Brothers, Ludhiana. (2000).
- Dick F "Sports Training Principles" .London Lepus Book, (1980).
- Desch and Burk "knesiology and applied Anatomy", 2nd ed.lee and Febiger, (1963).
- Show D, "Kinesiology' Friends Publications, New Delhi, (2001).
- Singh Ajmer et.al. "Modern Text Book of Physical Education, Health and Sports", Kalyani Publishers, Ludhiana (2010).
- Avelin C. Pearce., "Anatomy and Physiology for Nurses"Oxford University Press. New Delhi (2003). .
- Verma K.K., "Health & Physical Education" Parkash Brothers, Ludhiana (2005).
- Mathews D.K. & Fox D.K "The Physiological basis of Physical Education and Sprots, 2nd .Philadelphia.K.B.Sanuders& Co., (1996).
- Sharma, V.K, "Health & Physical Education" Saraswati House Pvt. Ltd. Daryagani, New Delhi. (2013).
- Kang G.S. Deol N.S. "An introduction to Health and Physical Education 21st century" Patiala (2008).
- Singh Ajmer et. al. "Olympic Movement" Kalyani Publishers, Ludhiana, (2000).

B.A. -6th Semester (Health & Physical Education)
Practical Syllabus according to CBCS & LOCF
w.e.f. Session 2022-23
BAHPHY-604: Health & Physical Education (Practical)

Max. Marks: 50 (External – 25 Marks + Internal Assessment- 25 Marks)

Practical Objectives:

To give basic knowledge about the ground specifications, rules and regulations ofJudo and Boxing. To impart the basic knowledge about the basic skill of Judo, Boxing,Relay races and baton exchange. To give basic knowledge about the First Aidtechniques.

Practical Learning Outcomes

After completing this course, the students will be able to:

- Describe the ground specifications, rules and regulations of Judo and Boxing. And perform basic skills of Judo, Boxing, Relay races and baton exchange.
- Understand and apply First Aid measures.

1. Any one game 10 Marks

(With ground specifications, general rules and general skills)

1. Judo& Boxing 2. Self Defense Tactics

2. First Aid 10 Marks

(First aid for different injuries and circumstances, itemsof First aid box and their uses)

3. Athletics: 10 Marks

Relay races and baton exchange

4. Viva – Voce and Practical File 10+10 Marks

B.A. -6th Semester (Health & Physical Education)

Theory Syllabus according to CBCS & LOCF

Skill Enhancement Course (SEC)

BAHPHY-605: Fitness Management

w.e.f. Session 2022-23

Max. Marks: 50 (External – 40 Marks + Internal Assessment- 10 Marks) Time- 2 hours

Instructions for Paper- Setter:

The question paper will consist of two Units I and II. The Unit I and II will have two questions from their respective Units of the Syllabus and will carry 15 marks each. Unit III will consists of 5 short answer type questions, which will cover the entire syllabus and will carry 2 marks for each question**.**

Instructions for Candidates

Candidates are required to attempt one question each from Unit I & II. Unit - III is compulsory for all.

Course Objectives:

To familiarize the students with the basic concepts of body composition and general fitness assessment.To develop the understanding of various macro and Micro nutrients.To develop the skill of diet planning for various purposes.

Course Learning Outcomes:

After completing this course, the students will be able to:

- Understand the concept of BMI and will be able to calculate BMI and Body Fat Percentage
- Able to evaluate strength, lung capacity, flexibility of person and training zones for various types of training.
- Develop knowledge about Macro & Micro nutrients and their role in our body
- Able to plan diet for various purposes

Unit – 1: Body Composition and General Fitness Assessment

- Meaning of BMI, Calculation of BMI, BMI Chart
- Calculating Body Fat Percentage with Skin Fold Caliper (Male & Female),
- Ideal Body fat for male and female
- Assessment of Body Strength with dynamometer (Leg and Back), Lungs Capacity (Spiro-meter) and flexibility (Bend and Reach)
- Goal setting with your for fitness with weekly and monthly objectives.
- Calculation of Heart Rate (HR) Training Zones: Warming up Zone, Fat Burning Zone, Endurance Zone, Anaerobic Zone and Maximum Effort Zone

Unit- II: Concept of Nutrition and Diet Planning

- Concept of Macro nutrients and Micro nutrients
- Carbohydrate: Meaning and their availability in different types of food stuffs.
- Fats: Meaning and their availability in different types of food stuffs.
- Protein: Meaning and their availability in different types of food stuffs.
- Role of Carbohydrate, Fats and Proteins in performance for various sports/games and for general population.
- Diet Planning: Meaning, Principles of diet planning, diet plans for Children, Adolescent, elderly persons, weight reduction and weight increasing

Text Books and Reference Books:-

- Turner S and Smith "School Health and Health Education" The C.V. Mos by Company St.Loius (1961).
- Singh Ajmer et.al. "Modern Text Book of Physical Education, Health and Sports", Kalyani Publishers, Ludhiana (2010).
- Bucher Olsen and Willgoose "The Foundation of Health" Prentice Hall inc.EnglewoodFliffs,New Jersey,(1976).
- Turner S and Smith "School Health and Health Education" The C.V. Mos by Company St.Loius (1961).
- Mathews D.K. & Fox D.K "The Physiological basis of Physical Education and Sprots, 2nd .Philadelphia.K.B.Sanuders& Co., (1996).
- Bucher Olsen and Willgoose "The Foundation of Health" Prentice Hall inc.EnglewoodFliffs,New Jersey,(1976).

BachelorofTechnology(Biotechnology),UIET,KUK
Credit-Based for the Academic Session 2023-24
MODIFIED SCHEME OF STUDIES/EXAMINATIONS(*Semester-V*)

S.No	CourseNo./Code	Subject	L:T:P	Hours/ Week	Credits	ExaminationSchedule(Marks)				Duration ofexam(Hours)
						Major /Test	MinorTest	Practical	Total	
1	PTC-301	Metabolic Engineering	2:0:0	2	2	75	25	0	100	3
2	PTC-303	Biophysical and Bioanalytical Techniques	2:0:0	2	2	75	25	0	100	3
3	PTC-305	Structural Biology	2:0:0	2	2	75	25	0	100	3
4	PTC-307	Bioprocess Engineering	2:0:0	2	2	75	25	0	100	3
5	PTC-309	Bioinformatics and Computational Biology	2:0:0	2	2	75	25	0	100	3
6	PTE-1*	Professional Elective-I	2:1:0	3	3	75	25	0	100	3
7	PTC-311	Bioinformatics and Computational Biology Lab	0:0:4	4	2		40	60	100	3
8	PTC-313	Biophysical and Bioanalytical Techniques Lab	0:0:3	3	1.5		40	60	100	3
9	PTC-315	Metabolic Engineering Lab	0:0:3	3	1.5	-	40	60	100	3
10	OTS-1**	Open Subject-I	2:0:0	2	2	75	25		100	3
11	ATU-301	Indian Constitution	2:0:0	2	2	75	25		100	3
12	PTS-301	Industrial Training	0:0:2	2	1		100		100	3
13	**ATU-903	Essence of Indian Traditional Knowledge	3:0:0	3		100	-	-	100	3
		Total	19:1:12	32	23	700	420	180	1300	

****ATU-903**isamandatory creditless course in which the student will be required to get passing marks in the major test.

Professional Elective-I*
PTE-301 Good Manufacturing and Lab Practices
PTE-303Genome Editing
PTE-305Biochemical and Enzyme Technology
PTE-307 Bioreactor Analysis and Design

Open Subject- I**
OTS-301 Biomaterial Technology
OTS-303 Internet of Things
OTS-305 Image Processing/MOOC Course
OTS-307 3D Printing & Design /MOOC Course``

BachelorofTechnology(Biotechnology),UIET,KUK
Credit-Based for the Academic Session 2023-24
MODIFIED SCHEME OF STUDIES/EXAMINATIONS(*Semester-VI*)

S.No	CourseNo./Code	Subject	L:T:P	Hours/ Week	Credits	ExaminationSchedule(Marks)				Duration ofexam(Hours)
						MajorTest	MinorTest	Practical	Total	
1	PTC-302	Downstream Processing and Bioseparation Engineering	3:1:0	4	4	75	25	0	100	3
2	PTC-304	Synthetic and Systems Biology	2:1:0	3	3	75	25	0	100	3
3	PTC-306	Animal and Plant Biotechnology	2:1:0	3	3	75	25	0	100	3
4	PTC-308	Data Science in Genome Technology	3:0:0	3	3	75	25	0	100	3
5	PTE-II*	Professional Elective-II	2:1:0	3	3	75	25	0	100	3
6	OTS-II**	Open Subject-II	2:0:0	2	2	75	25	0	100	3
7	PTC-308 L	Data Science in Genome Technology Lab	0:0:2	2	1		40	60	100	3
8	PTC-310	Downstream Processing Lab	0:0:2	2	1		40	60	100	3
9	PTC-312	Animal and Plant Biotechnology Lab	0:0:4	4	2		40	60	100	3
10	PTS-302	Technical Seminar	0:0:2	2	1	-	100	0	100	3
11	HSMC-1	Elective-1***	3;0:0	3	3	75	25	0	100	3
		Total	17:4:10	31	26	525	395	180	1100	

Students shall have to select one elective from each group of Program Elective-II, Open Subjects-II and HSMC Elective-1.

Professional Elective-II*
PTE-302 Machine Learning
PTE-304 Waste Management and Upcycling
PTE-306 Stem Cell Technology
PTE-308 Nanobiotechnology

Open Subject- II**
OTS-302 Artificial Intelligence
OTS-304 Quantum Computing/MOOC Course
OTS-306 Cyber Security /MOOC Course
OTS-308 Design Thinking

HSMC Elective-1***
HSMC-301 Engineering Economics
HSMC-302 Management-1 (Organizational Behaviour)
HSMC-303 Operations Research
HSMC-304 Effective Technical Communication

PTC-301	Metabolic Engineering (B.Tech. Biotechnology) Semester- V						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**-**	**-**	**2**	**75**	**25**	**100**	**3 hrs**
Purpose	**To familiarize the students with the Metabolic Engineering**						
Course Outcomes							
CO1	Students will analyze the complexities defining the regulation of various metabolic pathways.						
CO2	Students will able to learn about metabolic flux, and product formation.						
CO3	Students will able to design and learn strain-engineering strategies to alter cellular behavior.						
CO4	Learn industrial applications of metabolic engineering in the various fields.						

Unit I

Introduction to metabolic engineering and its importance: Introduction to metabolism, catabolism, anabolism. Key differences between metabolic controls of prokaryotes and eukaryotes. Stoichiometry of cellular reactions, enzyme kinetics, reaction rates, dynamic mass balance, yield coefficients and linear rate equations, Different models for cellular Reactions-Induction-Jacob Monod Model and its regulation, Differential regulation by isoenzymes, concerted or cumulative feedback regulation. Regulation in branched pathways, permeability and transport of metabolites.

Unit II

Metabolic flux analysis: Building stoichiometric matrix; Steady state and pseudo steady state assumptions; using different optimizing functions to solve linear programming problem. Experimental determination of metabolic fluxes C13 labeling, NMR and GC-MS based methods for flux determination.

Unit III

Computational modelling of biological networks: Introduction to MATLAB. Synthetic circuit design, MOMA (Minimization of Metabolic Adjustment), iFBA (Integrated Flux Balance Analysis), dFBA; Enhancement of product yield and productivity. Strain selection and improvement, the modification of existing or the introduction of entirely new metabolic pathways

Unit IV

Industrial applications pathway engineering strategies for overproduction of some commercially important primary and secondary metabolites (e.g. amino acids, organic acids, alcohols and therapeutic compounds).Bioconversion- applications and factors affecting bioconversion, mixed or sequential bioconversions.

Text Books/References:

1. Metabolic Engineering: Principles and Methodologies by Gregory N. Stephanopoulus, Aristos A. Aristidou, and Jens Nielsen.
2. Pathway Analysis and Optimization in Metabolic Engineering by Néstor V. Torres and Eberhard O. Voit.
3. The Metabolic Pathway Engineering Handbook by Christina D. Smolke.
4. Biochemical Engineering by Harvey W. Blanch and Douglas S. Clark.

Note: The Examiner will be given the question paper template and will have to set the question paper according to the template provided along with the syllabus.

PTC-303	Biophysical and Bioanalytical Techniques (B.Tech. Biotechnology) Semester-V						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**-**	**-**	**2**	**75**	**25**	**100**	**3 hrs**
Purpose	**To acclimatize students about different bioanalytical techniques.**						
Course Outcomes							
CO1	Students will be able to understand the principle of microscopy.						
CO2	Able to understand the principle and applications chromatography techniques						
CO3	Students will be able to learn underlying principle and applications of spectroscopy.						
CO4	Students will be able to learn process of detection and measurement of radioactivity.						

UNIT- I

Principles of Microscopy: Light, electron (scanning and transmission), fluorescence microscopy.
Centrifugation: Basic concepts and applications, differential centrifugation, high speed and ultracentrifugation techniques.

UNIT- II

Electrophoresis: basic principle and applications of Paper and gel electrophoresis, isoelectric focussing, two-dimensional electrophoresis.
Principles of Chromatography: Ion-exchange, gel filtration, affinity, gas chromatography, High Pressure Liquid Chromatography (HPLC), FPLC and Hydrophobic Interaction Chromatography.

UNIT- III

Principle and applications of Spectroscopy: UV/visible, IR, NMR, ESR, fluorescence, Raman.
Mass spectroscopy: LC-MS, X-ray diffraction, CD.

UNIT- IV

Radioisotope Techniques: Nature of radioactivity, properties of α, β and γ-rays, detection and measurement of radioactivity, use of radioisotopes in research, autoradiography, radioimmunoassay.

Text/ References Books:

1. Physical Biochemistry, 2nd edition, by D Friefelder (1983). W.H. Freeman & Co., U.S.A.
2. Analytical Chemistry for technicians: John Kenkel (1994), Lewis Publishers. Boca Raton.
3. Principles and techniques of Practical Biochemistry: K. Wilson and J. Walker (1994), Cambridge University Press, Cambridge.
4. Biophysical Chemistry: Principles and Techniques, 2nd edition by A. Upadhyay, K. Upadhyay and N. Nath. (1998). Himalaya Publishing House, Delhi.
5. Physical Biochemistry, 2nd edition, by K. E. VanHolde (1985), Prentice Hall Inc, New Jersey.

Note: The Examiner will be given the question paper template and will have to set the question paper according to the template provided along with the syllabus.

PTC-305	**Structural Biology (B.Tech Biotechnology Semester V)**						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**-**	**-**	**2**	**75**	**25**	**100**	**3 hrs**
Purpose	To provide a solid foundation of understanding structural biology						
	Course Outcomes **After completion of course students will be able**						
CO 1	To explain the concept of protein sequences and sequence alignment						
CO 2	To use protein structures from protein data bank.						
CO 3	To explain the technique of Cryo Electron Microscopy.						
CO 4	To predict RNA secondary structure.						

Unit-I

Protein structural biology: Protein sequences, sequence alignment; basic polypeptide stereochemistry, hierarchy in protein folds: secondary structure, tertiary structure, quaternary structure. Chaperones assisted protein production, Protein structure and analysis: Principles of soluble and membrane protein purification.

Unit-II

Phase diagram and separation, crystallization, Use of robotics in crystallization, Space groups and symmetry, structure determination; NMR sample preparation, Sample preparation for Cryo EM, Structure validation and best practices on the use of protein structures from protein data bank.

Unit-III

Protein fold-function relationships, Protein Data Bank (PDB) and EM Data Bank, Methods for atomic-resolution structure determination: X-ray crystallography, solution- and solid-state NMR spectroscopy, Single particle Cryo Electron Microscopy, Steady-state and time-resolved fluorescence spectroscopy, FRET.

Unit-IV

DNA and RNA structures: DNA and RNA secondary structures (duplex, triplex, quadruplexes and aptamers), RNA secondary structure prediction. Structure of Sugars and lipids Structural dynamics: Dynamics of Protein-RNA complexes; Structure and organization of genomes. Simulations: Protein functional dynamics, Protein dynamics studies by MD simulations; Protein dynamics studies by biophysical techniques.

Text Books/References:

1. Biophysical Chemistry vol I, II and III by Charles R. Canter and Paul R. Shimmel.
2. Structure and Mechanism in Protein Science by Alan Fersht.
3. Proteins: Structures and Molecular Properties, by Thomas E. Creighton.
4. Introduction to Protein Structure by Branden and Tooze, Garland Science; 2nd edition 1999.

5. Principles of nucleic acid structure, by Stephen Neidle.
6. RNA Sequence, Structure, and Function: Computational and Bioinformatic Methods by Walter L. Ruzzo, Jan Gorodkin, Springer 2014. 67
7. Crystallography made crystal clear by Gale Rhodes.
8. NMR of Proteins and Nucleic Acids by Kurt Wüthrich.
9. The Art of Molecular Dynamics Simulation by D. C. Rapaport Cambridge University Press; 2nd edition 2004.

PTC-307	BIOPROCESS ENGINEERING (B. Tech. Biotechnology Semester V)						
Lecture	**Tutorial**	**Practical**	**Credit**	**Minor test**	**Major test**	**Total**	**Time**
2	**-**	**-**	**2**	**25**	**75**	**100**	**3Hrs.**
Purpose	**To introduce the basics of Bioprocess Engineering to the students for applications in Biotechnology**						
Course Outcomes							
CO1	**Introduce the fundamentals of Bioprocess Engineering.**						
CO 2	**To make the students aware of the importance of formulation of culture media and sterilization of process fluids**						
CO 3	**To introduce the concept of configuration and different types of bioreactors**						
CO 4	**To make aware of the applications of Bioprocess Engineering to non- conventional Biological Systems**						

UNIT-I

1. **Introduction to Bioprocess Engineering**. History and Scope of Bioprocess Engineering. Basic concepts and approaches used in Bioprocess Engineering. Microbial growth Kinetics. Bioprocesses: Regulatory Constraints. Steps in Bioprocess development. Major products of biological processing.
2. **Basics of Bioprocess Engineering**. Introduction to Heat Transfer, Mass Transfer and Diffusion Concepts. Material and Energy Balances in a macroscopic view point. Variables, dimensions and units. Dimensionally Homogenous and non-homogenous equations. Standard conditions and ideal gases.

UNITII

3. **Formulation of Fermentation Media**. Principles of microbial nutrition. Formulation of culture media. Factors influencing the choice of various carbon and nitrogen sources. Growth factors and precursors in fermentation media. Rheology of fermentation fluids. Antifoaming and antifoam agents.
4. **Sterilization of Process fluids**. Kinetics of thermal death of cells and spores. Design of batch

and thermal sterilization. Sterilization of air and filter design. Radiation and chemical sterilization.

UNIT III

5. **Choosing the Cultivation Method.** Introduction to various kinds of bioreactors. Immobilized cell systems. Solid-state Fermentations and its applications. Various approaches to scale-up including regime analysis and scale- down.

UNIT IV

6. **Applications of Bioprocess Engineering to non-conventional Biological Systems**. Bioprocess considerations in using animal and plant cell cultures. Use of Genetically Engineered Microorganisms in Bioprocess development.

Text Books-

1. Shuler, M. L. and Kargi, F. 2002. Bioprocess Engineering-Basic Concepts. Prentice Hall India, NewDelhi.
2. Doran, P. M. 2013. Bioprocess Engineering Principles.Elsevier.
3. Mukhopadhyay, S. N. 2012. Process Biotechnology-Theory and Practice. The Energy and Resources Institute, NewDelhi/

Reference Books-

1. Ward, O.P. 1991. Bioprocessing. NewYork
2. Nostrand, R. V., Belter, P.A., Cussler, E. L. and Hu, W. S. 1988. Bioseparations- Downstream Processing forBiotechnology.
3. Lydersen, K. B., D'elia, N. A. and Nelson, K. L. 1994. Bioprocess Engineering: Systems, Equipments and Facilities. John Wiley and Sons, NewYork.

PTC - 309	**Bioinformatics & Computational Biology (B.Tech. Biotechnology Semester V)**						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**0**	**-**	**2**	**75**	**25**	**100**	**3 Hrs**
Purpose	This course is beneficial for students to understand the principles of analyzing biological data, building models and testing hypotheses using computer science algorithms. It will also introduce information technology practices in the field of biotechnology.						
Course Outcomes							
CO 1	Knowledge about basic overview of various information repositories widely used in biological sciences; and tools for searching or querying those databases						
CO 2	Student will learn about the foundation of sequence alignment techniques.						
CO 3	Student will learn about the foundation for how to find evolutionary connections.						

CO 4	Knowledge about analyzing mRNA expression data and gene annotations.

Unit 1

General Introduction: To study bioinformatics and its applications. Biological databases and tools: Nucleotide sequence databases, Protein sequence, structural and functional databases.

Unit 2

Database searching: BLAST and its types, Entrez. Pairwise Sequence alignment: Pairwise alignment, Dynamic programming, Scoring Matrices, Gaps. Multiple sequence alignment.

Unit 3

Phylogenetic analysis: Introduction, Types of Phylogenetic Trees, Methods and Applications. Genome informatics: Genome sequencing technologies and analysis methods; transcription factor regulation and motif finding.

Unit 4

Computational Epigenetic: Epigenetic and its role in transcription regulation, development, and diseases. Molecular modeling (Homology and *Ab initio*) and validation, Docking, Molecular dynamics.

Text Books/References:

1. Jonathan Pevsner. Bioinformatics and Functional Genomics, 2nd Edition. ISBN: 978-0- 470-08585-1.

2. Greg Gibson and Spencer V. Muse. A Primer of Genome Science, Third Edition. ISBN: 978-0-87893-309-9.

3. Essential Bioinformatics, Jin Xiong, Cambridge University Press; 1st edition 2006.

4. Bioinformatics: methods and applications, S. C. Rastogi, PHI learning; 4th edition, 2013.

5. The Dictionary of Genomics, Transcriptomics and Proteomics, Günter Kahl, Willey VCH, 2015.

Note: The Examiner will be given the question paper template and will have to set the

question paper according to the template provided along with the syllabus.

PTC-311	Bioinformatics and Computational Biology Lab (B.Tech. Biotechnology Semester -V)						
Lecture	**Tutorial**	**Practical**	**Credit**	**Minor Test**	**Practical**	**Total**	**Time**
-	**-**	**4**	**2**	**40**	**60**	**100**	**3 Hrs**
Purpose	To learn the practical aspects of Bioinformatics and Computational Biology						
Course Outcomes							
CO1	Students will be able to learn basic tools in Bioinformatics.						
CO2	Student will build the foundation of sequence alignment techniques.						
CO3	Students will learn about Multiple Sequences alignment methods.						
CO4	Students will learn how to find evolutionary connections.						

LABORATORY EXPERIMENTS

1. Finding patterns in genomes.
2. Implementation of motif finding algorithms.
3. Basic machine learning using WEKA tool.
4. Accessing databases from NCBI.
5. Extracting protein and nucleotide sequences from NCBI.
6. Database Search Tools.
7. Similarity search using BLAST.
8. Pairwise sequence alignment.
9. Multiple sequence alignment.
10. Conserved domain analysis.
11. Construction of Phylogenetic trees.

Text Books/References:

1. Jonathan Pevsner. Bioinformatics and Functional Genomics, 2nd Edition. ISBN: 978-0- 470-08585-1.

2. Greg Gibson and Spencer V. Muse. A Primer of Genome Science, Third Edition. ISBN: 978-0-87893-309-9.

3. Essential Bioinformatics, Jin Xiong, Cambridge University Press; 1st edition 2006.

4. Bioinformatics: methods and applications, S. C. Rastogi, PHI learning; 4th edition, 2013.

5. The Dictionary of Genomics, Transcriptomics and Proteomics, Günter Kahl, Willey VCH, 2015.

PTC-313	Biophysical and Bioanalytical Techniques Lab (B.Tech. Biotechnology) Semester-V						
Lecture	**Tutorial**	**Practical**	**Credit**	**Practical**	**Minor Test**	**Total**	**Time**
-	**-**	**3**	**1.5**	**60**	**40**	**100**	**3 hrs**
Purpose	**To acclimatize students about different bio analytical techniques.**						
Course Outcomes							
CO1	Students will learn about working of spectrophotometer.						
CO2	Students will be able to learn about technique of chromatography.						
CO3	Students will be able to learn about technique of electrophoresis.						
CO4	Students will be able to estimate DNA and RNA in any sample.						

Note: A college should offer 70% of the below listed experiments. The remaining 30% experiments may be modified by college according to facilities available

LABORATORY EXPERIMENTS

1. To verify the validity of Beer-Lambert's law and determine the molar extinction coefficient of NADH/NAD
2. Separation of amino acids/ sugars by paper chromatography.
3. Extraction and estimation of total lipid content in a given sample of oil seed.
4. Partial purification of an enzyme by ammonium sulphate fractionation,
5. Native gel electrophoresis of proteins.
6. To demonstrate the working of HPLC.
7. Quantitative determination of DNA and RNA by spectrophotometric method.

Reference Books:

1. Principles and techniques of Practical Biochemistry: K. Wilson and J. Walker (1994), Cambridge University Press, Cambridge.
2. Introductory practical Biochemistry by S.K. Sawhney and Randhir Singh (2000), Narosa Publishing House, New Delhi.
3. An introduction to Practical Biochemistry by David T. Plummer (1988), McGraw

PTC-315	Metabolic Engineering Lab (B.Tech. Biotechnology) Semester- V						
Lecture	**Tutorial**	**Practical**	**Credit**	**Practical**	**Minor Test**	**Total**	**Time**
0	**0**	**3**	**1.5**	**60**	**40**	**100**	**3 hrs**
Purpose	The course will provide an overview of the basic concepts and experimental techniques used in metabolic engineering						
Course Outcomes							
CO1	Students will learn about applications in production of useful compounds of industrial importance						
CO2	Students will learn about successful engineering strategies used for the production of commercially important primary metabolites						
CO3	Students will learn about successful engineering strategies used for the production of commercially important secondary metabolites						
CO4	Students will learn about successful engineering strategies used for the production of recombinant proteins.						

Note: A college should offer 70% of the below listed experiments. The remaining 30% experiments may be modified by college according to facilities available

LABORATORY EXPERIMENTS

1. Develop engineering strategies to boost production of industrially relevant compound in *E. coli.*
2. Strain engineering (deletion or overexpression of genes) to boost production of target compound followed by metabolite extraction and quantification.
3. Demonstration of feed-back regulation and product inhibition
4. Development of a flux model and correlation of the model with experimental data

Text Books/References:

1. Metabolic Engineering: Principles and Methodologies by Gregory N. Stephanopoulus, Aristos A. Aristidou, and Jens Nielsen.
2. Pathway Analysis and Optimization in Metabolic Engineering by Néstor V. Torres and Eberhard O. Voit.
3. The Metabolic Pathway Engineering Handbook by Christina D. Smolke.
4. Biochemical Engineering by Harvey W. Blanch and Douglas S. Clark.

PTE-301	GOOD MANUFACTURING AND LAB PRACTICES (B. Tech. Biotechnology Semester V)						
Lecture	**Tutorial**	**Practical**	**Credit**	**Minor Test**	**Major Test**	**Total**	**Time**
2	**1**	**-**	**3**	**25**	**75**	**100**	**3 Hrs.**
Purpose	Basic understanding of the regulatory requirement of Good manufacturing practices and Good laboratory practices.						
Course Outcomes							
CO1	To familiarize the students with basics of GMP and GLP.						
CO 2	To gain knowledge of concepts of design of experiments and quality by design in pharmaceutical industries.						
CO 3	To understand the objectives of International Council for Harmonization of Technical Requirements for Pharmaceuticals for Human Use.						
CO 4	To explore the principles of regulation of clinical and pre-clinical studies.						

UNIT-I

1. Introduction to Good Manufacturing and Laboratory Practice, Requirement of GLP and GMP compliance for regulatory approval, Ethics in manufacturing and control.

UNIT-II

2. Introduction to the concept of Design of Experiment (DOE) Principles of quality by design (QBD). Application of QBD principles in Biotech product development. Case studies: Example of QBD and DOE in Process Development, Example of DOE in analytical development.

UNIT-III

3. Introduction to ICH guidelines and their usage. National and international regulatory authorities and their function, Pharmaceutical Jurisprudence and Laws related to Product design, Drug Development & Approval Process.

UNIT-IV

4. Regulation of Clinical and Preclinical Studies, Good Manufacturing Practices, Formulation

Production Management, Authorization and marketing of drugs. Computer simulation on process design.

Text Books/References:

1. cGMP starter guide: Principles in Good Manufacturing Practices for Beginners, Emmet P. Tobin, Createspace Independent Publishing Platform, April 2016.

2. Good Manufacturing Practices for Pharmaceuticals: GMP in Practice, B Cooper, Createspace Independent Publishing Platform, July 2017.

3. Sarwar Beg and MdSaquibHasnain, Pharmaceutical Quality by design: Principles and application, Academic press, March 2019.

4. Ron S. Kenett, ShelemyahuZacks, Daniele Amberti, Modern Industrial Statistics: with applications in R, MINITAB and JMP, 2nd Edition, Wiley, January 2014.

5. N Politis S, Colombo P, Colombo G, M RekkasD.Design of experiments (DoE) in pharmaceutical development, Drug Dev Ind Pharm. 2017 Jun;43(6):889-901. doi: 10.1080/03639045.2017.1291672.

PTE-303	GENOME EDITING (B. Tech. Biotechnology Semester V)						
Lecture	**Tutorial**	**Practical**	**Credit**	**Minor Test**	**Major Test**	**Total**	**Time**
2	**1**	**-**	**3**	**25**	**75**	**100**	**3 Hrs.**
Purpose	Basic understanding of the genetic engineering tools used in gene editing and its varied applications in biotechnological research.						
Course Outcomes							
CO1	**To familiarize the students with basics of molecular biology.**						
CO 2	**To gain knowledge of concepts of CRISPR technology.**						
CO 3	**To understand the applications of genome editing techniques.**						
CO 4	**To explore the ethical aspects of genome editing.**						

UNIT-I

1. Introduction to genetic engineering; limitations of genetic engineering; double stranded DNA breaks and repair; homologous and non-homologous recombination; knock-ins and knock-outs.
2. Genome engineering using Zinc Finger Nuclease (ZFN) Technology; Transcription activator-like effector nuclease (TALEN) Technology.

UNIT-II

3. Clustered regularly interspaced short palindromic repeats (CRISPR)/Cas9 technology: target identification, gRNA design, donor design, screening and validation.

UNIT-III

4. Applications in treating human diseases: Human cell engineering-Thalassemia, SCID, Hemophilia, etc; Disease modeling-Cancer, iPSc and animal models.

UNIT-IV

5. Engineered immune cells for cancer therapy; Personalized therapy; Challenges: safety and specificity; Ethical concerns: Germ line gene editing.

Texts/ Reference Books

1. Harber , J. E., Genome Stability: DNA Repair and Recombination , Garland Science, 2013.

2. Yamamoto, T. Targeted Genome Editing Using Site-Specific Nucleases, Springer, 2015.

3. Zlatanova, J. and Holde, K. van, Molecular Biology: Structure and Dynamics of Genomes and Proteomes. Garland Science, 2015.

4. Yamamoto, T.(Ed.), Targeted Genome Editing Using Site-Specific Nucleases: ZFNs, TALENs, and the CRISPR/Cas9 System , Springer 2015.

References:

1. Barrangou , R. and Oost, J. van der, CRISPR-Cas Systems: RNA-mediated Adaptive Immunity in Bacteria and Archaea , Springer, 2013.

2. Addgene, CRISPR 101:A Desktop Resource , January 2016

3. Alberts , B. , Johnson , A., Lewis , J., Morgan, D., Raff, M., Roberts, K.and Walter, P., Molecular Biology of the Cell, 6th Edn., Garland Science, 2014.

PTE-305	**Biochemical and Enzyme Technology (B.Tech Biotechnology Semester V)**						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**1**	**-**	**3**	**75**	**25**	**100**	**3 hrs**
Purpose	To provide a solid foundation for understanding Biochemical and Enzyme Technology.						
	Course Outcomes **After completion of course, the learner will be able**						
CO 1	To enlist the relationship between domains and functions of proteins.						
CO 2	To explain the advantages of enzyme based production processes.						
CO 3	To write the steps involved in downstream processing of enzymes.						
CO 4	To explain the bioinformatics tools used for structure prediction of enzymes.						

Unit-I

Building Block of Proteins: Physiochemical Properties of Proteins, common plant Protein Sources, Protein Databases. Dissociation constant, Isoelectric point, protein denaturation and renaturation. Structural Organization: Structural organization of Protein (different models), Dynamics of Domain and Motifs: Motifs, domains, Models, Functional relationship between domains and function of proteins, super secondary structures of proteins Classification of proteins based on the structures like Zn finger, lucine zipper proteins etc

Unit-II

Introduction to enzyme Technology: What are Biocatalysts? Bio- and Chemo catalysts – Similarities and Differences, Goals and Potential of Biotechnological Production Processes, The Use of Isolated or Intracellular Enzymes as Biocatalysts, Advantages and Disadvantages of Enzyme-Based Production Processes, Goals and Essential System Properties for New or Improved Enzyme Processes, Essential System Properties for Rational Design of an Enzyme Process , Current Use and Potential of Enzyme Technology.

Unit-III

Enzyme Production and Purification: Enzyme Sources, Animal and Plant Tissues, Wild-Type

Microorganisms, Recombinant Microorganisms Improving Enzyme Yield, Processes that Influence the Enzyme Yield, Increasing the Yield of Periplasmic and Extracellular Enzymes Penicillin Amidase, Lipase, Downstream Processing of Enzymes, Static and Dynamic Properties of Chromatographic Adsorbents that Must Be Known for a Rational Design of Chromatographic Protein Purification.

Unit-IV

Advance techniques in enzyme research: Forward Enzyme Screening Approach, Reverse Enzyme Screening Approach, Enzyme Engineering, Enzyme Structure and Function Determination, enzyme stabilization

Text Books/References:

1. Biocatalysts and Enzyme Technology by Klaus Buchholz, Volker Kasche, and Uwe T. Bornscheuer (2012) 2nd edition; Wiley-Blackwell
2. Biotechnology of Microbial Enzymes editor: Goutam Brahmachari (2017) Academic press
3. Green Biocatalysis Edited by Ramesh N. Patel (2016) Wiley & sons
4. Advances in Enzyme Biotechnology, edited by Pratyoosh Shukla& Brett I. Pletschke (2013) Springer

PTE-307	Bioreactor Analysis and Design (B.Tech Biotechnology Semester V)						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**1**	**-**	**3**	**75**	**25**	**100**	**3 hrs**
Purpose	To familiarize the students about the bioreactor and its internal function with microbial growth kinetics						
	Course Outcomes						
CO 1	To understand the basic concept of bioreactor						
CO 2	To understand the mass transfer of different reactor						
CO 3	To understand the solid state fermentation						
CO 4	To understand the optimization process						

Unit- I

Basic concept of bioreactors: Basic objective of bioreactor design, aseptic operation & containment, body construction, agitator and sparger design, baffles, stirrer glands and bearings. Process parameters and measurement techniques: measurement of temperature, pressure and pH, DO, foam etc.; flow rate of liquid and gases; Automation (processes computerization). Validation of bioreactor.

Unit-II

Different Types of reactor: Batch Reactor, Fed batch reactor, continuous stirred tank reactor (CSTR), Fluidized bed reactor, air lift bioreactor, and numerical aspect of all types of reactors.

Unit-III

Cultivation Methods: Immobilized cell systems. Solid-state Fermentations and its applications. Rheology of fermentation fluids. Various approaches to scale-up the process

Unit-IV

Process Parameters: Heterogeneous reaction in process. Heat and mass transfer. Non ideal bioreactor- Design and Analysis. Different optimization parameters in a process.

Text Books

1. Shuler, M. L. and Kargi, F. 2002. Bioprocess Engineering-Basic Concepts. Prentice Hall India, New Delhi.
2. Doran, P. M. 2013. Bioprocess Engineering Principles. Elsevier.
3. Mukhopadhyay, S. N. 2012. Process Biotechnology- Theory and Practice. The Energy and Resources Institute, New Delhi.

OTS-301	BIOMATERIAL TECHNOLOGY						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**0**	**0**	**2**	**75**	**25**	**100**	**3 Hrs.**
Program Objective (PO)	To enable students to understand the role of gene therapy in treatment of severe diseases.						
Course Outcomes (CO)							
CO1	Students will learn about basics of Biomaterials, need of biomaterials, types of biomaterials, techniques for characterization of biomaterialas and their potential applications						
CO2	Students will learn about biomaterial degradation, cell interaction with biomaterial and process to improve biocompatibility						
CO3	Students will have knowledge about Biomaterial implantation, imuune and infalammatory response to biomaterial, tests for hemocompatibility						
CO4	Students will have learn about the risk of Infection, tumorigenesis and calcification Associated with biomaterials						

UNIT I

Introduction to biomaterials: Definition of biomaterials, History and current status of the field, Types of biomaterials, Important properties of biomaterials.

UNIT II

Biomaterial degradation in Biological environment; Biodegadable materials: Ceramics and polymers; Processing to improve biocompatibility: sterilization. Cell interactions with biomaterials: Techniques Assays to determine effects of cell-material interactions: Cytotoxicity assays, DNA and RNA assays and Protein production assays- Immunostaining.

UNIT III

Biomaterial implantation and Immune response to biomaterials. Undesired immune responses to biomaterials:Clinical signs of acute inflammation against biomaterials. In vitro assays for inflammatory response. Biomaterials and thrombosis: Tests for hemocompatability.

UNIT IV

Infection, tumorigenesis and calcification of biomaterials. Overview of potential problems with biomaterial implantation, steps to infection, techniques for infection experiments. Biomaterial related tumorigenesis, In vitro and in vivo models for tumorigenesis experiments, pathologic calcification of biomaterials and techniques for pathologic calcification experiments.

Text/References:

1. Temenoff, I.S. and Mikos, A.G. Biomaterials: The Intersection of Biology and Material Science. Pearson Education, India. 2009 Indian ed.

2. Ratledge C and Kristiansen B, Basic Biotechnology, Cambridge University Press, 2nd Edition, 2001.

3. J B Park, Biomaterials - Science and Engineering, Plenum Press, 1984.

4. Sujata V. Bhat, Biomaterials, Narosa Publishing House, 2002.

5. C.P.Sharma & M.Szycher, Blood compatible materials and devices, Technomic Publishing Co. Ltd., 1991.

6. Piskin and A S Hoffmann, Polymeric Biomaterials (Eds), Martinus Nijhoff Publishers. (Dordrecht. 1986)

7. Eugene D. Goldbera, Biomedical Ploymers. 8. Specific journals and published references.

OTS-303	Internet of Things (B.Tech Biotechnology) Semester- V						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**-**	**-**	**2**	**75**	**25**	**100**	**3 hrs**
Purpose	**To familiarize the students with the new development in Internet of Things**						
Course Outcomes							
CO1	Understand what IoT technologies are used for today, and what is required in certain scenarios.						
CO2	Understand the types of technologies that are available and in use today and can be utilized to implement IoT solutions						
CO3	Understand the type of protocols and challenges for designing IoT systems.						
CO4	Apply these technologies to tackle scenarios in teams of using an experimental platform for implementing prototypes and testing them as running applications. Understand operating system requirements of IOT.						

Unit I

Introduction to IoT: Defining IoT, Characteristics of IoT, Functional blocks of IoT, Physical and logical design of IoT, Smart cities and IoT revolution, Difference between IoT and M2M, M2M And peer networking concepts Ipv4 and IPV6, Software Defined Networks SDN.

Unit II

IoT design methodology, case study on IoT system for weather monitoring. IoT system Management, Developing IoT applications through embedded system platform: Introduction to sensors, IoT physical devices and endpoints, Raspberry pi, Raspberry pi interfaces, Arduino, arduino interfaces.

Unit III

Protocols for IoT- messaging protocols, transport protocols, Ipv4, Ipv6, URI, Cloud for IoT: IoT with cloud, challenges, introduction to fog computing, cloud computing, Challenges in IoT: Design challenges, development challenges, security and legal considerations.

Unit IV

Logic design using Python: Introduction to python, data types, data structures, control flow, functions, modules, file handling and classes., implementing IotT concepts with python, Applications of IoT, Connected cars IoT Transportation, Smart Grid and Healthcare sectors using IoT,

Text Books/References:

1) A Bahaga, V. Madisetti, “Internet of Things- Hands on approach”, University press, 2014.

2) S.K.Vasudevan, A.S.Nagarajan, “Internet of Things”, Wiley, 2019.

3) CunoPfister, “Getting started with Internet of Things”, Maker Media, 1st edition, 2011.

Samuel Greenguard, “Internet of things”, MIT Press, 2015.

OTS-305	Image Processing (B.Tech. Biotechnology) Semester- V						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**-**	**-**	**2**	**75**	**25**	**100**	**3 hrs**
Course Outcomes							
CO1	To review image processing techniques for computer vision.						
CO2	To understand three-dimensional image analysis techniques.						
CO3	To understand shape and region analysis.						
CO4	To study some applications of computer vision algorithms.						

UNIT-1

IMAGE PROCESSING FUNDAMENTALS

Review of image processing, Filtering types, thresholding techniques, edge detection techniques, line and point detection, Region descriptors, and mathematical morphology.

UNIT-2

Image Enhancement

Basics of intensity Transformations, Histogram processing, Spatial Domain filtering, Basics of Spatial Filtering, Smoothing and Sharpening Spatial Filtering, Frequency Domain Filtering, Sampling and Fourier Transform of sampled functions, 2-D Sampling, Smoothing and Sharpening frequency domain filters – Ideal, Butterworth and Gaussian filters.

UNIT-3

Shapes and Regions

Binary shape analysis, connectedness, object labelling and counting, skeletons and thinning, active contours, shape modals and shape recognition, boundary descriptors.

Image Compression: Fundamentals, Image Compression models, Error Free Compression – Huffman Coding, Arithmetic Coding, LZW Coding, Lossy Compression – Block transformcoding

UNIT-4

Applications

Photo album, Face detection, face recognition, Surveillance, In vehicle vision system: locating roadway, road markings, identifying road signs, locating pedestrians.

Text Books/Reference Books

1. Rafael C. Gonzales, Richard E. Woods, “Digital Image Processing”, Third Edition, Pearson Education,
2. R. Szeliski, “Computer vision: Algorithms & Applications”, Springer, 2011

OTS-307	3D Printing and Design (B.Tech. Biotechnology) Semester- V						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**-**	**-**	**2**	**75**	**25**	**100**	**3 hrs**
Course Outcomes							
CO1	Introduction of 3D Printing followed by CAD						
CO2	To Understand different Manufacturing Techniques						
CO3	To understand use of different materials for 3D Printing						
CO4	To study some applications of 3 D Printing						

UNIT-1

3D Printing: Introduction, Process, Classification, Advantages, Additive V/s Conventional Manufacturing processes, Applications. CAD Data formats, Data translation, Data loss, STL format.

UNIT-2

Additive Manufacturing Techniques: Stereo- Lithography, LOM, FDM, SLS, SLM, Binder Jet technology. Process parameter, Process Selection for various applications. Additive Manufacturing Application Domains: Aerospace, Electronics, Health Care, Defense, Automotive, Construction, Food Processing, Machine Tools

UNIT-3

Materials: Polymers, Metals, Non-Metals, Ceramics. Various forms of raw material- Liquid, Solid, Wire, Powder; Powder Preparation and their desired properties, Polymers and their properties. Support Materials

UNIT-4

Post Processing: Requirement and Techniques

Process Equipment- Design and process parameters Governing Bonding Mechanism Common faults and troubleshooting .Process Design

Text Books/Reference Books

1. Sabrie Soloman, “3D Printing and Design”, Khanna Publishing House, Delhi.
2. Lan Gibson, David W. Rosen and Brent Stucker, “Additive Manufacturing Technologies: Rapid Prototyping to Direct Digital Manufacturing”, Springer, 2010.
3. Andreas Gebhardt, “Understanding Additive Manufacturing: Rapid Prototyping, Rapid Tooling, Rapid Manufacturing”, Hanser Publisher, 2011.

ATU-301	Indian Constitution (B.Tech Biotechnology Semester V)						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**-**	**-**	**2**	**75**	**25**	**100**	**3 hrs**
Purpose	To understand the basic concepts of Indian Constitution						
	Course Outcomes **After completion of course the students will be able**						
CO 1	To explain the basic structure of Indian Constitution						
CO 2	To understand the structure of Indian Union						
CO 3	To write down roles and powers of Governer						
CO 4	To explain the election process under Indian Constitution.						

Unit 1

The Constitution - Introduction ● The History of the Making of the Indian Constitution ● Preamble and the Basic Structure, and its interpretation ● Fundamental Rights and Duties and their interpretation ● State Policy Principles

Unit 2

Union Government ● Structure of the Indian Union ● President – Role and Power ● Prime Minister and Council of Ministers ● Lok Sabha and Rajya Sabha

Unit 3

State Government ● Governor – Role and Power ● Chief Minister and Council of Ministers ● State Secretariat

Unit 4

Local Administration ● District Administration ● Municipal Corporation ● Zila Panchayat Election Commission a. Role and Functioning b. Chief Election Commissioner c. State Election Commission

Suggested Learning Resources:

1. Ethics and Politics of the Indian Constitution Rajeev Bhargava Oxford University Press, New Delhi, 2008

2 The Constitution of India B.L. Fadia Sahitya Bhawan; New edition (2017)

3 Introduction to the Constitution of India DD Basu Lexis Nexis; Twenty-Third 2018 edition

Suggested Software/Learning Websites: 1. https://www.constitution.org/cons/india/const.html
2. http://www.legislative.gov.in/constitution-of-india
3. https://www.sci.gov.in/constitution
4. https://www.toppr.com/guides/civics/the-indian-constitution/the-constitution-ofindia/

ATU-903	Essence of Indian Traditional Knowledge (B.Tech Biotechnology Semester V)						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
3	-	-	-	**100**	-	**100**	**3 hrs**
Purpose	To impart basic principles of thought process and reasoning						
	Course Outcomes						
CO 1	The students will be able to understand , connect up and explain basics of Indian traditional knowledge in modern scientific perspective						

Course Contents

- Basic structure of Indian Knowledge System: अष्टादशविद्या -४वेद,४उपवेद (आयुर्वेद, धनुर्वेद, गन्धर्ववेद, स्थापत्य आदि) ६वेदांग (शिक्षा, कल्प, निरुक्त, व्याकरण, ज्योतिष, छंद) ४ उपाङ्ग (धर्मशास्त्र, मीमांसा, पुराण, तर्कशास्त्र)
- Modern Science and Indian Knowledge System
- Yoga and Holistic Health care
- Case studies

References

- V. Sivaramakrishnan (Ed.), *Cultural Heritage of India-course material*, Bharatiya Vidya Bhavan, Mumbai. 5th Edition, 2014
- Swami Jitatmanand, *Modern Physics and Vedant*, Bharatiya Vidya Bhavan
- Swami Jitatmanand, *Holistic Science and Vedant*, Bharatiya Vidya Bhavan
- Fritzof Capra, *Tao of Physics*
- Fritzof Capra, *The Wave of life*
- VN Jha (Eng. Trans.), *Tarkasangraha of Annam Bhatta*, International Chinmay Foundation, Velliarnad, Arnakulam
- *Yoga Sutra of Patanjali*, Ramakrishna Mission, Kolkata
- GN Jha (Eng. Trans.), Ed. RN Jha, *Yoga-darshanam with Vyasa Bhashya*, Vidyanidhi Prakashan, Delhi 2016
- RN Jha, *Science of Consciousness Psychotherapyand Yoga Practices*, Vidyanidhi Prakashan, Delhi 2016
- P B Sharma (English translation), *Shodashang Hridayan*

Pedagogy: Problem based learning, group discussions, collaborative mini projects.

PTC-302	Downstream Processing and bioseparation Engineering (B.Tech. Biotechnology) Semester-VI						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
3	**1**	**-**	**4**	**75**	**25**	**100**	**3 hrs**
Purpose	**To familiarize the students with the Downstream Processing**						
Course Outcomes							
CO1	Students will become familiar to upstream and downstream processing						
CO2	Students known about cell disintegration and primary methods of separation in DSP						
CO3	Students will develop knowledge to Emerging separation techniques						
CO4	Students will develop focus on different examples of DSP						

UNIT –I

Introduction: History and scope of downstream processing in biotechnology, problems, requirement of purification. Overview of a bioprocess including upstream and downstream processing.Physicochemical basis of bio separation

UNIT – II

Cell disintegration: Separation of particulate by centrifugation, settling, sedimentation, decanting and micro filtration. Primary isolation methods including solvent extraction and sorption.

Purification methods: Precipitation, electrophoresis, electro dialysis and various kinds of chromatography.

UNIT – III

Emerging separation techniques: Immobilization, reverse osmosis, super critical fluid extraction evaporation, super liquid extraction and foam based separation. Separation of intracellular, extracellular, heat and photosensitive materials.

UNIT – IV

Downstream processes and effluent treatment: Applications of Unit Operations in Downstream with special reference to membrane separations & extractive fermentation, anaerobic and aerobic treatment of effluents. Typical examples effluent disposal in process industries.

Text and Reference books

1. Biochemical Engineering fundamentals 2nd ed. Bailey J. E. and Ollis D. F. (1986) MacGraw Hill, New York.

2. Principles of fermentation technology, Stanbury, P. F. and Whitaker, A. (1984), Pergamonpress.

3. Unit Operation of Chemical Engineering 6th ed. McCabe, W. L; Smith J. C and Harriott P. (2000). MacGraw Hill, New York

4. Bioseparation: Downstream Processing for Biotechnology. Belter, P. A.; Cussler E. L. and Hu W. S. (2003) John Wiley & Sons. OXFORD.

Note: The Examiner will be given the question paper template and will have to set the question paper according to the template provided along with the syllabus.

PTC-304	SYNTHETIC AND SYSTEMS BIOLOGY (B. Tech. Biotechnology Semester VI)						
Lecture	**Tutorial**	**Practical**	**Minor Test**	**Major Test**	**Total**	**Time**	**Credit**
2	**1**	**-**	**25**	**75**	**100**	**3 Hrs.**	**3**
Purpose	This course introduces students to the rapidly evolving field of Systems & synthetic biology.						
Course Outcomes							
CO1	**To familiarize the students with basics of synthetic and systems biology.**						
CO 2	**To gain knowledge of tools used in synthetic biology.**						
CO 3	**To understand the applications of mathematical modeling in systems biology.**						
CO 4	**To explore the applications of synthetic and systems biology.**						

UNIT-I

Introduction to Synthetic biology & Systems biology Introduction to synthetic biology. Background of Gene Regulatory Mechanisms (Gene Parts- Gene Structure, Promoters, Terminators, Enhancers, Inducers, Repressors, Transcription Factors, Co-factors, transcriptional and post-transcriptional regulation, post-translational modifications). Genetic Engineering and Genome Editing Various Omics & role in systems biology - genomics, proteomics, transcriptomics, metabolomics

UNIT-II

Introduction to graph Theory: Basic; why graphs? types of graphs; computational representation of graph; graph representation of biological networks; common challenges and software tools.

UNIT-III

Elements of synthetic biology - Tools, circuits, BioBricks Gene shuffling for large scale pathway assembly and engineering; Choices for microbial hosts for industrial applications– bacteria, yeast, insect. Gene sequencing – Pyrosequencing, Nanopore sequencing. Bacterial circuits: feedback, feed-forward, toggle switch, signal propagators and band filter, synchronized oscillators. Introduction to Bio Bricks & its applications. Microarrays & systems biology - a basic introduction

UNIT-IV

Commercial Applications Biomedicine, Biomaterials, Biofuels and Bioremediation; Production of artemisinin as case study. Building the new bio-economy. Introduction to Biofoundries & circuits. Role of automation and robotics in biofactories; Green chemistry - use of plants for engineering biologics & small molecules. Global events & competitions- iGEM, synbiobeta. Regulations & ethics Safety & bioethics, legal & IP elements involved in synthetic biology applications for human, animals and plants.

Text Books/References

1. Uri Alon, An Introduction to Systems Biology: Design Principles of Biological Circuits, Chapman & Hall/CRC (2006).

2. Eric Davidson, The Regulatory Genome: Gene Regulatory Networks In Development And Evolution, Academic Press (2006).

3. Hamid Bolouri, Computational Modeling of Gene Regulatory Networks - A Primer, Imperial College Press (1st edition) (2008).

4. Freemont, P.S and Kitney, R.I. (2012). Synthetic Biology – a Primer. World Scientific Publishing Co pte Ltd

5. Singh, V and P.K. Dhar. (2015). Systems and Synthetic Biology. Springer publishing, Netherlands

6. Karthik Raman (2012) An Introduction to Computational Systems Biology ; Chapman & Hall/CRC

PTC-306	Animal and Plant Biotechnology (B.Tech Biotechnology Semester VI)						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**1**	**-**	**3**	**75**	**25**	**100**	**3 hrs**
Purpose	To familiarize the students about Genetic alteration for superior breed development and micro-propagation for large scale metabolite synthesis						
	Course Outcomes						
CO 1	To understand the Basic concepts of animal cell culture.						
CO 2	To understand the theoretical aspects of Transgenic animals Methodology						
CO 3	To understand Plant cell tissue culture history and present perspectives						
CO 4	To understand genetic modification to develop new resistant varieties better suited to environment conditions						

Unit- I

Introduction and Scope of Animal Biotechnology: History and scope of animal cell culture; Cell culture media and reagents, culture of cells, tissues and organs, establishment of cell culture, continuous cell lines, suspension cultures.

Unit-II

Transgenic animals Methodology: Retroviral vector method, DNA microinjection method and engineered embryonic stem cell method. Cloning by nuclear transfer.

Unit-III

Tissue Culture: Micropropagation,application and future prospects,Different types of culture-seed,embryo,callus, organ,cell and protoplast.Somaclonal variations, Somatic cell hybrids,Haploid production,Germplasm storage and conservation.

Unit-IV

Transgenics and crop improvement: Development of plants to disease,biotic stress and insect and pest. Transgenics case studies –implementation, market reach and acceptance.Consequences of transgenics on social well being and environmental concern

Text Books

1. Principles of Gene Manipulations 6th edition. Primrose S.B.; Twyman, R. and Old B. (2002) Blackwell Publishing.
2. Molecular Biotechnology: Principles and Applications of recombinant DNA 2nd Edition. Glick, B. R. and Pasternak J. J. (1998) ASM press, Washington DC.
3. Animal Cell Biotechnology : Spier, R.E. and Griffiths J.B. (1988) Academic press.
4. Introduction to Plant Biotechnology 2nd edition. Chawla, H.S. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi

5. Molecular Biotechnology: Principles and Applications of recombinant DNA. Glick, B. R. and Pasternak J. J. (1998) ASM press, Washington DC.
6. Plant Tissue culture: Theory and Practice. Bhojwani, S.S. and. Razdan M.K (1996) Elsevier Science, Netherlands

PTC-308	Data Science in Genome Technology (B.Tech. Biotechnology Semester VI)						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
3	**0**	**-**	**3**	**75**	**25**	**100**	**3 Hrs**
Purpose	The course will introduce the next-generation sequencing platform used to quantify DNA, RNA, and epigenetic patterns. Student will get an introduction to the key concepts in computing and data science that will help to understand how data from next-generation sequencing experiments are generated and analyzed.						
Course Outcomes							
CO 1	Knowledge regarding the basic biology of modern genomics.						
CO 2	Building the foundation of Measurement Technologies used in Genome Technology.						
CO 3	Students will learn the foundation for computational biology software's.						
CO 4	Knowledge about analyzing data with use of Statistical tools.						

Unit 1

Introduction of Molecular biology: - The genome, Writing a DNA sequence, Central dogma, Transcription, Translation, and DNA structure and modifications, Human Genome Project.

Unit 2

Measurement Technology: - Polymerase chain reaction, Different Types of PCR, Next Generation Sequencing, brief introduction to different types of NGS and applications of sequencing.

Unit 3

Computing Technology: -Basic topics in computing technology, Computer science, algorithms, memory and data structures, efficiency, software engineering, and computational biology software etc.

Unit 4

Data Science Technology: - Handling the data produced during the sequencing process. reproducibility, analysis, statistics, question types, the central dogma of inference, analysis code, testing, prediction, variation, experimental design, confounding, power, sample size, correlation, causation, and degrees of freedom.

Text/Reference Books:-

1. Recombinant DNA 2nd Edition. Watson, James D. and Gilman, M. (2001) W.H Freeman and Company, New York.

2. Molecular Biotechnology: *Principles Application of Recombinant DNA* 2nd Edition. Glick, B. R. and Pasternak, J. J. (1998) ASM press Washington DC.

PTE-302	Machine Learning (B.Tech Biotechnology Semester VI)						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**1**	**-**	**3**	**75**	**25**	**100**	**3 hrs**
Purpose	To familiarize the students about different aspects of Machine Learning						
	Course Outcomes						
CO 1	To introduce students to the basic concepts and techniques of Machine Learning.						
CO 2	To have a thorough understanding of the Supervised and Unsupervised learning techniques						
CO 3	To study the various probabilities based learning techniques.						
CO 4	To understand graphical models of machine learning algorithms.						

Unit-I

Introduction: Learning – Types of Machine Learning – Supervised Learning – The Brain and the Neuron – Design a Learning System – Perspectives and Issues in Machine Learning – Concept Learning Task – Concept Learning as Search – Finding a Maximally Specific Hypothesis – Version Spaces and the Candidate Elimination Algorithm – Linear Discriminants – Perceptron – Linear Separability – Linear Regression.

Unit-II

Linear Models: Multi-layer Perceptron – Going Forwards – Going Backwards: Back Propagation Error – Multi-layer Perceptron in Practice – Examples of using the MLP – Overview – Deriving Back-Propagation – Radial Basis Functions and Splines – Concepts – RBF Network – Curse of Dimensionality – Interpolations and Basis Functions – Support Vector Machines.

Unit-III

Tree and Probabilistic Models: Learning with Trees – Decision Trees – Constructing Decision Trees – Classification and Regression Trees – Ensemble Learning – Boosting – Bagging – Different ways to Combine Classifiers – Probability and Learning – Data into Probabilities – Basic Statistics – Gaussian Mixture Models – Nearest Neighbor Methods – Unsupervised Learning – K means Algorithms – Vector Quantization – Self Organizing Feature Map.

Unit-IV

Dimensionality Reduction, Evolutionary and Graphic Models: Dimensionality Reduction – Linear Discriminant Analysis – Principal Component Analysis – Factor Analysis – Independent Component Analysis – Locally Linear Embedding – Isomap – Least Squares Optimization – Evolutionary Learning – Genetic algorithms – Genetic Offspring: - Genetic Operators – Using

Genetic Algorithms – Reinforcement Learning – Overview – Getting Lost Example – Markov Decision Process. Markov Chain Monte Carlo Methods – Sampling – Proposal Distribution – Markov Chain Monte Carlo – Graphical Models – Bayesian Networks – Markov Random Fields – Hidden Markov Models – Tracking Methods.

Text Books:

1. Stephen Marsland, ―Machine Learning – An Algorithmic Perspective‖, Second Edition, Chapman and Hall/CRC Machine Learning and Pattern Recognition Series, 2014.
2. Tom M Mitchell, ―Machine Learning‖, First Edition, McGraw Hill Education, 2013.
3. Jeeva Jose, - Introduction to Machine Learning using Python‖, First Edition, Khanna Publishing House, 2019.

References:

1. Peter Flach, ―Machine Learning: The Art and Science of Algorithms that Make Sense of Data‖, First Edition, Cambridge University Press, 2012.
2. Jason Bell, ―Machine learning – Hands on for Developers and Technical Professionals‖, First Edition, Wiley, 2014.
3. Ethem Alpaydin, ―Introduction to Machine Learning 3e (Adaptive Computation and Machine Learning Series) ‖, Third Edition, MIT Press, 2014.
4. Rajiv Chopra, - Machine Learning ‖, Khanna Book Publishing Co. 2019.

PTE-304	Waste Management & Upcycling (B.Tech. Biotechnology) Semester-VI						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**1**	**0**	**3**	**75**	**25**	**100**	**3 hrs**
Purpose	• To familiarize the students fundamental aspects of types of waste and its management. • To disseminate knowledge on various waste management technologies. • To provide knowledge on how waste can be converted to wealth in a sustainable way. • To enable students to think innovative way to develop concepts in waste management.						
Course Outcomes							
CO1	The students shall get an adequate knowledge on waste and its sustainable management.						
CO2	Students should get enough knowledge on safety guidelines of waste management.						
CO3	Students in groups shall develop concepts in managing waste of their institutions.						
CO4	Students should get experiential learning with a waste management company in the vicinity.						

UNIT –I

Waste management: The definition of waste, and its classification in the context of EU legislation, policy including the planning and permitting regime for the delivery of waste management solutions.

UNIT – II

Air Pollution management and treatment: Overview of industrial emissions; Air pollution control systems and overview of air pollution control technologies; Development of schemes for the collection, treatment and discharge of industrial emissions.

Technologies for Waste treatment technologies: waste incineration and energy from waste, pyrolysis and gasification , managing biomedical waste,

UNIT – III

Health considerations in the context of operation of facilities, handling of materials and impact of outputs on the environment. The management of landfill leachate. Recovery technologies to deliver added value products. Innovative technologies for sustainable waste management.

UNIT – IV

Interface of waste and resource management; carbon foot-printing. Waster Upcycling, waste reuse, Waste down cycling, waste upcycling a social enterprise,

Case study in each area**.**

Text and Reference books

1. O.P. Gupta, "Elements of Solid & Hazardous Waste Management", Khanna Publishing House, New Delhi, 2019.

2. George Tchobanoglous et.al., "Integrated Solid Waste Management", McGraw-Hill Publishers, 1993.

3. B.Bilitewski, G.HardHe, K.Marek, A.Weissbach, and H.Boeddicker, "Waste Management", Springer, 1994.

4. Environmental Biotechnology. Jogland, S.N. (1995) Himalaya Publishing House, New Delhi.

5.Environmental Biotechnology: Bhattacharya and Banerjee (2007) Oxford University Press.

6. Comprehensive Biotechnology (Vol. 1-4) Young Murray Moo (Ed.) 1985 Elsevier Sciences.

7. Waste water Engineering Treatment, Disposal and Reuse. Metcalf & Eddy (1991) McGraw Hill.

PTE-306	Stem Cell Technology (B.Tech. Biotechnology) Semester- VI						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**1**	**0**	**3**	**75**	**25**	**100**	**3 hrs**
Purpose	The objective of this course is to enable students to understand the principles of stem cells, their isolation and maintenance and their application in different therapies						
Course Outcomes							
CO1	Students will be able to differentiate among the different types of stem cells						
CO2	Students will be able to explain the concept of stem cell cloning						
CO3	Students will be able to compare the isolation and maintenance methods for different type of stem cells						
CO4	Students will be able to recognize the applications of stem cells in different diseases						

Unit I

Introduction

Basic concepts and properties of Stem cells, Totipotency and Pluripotency, Types of stem cells: Embryonic stem cells, Germinal stem cells, Adult stem cells, Tumor stem cells.

Unit II

Molecular Cell Biology and Cloning

Cell cycle regulation in stem cells. Stem cell niches

Therapeutic and reproductive cloning, Nuclear Transfer method, Application of nuclear transfer derived embryonic stem cells.

Unit III

Stem Cells maintenance and transplant

Sources of stem cells; Cell types for transplantation: Bone marrow, Peripheral stem cells, cord blood stem cells

General methods of Isolation, Identification, Characterization and maintenance of different stem cells: Embryonic stem (ES) cells, Hematopoietic Stem Cells (HSC), Mesenchymal stem cells

Unit IV

Stem cells and Therapy

Organ factories, drug discovery and development, Medical applications in Leukemia, Immune deficiencies, diabetes, liver diseases, cardiovascular diseases,

Recommended Books

Text Books

1. Anthony Atala, Robert Lanza. Essentials of Stem Cell Biology. Netherlands: Elsevier/Academic Press, 2014.
2. Atala A & Lanza R, Stem Cells Handbook. Netherlands: Springer New York, 2013.
3. Satish Totey and Kaushik D. Deb. Stem Cell Technologies: Basics and Applications (McGraw-Hill, 2010).

Reference Books

1. Robert A. Meyers Stem Cells: From Biology to Therapy (Current Topics from the Encyclopedia of Molecular Cell Biology and Molecular Medicine), 2013

PTE-308	Nano-biotechnology (B.Tech Biotechnology Semester VI)						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**1**	**0**	**3**	**75**	**25**	**100**	**3 hrs**
Purpose	To familiarize the students about different aspects of Nanobiotechnology.						
	Course Outcomes						
CO 1	To understand the basic concept of Nano biotechnology and different characterization techniques						
CO 2	To understand about basics of BioMEMS and different advancements in sensors						
CO 3	Students will learn about different types of nanomaterials						
CO 4	Students will have clear idea about different applications of nanotechnology in life science						

Unit-I

Introduction to Nanotechnology: Definition of Nano biotechnology, A brief history of the Super small, Bottom-up versus top-down, discussion on nanofabrication, nanolithography, Nano biotechnology, Structure property relations in materials, materials characterization techniques, microelectronic fabrication, scanning tunneling and atomic force microscopy, Biomolecule-surface interactions, DNA microarrays.

Unit-II

BioMEMS: Introduction and overview, biosignal transduction mechanisms. Electromagnetic transducers: basic sensing mechanisms, basic actuating mechanisms. Mechanical transducers: basic sensing mechanisms, basic actuating mechanisms. Chemical transducers: basic sensing mechanism, basic actuating mechanism, ultimate limits of fabrication and measurement.

Unit-III

Nanomaterials: Buckyballs and buckytubes manufacturing, diagnostics and sensors, nanobiosensors, Carriers, Dendrimers as nanoparticle, nanoshells, quantum dot nanocrystals, nanotubes and hybrid biological/ inorganic devices.

Unit-IV

Applications of nanotechnology in the life science: Leading applications of nanobiotechnology: drug delivery. nanorobots. Benefits of nano drug delivery. Drug delivery using nanocrystals, drug discovery using Resonance Light Scattering (RLS) technology, rapid ex-vivo diagnostics, nanosensors as diagnostics agents

References Books :

1. Unbounding the future by K Eric Drexler, C.Pelerson, G.Pergamit Willaim Marrow and Company, 1993

2. Biological molecules in Nanotechnology By Stephen Lee and Lynn M Savage, 2004

3. Nanotechnology By mark Ratner and Dan Ratner, Prentice Hall, 2005.

OTS-302	ARTIFICIAL INTELLIGENCE (B. Tech. Biotechnology Semester VI)						
Lecture	**Tutorial**	**Practical**	**Minor Test**	**Major Test**	**Total**	**Time**	**Credit**
2	**-**	**-**	**25**	**75**	**100**	**3 Hrs.**	**2**
Purpose	This course will allow gaining expertise in one of the most fascinating areas of Computer Science through a classroom program that covers fascinating and compelling topics related to human intelligence and its applications in industry, defense, healthcare, agriculture, and many other areas						
Course Outcomes							
CO1	**To familiarize the students with basics of Artificial Intelligence.**						
CO 2	**To gain knowledge of tools used in algorithm search and their design.**						
CO 3	**To understand the applications of probability and mathematical modeling in AI.**						
CO 4	**To explore the concept of reinforcement learning and other learning methods in AI.**						

UNIT-I

Introduction: Concept of Artificial Intelligence, history, current status, scope, agents, environments, Problem Formulations, Review of tree and graph structures, State space representation, Search graph and Search tree.

UNIT-II

Search Algorithms Random search, Search with closed and open list, Depth and Breadth first search, Heuristic search, Best first search, A* algorithm, Game Search.

UNIT-III

Probabilistic Reasoning Probability, conditional probability, Bayes Rule, Bayesian Networks-representation, construction and inference, temporal model, hidden Markov model.

Markov Decision process MDP formulation, utility theory, utility functions, value iteration, policy iteration and partially observable MDPs.

UNIT-IV

Reinforcement Learning Passive reinforcement learning, direct utility estimation, adaptive dynamic programming, temporal difference learning, active E reinforcement learning- Q learning.

Text/Reference Books

1. Stuart Russell and Peter Norvig, “Artificial Intelligence: A Modern Approach”, 3rd Edition, Prentice Hall

2. Elaine Rich and Kevin Knight, “Artificial Intelligence”, Tata McGraw Hill

3. Trivedi, M.C., “A Classical Approach to Artificial Intelligence”, Khanna Publishing House, Delhi. 4. SarojKaushik, “Artificial Intelligence”, Cengage Learning India, 2011

5. David Poole and Alan Mackworth, “Artificial Intelligence: Foundations for Computational Agents”, Cambridge University Press 2010

OTS-304	Quantum Computing (B.Tech. Biotechnology) Semester-VI						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**0**	**-**	**2**	**75**	**25**	**100**	**3hrs**
Purpose	**The objective of this course is to impart the necessary knowledge to the learner so that he/she can develop and implement algorithms and write programs using these algorithms**						
Course Outcomes							
CO1	Explain the working of a Quantum Computing program, its architecture and program model.						
CO2	Develop quantum logic gate circuits.						
CO3	Develop quantum algorithm						
CO4	Program quantum algorithm on major toolkits.						

UNIT-I

Introduction to Quantum Computing: Motivation for studying Quantum Computing, Major players in the industry (IBM, Microsoft, Rigetti, D-Wave etc.), Origin of Quantum Computing, Overview of major concepts in Quantum Computing, Qubits and multi-qubits states, Bra-ket notation. Bloch Sphere representation o Quantum Superposition, Quantum Entanglement

UNIT-II

Matrix Algebra: basis vectors and orthogonality, inner product and Hilbert spaces, matrices and tensors, unitary operators and projectors, Dirac notation, Eigenvalues and Eigenvectors

UNIT-III

Architecture of a Quantum Computing platform Details of q-bit system of information representation: Block Sphere o Multi-qubits States, Quantum superposition of qubits (valid and invalid superposition) Quantum Entanglement Useful states from quantum algorithmic perspective e.g. Bell State Operation on qubits: Measuring and transforming using gates. Quantum Logic gates and Circuit: Pauli, Hadamard, phase shift, controlled gates, Ising, Deutsch, swap etc. Programming model for a Quantum Computing Program , Steps performed on classical computer, Steps performed on Quantum Computer, Moving data between bits and qubits

UNIT-IV

Quantum Algorithms: Basic techniques exploited by quantum algorithms., Amplitude amplification , Quantum Fourier Transform, Phase Kick-back, Quantum Phase estimation, Quantum Walks, Major Algorithms o Shor's Algorithm o Grover's Algorithm, Deutsch's Algorithm, Deutsch -Jozsa Algorithm,

OSS Toolkits for implementing Quantum program, IBM quantum experience, Microsoft Q, Rigetti PyQuil (QPU/QVM)

Text/Reference Books

1. Michael A. Nielsen, "Quantum Computation and Quantum Information", Cambridge University Press.
2. David McMahon, "Quantum Computing Explained", Wiley.
3. IBM Experience: https://quantumexperience,ng,bluemix.net
4. Microsoft Quantum Development Kit https://www.microsoft.com/enus/quantum/development-kit.
5. Forest SDK PyQuil: https://pyquil.readthedocs.io/en/stable/

OTS-306	Cyber Security						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**0**	**0**	**2**	**75**	**25**	**100**	**3 Hours**
Purpose	To gain a broad understanding in order to get predictive ways out related to cyber security.						
Course Outcomes							
CO1	To facilitate the basic knowledge of cyber security.						
CO2	To explore and sort issues related to different types of activities in cyber crime.						
CO3	To get enable to fix the various cyber attacks.						
CO4	To deal with the digital forensics and Legal Perspectives of Cyber crimes .						

Unit-I

Introduction: Introduction and Overview of Cyber Crime, Nature and Scope of Cyber Crime, Types of Cyber Crime: crime against individual, Crime against property, Cyber extortion, Drug trafficking, cyber terrorism.

Unit-II

Cyber Crime Issues: Unauthorized Access to Computers, Viruses and Malicious Code, Internet Hacking and Cracking, Virus and worms, Software Piracy, Intellectual Property, Mail Bombs, Exploitation, Stalking and Obscenity in Internet, Password Cracking, Steganography and Key loggers

Unit-III

Introduction to cyber attacks: Passive attacks, active attacks, Cyber crime prevention methods, Application security (Database, E-mail and Internet), Data Security Considerations-Backups, Archival Storage and Disposal of Data, Security Technology-Firewall and VPNs, Intrusion Detection, Access Control, Hardware protection mechanisms, OS Security

Unit-IV

Digital Forensics: Introduction to Digital Forensics, historical background of digital forensics, Forensic Software and Hardware, need for computer forensics science, special tools and techniques digital forensic life cycle.

Law Perspective: Introduction to the Legal Perspectives of Cybercrimes and Cyber security, Cybercrime and the Legal Landscape around the World, Why Do We Need Cyber laws, The Indian IT Act.

Suggested Books:

1. Nelson Phillips and Enfinger Steuart, “Computer Forensics and Investigations”, Cengage Learning, New Delhi, 2009.

2. Robert M Slade," Software Forensics", Tata McGraw - Hill, New Delhi, 2005.
3. Sunit Belapure and Nina Godbole, "Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives", Wiley India Pvt. Ltd.

OTS-308	Design Thinking						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
2	**0**	**0**	**2**	**75**	**25**	**100**	**3 Hours**
Course Outcomes							
CO1	To facilitate the basic knowledge of Design Thinking						
CO2	Students become capable of innovative design thinking						
CO3	Students are able to design & realize prototype and experiments						
CO4	Students will be able to explore the innovation ideas and templates.						

Unit-I

Introduction to Design Thinking: Design Thinking. Preparing Your Mind for Innovation, Empathize Phase: Customer Journey Mapping, Analyze Phase: Idea Generation, Free Brainstorming & Make/Test Phase: Prototype, Experimentation.

Unit-II

Innovation by Design: Design Thinking and Collaboration, Challenges to Innovation, Understanding Users, Arriving at Design Insights, Prototyping for User Feedback, Cause, Crossing the first Pitfall, Trial and Error, User Feedback for Development, New users, New needs to meet, Knowing the Context.

Unit-III

Context, Comprehension, Check and Cause: The Context,The Basic Need, Ingenious Attempt, Further Insights, Working Rig, Concepts Generation, Experiencing the Product, Refinements. Comprehension, Understanding Constraints, Positioning the Product, Exploring Possibilities, More Experiment, Understanding the Technology, At the 2nd Valley of Death, Finishing Touches. Check and Cause, product, Users and the Context, Prototyping, User Needs. Crucial Step Missed.

Unit-IV

Conception, Crafting and Connection: The Conception, Synchronic Studies, One Product, many problems, Concept Clusters, From Idea to Product, Prototyping, Material and Technologies, Collaborative Efforts. Crafting, Recap, Manufacturing Challenge, User Feedback, The Iterative Process. Connection, Seed for Innovation, Pinnacle for Innovation, Innovation Timeline, Innovation Champions, Innovation Domain, Innovation Template, Serial Innovation

Text Books:

1. Innovation By Design by Chakravarthy, BattulaKalyana, and JanakiKrishnamoorthy, Springer India, 2013, ISBN 978-81-322-0901-0

Reference Books

1. Innovation by Design: How Any Organization Can Leverage Design Thinking to Produce Change, Drive New Ideas, and Deliver Meaningful Solutions by Thomas Lockwood, New Page Books, US; 1st edition (28 November 2017), ISBN: 1632651165.
2. Innovation by Design by Gerard Gaynor, Amacom, A Division of American Management Associ135 West 50th Street New York, NY, United States, ISBN:978-0-8144-0696-

PTC-308 L	Data Science in Genome Technology Lab (B.Tech. Biotechnology Semester VI)						
Lecture	**Tutorial**	**Practical**	**Credit**	**Minor Test**	**Practical**	**Total**	**Time**
-	**-**	**2**	**1**	**40**	**60**	**100**	**3 Hrs**
Purpose	To learn the practical aspects of Data Science in Genome Technology Lab						
Course Outcomes							
CO1	Students will be able to learn basic tools in Genome Technology.						
CO2	Student will build the foundation of Data Science.						
CO3	Students will learn about techniques in molecular Biology.						
CO4	Students will learn about various tools/resources in Statics for genome anaylsis.						

LABORATORY EXPERIMENTS

1. Database Search Tools.
2. Analysis of Protein structures.
3. Identifying various regions around genes using Genome browsers.
4. Browsing genetic variation databases such as dbSNP, ClinVar.
5. Software Analysis of Statistic Functions like Mean, Median mode etc.
6. Calculation of Variation and Standard Deviation.
7. Finding patterns in genomes.

Reference Books:-

1. Recombinant DNA 2nd Edition. Watson, James D. and Gilman, M. (2001) W.H Freeman and Company, New York.

2. Molecular Biotechnology: *Principles Application of Recombinant DNA* 2nd Edition. Glick, B. R. and Pasternak, J. J. (1998) ASM press Washington DC.

PTC-310	Downstream Processing Lab (B.Tech. Biotechnology Semester VI)						
Lecture	**Tutorial**	**Practical**	**Credit**	**Practical**	**Minor Test**	**Total**	**Time**
-	**-**	**2**	**1**	**60**	**40**	**100**	**3 Hrs.**
Purpose	**To familiarize the students with different Downstream Processing techniques**						
Course Outcomes							
CO1	Students will learn how to lyse the cell						
CO2	Students will learn different chromatography used in DSP						
CO3	Students will work on purification of antigen						
CO4	Students will work on cell lysis by different methods						

Note: A college should offer 70% of the below listed experiments. The remaining 30% experiments may be modified by college according to facilities available

LIST OF EXPERIMENTS

1. Purification of bacterial protein

a) Cell lysis by different methods and Cell debris separation by different methods.

b) Column purification

I. Separation by Molecular weight and charge

II. Separation by metal affinity and Receptor-Ligand affinity.

c) Dialysis, Crystallization andLyophilization

2. Purification of O-PS

a) Cell lysisand harvesting of cells

b) Purification of O-PS antigens

References:

1. Biophysical Chemistry: Principles & techniques 2nd Edition. Upadhyay, A.; Upadhyay, K. and Nath, N. (2002) Himalaya Publication House, New Delhi.
2. Bioprocess Engineering: Systems, Equipment & facilities. Eds. Lydersen K.B.; D'elia N.A. and Nelson K.L. (1994) John Wiley & Sons, New York.
3. Physical Biochemistry 2nd Edition. Friefelder D. (1983) W.H. Freeman & Co., USA.
4. Physical Biochemistry: Principles & applications. Sheehan David (2000) John Wiley & Sons Ltd. New York.
5. Bioseparations- Downstream processing for biotechnology. Belter, P.A.; Cussler, E.L. and Hu, W.S. (1988) John Wiley and Sons, New York.

PTC-312	Animal and Plant Biotechnology Lab (B. Tech Biotechnology Semester VI)						
Lecture	**Tutorial**	**Practical**	**Credit**	**Practical**	**Minor Test**	**Total**	**Time**
-	**-**	**4**	**2**	**60**	**40**	**100**	**3Hrs**
Purpose	To learn practical concept and procedures for animal and Plant ,Cell and Tissue culture						
	Course Outcomes						
CO 1	To Learn Sterilization techniques and media preparation for plants						
CO 2	To micro propagate plants via direct and indirect methodology						
CO 3	Learning of Sterilization Techniques used in Animal cell culture Lab and Preparation of reagents and media for cell culture.						
CO 4	Students will learn Quantification of cells						

List of Experiments

1. Laboratory set up for plant cell and tissue culture.
2. Preparation of culture media, Nutrients and stock solutions.
3. Handling and sterilization of glassware and Plant parts.
4. Establishment of callus culture using different explants.
5. Inoculation and subculture for mass propagation of plant and callus culture
6. To study different development stages for somatic embryogenesis
7. Direct Plant regeneration from explants
8. Packing and sterilization of glass and plastic wares for cell culture.
9. Preparation of reagents and media for cell culture
10. Primer culture technique chicken embryo fibroblast.
11. Quantification of cells by trypan blue exclusion dye.
12. Study of effect of toxic chemicals on cultured mammalian cells

Text Books

1. Plant Tissue Culture. Theory and Practical. Bhojwani, S. S. and Rajdan,M.K.(1996).Elsevier, Amsterdam.

HSMC-301	(B.Tech. Biotechnology Semester VI) Engineering Economics						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
3	**0**	**-**	**3**	**75**	**25**	**100**	**3 hrs**
Purpose	The course aims at providing the students with advanced concepts of engineering economic analysis and it's role in engineering decision making and also covers topics such as inflation, deflation, and estimation of future events.						
	Course Outcomes						
CO 1	Describe the role of economics in the decision making process and perform calculations in regard to interest formulas.						
CO 2	Estimate the Present, annual and future worth comparisons for cash flows						
CO 3	Calculate the rate of return, depreciation charges and income taxes.						
CO 4	Enumerate different cost entities in estimation and costing.						

Unit- I

- **Introduction**: Definition Nature Scope and Significance of Economics for Engineers.
- **Demand and Supply:** Demand – It's meaning,Types,Determinants, Law of Demand, Elasticity Of Demand and it's types, concept of Supply- it's determinants , Law of supply
  Market price determination, Demand Forecasting - it's Meaning,Methods, Consumer Survey-Trend Projections – Moving average.

Unit- II

- **Cost and Revenue:** Concepts – Classifications-Short run and long run cost curves-Revenue-Concepts – Measurement of Profit (Case Study).
- **Market Structure:** Perfect Competition- it's Characteristics Price and output in short run and long run, Monopoly Price Discrimination, Monopolistic Competition-Product Differentiation-Oligopoly and Duopoly.

Unit-III

- **Market Failure:** Causes Type of Goods Rivalrous and Non-rivalrous goods – Excludable and Non-excludable goods
- **Money and Banking:** Money – it's Functions , Quantity theory of money, Banking- Commercial Banks ,it's Functions , Central Bank (RBI) – it's Functions , Role of Banks in Economics development .

Unit-IV

- **Foreign Exchange:** Balance of Payments , Exchange rate determination , Methods Of foreign payments , International Institutions- IMF, IBRD.
- **Business Cycle and National Income**: Meaning-Phases of business cycle, Inflation - it's Causes , Control measures, Deflation, National Income – it's Concepts and Methods of Calculating national income , Problems in calculating national income.

Text Books:

1. Premvir Kapoor. “Sociology & Economics for Engineers”, Khanna Publishing House, 2018.
2. Dewitt. K.K., Navalur M. H., “Modern Economic Theory”. S. Chand and Company Ltd, New Delhi,24thEdn., 2014
3. Lipsey& Chrystal, “Economics”, Oxford University Press, 2010.

References:

1. Paul A Samuelson & William, “Economics”, Tata McGraw Hill, New Delhi, 2012.
2. Francis Cherinullem “International Economics”, McGraw Hill Education, 2011.
3. William A McEachern and Simrit Kaur, “Micro ECON”, Cengage Learning, 2013.
4. William A McEachern and Indira A., “Macro ECON”, Cengage Learning, 2014.

HSMC-302	(B.Tech Biotechnology Semester VI) Management - I , Organisational Behaviour						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
3	**0**	**-**	**3**	**75**	**25**	**100**	**3 Hr**
Purpose							
	Course Outcomes						
CO 1	An overview about organizational behavior as a discipline and understanding the concept of individual behavior.						
CO 2	Understand the concept and importance of personality, emotions and its importance in decision making and effective leadership.						
CO 3	Enabling the students to know about the importance of effective motivation and its contribution in group dynamics and resolving conflicts.						
CO 4	Understand how to overcome organizational stress by maintaining proper organizational culture and effective communication.						

Unit- I

Introduction to organizational behavior: Concept and importance of organizational behavior, role of Managers in OB, challenges and opportunities for OB.

Foundation of individual behavior: Biographical characteristics, concept and types of abilities , concept of values and attitude, types of attitude, attitude and workforce diversity.

Unit- II

Introduction to personality and emotions: Definition and Meaning of Personality, Determinants of Personality, Personality Traits Influencing OB, Nature and Meaning of Emotions, Emotions dimensions, concept of Emotional intelligence.

Perception and individual decision making: meaning of perception, factors influencing perception, rational decision making process, concept of bounded rationality. Leadership-trait approaches, behavioural approaches, situational approaches, and emerging approaches to leadership.

Unit-III

Motivation: Concept and theories of motivation, theories of motivation-Maslow, two factor theory, theory X and Y, ERG Theory, McClelland's theory of needs, goal setting theory, application of theories in organizational scenario, linkage between MBO and goal setting theory.

Foundations of group behavior and conflict management: Defining and classifying of groups, stages of group development, Informal and formal groups- group dynamics, managing conflict and negotiation , causes of group conflicts, managing intergroup conflict through resolution.

Unit-IV

Introduction to Organizational Communication: Meaning and importance of communication process, importance of effective communication, organizational stress: definition and meaning sources and types of stress, impact of stress on organizations, stress management techniques.

Introduction to Organization Culture: Meaning and nature of organization culture, types of culture, managing cultural diversity, managing change and innovation-change at work, resistance to change, a model for managing organizational change.

Text Books:

1. Colquitt, Jason A., Jeffery A. LePine, and Michael Wesson. Organizational Behavior: Improving Performance and Commitment in the Workplace. 5th ed. New York: McGrawHill Education, 2017.

2. Hitt, Michael A., C. Chet Miller, and Adrienne Colella. Organizational Behavior. 4th ed. Hoboken, NJ: John Wiley, 2015.

3. Robbins, Stephen P., and Timothy Judge. Organizational Behavior. 17th ed. Harlow, UK: Pearson Education, 2017. Stephen P. Robins, Organisational Behavior, PHI Learning / Pearson Education, 11th edition, 2008.

Reference Books:

1. Schermerhorn, Hunt and Osborn, Organisational behavior, John Wiley.

2. Udai Pareek, Understanding Organisational Behaviour, Oxford Higher Education.

3. Mc Shane & Von Glinov, Organisational Behaviour, Tata Mc Graw Hill.

4. Aswathappa, K., Organisational Behaviour– Text and Problem, Himalaya Publication.

HSMC- 303	(B.Tech Biotechnology Semester VI) Operations Research						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
3	**0**	**-**	**3**	**75**	**25**	**100**	**3 hrs**
Purpose	To make the students aware various optimization techniques used for solving engineering problems						
	Course Outcomes						
CO 1	To study necessity, application, scope related to industry. To make the students aware f linear programming and its graphical representation						
CO 2	To minimize the transportation cost using transportation models. To discuss and understand the network analysis representations						
CO 3	To understand simulation. Its applications, merits and demerits. Furthermore decision theory is also helpful to solve various engineering problems.						
CO 4	To Solve the problems related to Queuing theory and game theory						

Unit- I

Introduction: Definition and Development of Operations and scope of OR in industry, Operation Research in decision making ,Fields of application, Difficulties and limitations of OR

General Linear Programming Problems:
Introduction Maximization and minimization of function with or without Constraints, Formulation of a linear programming problem, Graphical method and Simplex method, Big M method, Degeneracy.

Unit- II

The Transportation Problems: Mathematical formulation, Optimality test the stepping stone method and MODI method, Modified Distribution Method, Vogels Approximation Method, Solution of balanced and unbalanced transportation problems and case of degeneracy, Assignment problems, Assignment modal Formulation Hungarian method for optimal solution Solving unbalanced problem.

Network Analysis: CPM/PERT, Network Representation, Techniques for drawing network, Numbering of events (Fulkersen Rule) ,PERT calculations- Forward path, back-ward path, Slack, probability, comparison with PERT, Critical path. Float, Project cost, Crashing the net work, updating (PERT and CPM).

Unit-III

Simulation Basics concept of simulation, Applications of simulation, Merits and demerits of simulation, Monte Carlo simulation, Simulation of Inventory system, Simulation of Queuing systems

Decision Theory: Steps in decision theory approach, Decision Machinery environment, Decision

machining under certainty and uncertainty, Decision machining under condition of risk, Decision trees, Minimum enchained criteria, Advantages and limitations of decision tree solutions, Post Optimality.

Unit-IV

Queuing Theory: Introduction, Applications of queuing Theory, Waiting time and idle time costs Single channel queuing theory and multi Channel queuing theory with Poisson arrival and exponential services, Numerical on single channel and multi channel queuing theory

Game Theory: Theory of games, competitive games, Rules and Terminology in game Theory, Rules for game theory saddle point, dominance Mixed strategy (2* 2 games), Mixed strategy 2 *n games or m*2 games for game Theory) Mixed strategy (3 x3 game)Two person zero sum games, N-person zero sum games.

Text Books:

1. JK Sharma, "Operations Research Theory & Applications, 34, Macmillan india Ltd, 2007 2. P.K. Gupta and D. S. Hira, "Operations Research", S. Chand & zo, 2007.
2. Introduction to Operations Research, by F.S. Hillier and G.J. Lieberman, seventh edition, McGraw Hill publications.

Reference Books :

1. Introduction to Mathematical Programming by Winston, WI (4^{th} ed.). Duxbury Press.
2. Operations Research by P Sankara lyer, Mc Graw Hill publications.

HSMC-304	Effective Technical Communication (B.Tech Biotechnology) Semester- VI						
Lecture	**Tutorial**	**Practical**	**Credit**	**Major Test**	**Minor Test**	**Total**	**Time**
3	**-**	**-**	**3**	**75**	**25**	**100**	**3 hrs**
Purpose	**To familiarize the students with the effective communication skills**						
Course Outcomes							
CO1	Develop basic understanding of Communication						
CO2	Understand the process of communication and speaking.						
CO3	Develop the Personality concepts and its implementation.						
CO4	Develop the basic of group Discussion and interview.						

Unit I

Communication: Introduction, Types of communication, extra personal communication, inter personal communication, intrapersonal communication, mass communication, Creativity in communication, Role of communication, flow of Communications and its need, gesture and posture while communication

Unit II

Barriers in the way of communication, noise, inter personal barriers, intrapersonal barriers, organizational barriers, extra personal barriers, Basics of communication: importance of communication, process of communication, role of professional communication and its strategy.

Unit III

Personality Development, what is personality? Role of personality, Heredity, Environment, situation, Basics of personality, speaking skills: behavior and fluency in speaking skill, introduction and need of speaking skill.

Unit IV

Group discussion: Form of group discussion, strategy for group discussion, discussing problem and solution. Resume making: Purpose of Resume, Resume design and structure, contents in Resume, types of Resume, job interview, introduction, objective of Interview, types of interview, stages of interview, Face to face interview and campus interview.

Text Books/References:

1. Technical Communication Principles and Practice by Meenakshi Raman and Sangeeta Sharma by Oxford Publication.
2. Personality Development and soft skills by Barun K. Mitra ,Oxford Publication
3. Communication Skills For Engineers by C. Muralikrishna and Sunita Mishra , Pearson Pub

KURUKSHETRA UNIVERSITY, KURUSKHETRA
('A+' Grade NAAC Accredited)

DEPARTMENT OF BIOCHEMISTRY
Curriculum for M. Sc. Biochemistry (Semester System)
Under CBCS-LOCF Scheme of Examination (w.e.f. 2023-2024) in phased manner

Semester – I

Paper code	Title of Paper	Type of paper	Hours/ week	Credits	Internal Assessment	External Marks	Total Marks	Duration of Exam (Hrs)
BCH-101	Structure and Function of Biomolecules	Core	4	4	20	80	100	3
BCH-102	Cell Biology and Human Physiology	Core	4	4	20	80	100	3
BCH-103	Proteins and Proteomics	Core	4	4	20	80	100	3
BCH-104	Bioenergetics and Metabolism	Core	4	4	20	80	100	3
BCH-105	Practical-1 (Based on papers BCH-101 and BCH-102)	Core	8	4	20	80	100	8
BCH-106	Practical-2 (Based on papers BCH-103 and BCH-104)	Core	8	4	20	80	100	8
Total				**24**			**600**	

Semester –II

Paper code	Title of Paper	Type of paper	Hours / week	Credits	Internal Assessment	External Marks	Total Marks	Duration of Exam (Hrs)
BCH-201	Industrial Biochemistry	Core	4	4	20	80	100	3
BCH-202A	Clinical Biochemistry	Elective	4	4	20	80	100	3
BCH-202B	Nutritional Biochemistry	Elective	4	4	20	80	100	3
BCH-203	Enzymology	Core	4	4	20	80	100	3
BCH-204	Molecular Biology -I	Core	4	4	20	80	100	3
BCH-205	Food Biochemistry	Open Elective	2	2	10	40	50	3
BCH-206	Practical-3 (Based on papers BCH-201 and BCH-202A & B)	Core	8	4	20	80	100	8

BCH-207	Practical-4 (Based on papers BCH-203 and BCH-204)	Core	8	4	20	80	100	8
Total				**26**			**650**	

***The students entering in 3rd semester of their programs (PG) w.e.f. 2023-24 onwards will be allowed to opt for summer/Industrial training (with a recognized industry research laboratory/company) in lieu of open elective paper (BCH-306) for minimum 6 weeks duration and can be done only during summer vacation falling in the period intervening between 2nd and 3rd Semester.**

Semester –III

Paper code	Title of Paper	Type of paper	Hours/ week	credits	Internal Assessment	External Marks	Total Marks	Duration of Exam (Hrs)
BCH-301	Molecular Biology -II	Core	4	4	20	80	100	3
BCH-302	Immunology	Core	4	4	20	80	100	3
BCH-303	Plant Biochemistry	Core	4	4	20	80	100	3
BCH-304	General Microbiology	Core	4	4	20	80	100	3
BCH-305	Seminar	Core	1	1	-	-	50	
BCH-306	Clinical Diagnostics in Health and Disease	Open Elective	2	2	10	40	50	3
BCH-306A*	Summer/industrial training	Presentation and Project Report				50	50	
BCH-307	Practical-5 (Based on papers BCH-301 and BCH-302)	Core	8	4	20	80	100	8
BCH-308	Practical-6 (Based on papers BCH-303 and BCH-304)	Core	8	4	20	80	100	8
Total				**27**			**700**	

Semester –IV

Paper code	Title of Paper	Type of paper	Hours/ week	Credits	Internal Assessment	External Marks	Total Marks	Duration of Exam (Hrs)
BCH-401	Biotechniques	Core	4	4	20	80	100	3
BCH-402	Genetic Engineering	Core	4	4	20	80	100	3
BCH-403	Biostatistics and Bioinformatics	Core	4	4	20	80	100	3
BCH-404A	Pharmacovigilance and Clinical Trials	Elective	4	4	20	80	100	3
BCH-404B	Genetics and Evolution	Elective	4	4	20	80	100	3
BCH-405	Practical-7 (Based on papers BCH-401 and BCH-402)	Core	8	4	20	80	100	8
BCH-406	Practical-8 (Based on papers BCH-403 and BCH-404A & B)	Core	8	4	20	80	100	8
Total				**24**			**600**	
Grand Total (Semester I-IV)							**2550**	

Program Outcomes (POs)

PO1: To acquaint students with recent knowledge and techniques in recent basic and applied biological sciences.

PO2: To develop understanding of organismal, cellular, biochemical and environmental basis of life.

PO3: To develop insight into ethical implication of biological research for environmental protection and good laboratory practices and biosafety.

PO4: To develop problem solving innovative thinking and robust communication and writing skills in youth with reference to biological, environmental and nutritional sciences.

PO5: To understand application of biotic materials in health, medicine, food security for human well-being and sustainable development.

PO6: To impart practical and project based vocational training for preparing youth for a career in research and entrepreneurship in the field of life sciences for self-reliance.

Program Specific Outcomes (PSOs)

PSO1: An ability to acquire in-depth theoretical and practical knowledge of Biochemistry in the broad range of fields including Structure and Function of Biomolecules, Cell Biology and Human Physiology, Proteins and Proteomics, Intermediary Metabolism, Industrial Biochemistry, Enzymology, Plant Biochemistry, Immunology, Molecular Biology, General Microbiology, Clinical Biochemistry, Nutritional Biochemistry, Biotechniques, Genetic Engineering, Biostatistics and Bioinformatics,

Pharmacovigilance and Clinical Trials, and Genetics and Evolution.

PSO2: Diligently learn and link the applicability of the theoretical and practical knowledge imparted in routine life to the understanding of cellular, molecular, biochemical and metabolic basis of life and understand the role of scientific developments in relation to professional and every day use.

PSO3: Acquire necessary knowledge and skills to appear for competitive exams for higher studies and to undertake a career in research, either in industry or in an academic set up.

PSO4: An ability to work independently, demonstrate scientific writing, possess effective presentation skills to explain various concepts of Biochemistry, ability to formulate research hypothesis and contribute to team work and participate constructively in classroom discussions.

Core

M. Sc. (Biochemistry) Semester- I

Paper: BCH-101

Structure and Function of Biomolecules

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions and covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. The candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objectives:

- To introduce the student to the structure and function of biomolecules and understand the chemical principles in life processes.
- To familiarize student about the hormones and disorders associated with the over- or under-production of hormones.

Course outcomes:

After completion of the course, the students will be able to:

101.1 Understand an overview of importance of biomolecules starting from the simplest molecule, water. Understand the structure and the role of carbohydrate.

101.2 Understand the structure and the role of amino acids, and nucleotides and their cellular functions in physiology.

101.3 Understand the structure and the role of lipids.

101.4 Know integrated understanding of hormones and their related disorders.

SECTION - A

Water and Carbohydrates: Water and its physicochemical properties; Classification of carbohydrates; Occurrence, characteristics, structure and functions of monosaccharides, disaccharides, oligosaccharides and polysaccharides; structure and conformation of sugars; monosaccharides: stereoisomerism and optical isomerism; chemical reactions of the functional groups; sugar derivatives; Glycoproteins; peptidoglycan, proteoglycan, N-linked and O-linked glycoproteins bacterial cell wall polysaccharides; blood group polysaccharides; glycobiology, glycomics

SECTION - B

Amino acids and nucleotides: Nature of chemical bond, Covalent Bond, Coordinate bond, ionic bond, Hydrogen bond, Vanderwaal's interactions, hydrophobic interactions, Disulfide bond;Structure, nomenclature, classification, acid-base properties of amino acids, chemical reactions of amino acids; stereoisomerism and optical properties of amino acids; non-natural amino acids, Functions of amino acids;DNA/RNA bases, Nucleosides, Nucleotides, oligonucleotides; Structure and properties of purines and pyrimidine bases; structure and functions of nucleotides.

SECTION - C

Lipids: Classification of lipids; structures, nomenclature and properties of fatty acids; structure, properties and functions of acylglycerols, plasmalogens, phospholipids, sphingolipids, glycolipids, steroids, prostaglandins and eicosanoids, bile acids lipoamino acids; chemical composition and biological role of lipoproteins; structure and functions of fat soluble vitamins.

SECTION - D

Hormones: General characteristics, classification, chemistry, functions and mechanism of action of thyroid, parathyroid, adrenal, pancreatic, gastric and reproductive hormones; hypothalamus and pituitary; detection of hormones; hormone replacement therapy; pheromones. Regulation of growth hormones, ADH, oxytocin, thyroid hormones, mineralocorticoid, glucocorticoid, insulin, glucagon, parathyroid hormone, and male and female reproductive hormones.

Suggested reading:

1. Lehninger: Principles of Biochemistry, 8th edition, by David L. Nelson and M M Cox (2021), Macmillan / Worth publishers/ W H Freeman and Company.
2. Biochemistry (2004) by J David Rawn, Panima Publishing Corporation, New Delhi.
3. Biochemistry, 6th edition, by R H Garrett and C M Grisham (2016), Saunders College Publishing, New York.
4. Biochemistry, 7th edition, by Jeremy M. Berg (2015), W H Freeman and Co., New York.
5. Fundamentals of Biochemistry, 6nd ed., by Donald Voet, Judith G. Voet and Charlotte W Pratt (2020), John Wiley and Sons, INC.
6. Textbook of Medical Physiology, 14th ed., A C Guyton and J E Hall (2020) Elsevier.
7. Biochemistry, 6th ed. Zubay, G., (2016). Wm.C Brown Publishers, Saunders and Company, Philadelphia.
8. Biochemistry by U. Satyanarayana (2019). Books and allied (P) Ltd.

Teaching Learning Process

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.
- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessments.

CO-PO mapping matrix for BCH 101 (Structure and Functions of Biomolecules)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH101.1	3	3	-	2	-	2
101.2	3	3	-	2	-	2
101.3	3	3	-	2	-	2
101.4	3	3	-	2	-	2
Average	3	3	-	2	-	2

CO-PSO mapping matrix for BCH 101 (Structure and Functions of Biomolecules)

COs	PSO1	PSO2	PSO3	PSO4
BCH 101.1	3	3	3	3
101.2	3	3	3	3
101.3	3	3	3	3
101.4	3	3	3	3
Average	3	3	3	3

Core

M.Sc. (Biochemistry) Semester - I
Paper: BCH – 102
Cell Biology and Human Physiology

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. Candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objectives:

- To provide students with a comprehensive understanding of molecular biology of cells and the key techniques involved in cell biology.
- To understand the concept of biosignaling
- To explain basic physiology of various systems and regulation of body's organ systems.

Course outcomes:

After studying this course, students will be able to:

102.1 Understand the detailed information regarding bio-membranes and membrane transport.

102.2 Understand the concept of cytoskeleton. Explain the communications of cells with other cells and to the environment.

102.3 Understand the basic mechanisms of secretion and stimulation of alimentary tract glands and describe the physiology of digestion in humans. Gain knowledge about physiology of respiration

102.4Have an overview of excretory system and neurotransmission.

SECTION-A

Plasma membrane: An overview of membrane functions; Brief history of studies on plasma membrane structure, chemical composition of membranes: membrane lipids, membrane carbohydrates and membrane proteins, Glycocalyx, membrane lipids and membrane fluidity, the dynamic nature of the plasma membrane, methods of introducing a membrane-impairment substance into a cell.

Membrane transport of small molecules:

Principles of membrane transport, Passive diffusion, Facilitated diffusion and carrier proteins, ion channels, active transport driven by ATP hydrolysis and by ion gradients. Cells as experimental models.

SECTION- B

Cytoskeleton: Microfilaments: structure and organization, muscle contractility; Microtubules: structure and dynamic organization of microtubules, Microtubule organizing centers: centrosomes and basal bodies; Microtubule motor proteins; Cilia and flagella: structure and functions, Intermediate filaments: intermediate filament proteins; assembly, intracellular organization and functions of intermediate filaments

Cellular interactions: Extracellular matrix: matrix structural proteins, matrix polysaccharides, matrix adhesion proteins, Interactions of cells with extracellular materials: integrins, focal adhesions and hemidesmosomes; Interactions of cells with other cells: Adhesion junctions, Tight junctions, Gap junctions and Plasmodesmata.

The Biosignaling: General features of signal transduction, G protein-coupled receptors and Second messengers (cAMP, diacyl glycerol, inositol triphosphate and Ca^{2+} ions), receptor tyrosine kinases.

SECTION – C

Gastrointestinal Physiology: Secretory functions of the alimentary tract: General principles of alimentary tract secretion; Basic mechanism of stimulation of alimentary tract glands; Basic mechanism of secretion by glandular cells; Lubricating and protective properties of mucus and importance of mucus in gastrointestinal tract; Composition, function and regulation of saliva, gastric, pancreatic, intestinal and bile secretions.

Respiration: Components of respiratory system and their functions; transfer of blood gases- O_2 and CO_2; Bohr effect; role of chloride ions in oxygen transport; effect of 2,3-BPG on O_2 affinity of Hb; Clinical importance of 2,3-BPG. Acid base balance; Role of blood buffers; respiratory and renal mechanism in the maintenance of blood pH.

SECTION – D

Excretory System: Structure of nephron; formation of urine; tubular re-absorption of glucose, water and electrolytes; tubular secretion; regulation of water and electrolyte balance; role of kidneys and hormones in their maintenance.

General principles of nervous system: Structure of a neuron, resting potential, action potential, propagation of action potentials as an impulse; types of synapses; role of Ca^{+2} in release of neurotransmitter from pre-synaptic membrane; function of receptor proteins and secondary messenger on the postsynaptic neuron; Characteristics of some important neurotransmitters (Dopamine, GABA, Glutamate, Acetylcholine, Serotonin, NO).

Suggested readings:

1. Cell and Molecular Biology-Conceptsand experiments, 7thed. (2008) Gerald Carp-Wiley & Sons
2. The Cell: A Molecular Approach, G.M. Cooper R.E. Hausman (2007), 6thed. ASMPress
3. Cell and Molecular Biology, 8thed.E.D.P. DeRobertis & E.M.F. DeRobertis (2001), Lippincott Williams and Wilkins
4. Molecular Biology of the Cell (2008) 5thed. Alberts *et al.* Garland Science, Taylorand Francis Group
5. Molecular Cell Biology (2020) 9thed. Lodish *et al.*, W.H. Freeman & Company
6. Text book of Medical Physiology, 14th edition, A C Guyton & J E Hall. (2020) Elsevier.
7. Human physiology, 12th edition by Stuart Ira Fox (2011) McGraw-Hill Education (ISE editions)
8. Tortora's Principles of Anatomy & Physiology, 15th edition by Gerard J. Tortora & Bryan H. Derrickson (2017) John Wiley & Sons
9. Vander's Human physiology, 16th edition by Hershel Raff, Eric Widmaier & Kevin Strang (2020) McGraw-Hill Education
10. Lehninger: Principles of Biochemistry, 8th edition, by David L. Nelson and M.M. Cox (2021) Maxmillan/ Worth publishers. Freeman& Co. New York.

Teaching Learning Process

- Teaching is supported by Classroom Lectures, Powerpoint presentations and related videos.
- Oral or written assignments are assigned.
- Knowledge of the students is tested through surprise tests and internal assessments.

CO-PO Mapping Matrix for the course BCH-102 (Cell Biology and Human Physiology)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH-102.1	3	3	-	1	3	2
BCH-102.2	3	3	-	1	3	2
BCH-102.3	3	3	-	1	3	2
BCH-102.4	3	3	-	2	3	3
Average	3	3	-	1.25	3	2.25

CO-PSO Mapping Matrix for the course BCH-102 (Cell Biology and Human Physiology)

COs	PSO1	PSO2	PSO3	PSO4
BCH-102.1	3	3	3	3
BCH-102.2	3	3	3	3
BCH-102.3	3	3	3	3
BCH-102.4	3	3	3	3
Average	3	3	3	3

Core

M.Sc. (Biochemistry) Semester- I

Paper: BCH – 103

Proteins and Proteomics

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. Candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objectives:

- To understand proteins, their structure, conformation and dynamics, protein folding, and protein purification and their separation.
- To aware about the various aspects of mass spectrometry including MALDI-TOF, ESI-MS, MS/MS and X-ray crystallography for prediction of three-dimensional structure of protein.

Course outcomes:

After studying this course, students will be able to:

103.1 Understand the structure, conformation and folding of proteins.

103.2 Learn various methods of protein purification and their separation

103.3 Know the various aspects of mass spectrometry and X-ray crystallography

103.4 Apply the mass spectrometry and X-ray crystallography for prediction of the three-dimensional structure of proteins.

SECTION - A

Primary structure of proteins: Hierarchy of protein structure; Peptides, Proteins, Dihedral angles, psi and phi, omega, Ramachandran plot; **Secondary and tertiary structure of proteins:** Alpha helix and beta sheets; 310-helix, 3.613-helix, 4.416-helix, Collagen helix and other types of helical structures; Super secondary structures; Amino acid sequence and three dimensional structure; Domains; Forces stabilizing the secondary and tertiary structure. Artificial peptide synthesis and applications, Structure and function of some biologically important polypeptides. Determination of primary structure of protein – determination of N and C-terminal residue; Determination of amino acid composition of protein and determination of sulfhydryl groups; location of disulfide bonds;

SECTION - B

Sequencing, protein folding and denaturation: Protein sequencing; Sequenators; Quaternary structure of protein; Structure and function of hemoglobin and cytochrome c; Denaturation and renaturation of proteins; Characteristics of molten globule state; Principle of protein folding, Proteins involved in folding; Models of protein folding; Chaperones and Lavinthal paradox; Protein conformation and diseases.

SECTION - C

Protein purification and separation techniques: Protein purification; criteria of purity, and fold purification; Ion-exchange, gel-filtration and affinity chromatography techniques; High performance liquid chromatography (HPLC); Iso-electric focusing (IEF); Native-PAGE and SDS-PAGE; Detection and quantification of proteins in gels; Recovery of proteins from gels.

SECTION - D

Proteomics: Overview and tools; Two-dimensional PAGE; Protein spot detection; iTRAQ, Mass spectrometry: matrix assisted laser desorption ionization MS, Electrospray ionization MS, and tandem MS for protein identification; Identification of protein-protein interactions; Protein complexes; X-ray crystallography; Transmembrane domains; Functional proteomics; Application of proteome analysis.

Suggested readings:

1. Biochemistry, 7th edition, by Jeremy M. Berg (2015), W H Freeman and Co., New York.
2. Fundamentals of Biochemistry, 6th ed., by Donald Voet, Judith G Voet and Charlotte W Pratt, John Wiley and Sons, INC.
3. Principles of Peptide synthesis (2012), 2nd ed., M Bodansky, Springer - Verlag Berlin, Heidelberg.
4. Principles of Proteomics (2004), R M Twyman, 7th edition, BIOS Scientific Publishers.
5. Handbook of Proteomic Method (2010), P Michael Conn, Humana Press, Totowa, New Jersey, USA.

CO-PO mapping matrix for BCH 103 (Proteins and Proteomics)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 103.1	3	3	--	--	-	--
103.2	3	1	1	3	--	1
103.3	3	--	2	3	--	2
103.4	2	--	2	2	--	1
Average	2.75	1.0	1.25	2.0	--	1.0

CO-PSO mapping matrix for BCH 103 (Proteins and Proteomics)

COs	PSO1	PSO2	PSO3	PSO4
BCH 103.1	3	2	2	2
103.2	2	3	3	2
103.3	3	3	3	3
103.4	2	3	2	2
Average	2.5	2.75	2.5	2.25

Core

M.Sc. (Biochemistry) Semester- I
Paper: BCH – 104
Bioenergetics and Metabolism

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. Candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objectives:

- To provide students a comprehensive understanding of energetics and metabolic pathways of carbohydrate, nucleotides, lipids and amino acids metabolism.

Course outcomes:

After studying this course, students will be able to:

104.1 Understand the concept of high energy compounds and redox reactions and its application to the study of metabolism. Describe various anabolic and catabolic pathways like glycolysis, Kreb's cycle, HMP shunt, glycogen metabolism etc. and their regulation for better understanding of physiology and therapeutic applications.

104.2 Understand the pathways involved in the catabolism and biosynthesis of nucleotides.

104.3 Comprehend reactions and regulation of pathways involved in the metabolism of lipids.

104.4 Understand the pathways involved in the catabolism and biosynthesis of amino acids

SECTION – A

Coupled reactions; High-energy compounds. Biological oxidation: Oxidation & reduction; Oxidation-reduction half reactions; Enzymes involved in oxidation and reduction (oxidases, dehydrogenases, hydroperoxidases and oxygenases). Introduction to Metabolism and Experimental approaches for studying metabolism.

Carbohydrate Metabolism: Reactions, energetics and regulation of glycolysis; Feeder pathways for glycolysis; Fate of pyruvate under aerobic and anaerobic conditions; Pasteur effect; Pyruvate dehydrogenase complex and its regulation; Reactions, regulation and amphibolic nature of TCA Cycle; Anaplerotic reactions; Glyoxalate cycle; Pentose Phosphate Pathway; Gluconeogenesis; Cori cycle; Biosynthesis of lactose and sucrose; Glycogenesis and Glycogenolysis; Control of glycogen metabolism;

SECTION – B

Nucleotide metabolism: *De novo* biosynthesis and regulation of purine and pyrimidine nucleotides; Salvage pathways of purines and pyrimidines; Ribonucleotide reductase and formation of deoxyribonucleotides (dNTPs) from ribonucleotides (NTPs); Catabolism of purine and pyrimidine nucleotides; Chemotherapeutic agents as inhibitors of enzymes in nucleotide biosynthetic pathways; Biosynthesis of nicotinamide coenzymes, flavin coenzymes and coenzyme A.

SECTION – C

Lipid Metabolism: Mobilization and hydrolysis of triacylglycerols; Fatty acid oxidation: Franz Knoop's experiment; β-oxidation of saturated, unsaturated and odd-chain fatty acids; Peroxisomal β-oxidation; Minor pathways of fatty acid oxidation (α- and ω- oxidations); Formation and utilization of Ketone

bodies; Biosynthesis of saturated fatty acids; Elongation and desaturation of fatty acids; Biosynthesis of triacylglycerols; Regulation of fatty acid metabolism; Cholesterol biosynthesis and its regulation; Biosynthesis of glycerophospholipids and sphingolipids; Breakdown of sphingolipids by lysosomal enzymes; Formation of prostaglandins, prostacyclins, thromboxanes and leukotrienes from arachidonic acid.

SECTION – D

Amino acid degradation: General reactions of amino acid metabolism: Transamination; Oxidative, non-oxidative deamination and decarboxylation reactions; Role of glutamine in ammonia transport; Glucose-Alanine Cycle; Urea Cycle; Metabolic breakdown of individual amino acids (both essential and non-essential)

Amino acid biosynthesis: Biosynthesis of non-essential and essential amino acids; Regulation of amino acid biosynthesis; Amino acids as biosynthetic precursors of phosphocreatine, glutathione, dopamine, non-epinephrin and epinephrin, GABA, histamine, serotonin, polyamines (spermine and spermidine), and indole-3-acetic acid.

Suggested readings:

1. Lehninger: Principles of Biochemistry, 8th edition, by David L. Nelson and M.M. Cox (2021) Maxmillan/ Worth publishers/ W. H. Freeman & Company.
2. Fundamentals of Biochemistry, 6rd edition, by Donald Voet and Judith G Voet (2020) , John Wiley & Sons, NY
3. Biochemistry, 6nd edition, by R.H. Garrett and C. M. Grisham (2016). Saunders College Publishing, NY.
4. Biochemistry, 6th edition, by Jeremy M. Berg (2007). W.H. Freeman & Co., NY.
5. Harper's Biochemistry, 26th edition, by R.K. Murray, P.A. Hayes, D.K. Granner, P.A. Mayes and V. W. Rodwell (2003). Prentice Hall International.
6. Biochemistry, 3rd edition, by C.K. Mathews, K.E. vans Holde and K.G. Ahern (2000). Addison-Wesley Publishing Company.
7. Biochemistry (2004) by J. David Rawn, Panima Publishing Corporation, New Delhi.

Teaching Learning Process

- Teaching is supported by Classroom Lectures, Power point presentations and related videos.
- Oral or written assignments are assigned.
- Knowledge of the students is tested through surprise tests and internal assessments.
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CO-PO Mapping Matrix for the course BCH-104 (Bioenergetics and Metabolism)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH-104.1	3	3	-	2	1	1
104.2	3	3	-	2.5	1	2
104.3	3	3	-	2.5	1	2
104.4	3	3	-	2	1	1
Average	3	3	-	2.25	1	1.5

CO-PSO Mapping Matrix for the course BCH-104 (Bioenergetics and Metabolism)

COs	PSO1	PSO2	PSO3	PSO4
BCH-104.1	3	3	3	2
104.2	3	3	3	2
104.3	3	3	3	2
104.4	3	3	3	2
Average	3	3	3	2

Core

M.Sc. (Biochemistry) Semester - I

Paper: BCH –105

Practical-1 (Based on papers BCH-101 and BCH-102)

Total Marks:100

External Marks: 80 **Time allowed: 8hrs**

Internal Assessment: 20 **Credits: 4**

Course outcomes:

After completion of the course, the students will be able to:

105.1 Get more acquainted with the basic practical techniques related to various biomolecules and techniques involved in cell biology.

105.2 Standardize and qualitatively & quantitatively estimate various biomolecules including carbohydrates, lipids and proteins in the biological samples.

105.3 Get an insight/awareness about the safe laboratory practices.

105.4 Understand the principle and working of different types of Light microscopy and Electron microscopy and its applications in various fields of research.

List of experiments*

1. To study biochemistry laboratory safety rules and guidelines
2. To perform Biochemical calculation.
3. Standardization of pH meter and Preparation of buffers
4. Qualitative estimation of carbohydrates
5. Qualitative estimation of proteins/amino acids
6. Qualitative estimation of lipids
7. Quantitative estimation of proteins by Lowry's method
8. Quantitative estimation of proteins by Bradford method
9. Quantitative estimation of total sugars
10. Quantitative estimation of reducing sugars by Nelson-Somoyogi's method
11. Solubility test for lipids
12. To detect the presence of glycerol in given sample by acrolein method
13. Characterization of lipids (Acid value, Saponification value and Iodine number)
14. Extraction of lipids from tissues using Soxhlet's apparatus
15. To determine pka of acetic acid/glycine
16. To demonstrate: Light microscopy, Fluorescence microscopy, Confocal microscopy, Electron microscopy (scanning and transmission)

*****As per feasibility of practical(s), teacher concerned may conduct additional practical(s) in addition to the present list, which will also be the part of syllabus for evaluation.

CO-PO Mapping Matrix for the course BCH-105(Practical-1)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH-105.1	3	3	-	1	3	3
BCH-105.2	3	3	-	1	3	3
BCH-105.3	3	-	3	-	-	1
BCH-105.4	3	3	-	-	-	3
Average	3	2.25	0.75	0.5	1.5	2.5

CO-PSO Mapping Matrix for the course BCH-105(Practical-1)

COs	PSO1	PSO2	PSO3	PSO4
BCH-105.1	3	3	2	1
BCH-105.2	3	3	2	1
BCH-105.3	3	3	2	1
BCH-105.4	3	3	2	2
Average	3	3	2	1.25

Core

M.Sc. (Biochemistry) Semester - I

Paper: BCH –106

Practical-2 (Based on papers BCH-103 and BCH-104)

Total Marks: 100
External Marks: 80 **Time allowed: 8hrs**
Internal Assessment: 20 **Credits: 4**

Course Outcomes:

After completion of the course, the students will be able to:

106.1 Well acquainted with the titration and spectrophotometric estimation of biomolecules

106.2 An understanding of different chromatographic techniques and their application in purifications and separations of biomolecules

106.3 Develop skills of using various equipment involved in biomolecules purification and separation

106.4 Develop skills in carrying out research projects by employing basic biochemical techniques

List of experiments*

1. Titration of a weak acid using a pH meter
2. Verification of Beer-Lambert's law and determination of absorption coefficients
3. Concentration of a protein sample by ultrafiltration (using stirred cell)
4. Separation of amino acids and carbohydrates in a mixture by Paper chromatography
5. Separation of lipids/amino acids by TLC
6. Purification of an enzyme by ion-exchange chromatography
7. Purification of an enzyme/protein by Affinity chromatography
8. Determination of void volume of a gel filtration column
9. Determination of molecular weight of an enzyme by gel filtration chromatography
10. Separation of proteins by Native PAGE
11. Determination of molecular weight of a protein by SDS-PAGE
12. Demonstration of HPLC, GC and GC-MS
13. Demonstration of LC-MS and ICP
14. Demonstration of Iso-electric focussing
15. Demonstration of 2D-PAGE

*****As per feasibility of practical(s), teacher concerned may conduct additional practical(s) in addition to the present list, which will also be the part of syllabus for evaluation.

CO-PO mapping matrix for BCH 106 (Practical-2)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 106.1	3	3	2	2	-	2
106.2	3	3	2	2	-	2
106.3	3	3	2	2	-	2
106.4	3	3	2	2	-	2
Average	3	3	2	2	-	2

CO-PSO mapping matrix for BCH 106 (Practical-2)

COs	PSO1	PSO2	PSO3	PSO4
BCH 106.1	3	3	3	3
106.2	3	3	3	3
106.3	3	3	3	3
106.4	3	3	3	3
Average	3	3	3	3

Core

M.Sc. (Biochemistry) Semester - II

Paper: BCH – 201

Industrial Biochemistry

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. Candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objectives:

- To provide students a comprehensive understanding of Industrial Biochemistry.

Course outcomes:

After studying this course, students will be able to:

201.1 Understand the regulatory guidelines of ICH, WHO and USFDA, and laboratory maintenance and management rules and regulations.

201.2 Understand the scope of Industrial Biochemistry. Product development and validation methods

201.3 Understand the scope of clinical and medical diagnostics and pharmaceutical regulatory affairs

201.4 Understand the practice the ethics in research and aware about IPR and bioethics.

SECTION - A

Laboratory Maintenance and Management: Laboratory safety rules and guidelines, safety equipments, Stability testing: ICH, WHO and USFDA guidelines, Concept and significance of Biosafety, Bio Hazards and Bio ethics, Validation of utilities [Compressed air, steam, water systems, Heat Ventilation and Air conditioning (HVAC)] and Cleaning Validation, Standard operating procedures (SOPs), Concept of QC, QA, GMP, cGMP, GLP, GCP in labs & production processes, Documentation, Animal Care and Management of Laboratory Animals, Animal House CPCEA guidelines, Risk assessment and Management, Corrective Action and Preventive Action (CAPA), Handling of non-conformance, Relevant ISO and Quality Council of India (QCI) Standards

SECTION – B

Industrial Biochemistry and Scope: Introduction to Industrial Biochemistry and their Applications, Upstream and Downstream processing, Product development and their methods, Stages of the Product development Process, Analytical Method development and Validation - Parameters like accuracy, precision, linearity, Limit of Detection (LOD), Limit Of Quantification (LOQ), specificity, range and robustness.

Physicochemical properties in relation to biological action: effects of route of administration, drug targets, validation techniques of pharmaceutical targets, pharmacokinetics and pharmacodynamics of drugs, drug toxicity.

SECTION – C

Clinical and Medical Diagnostics and their Scope: Clinical diagnostic and Testing, *In-vitro* Diagnostic (IVD), Diagnostic Kits and their Development and applications, Basics of Clinical and Translational Research, Animal Cell Culture Technology & Scope, Artificial intelligence in healthcare

Pharmaceutical Regulatory Affairs: Pharmaceutical Regulatory Affairs and Scope, Regulatory Affairs in Product Management, Regulatory Affairs in Clinical Trials, Regulatory Affairs in R&D

SECTION - D

Intellectual Property Rights: Introduction to IPR, Types of IPR - Patents, Trademarks, Copyright and Related Rights, Industrial Design, Traditional Knowledge and Geographical Indications. Importance of IPR-patentable and nonpatentable, IPR and WTO regime - consumer protectionand plant genetics resources.

Bioethics: Introduction to ethics and bioethics; Ethical and socioeconomic aspects of gene therapy, germline, somatic, embryonic and adult stem cell research. Ethical implications of GM crops, GMOs, human genome project, human cloning and bio-weapons

Suggested Readings:

- Regulatory guidelines of ICH, WHO and USFDA.
- R. Ian Freshney**,** Culture of Animal Cells: A Manual of Basic Technique and Specialized Applications, Seventh Edition
- Good Laboratory Practice Regulations, by Sandy Weinberg, Fourth Edition Drugs and the Pharmaceutical Sciences, Vol.168
- Good Pharmaceutical Manufacturing practice, Rational and compliance by John Sharp, CRC Press
- Establishing a cGMP Laboratory Audit System, A practical Guide by David M. Bleisner, Wiley Publication. How to practice GLP by PP Sharma, Vandana Publications.
- Laboratory Auditing for Quality and Regulatory compliance bu Donald C. Singer, Drugs and the Pharmaceutical Sciences, Vol.150.
- Pharmaceutical Regulatory Affairs - Selected Topics, CVS Subramanyam and J Thimmasetty, VallabhPrakashan Delhi – 2013
- Protection of Industrial Property rights by P. Das and Gokul Das

Teaching Learning Process:

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.
- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessments.

CO-PO mapping matrix for BCH 201 (Industrial Biochemistry)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 201.1	2	1	3	3	3	3
201.2	3	-	3	3	3	3
201.3	2	1	3	3	3	3
201.4	2	1	3	3	3	3
Average	2.25	0.75	3	3	3	3

CO-PSO mapping matrix for BCH 201 (Industrial Biochemistry)

COs	PSO1	PSO2	PSO3	PSO4
BCH 201.1	3	3	3	3
201.2	3	3	3	3
201.3	3	3	3	3
201.4	3	3	3	3
Average	3	3	3	3

Elective

M.Sc. (Biochemistry) Semester - II

Paper: BCH – 202A

Clinical Biochemistry

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. Candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objectives:

- To bring awareness among students for practicing quality control for accuracy of results.
- To explain the patho-physiology and metabolic basis of common disorders.
- Assessment of organ function tests.

Course outcomes:

After successful completion of the course, students will be able to:

202A.1 Know the principles and practice of quality control, handling of biological fluids and theirsignificance in maintaining good health; understand clinical significance of plasma proteins and blood disorders.

202A.2 Explain the role of enzymes and other biochemical markers in clinical diagnostics and organ function tests; use the knowledge of metabolism of xenobiotics in various interdisciplinary courses.

202A.3 Learn the etiology of disorders associated with carbohydrates, amino acids, lipids, nucleic acids, vitamins & minerals metabolism.

202A.4 Understand and explain disorders associated with various hormones, disorders of acid-base and electrolytes balance in the body and neuropsychiatric disorders.

SECTION-A

Clinical biochemistry and quality assurance: Biological samples (blood, urine and cerebrospinal fluid): chemical composition, collection, processing, storage and reservation; Quality control: accuracy, precision, Specificity, Sensitivity, Levy Jening's chart.

Blood: clinical significance and functions of plasma proteins (albumin, alpha 1-antitrypsin, hepatoglobin, ceruloplasmin, transferrin, C-reactive protein); Disorders of hemoglobin: thalassemia, anemia (different types) and porphyrias.

SECTION- B

Clinical enzymology: Enzymes as diagnostic tool; Clinically important enzymes: alkaline phosphatase, acid phosphatase, aldolase, creatine kinase, LDH, AST, ALT, lipase, amylase and 5'-nucleotidase; isoenzymes and their diagnostic importance. **Organ function tests**: Assessment of liver, kidney, exocrine pancreas and G.I. tract function tests. **Detoxification:** Phase I and Phase II reactions**.**

SECTION- C

Metabolic disorders: Disorders of carbohydrate metabolism: Diabetes mellitus, diabetic ketoacidosis, hypoglycemia, glycogen storage disease and galactosemia; glucose tolerance test; disorders of lipid: Refsum's disease, fatty liver and lipotropic factors, hypolipoproteinemia and hyperlipidemia. Atherosclerosis: pathogenesis and risk factors; Disorder of amino acid metabolism: Maple syrup urine disease, phenylketonuria, Alkaptonuria, cystinuria and homocystinuria; disorder of nucleic acid metabolism: Gout, Lesch-Nyhan Syndrome, Hypouricemia, Orotic Aciduria;

disorders of calcium, magnesium, phosphorous, iron, copper and selenium metabolism; disorders of fat soluble (A, D, E and K) and water soluble vitamins (Thiamine, riboflavin, niacin, pyridoxine, pantothenic acid, biotin, folic acid, vitamin B_{12} and ascorbic acid)

SECTION- D

Hormone disturbances: Disturbances related to protein hormones (anterior and posterior pituitary), steroid hormones and thyroid hormones.

Electrolyte and acid base balance: disorders of electrolytes (hypernatremia, hyponatremia, hypokalemia, hyperkalemia, hyperchloremia, hypochloremia); water and acid base balance (metabolic and respiratory acidosis, metabolic and respiratory alkalosis)

Neuropsychiatric disorders: Alzheimer's & Parkinson's disease.

Suggested readings:

1. Textbook of Biochemistry for Medical student by Vasudevan DM (2019), 9th edition, Jaypee Brothers Medical Publishers
2. Teitz text book of clinical chemistry (2016), 6th edition, Carl A. Burtis and Edward R. Ashwood, W. B. Saunders Company.
3. Harper's Biochemistry, 31st edition, by R.K. Murray, P.A. Hayes, D.K. Granner, P.A. Mayes and V.W.Rodwell (2018) Prentice Hall International.
4. Textbook of Biochemistry with Clinical Correlations, 6th edition by T.M. Devlin (2005).Wiley-liss.
5. Biochemistry by U. Satyanarayana (2019). Books and allied (P) Ltd.
6. Text Book of Biochemistry & Human Biology by G.P. Talwar (1989) Prentice Hall, New Delhi.

Teaching Learning Process

- Teaching is supported by Classroom Lectures, Powerpoint presentations and related videos.
- Oral or written assignments are assigned.
- Knowledge of the students is tested through surprise tests and internal assessments.

CO-PO Mapping Matrix for the course BCH-202A (Clinical Biochemistry)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH202A.1	3	3	3	2	3	3
BCH202A.2	3	3	-	2	2	3
BCH202A.3	3	3	-	2	2	2
BCH202A.4	3	3	-	2	-	2
Average	3	3	0.75	2	1.75	2.5

- **CO-PSO Mapping Matrix for the course BCH-202 (Clinical Biochemistry)**

COs	PSO1	PSO2	PSO3	PSO4
BCH202A.1	3	3	3	2
BCH202A.2	3	3	3	2
BCH202A.3	3	3	3	2
BCH202A.4	3	3	3	2
Average	3	3	3	2

Elective

M.Sc. (Biochemistry) Semester – II

Paper: BCH – 202B

Nutritional Biochemistry

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. Candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objectives:

- To focus on the health benefits of typical nutrients including macro and micro minerals and vitamins and of nutraceuticals and functional foods.
- To know the basic concepts of food toxicity and safety.
- To help students understand the nutritive value of common Indian foods and nutritional disorders.

Course outcomes: After the completion of the course, the students will be able to:

202B.1 Acquire detailed knowledge regarding nutritional importance of different nutrients and how diet influences health.

202B.2 Explain the importance of vitamins and minerals for maintaining good health.

202B.3 Get an insight about the various food toxicants, food additives, nutraceuticals and functional foods

202B.4 Describe different nutritional disorders and various applications of major enzymes in food industry.

SECTION A

Composition of human body, Energy content of foods, respiratory quotient of food stuffs, measurement of energy expenditure (direct and indirect calorimetry), BMR: measurement and significance of BMR, factors affecting BMR; Specific dynamic action (SDA); Carbohydrates: nutritional importance, sources of available carbohydrates; fibres in nutrition: beneficial effects, adverse effects and their sources, glycemic index, alternative sweeteners; Lipids: nutritional importance, major classes of dietary lipids, properties and composition of plasma lipoproteins, essential fatty acids and their physiological functions; Proteins: nutritional importance, nitrogen balance, assessment of nutritive value of proteins, concept of balanced diet.

SECTION B

Minerals: nutritional significance, dietary sources, deficiency symptoms and toxicity symptoms of major and trace minerals Vitamins: dietary sources, physiological functions and specific deficiency diseases associated with fat and water soluble vitamins, hypervitaminosis of fat soluble vitamins

SECTION C

Food toxicity and safety: Microbial contamination, Environmental contamination, Natural food toxins and Antinutrients: naturally occurring food borne toxicants, protease inhibitors, hemagglutinin, hepatotoxins, allergens, oxalates, toxin from mushrooms, animal food stuffs and sea foods; Agricultural residues, Intentional food additives: types of food additives-attributes and related health concerns; Nutraceuticals: different types of Dietary supplements and typical ingredients of Functional foods

SECTION D

Applications of major enzymes in food industry

Nutritional disorders: Lipoproteins and cardiovascular disease: 'good' and 'bad' cholesterol, development of cardiovascular disease and risk factors for cardiovascular disease

Protein energy malnutrition: etiology, clinical features, metabolic disorders and management of Marasmus and Kwashiorkor diseases

Nutrition and Cancer: Associations between nutritional factors and common cancer sites; effect of different foods, beverages, physical parameters and other additional factors on cancer.

Suggested readings:

1. Biochemistry by U. Satyanarayana (2019). Books and allied (P) Ltd.
2. Essentials of Human Nutrition by J.Mannand A.S.Truswell (2015) 5t^{h} ed.Oxford University Press Inc., NewYork
3. Contemporary Nutrition by Wardlaw Smith (2016) 9th ed. McGraw Hill Inc., New York
4. Nutritional Biochemistry by S. Ramakrishnan and S.Venkat Rao (1995) T.R. Publications
5. *Food Chemistry* by Owen Fennema (2017) 5th ed. CRCPress.
6. Food Science Chemistry and Experimental Foods 2nd ed. by M. Swaminathan (1995). The Bangalore Printing and Publishing Co. Ltd.

Teaching Learning Process:

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.
- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessments.

CO-PO Mapping Matrix for BCH–202B (Nutritional Biochemistry)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH-202B.1	3	1	-	-	1	1
BCH-202B.2	3	1	-	-	1	1
BCH-202B.3	3	1	3	-	1	1
BCH-202B.4	3	2	-	-	3	3
Average	3	1.25	0.75	-	1.5	1.5

CO-PSO Mapping Matrix for BCH–202B (Nutritional Biochemistry)

COs	PSO1	PSO2	PSO3	PSO4
BCH-202B.1	3	3	2	1
BCH-202B.2	3	3	2	1
BCH-202B.3	3	3	3	2
BCH-202B.4	3	3	3	3
Average	3	3	2.5	1.75

Core

M.Sc. (Biochemistry) Semester - II

Paper: BCH –203

Enzymology

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. The candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objectives:

- To introduce students to various theoretical and practical aspects of enzymology.
- To develop their interest in the structure, function and kinetics of enzyme and their role as catalyst and regulator of cell metabolism.
- It serves as foundation for more advanced enzymology courses.

Course outcomes: After successful completion, students will be able to:

203.1 Distinguish the fundamentals of enzyme properties, nomenclature, characteristics and mechanism.

203.2 Study of factors affecting enzymatic reactions, application of biochemical calculations for enzyme kinetics and plotting graphs based upon kinetic data.

203.3 Describe the concept of enzyme inhibition. Students will know how to construct enzyme inhibitors.

203.4 Conceptualize the co-operative behavior of enzyme, Allosteric enzyme and understanding of regulatory mechanism of enzyme action.

SECTION – A

Introduction: Historical perspectives; General characteristics; Nomenclature and classification; Introduction to the following terms with examples – Holoenzyme, apoenzyme, cofactors, coenzymes, prosthetic groups, metalloenzymes, turnover number, enzyme activity units (I.U and Katal), and specific activity.Multienzyme systems and multifunctional enzymes with specific examples and significance. Enzyme specificity: **Types of specificity;** three-point attachment theory to explain stereospecificity; Lock-and-key hypothesis; Induced- fit hypothesis; Hypothesis involving strain or transition-state stabilization.**Enzyme Catalysis:** Role of NAD^+/$NADP^+$, FMN/FAD, coenzyme A, thiamine pyrophosphate, pyridoxal phosphate, lipoic acid, biocytin, Vitamin B_{12} Coenzyme, and tetrahydrofolate coenzymes in enzyme catalysis; Common features of active sites;Reactionco-ordinate diagram; Proximity & orientation, acid-base catalysis, and covalent catalysis; Enzyme promiscuity; Mechanism of action of chymotrypsin, ribonuclease, carboxypeptidase, and lysozyme

SECTION – B

Enzyme assay: Introduction; Kinetic and coupled enzyme assays. **Enzyme Kinetics**: Factors affecting enzyme activity; Arrhenius plot; Derivation of Michaelis-Menten equation for unisubstrate reactions; Km and its significance; K_{cat}/K_m and its importance; Measurement of K_m and V_{max} by Lineweaver-Burk plot and other linear transformations of MM equation; Bi-substrate reactions: Sequential and ping-pong mechanisms with examples and determination of K_m and $V_{max}$for each substrate (derivations excluded); Use of initial

velocity studies, product-inhibition studies and isotope exchange at equilibrium for determining the kinetic mechanism of a bisubstrate reaction.

SECTION - C

Methods of studying fast reactions: A brief account of rapid mixing techniques, flash photolysis and relaxation methods. **Enzyme inhibition**: Reversible (competitive, non- competitive, and uncompetitive) and irreversible (affinity labels and suicide inhibitors) enzyme inhibitors; Determination of K_i. **Investigation of active site structure:** Methods for identification of binding and catalytic sites- Trapping the enzyme-substrate complex, use of substrate analogues, chemical modification of amino acid side chains in enzymes, enzyme modification by proteases and effect of changing pH.

SECTION - D

Enzyme regulation: Coarse and fine control of enzyme activity; Enzyme induction & Repression; Feedback inhibition; Allosteric enzymes with aspartate transcarbamoylase as an example; Concerted and sequential models for action of allosteric enzymes; Negative and Positive Cooperativity; Hill plot; Scatchard plot; Regulation by reversible and irreversible covalent modification of enzymes; Isoenzymes. **Ribozyme and Abzyme, Pseudoenzymes**

Suggested readings:

1. Enzymes: Biochemistry, Biotechnology and Clinical Chemistry by Trevor Palmer (2007). Horwood Publishing.
2. Fundamentals of Enzymology, 3rd edition, by Nicholas C. Price and Lewis Stevens (2009) Oxford University Press.
3. Principles of Enzymology for Food Science by J.R. Whitaker (2018). Marcel Dekkar Publishers.
4. Structure and Mechanism in Protein Science, 9th edition, by Alan Fersht (2017). W.H. Freeman and Co., NY.
5. Lehninger: Principles of Biochemistry, 8th edition, by David L. Nelson and M.M. Cox Maxmillan/ Worth publishers/ W.H. Freeman & Company.

Teaching Learning Process:

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.
- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessments.

CO-PO mapping matrix for BCH 203 (Enzymology)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 203.1	2	2	-	1	-	-
203.2	3	3	-	1	-	1
203.3	2	2	2	1	2	2
203.4	3	2	--	-	-	-
Average	2.5	2.25	0.5	0.75	0.5	0.75

CO-PSO mapping matrix for BCH 203 (Enzymology)

COs	PSO1	PSO2	PSO3	PSO4
BCH 203.1	3	3	3	2
203.2	3	2	3	2
203.3	2	3	3	3
203.4	3	3	1	2
Average	2.75	2.75	2.5	2.5

Core

M. Sc. (Biochemistry) Semester - II
Paper: BCH-204
Molecular Biology-1

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions and covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. The candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objectives:

- To impart education in basic molecular mechanisms vital for cell survival.
- To educate students in molecular biology so that they can pursue advanced course and research.

C**ourse outcome**

204.1Students learn about central diagram of molecular biology.
204.2They also learn about DNA, RNA and protein synthesis.
204.3They also learn about DNA damages and various repair mechanism.
204.4Understand molecular mechanisms behind protein targeting.

SECTION - A

Basic Concepts of Genetic Information: Nucleic acids as the genetic material - experimental evidences; Chargaff's rules Structure of DNA, Structural polymorphism of DNA (A, B and Z-DNA) various forces responsible for stability of DNA, DNA topology, topological and geometric properties, DNA supercoiling, Topoisomerases in prokaryotes and eukaryotes, DNA organization in prokaryotes and eukaryotes, C-value paradox, denaturation: different ways for carrying out denaturation, renaturation: requirements, kinetics, significance, various classes of DNA: highly repetitive, moderately repetitive and unique sequence, RNA: structure and types.

SECTION - B

DNA replication, mutations and DNA repair: Possible modes of DNA replication, Meselson-Stahl experiment, DNA polymerases and other enzymes involved in DNA replication, Okazaki fragments, Mechanism of replication in prokaryotes and eukaryotes, inhibitors of DNA replication, molecular basis of mutations, DNA repair mechanisms like direct, base-excision, nucleotide-excision, mismatch, SOS and recombinational repair.

SECTION - C

Transcription and post-transcriptional modifications: RNA polymerase/s in prokaryotes and eukaryotes, DNA footprinting technique, initiation, elongation and termination of transcription in prokaryotes and eukaryotes, inhibitors of transcription, RNA replicase, reverse transcriptase, post-transcriptional modifications: different types of introns and their splicing mechanisms, processing of mRNA, rRNA and tRNA precursors, overlapping genes and split genes.

SECTION - D

Protein synthesis, targeting and degradation: Characteristics of the genetic code, biological significance of degeneracy, decoding the code, Wobble hypothesis, ribosomes structure and function in prokaryotes and eukaryotes, Aminoacyl tRNA-synthetases, various factors and steps involved in protein synthesis in

prokaryotes and eukaryotes, polyribosomes, post-translational processing, signal hypothesis and protein targeting to lysosomes, Plasma membrane, extracellular matrix and different compartment of mitochondria and chloroplast, protein degradation.

Suggested readings:

1. Molecular Biology of the Gene, Watson et al, 7th Edition.
2. Lehninger's Principles of Biochemistry, 8th edition.
3. Molecular Cell Biology, Lodish et al, 9th edition.
4. Principles of Biochemistry, Moran et. al., 5th edition.
5. Fundamentals of Biochemistry, Voet et. al, 6th edition.
6. Biochemistry, L Stryer. 9th edition.

Teaching Learning Process:

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.
- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessments.

CO-PO mapping matrix for BCH 204 (Molecular Biology I)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 204.1	2	3	--	1	--	--
204.2	2	3	--	2	1	--
204.3	1	2	1	1	2	--
204.4	1	3	--	1	1	--
Average	1.5	2.75	0.25	1.25	1.0	--

CO-PSO mapping matrix for BCH 204 (Molecular Biology I)

COs	PSO1	PSO2	PSO3	PSO4
BCH 204.1	3	3	3	3
204.2	3	2	3	3
204.3	3	3	3	2
204.4	1	3	2	1
Average	2.5	2.75	2.75	2.25

Open Elective

M.Sc. (Biochemistry) Semester - II

Paper: BCH – 205

Food Biochemistry

Total Marks: 50
External Marks: 40 **Time allowed: 3 hrs**
Internal Assessment: 10 **Credits: 2**

Note: The examiner will set five questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. Candidates will be required to attempt Q. No. 1 & two others, selecting one from both sections.

Objectives:

- To focus on different sources of nutrients along with their nutritional importance.
- To help students know the basic concepts of food toxicity and safety and nutritional disorders.

Course outcomes:

After the completion of the course, the students will be able to:

205.1 Acquire detailed knowledge regarding dietary sources and nutritional importance of different nutrients.

205.2 Describe different food toxicants, nutritional disorders and various applications of major enzymes in food industry

SECTION A

Classes and sources of nutrients (overview), energy value of foods, Basal metabolic rate, specific dynamic action, nutritional importance of carbohydrates, Glycemic index, fibres in nutrition, nutritional importance of lipids, essential fatty acids, nutritional importance of proteins, nitrogen balance, mutual supplementation of proteins, concept of balanced diet, Vitamins: major functions, dietary sources, deficiency symptoms of fat soluble and water soluble vitamins, hypervitaminosis of fat soluble vitamins; Minerals: major functions, dietary sources, deficiency symptoms and toxicity symptoms of major and trace minerals

SECTION B

Food toxicity and safety: Microbial contamination, environmental contamination, natural toxins, agricultural residues, intentional food additives.

Applications of major enzymes in food industry

Nutritional disorders: Lipoproteins and cardiovascular disease: 'good' and 'bad' cholesterol, risk factors for cardiovascular disease.

Nutrition and Cancer: Associations between nutritional factors and common cancer sites; effect of different foods, beverages, physical parameters and other additional factors on cancer.

Suggested readings:

1. Biochemistry by U. Satyanarayana (2017). Books and allied (P) Ltd.
2. Essentials of Human Nutrition by J. Mann and A.S. Truswell (2015) 5th ed. Oxford University Press Inc., New York.
3. Contemporary Nutrition by Wardlaw Smith (2016) 9th ed. Mc Graw Hill Inc., New York.

4. Nutritional Biochemistry by S. Ramakrishnan and S. Venkat Rao (1995) T. R. Publications.
5. *Food Chemistry* by Owen Fennema (2017) 5th ed. CRC Press.
6. Food Science Chemistry and Experimental Foods by M. Swaminathan (1990). The Bangalore Printing and Publishing Co. Ltd.

Teaching Learning Process:

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.
- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessments.

CO-PO Mapping Matrix for the course BCH-205 (Food Biochemistry)

Cos	PO1	PO2	PO3	PO4	PO5	PO6
BCH-205.1	3	3	-	-	3	-
BCH-205.2	3	3	1	-	3	-
Average	3	3	0.5	-	3	-

CO-PSO Mapping matrix for the course BCH-205 (Food Biochemistry)

Cos	PSO1	PSO2	PSO3	PSO4
BCH-205.1	3	3	3	1
BCH-205.2	3	3	3	1
Average	3	3	3	1

Core

M.Sc. (Biochemistry) Semester - II

Paper: BCH –206

Practical-3 (Based on papers BCH-201 and BCH-202A&B)

Total Marks: 100
External Marks: 80 **Time allowed: 8hrs**
Internal Assessment: 20 **Credits:4**

Course outcomes:
After the completion of the course, the students will be able to:
206.1 Elucidate the basic elements of clinical biochemistry and specialized tests of biochemistry.
206.2 Develop the skills of performing basic biochemical tests important in clinical investigations and to develop familiarity with biochemical laboratory techniques.
206.3 Deal with the handling of the various biological specimens including the process of collection, preservation and storage.
206.4 Get an insight about the diseases of various organs such as pancreas, liver, bones, kidney, heart and muscle by estimating different enzymes and metabolites.

List of experiments*
1. Collection, preservation and physical examination of urine sample
2. Tests for analysis of abnormal urine constituents
3. To determine the blood group and Rh factor of the blood sample
4. Collection, preservation and separation of blood plasma and serum
5. To estimate urea in the given blood sample
6. To estimate creatinine anduric acid in the given serum sample
7. Estimation of glycated Hemoglobin in blood by enzymatic method.
8. Estimation of CRP in the given blood sample.
9. To determine albumin-globulin ratio in blood.
10. Quantitative estimation of SGPT and SGOT in the given serum sample
11. Quantitative estimation of LDH in the given serum sample
12. Determination of ESR by Westergen method
13. Determination of chloride and phosphorus in the given serum sample
14. Estimation of blood glucose in blood.
15. Determination of lipids level in blood.

*****As per feasibility of practical(s), teacher concerned may conduct additional practical(s) in addition to the present list, which will also be the part of syllabus for evaluation.

CO-PO mapping matrix for BCH 206 (Practical-3)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH-206.1	3	3	1	1	3	3
BCH-206.2	3	3	1	1	3	3
BCH-206.3	3	3	1	1	3	3
BCH-206.4	3	3	1	1	3	3
Average	3	3	1	1	3	3

CO-PSO mapping matrix for BCH 206 (Practical-3)

COs	PSO1	PSO2	PSO3	PSO4
BCH-206.1	3	3	3	2
BCH-206.2	3	3	3	2
BCH-206.3	3	3	3	2
BCH-206.4	3	3	3	2
Average	3	3	3	2

Core

M.Sc. (Biochemistry) Semester - II

Paper: BCH –207

Practical-4 (Based on papers BCH-203 and BCH-204)

Total Marks: 100
External Marks: 80 **Time allowed: 8hrs**
Internal Assessment: 20 **Credits: 4**

Course outcomes:
After the completion of the course, the students will be able to:
207.1 Learn about isolation and purity of nucleic acids
207.2 Develop the skills of extraction, purification assay of enzymes from plant and animal tissue.
207.3 Understand enzymes kinetics and enzymes immobilization
207.4 Understand partial purification of enzymes

List of Experiments*

1. Isolation of DNA from blood.
2. Isolation of RNA from blood.
3. Estimation of DNA by diphenylamine reaction
4. Estimation of RNA by orcinol reaction
5. Qualitative and quantitative estimation of DNA and RNA.
6. Assay of acid phosphatase enzyme from plant/animal tissue and calculation of specific activity
7. Assay of alkaline phosphatase enzyme from plant/animal tissue and calculation of specific activity
8. Effect of substrate concentration on enzyme activity of acid/alkaline phosphatase
9. Effect of enzyme concentration on enzyme activity of acid/alkaline phosphatase
10. Effect of temperature on the activity of acid/alkaline phosphatase
11. Effect of pH on the activity of acid/alkaline phosphatase
12. Determination of K_m, and V max
13. Determination of pHoptima of an enzyme
14. Demonstration of enzyme immobilization
15. Partial purification of an enzyme by Ammonium Sulphate fractionation

*****As per feasibility of practical(s), teacher concerned may conduct additional practical(s) in addition to the present list, which will also be the part of syllabus for evaluation.

CO-PO mapping matrix for BCH 207 (Practical-4)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 207.1	3	2	2	3	-	3
207.2	3	2	2	3	-	3
207.3	3	2	2	3	-	3
207.4	3	2	2	3	-	3
Average	3	2	2	3	-	3

CO-PSOmapping matrix for BCH 207 (Practical-4)

COs	PSO1	PSO2	PSO3	PSO4
BCH 207.1	3	3	3	3
207.2	3	3	3	3
207.3	3	3	3	3
207.4	3	3	3	3
Average	3	3	3	3

Core

M. Sc. (Biochemistry) Semester - III
Paper: BCH – 301
Molecular Biology – II

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. The candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objectives:

- The objective is to acquaint the students to most recent advances in molecular biology.
- Prepare students for finding careers and pursue Ph.D. in related fields.

Course outcomes:

301.1 Students learn about gene expression and its regulation at different levels
301.2 Students learn about jumping genes and interactions of molecules with nucleic acids
301.3 Explain how molecular defects can lead to development of cancer.
301.4 Students learn about development of Drosophila and concepts of genomics

SECTION - A

Gene regulation: Various levels of control of gene expression in prokaryotes and eukaryotes, operon concept, regulation of expression of lac, galactose, araBAD, tryptophan operons and lambda phages, regulation of ribosome synthesis, motifs involved in DNA- protein, protein-protein interactions; Various regulatory sequences in eukaryotes, molecular aspects of regulation of gene expression at transcription level viz. repression by nucleosomes, DNase sensitivity and hypersensitivity, histone modifications etc., at post-transcriptional level like regulation of RNA splicing, mi-RNA and Si-RNA mediated gene regulation, RNA transport, RNA stability; at translational, post-translational and protein degradation level,

SECTION - B

Transposable genetic elements: Non-replicative and replicative transposition, transposable genetic elements in bacteria, yeast, maize, drosophila and significance of transposable elements.

Interaction of nucleic acids with small molecules: Reactions of nucleic acids with non-carbon electrophiles, nitrogen electrophiles, carbon electrophiles, anticancer drugs, photochemical modifications of nucleic acids, effects of ionizing radiations on nucleic acids.

SECTION - C

Molecular Biology of Cancer: Benign and malignant tumors, types of cancers, cancer causing agents-radiations, chemical compounds, DNA and RNA viruses; mechanism of carcinogenesis; important characteristics of cancerous cells; proto-oncogenes and oncogenes, gain of function mutations of proto-oncogenes-growth factors, growth factor receptors, intracellular signal transducers, nuclear transcription factors, cell cycle control proteins, DNA repair proteins into oncogenes; Rb and P^{53} as tumor suppressor genes, telomerase expression and immortalization of cells.

Cell death and cell renewal: Apoptosis (Programmed cell death),caspases: the executioners of apoptosis, central regulators of apoptosis: The Bcl-2family.

SECTION – D

Drosophila development and its regulation: Various stages of oogenesis, blastulation, gastrulation to form three cell layers, morphogen gradient, details of three classes of pattern control genes like egg-polarity genes, segmentation genes, homeotic selector genes and imaginal discs.

Genomics: Structural genomics-construction of cytological maps based on banding pattern, physical maps based upon contigs, sequence-tagged sites (STSs), expressed-sequence tags (ESTs), genetic maps based upon RFLP, microsatellites, variable number tandem repeats; Map position- based cloning of genes; The human genome project; functional genomics- DNA microarray, serial analysis of gene expression (SAGE); comparative genomics- prokaryotic, chloroplast, mitochondria and eukaryotic genomes; evolution of genomes in the cereal grasses and mammals.

Suggested Readings:

1. Principles of Gene Manipulation, R.W. Old, S B Primose& R Twyman, 7th edition.
2. Principles of Genetics, Snustadet. al., 8th edition.
3. Molecular Cell Biology, Lodish et al, 9th edition.
4. Molecular Biology of the Gene, Watson et al, 7th Edition.
5. Nucleic acids in Chemistry and Biology, G M Blackburn & M.J. Gait, 3rd edition.

Teaching Learning Process:

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.
- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessments.

CO-PO mapping matrix for BCH 301 (Molecular Biology II)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 301.1	2	3	-	1	1	-
301.2	2	2	1	1	-	1
301.3	1	3	-	-	1	1
301.4	2	1	-	1	-	1
Average	1.75	2.25	0.25	0.75	0.5	0.75

CO-PSO mapping matrix for BCH 301 (Molecular Biology II)

COs	PSO1	PSO2	PSO3	PSO4
BCH 301.1	3	3	3	3
301.2	3	3	3	2
301.3	3	2	2	2
301.4	2	2	2	2
Average	2.75	2.5	2.5	2.25

Core

M.Sc. (Biochemistry) Semester - III
Paper: BCH-302
Immunology

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. The candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objectives: The objective of this course is to:

- Learn about different components of immune system and how they work.
- To understand structure and function of immune system.
- Study mechanisms involved in immune system development and responsiveness.
- Failure of immune system will also be discussed

Course outcomes: After successful completion of course, students will be able to:

302.1 Compare and contrast the different types of immunity and their correlation for effective immune response, overview of immune system (including its cells and organs). Design and model of different types of immunoglobulins and antigens.

302.2 Conceptualization of molecular basis of Antigen Antibody interaction, immune cell interactions, recognition molecules and immunomodulatory molecules.

302.3 Understanding of genetic basis of diversity of immune response and also knowledge of immunization.

302.4 Knowledge of immune response against infectious agents and tumors, adverse effects of immune response including autoimmune disorders, hypersensitivity and immunodeficiency disorders.

SECTION - A

Introduction to immune system: Innate and acquired immunity, self vs non-self discrimination, structure and functions of primary and secondary lymphoid organs.

Cells involved in immune responses: Phagocytic cells and their killing mechanisms; T and B lymphocytes. **Nature of antigen and antibody:** Antigens vs immunogen, haptens, structure and functions of immunoglobulins; isotypic, allotypic and idiotypic variations.

SECTION - B

Major Histocompatibility Complex (MHC) genes and products: polymorphism of MHC genes, role of MHC antigens in immune responses, MHC antigens in transplantation.

Humoral and cell mediated immune responses: Kinetics of primary and secondary immune responses, complement activation and its biological consequences, antigen processing and presentation, cytokines and co-stimulatory molecules- role in immune responses, Immune cell interactions.

SECTION - C

Generation of diversity in immune system: Clonal selection theory- concept of antigen specific receptor, organization and expression of immunoglobulin genes- generation of antibody diversity, Organization and expression of T-cell receptor genes- generation of T cell receptor diversity. **Immunization:** Active & passive immunization.

SECTION - D

Tolerance vs activation of immune system: Immune tolerance, immunosuppression, hypersensitivity (Types I, II, III and IV).**Immune responses in diseases:** Immune responses to infectious diseases- viral, bacterial and protozoal; cancer and immune system, immunodeficiency disorders and autoimmunity.

Suggested Readings:

1. Immunology, 13th ed. by Roitt et al., Mosby Publications.
2. Cellular and Molecular Immunology, 10thed. by Abbas and Litchman, Saunders Publication.
3. Kuby Immunology, 7th ed. by R.A. Goldsby et al, W.H. Freeman & Co.
4. Immunology: an introduction, 4th Edition by Ian R Tizard, Saunders College Publishing.

Teaching Learning Process:

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.
- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessment

CO-PO mapping matrix for BCH 302 (Immunology)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 302.1	2	2	--	1	1	--
302.2	2	3	--	1	2	--
302.3	1	3	--	1	--	--
302.4	1	3	--	2	--	2
Average	1.5	2.75	--	1.25	0.75	0.5

CO-PSO mapping matrix for BCH 302 (Immunology)

COs	PSO1	PSO2	PSO3	PSO4
BCH 302.1	3	3	3	3
302.2	3	3	2	3
302.3	2	3	2	2
302.4	3	2	2	2
Average	2.75	2.75	2.25	2.5

Core

M.Sc. (Biochemistry) Semester - III

Paper: BCH – 303

Plant Biochemistry

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. Candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objective:

- To provide students a comprehensive understanding of different plant metabolic processes such as carbon metabolism, nitrogen metabolism, plant hormones and biochemical defense mechanisms against pathogen.
- To learn about secondary plant metabolites and plant development biology

Course outcomes: After the completion of the course, the students will be able to:

303.1 Understand the light phase of photosynthesis and pathways of CO_2 assimilation in C_3, C_4 and CAM plants.

303.2 Get an insight about the Sucrose and starch metabolism in plants and Electron transport chain in plant mitochondria.

303.3 Explain the various plant processes viz. nitrate assimilation, biological nitrogen fixation in plants. Understand the function of plant hormones.

303.4 Understand the secondary metabolites of plants and plant development biology

SECTION – A

Chemical and physical composition of higher plant cell wall. **Light reactions of Photosynthesis:** Photosynthetic pigments, chlorophyll excitation by absorption of light energy and its return to the ground state, Requirement of an antenna to capture light, van Niel equation, Hill equation, Cyclic electron transport in purple photosynthetic bacterium, Red drop and Emerson enhancement effect, Photosystem I & II, Non-cyclic, cyclic and pseudocyclic photosynthetic electron transport, Inhibitors of non-cyclic electron transport, Regulation of energy distribution between PS I and PS II, Photophosphorylation: coupling between electron transport and phosphorylation, chemiosmotic hypothesis, chloroplast ATP synthase, binding change mechanism of ATP synthesis and uncouplers of photophosphorylation.

SECTION – B

Pathway and regulation of CO_2 assimilation in C_3, C_4 & CAM plants. Photorespiration: pathway and significance. Metabolism of Sucrose and Starch: Biosynthesis and degradation of starch and sucrose; role of fructose 2, 6- bisphosphate in carbon partitioning between sucrose and starch. **Electron transport in plant mitochondria:** Electron transport complexes and pathway of electron flow in plant mitochondria; cyanide - resistant respiratory pathway.

SECTION – C

Nitrogen Metabolism: Nitrogen Cycle; Nitrate Assimilation: nitrate uptake, nitrate & nitrite reduction and regulation of nitrate assimilation. **Biological nitrogen fixation**: Nitrogen fixing organisms, structure and mechanism of action of nitrogenase, Legume-Rhizobium symbiosis (A brief account), Leghaemoglobin, Strategies for protection of nitrogenase against the inhibitory effect of oxygen, Ammonia assimilation, *nif* genes of *Klebsiella pneumoniae* and their regulation, and synthesis of amides and ureides. Biochemical defense mechanisms in plants against pathogens;

Plant hormones: Physiological effects and molecular mechanism of action of auxins, gibberellins, cytokinins, ABA and ethylene. Phytochromes as light sensors.

SECTION – D

Secondary plant metabolism: Primary and secondary metabolites; Isoprenoids: introduction, different classes with examples; Alkaloids: definition, classification according to their heterocycles with examples; physiologically active alkaloids (used in medicine and plant chemical defense); Phenylpropanoids: Introduction; overview of products of the phenylpropanoid metabolism; Flavonoids: nature; classification of aglycons with examples; functions of flavonoids; Nature of Tannins, Cyanogenic glycosides and Glucosinolates.

Plant Development: Morphogenesis and organogenesis in plants: Organization of shoot and root apical meristem; shoot and root development; leaf development and phyllotaxy; transition to flowering, floral meristems and floral development in *Arabidopsis* and *Antirrhinum.*

Suggested Reading:

1. Biochemistry and Molecular Biology of Plants by Bob, B. Buchanan, W. Gruissenand R.L. Jones 2nd ed. (2015). Published by American Society of Plant Physiologists and distributed by Panima Educational Book Agency, New Delhi.
2. Plant Biochemistry & Molecular Biology, 4th ed., by Hans–Walter Heldt (2010), Academic Press
3. Introduction to Plant Biochemistry, T.W. Goodwinand E.I. Mercer (1983). Pergamon Press, Oxford
4. Plant Physiology, 6th edition, by L.Taizand E Zeigler (2010), Sinauer Associates, Inc.,Publishers

Teaching Learning Process:

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.
- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessments.

CO-PO Mapping Matrix for the course BCH – 303 (Plant Biochemistry)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH-303.1	3	3	-	1	1	1
BCH-303.2	3	3	-	1	1	1
BCH-303.3	3	3	-	1	1	1
BCH-303.4	3	3	-	2	2	3
Average	3	3	-	1.25	1.25	1.5

CO-PSO Mapping Matrix for the course BCH – 303 (Plant Biochemistry)

COs	PSO1	PSO2	PSO3	PSO4
BCH-303.1	3	3	3	1
BCH-303.2	3	3	3	1
BCH-303.3	3	3	3	1
BCH-303.4	3	3	3	3
Average	3	3	3	1.5

Core

M.Sc. (Biochemistry) Semester - III

Paper: BCH – 304

General Microbiology

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. Candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objectives:

- To provide the students a basic knowledge of microorganisms and their metabolic pathways.
- To focus on the importance of microbiology at industrial level and in general human welfare.

Course outcomes: After the completion of the course, the students will be able to:

304.1 Describe the physical & chemical agents for the control of microorganisms for biosafety purpose.
304.2 Explain Microbial Tissue Culture and the importance of microorganisms in food and industrial microbiology.
304.3 Explain bacterial genetics and virus structure. Learn about biochemical activities of microorganisms
304.4 Get an insight about the pathogenicity of microorganisms and antimicrobial chemotherapy among students.

SECTION – A

Members of the microbial world; Impact of microorganisms on humans; Gram +ve and Gram –ve bacteria; Control of microorganisms by physical & chemical agents; Nutritional types of microorganisms; Culture media; Pure culture techniques; Microbial Growth curve, Continuous culture of microorganisms; influence of environmental factors on growth: solutes and water activity, pH, temperature, oxygen concentration, pressure and radiations; Biofilms

SECTION – B

Industrial Microbiology: Biosafety, Maintenance and Preservation of pure cultures, Microbial Tissue Culture (MTC), Industrial Microbes and their uses in production of food, antibiotics and hormones, Production of humulin by Recombinant DNA Technology, Biofertilizers, Genetically modified Microorganisms

Fermentations: Lactic and mixed acid fermentations; Amino acid fermentation by *Clostridium* species and the Stickland reaction; fermentations without substrate level phosphorylation; Fermentors; Characteristics of large scale fermentations; Major products of industrial microbiology: Antibiotics (penicillin and tetracyclin), Alcohol and alcoholic beverages, Organic compounds (citric acid); Yeast as a food and food supplement; Microbes as products: Biosensors and Bioinsecticides

SECTION – C

Bacterial Genetics: Transformation, Transduction & Conjugation

Biochemical activities of Microorganisms: Extracellular enzymatic activities of microorganisms, Carbohydrate fermentation, Triple sugar-iron agar test, IMViC test, Hydrogen sulphide test, Urease test, Litmus milk reactions, Nitrate reduction test, Catalase test, Oxidase test, Utilization of amino acids, Acetogenesis; Methanogenesis; Microbial Biodegradation of Petroleum and Xenobiotics;

Biodegradable plastics; **Virus:** Structure and general characteristics; cultivation of viruses; Viroids and Prions

SECTION – D

Microbial diseases and their control: Pathogenicity of microorganisms: Host-parasite interactions; pathogenesis of viral diseases; Bacterial pathogenesis; pathogenicity islands; Toxigenicity: General characteristics of Exotoxins and Endotoxins,

Antimicrobial chemotherapy: General Characteristics of antimicrobial drugs, Mechanism of action of antibacterial drugs: inhibitors of cell wall synthesis, protein synthesis inhibitors, metabolic antagonists, nucleic acid synthesis inhibitors; factors influencing antimicrobial dug effectiveness, Mechanisms of drug resistance; Mechanism of action of Antifungal drugs and Antiviral drugs

Suggested Readings:

1. Microbiology by L.M. Prescott. J.P. Harleyand. D.A.Klein7th ed. WM.C. Brown Publishers.
2. Brock Biology of Microorganisms 15th ed. by M.T. Madigan, J.M. Martinko, J. Parker (2015) Prentice Hall International, Inc.
3. The Microbial World, 5thed. By R.Y. Stainer, J.L. Ingraham, M.L. WheelisandP.R. Painter, Prentice-Hall of India, New Delhi.
4. Microbiology, 5thed. By M.J. Pelczar, E.C.S. Chanetal. Mcgraw-Hill Book Company.
5. Microbiology: Fundamental and Applications, 2nded. by R.M. Atlas, Maxwell Macmillan, International Edition.

Teaching Learning Process:

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.
- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessments.

CO-PO matrix for the course BCH – 304 (General Microbiology)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH-304.1	3	3	3	2	1	2
BCH-304.2	3	3	3	3	3	3
BCH-304.3	3	3	-	1	3	3
BCH-304.4	3	3	3	2	2	3
Average	3	3	2.25	2	2.25	2.75

CO-PSO matrix for the course BCH – 304 (General Microbiology)

COs	PSO1	PSO2	PSO3	PSO4
BCH-304.1	3	3	3	1
BCH-304.2	3	3	3	1
BCH-304.3	3	3	3	3
BCH-304.4	3	3	3	3
Average	3	3	3	2

Core

M. Sc. (Biochemistry) Semester - III
Paper: BCH-305
Seminar

Total Marks: 50 **Credits:** 1

Course outcomes
After the completion of the course, the students will be able to:
305.1Work independently, critically analyze research literature and use different digital sources to explain the concepts of Biochemistry.

305.2 Demonstrate latest scientific developments from disciplinary perspective to its professional and everyday use.

305.3 Formulate logical and convincing arguments and to substantiate critical readings of scientific texts in order to develop scientific temper in biological sciences.

CO-PO mapping matrix for BCH 305 (Seminar)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 305.1	3	3	2	3	2	-
305.2	3	3	3	2	3	-
305.3	3	3	3	3	-	-
Average	3	3	2.66	2.66	1.66	-

CO-PSO mapping matrix for BCH 305 (Seminar)

COs	PSO1	PSO2	PSO3	PSO4
BCH 305.1	3	3	2	2
305.2	3	3	2	2
305.3	3	3	2	3
Average	3	3	2	2.33

Open Elective

M.Sc. (Biochemistry) Semester - III

Paper: BCH – 306

Clinical Diagnostics in Health and Disease

Total Marks: 50
External Marks: 40 **Time allowed: 3 hrs**
Internal Assessment: 10 **Credits: 2**

Note: The examiner will set five questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. Candidates will be required to attempt Q. No. 1 & two others, selecting one from both sections.

Objective:

- To provide students with the basic knowledge and understanding of the role of clinical biochemistry in diagnosis of various diseases.

Course outcomes: After the completion of the course, the students will be able to:

306.1 Have an overview of clinical biochemistry in the diagnosis of common diseases.

306.2 Have an overview of common biochemical and molecular markers of common diseases.

SECTION - A

Introduction to health and disease; **General biochemical test:** Blood group, Hb, total cell count, differential cell count (TLC and DLC), ESR, Bleeding time, clotting time, Urine analysis (protein, sugar and pigments), blood sugar, GTT and acetylated Hb. **General microbiological tests:** culture and sensitivity (urine and blood) tests. **Biochemical tests in clinical medicine– diagnostic tests and their clinical significance**: Liver function tests: SGOT, SGPT, ALP; Kidney function tests: Urea and creatinine; Cardiac function tests: blood pressure, lipid profile – HDL-c, LDL-c, total cholesterol, triglycerides, electrolytes; lung function tests.

SECTION - B

Molecular diagnosis of viral diseases: HIV (I and II), H1N1, Chickungunya, Dengue, viral hepatitis (B and C). **Diagnosis of infectious diseases:** tuberculosis**,** cholera, Typhoid and malaria; TORCH – panel; Infection in pregnancy; microscopic examination of body fluids, ELISA and PCR tests.

Suggested readings:

1. Teitz text book of clinical chemistry and Molecular diagnostics (2016), 6th edition, Carl A Burtis and Edward R Ashwood, W B Saunders Company.
2. Harper's Biochemistry, 32th ed., by R.K.Murray, P.A.Hayes, D.K. Granner, P.A. Mayes and V W Rodwell (2019), Prentice Hall International.
3. Textbook of Biochemistry with Clinical Correlations, 5th ed., T.M. Devlin (2002), Wiley-Liss.
4. Biochemistry, 6th ed., U. Satyanarayana (2019), Books and allied (P) Ltd.

Teaching Learning Process:

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.

- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessments.

CO-PO mapping matrix for BCH 306 (Clinical Diagnostics in Health and Disease)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 306.1	3	3	-	2	1	2
306.2	3	3	-	2	1	2
Average	3	3	-	2	1	2

CO-PSO mapping matrix for BCH 306 (Clinical Diagnostics in Health and Disease)

COs	PSO1	PSO2	PSO3	PSO4
BCH 306.1	2	3	2	2
306.2	2	3	2	2
Average	2	3	2	2

Open Elective

M.Sc. (Biochemistry) Semester - III

Paper: BCH – 306A

Summer/Industrial Training

(Only for Biochemistry students)

Total Marks: 50

The students M.Sc. Biochemistry entering in 3rd semester of their programs(PG) w.e.f 2023-24 onwards will be allowed to opt for summer/Industrial training in lieu of open elective paper (BCH-306) keeping in view the following guidelines:-

1. Can be opted in 3rd semester only
2. Can do the summer/industrial training only after taking permission from the Chairperson of the department in writing.
3. Will be of minimum 6 weeks duration and can be done only during summer vacation falling in the period intervening between 2nd and 3rd Semester.
4. Can be done with a recognized industry research laboratory/company.
5. Every student opting for summer training will submit a report separately and present the same before a committee of the three teachers constituted by the chairperson of the department. The committee will award the marks out of 50 after evaluating the report and performance of the student during presentation.
6. Student will append a certificate in the report from the industry/research laboratory/company where she has done summer training.
7. No TA/DA or stipend will be provided by the University for doing the summer training.

Course outcomes:

After the completion of the course, the students will be able to:

1. Impart practical and project based training for preparing students to pursue higher education and career in research in the field of life sciences.

2. Develop problem solving innovative thinking with strong communication and writing skills, develop understanding of biological sciences with respect to recent knowledge and techniques.

3. Articulate specific ideas, scientific writing authentic reporting and effective presentation skills.

CO-PO mapping matrix for BCH 306A (Summer/Industrial Training Project Report)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 306A.1	3	3	3	3	2	3
306A.2	3	3	3	3	2	3
306A.3	3	3	3	3	2	3
Average	3	3	3	3	2	3

CO-PSO mapping matrix for BCH 306A (Summer/Industrial Training Project Report)

COs	PSO1	PSO2	PSO3	PSO4
BCH 306A.1	3	3	3	3
306A.2	3	3	3	3
306A.3	3	3	3	3
Average	3	3	3	3

Core

M.Sc. (Biochemistry) Semester - III

Paper: BCH –307

Practical-5 (Based on papers BCH-301 and BCH-302)

Total Marks: 100
External Marks: 80 **Time allowed: 8hrs**
Internal Assessment: 20 **Credits: 4**

Course outcomes:
After the completion of the course, the students will be able to:
307.1Develop skills in carrying out research projects by employing molecular biology and basic immunological techniques
307.2 Learn about cDNA preparation and Transcript expression by RT-PCR
307.3 Acquire insight knowledge regarding the important methods in Molecular Biology and immunology and able to exhibit their proficiency and skills in research.
307.4 Understand the polymorphism in DNA

List of experiments*

1. Preparation of Master Mix for PCR analysis
2. To perform amplification of genes by PCR
3. To perform RFLP using restriction enzymes
4. Determination of molecular weight of DNA fragments on agarose gel electrophoresis
5. To study the polymorphism in DNA using Single-Strand Confirmation Polymorphism condition
6. To demonstrate cDNA synthesis and Transcript expression by RT-PCR
7. Electrophoresis of RNA on denaturing gels
8. To perform the Bisulfite conversion of DNA
9. To know the methylation pattern at DNA (By Bisulfite conversion)
10. Electrophoretic separation of isoenzymes
11. ELISA
12. Immunoprecipitation
13. Immunoblotting
14. Immunodiffusion
15. Purification of IgG from serum

*****As per feasibility of practical(s), teacher concerned may conduct additional practical(s) in addition to the present list, which will also be the part of syllabus for evaluation.

CO-PO mapping matrix for BCH 307 (Practical-5)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 307.1	3	3	2	3	-	3
307.2	3	3	2	3	-	3
307.3	3	3	2	3	-	3
307.4	3	3	2	3	-	3
Average	3	3	2	3	-	3

CO-PSO mapping matrix for BCH 307 (Practical-5)

COs	PSO1	PSO2	PSO3	PSO4
BCH 307.1	3	3	3	3
307.2	3	3	3	3
307.3	3	3	3	3
307.4	3	3	3	3
Average	3	3	3	3

Core

M.Sc. (Biochemistry) Semester - III

Paper: BCH –308

Practical-6 (Based on papers BCH-303 and BCH-304)

Total Marks: 100
External Marks: 80 **Time allowed: 8hrs**
Internal Assessment: 20 **Credits: 4**

Course outcomes:
After the completion of the course, the students will be able to:
308.1 Understand and develop the skills in the preparation of microbial media and to get more familiar about the aseptic techniques to perform routine culture handling tasks safely and effectively.
308.2 Exhibit proficiency in the isolation of cultures by various methods (Serial dilution, Spread plate and Streak plate methods)
308.3 Demonstrate skill in taking up basic research projects and findings by employing microbiological concepts and principles.
308.4 Develop skills and knowledge to conduct basic research work in the field of Plant Biochemistry.

List of experiments*
1. To study Microbiology laboratory safety rules and guidelines
2. To study some of the routinely used equipments in microbiology laboratory
3. Storage of microorganisms and Maintenance of pure culture.
4. Preparation of solid and liquid media for growth of microorganisms
5. Isolation of bacteria from soil and maintenance of microorganisms by plating, streaking and serial dilution method
6. To perform slant and stab culture
7. To perform Gram staining in order to differentiate between gram positive and gram negative bacteria
8. Demonstration of Total Plate Count
9. Antimicrobial susceptibility testing and MICs determination.
10. Calculation of IC_{50} value.
11. To demonstrate detection and confirmation of *S. aureus* and *Salmonella*.
12.Widal test and Interpretation
13. To demonstrate detection and confirmation of *Coliforms* and *E. coli* in water.
14. Estimation of chlorophyll content in the leaves
15. Estimation of ascorbic acid in lemon juice
16. To determine the activity of polyphenol oxidases
17. To estimate titrable acidity in fruits

*****As per feasibility of practical(s), teacher concerned may conduct additional practical(s) in addition to the present list, which will also be the part of syllabus for evaluation.

CO-PO mapping matrix for the course BCH–308

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH-308.1	3	3	3	3	3	3
BCH-308.2	3	3	3	3	3	3
BCH-308.3	3	3	3	3	3	3
BCH-308.4	3	3	-	-	2	1
Average	3	3	2.25	2.25	2.75	2.5

CO-PSO mapping matrix for the course BCH–308

COs	PSO1	PSO2	PSO3	PSO4
BCH-308.1	3	3	3	2
BCH-308.2	3	3	3	2
BCH-308.3	3	3	3	2
BCH-308.4	3	3	3	2
Average	3	3	3	2

Core

M.Sc. (Biochemistry) Semester – IV

Paper: BCH – 401

Biotechniques

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. Candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objective:

- To introduce the student about the radioisotopic, fractionation, molecular biology, immunological and spectroscopic techniques, their principles and applications.

Course outcomes: After the completion of the course, the students will be able to:

401.1 Know the radio-isotopic techniques and their application in biological science research.

401.2 Understand the basic techniques of molecular biology and relate modern DNA technology for disease diagnosis and therapy.

401.3 Know the antigen antibody interactions, experimental methods of monoclonal antibody synthesis and types of vaccines.

401.4 Gain insight knowledge of the interaction of matter with electromagnetic radiations that will help to understand the chemical structure of molecules

SECTION - A

Radioisotope techniques: Basic concepts (types of radioactive decay, rate of radioactive decay, radioactive isotopes and their half-lives and units of radioactivity); GM and scintillation counter; autoradiography; specific activity of a radioisotope; safety aspects; applications of radioisotopes in biological sciences. **Centrifugation:** Basic principles; different types of centrifuges; types of rotor; analytical and preparative ultracentrifugation methods.

SECTION - B

Molecular biology techniques: Isolation of DNA and RNA, purification and quantification of nucleic acids; Electrophoresis of nucleic acids: agarose gel electrophoresis, pulse field electrophoresis; capillary electrophoresis; microchip electrophoresis; DNA sequence analysis methods: Sanger dideoxy method, Maxam Gilbert chemical method and Fluorescence method; Polymerase chain reaction: principles, process, design and optimization; different types of PCR: allele specific, nested, multiplex and real-time PCR; ligase chain reaction; SNP and application in molecular diagnostics; DNA fingerprinting: applications and prospects; restriction fragment length polymorphism (RFLP) and its uses.

SECTION - C

Immunotechniques: Immunoprecipitation; agglutination; RIA; ELISA; ELISPOT; immunoblotting; immunofluorescence assays; cytotoxic assay; hybridoma technology for production of monoclonal antibody - principles, techniques and applications; designing chimeric and humanized antibodies; vaccines: types and their role in prevention of diseases; Flow cytometery and data analysis, FACS analysis.

SECTION - D

Spectroscopy: Nature of electromagnetic radiations; principles of biophysical methods used for analysis of biopolymer structure - UV, Visible, Infrared, Raman, Fluorescence and NMR spectroscopy; ORD and CD; Atomic absorption spectroscopy (AAS).

Suggested readings:

1. Kuby Immunology, 10th Edition
2. Physical Biochemistry, 3rd edition, by K. E Van Holde.
3. Principles and Techniques of Practical Biochemistry, 8th edition by Keith Wilson and John Walker.
4. Physical Biochemistry, 2nd edition, by D Friefelder.
5. Biophysical Chemistry: Principles and Techniques, 6th edition by A Upadhyay, K Upadhyay and N Nath.

CO-PO mapping matrix for BCH 401 (Biotechniques)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 401.1	3	-	2	2	-	2
401.2	3	1	2	-	-	1
401.3	3	-	2	1	2	2
401.4	2	1	1	1	-	1
Average	2.75	0.5	1.75	1.0	0.5	1.5

CO-PSO mapping matrix for BCH 401 (Biotechniques)

COs	PSO1	PSO2	PSO3	PSO4
BCH 401.1	3	3	2	1
401.2	3	2	3	2
401.3	2	3	3	2
401.4	3	2	2	2
Average	2.75	2.5	2.5	1.75

Core

M.Sc. (Biochemistry) Semester - IV

Paper: BCH – 402

Genetic Engineering

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. Candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objective:

- To provide students a basic knowledge of genetic engineering for gene transfer into bacteria, yeast, plants, and animals as well as recombinant protein production in bacteria and eukaryotic cells.

Course outcomes: After the completion of the course, the students will be able to:

402.1 Understand the basic of genetic engineering and steps involved in a gene cloning experiment.
402.2 Know the various methods of gene transfer into *E. coli*, yeast, plant cells and animal cell and also know how to construct a genomic/cDNA library
402.3 Gain knowledge of recombinant protein production in bacteria and eukaryotic cells.
402.4Understand Morphogenesis and organogenesis in animals

SECTION– A

Gene cloning strategies: Isolation and purification of nucleic acid and its quantification and analysis; Molecular tools and their applications; Restriction endonucleases; DNA modification enzymes; Site directed mutagenesis; Cloning vectors; Ligation of DNA fragments: Linkers, adapters and homopolymeric tailing; Construction of genomic library: mRNA enrichment; Reverse transcription; Synthesis of cDNA and library construction, Oligonucleotide synthesis, purification, and its application in screening of libraries.

SECTION- B

Expression vectors: Choice of expression system; Expression in bacterial, yeast, insect and mammalian cells; Baculovirus expression systems; Expression of heterologous genes; Factors affecting the expression of cloned genes; Codon bias; Vector engineering and codon optimization; Ti-plasmid

Transgenic and gene knockout technologies: Transgenic methodology; Transgenic animals and plants; Targeted gene replacement; chromosome engineering.

Stem cells: Stem cells and their properties, medical applications of adult stem cells, embryonic stem cells and therapeutic cloning.

SECTION- C

Studying gene expression and function: Studying the transcript of a cloned gene; Identifying protein binding sites on a DNA molecule; Identifying control sequences by deletion analysis; Identifying and studying the translation product of a cloned gene by HRT & HART. Studying protein-protein

interactions(Phage display and the yeast two hybrid systems). Production of Proteins from cloned genes: Expression in *E. coli* (Vectors for expression of foreign genes in *E. coli*, promoters used in expression vectors, general problems with the production of recombinant protein in *E. coli*); Production of recombinant protein by eukaryotic cells (Recombinant protein production in yeast, insect cells and mammalian cells; Pharming- recombinant protein production from live animals and plants); Recombinant protein purification using His-tag. Importance of gene cloning in medicine for the production of recombinant pharmaceuticals

SECTION- D

Morphogenesis and organogenesis in animals : Cell aggregation and differentiation in *Dictyostelium*; axes and pattern formation in amphibia and chick; organogenesis – vulva formation in *Caenorhabditis elegans*, eye lens induction, limb development and regeneration in vertebrates; differentiation of neurons, post embryonic development- larval formation, metamorphosis; environmental regulation of normal development; sex determination.

Suggested Readings:

1. Gene Cloning and DNA Analysis - An Introduction, 8th edition, by T. A. Brown (2018), Blackwell Publishing.
2. Molecular Biotechnology - Principles & applications of Recombinant DNA, 6th ed., Bernard R. Glick, Cheryl L. Patten (2018), ASM Press.
3. Principles of Gene Manipulation, 7th ed., Sandy B. Primrose, Richard Twyman (2006), Blackwell Scientific Publication.
4. Analysis of Genes and Genomes, 9th ed. (2015) by Richard J Reece, John Wiley & Sons, Ltd.
5. Beier F.K, Crespi R.S and Straus T. Biotechnology and Patent protection, Oxford and IBH Publishing Co. New Delhi.
6. Rajmohan Joshi (Ed.) 2006. Biosafety and Bioethics, Isha Books, Delhi
7. Developmental Biology (9th Edition) By Scott F. Gilbert

Teaching Learning Process

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.
- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessments.
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CO-PO mapping matrix for BCH 402 (Genetic Engineering)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 402.1	3	2	1	2	-	2
402.2	3	2	1	2	-	2
402.3	3	2	1	2	-	2
402.4	3	1	3	2	-	2
Average	3	2	1.5	2	-	2

CO-PSO mapping matrix for BCH 402 (Genetic Engineering)

COs	PSO1	PSO2	PSO3	PSO4
BCH 402.1	3	3	3	3
402.2	3	3	3	3
402.3	3	3	3	3
402.4	2	2	3	3
Average	2.75	2.75	3	3

Core

M.Sc. (Biochemistry) Semester - IV
Paper: BCH – 403
Biostatistics and Bioinformatics

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. Candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objective:

- To familiarize the student with the science of biological data analysis using statistical and computational tools.

Course outcomes: After the completion of the course, the students will be able to:

403.1 Understand the basic statistics and know how to analyse the biological data.
403.2 Equip the students to infer their results in a better way which is essential to get scientific data published in reputed journals.
403.3 Understand the fundamentals of bioinformatics.
403.4 Know how to use biological databases, retrieve information and link the wet and dry lab knowledge for better understanding of biological phenomenon's.To learn about Genome data-high throughput sequencing (NGS Platform).

SECTION - A

Fundamentals of Statistics: Arithmetic mean, median, mode: measures of variation: standard deviation, variance, coefficient of variation; properties; correlation: types and methods; simple, multiple, linear and non linear correlation, spearman's correlation, rank correlation; regression: linear and curvilinear regression (for X and Y only), regression lines by least square method, regression equations of X on Y and Y on X only; sample size; power of study, sampling techniques, handling and description of data

SECTION - B

Tests of Significance: Null hypothesis; standard error; level of significance; degrees of freedom; significance of mean for large samples; significance in means for small samples (students t-test); significance in ratio of two samples; F test (for difference between variance of two samples); chi square test; analysis of variance (ANOVA) test for one and two way classification; applications of various online tools: SPSS, Minitab, XLSTAT etc.

SECTION - C

Fundamentals of Bioinformatics: Introduction to bioinformatics; concept of databases; biological databases; integration of databases; applications and problems in information retrieval from biological databases; Pairwise sequence comparisons by DOT-MATRIX and dynamic programming; Global (Needleman and Wunsch algorithm) and local (Smith and Waterman algorithm) alignments; Measures of sequence similarity (Alignment score, % sequence identity; percentage similarity; statistical scores–E, P

and Z); Heuristic approaches for database searching; SP scoring; multidimensional dynamic programming; progressive sequence alignment approach.

SECTION - D

Applications of Bioinformatics: Phylogenetic analysis (phylogeny, Phylogenetic tree, construction methods of Phylogenetic tree and Phylogenetic programs); protease digestion mapping; protein structure analysis; protein secondary structure prediction; Homology modelling (principles and procedures);

Genome data-high throughput sequencing (NGS Platform): Assembly and mapping of reads, and annotation with functional features – Practical use of scripts for NGS data analysis; Molecular Docking; Protein-ligand and Protein-protein interactions, Online tools, Data generation and analysis.

Suggested Readings:

1. Statistical Methods by S P Gupta 46th ed. (2017), Sultan Chand and Sons. New Delhi
2. Fundamentals of Mathematical Statistics, S C Gupta and V K Kapoor (2014), Sultan Chand and Sons.
3. Essential Bioinformatics, JinXiong (2007), Cambridge University Press.
4. Bioinformatics for Dummies, Jean-Michel Claverie, Cedric Notredame (2003), John Wiley and Sons.
5. Introduction to Bioinformatics, 5th ed., Arthur M. Lesk (2019) Oxford University Press.
6. Fundamental Concepts of Bioinformatics (2003), Dan E. Krane, Michael L Raymer.

Teaching Learning Process:

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.
- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessments.

CO-PO mapping matrix for BCH 403 (Biostatistics and Bioinformatics)

Cos	PO1	PO2	PO3	PO4	PO5	PO6
BCH 403.1	3	2	-	1	-	2
403.2	3	2	-	2	-	3
403.3	3	2	-	2	-	2
403.4	3	2	-	2	-	3
Average	3	2	-	1.75	-	2.5

CO-PSO mapping matrix for BCH 403 (Biostatistics and Bioinformatics)

Cos	PSO1	PSO2	PSO3	PSO4
BCH 403.1	3	3	3	3
403.2	3	3	3	3
403.3	3	3	3	3
403.4	3	3	3	3
Average	3	3	3	3

Elective

M.Sc. (Biochemistry) Semester – IV

Paper: BCH – 404A

Pharmacovigilance and Clinical Trials

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions and covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. The candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objectives:

- To familiarize student about the Pharmacovigilance and Clinical Trials

Course outcomes: After completion of the course, the students will be able to:

404A.1 Understand the Basics and Terminology of Adverse drug reactions and importance of Clinical Therapeutics.

404A.2 Learn about Pharmacovigilance and Clinical Trials.

404A.3 Understand the Pharmacovigilance System & Regulations and Pharmacovigilance-Sources of ADRs (ICSRs).

404A.4 Learn about MedDRA and Pharmacovigilance Risk Management.

SECTION – A

Adverse Drug Reactions (ADRs) and Clinical Therapeutics: Basics and Terminology representing Adverse drug reactions, Types of ADRs, Seriousness and severity in ADR, Causality assessment of ADR, Difference in Expectedness and labelledness, PV plans-National, EMA, FDA, Significance and Importance of ADR reporting, Clinical Therapeutics: Basics and Its Importance

SECTION – B

Pharmacovigilance and Clinical Trials: Overview of Pharmacovigilance, Standard Terms And Terminology in Pharmacovigilance, Introduction of Clinical Research, Clinical trials: bioethics of drug safety, pharmacovigilance in trial design, applications for marketing authorization, Clinical Trial Phases, Drug Development and Launch, Importance of pharmacovigilance in Clinical Trials-Outcome and clinical implications, Pharmacological Principal of Clinical Research

SECTION – C

Pharmacovigilance System & Regulations: ICH: Basics and its Importance GVP Guidelines, ICMR, 21 CFR, CIOMS and its importance, NPP (National Pharmacovigilance Program) programmes in India, Awareness regarding NPP programmes

Pharmacovigilance-Sources of ADRs (ICSRs): Adverse Event Reporting System and Form, Adverse event reporting-Globally, Adverse event reporting in India, Sources of ADRs: Clinical trial, spontaneous, literature and NIP/NIS, Current status and knowledge about ADR reporting, Carrier opportunities as Affiliates

SECTION – D

MedDRA: History and Structure, MedDRA browser, versioning and updating, terminologies used in MedDRA, MedDRA coding, MedDRA baskets, Use of MedDRA in PV databases, Importance of having Global MedDRA terminologies

Pharmacovigilance Risk Management: Introduction, Aim of the RMP, Risk management cycle, Characterization of risks, RMP content and contributors, RMP review process, EU RMP versus Core RMP

Suggested readings:

1. Textbook of Pharmacoepidemiology, Edited by Brian L. Storm and Stephen K. Kimmel; Wiley Blackwell;5th Edition
2. Pharmacovigilance by Ronald D. Mann, Elizabeth Andrews; Wiley Blackwell;3rd Edition
3. Principles and practice of Clinical Research by John. I Gallin.; Academic Press;3rd Edition
4. Principles and practice of clinical trial medicine by Richard Cin and Bruce Y. Lee; Academic Press; Ist Edition

Teaching Learning Process:

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.
- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessments.

CO-PO mapping matrix for BCH 404A (Pharmacovigilance and Clinical Trials)

Cos	PO1	PO2	PO3	PO4	PO5	PO6
BCH 404A.1	3	2	3	2	-	3
404A.2	3	1	3	1	-	3
404A.3	3	-	3	1	-	3
404A.4	3	-	3	1	-	3
Average	3	0.75	3	1.25	-	3

CO-PSO mapping matrix for BCH 404A (Pharmacovigilance and Clinical Trials)

Cos	PSO1	PSO2	PSO3	PSO4
BCH 404A.1	3	2	3	3
404A.2	3	2	3	3
404A.3	3	2	3	3
404A.4	3	2	3	3
Average	3	2	3	3

Elective

M.Sc. (Biochemistry) Semester - IV
Paper: BCH – 404B
Genetics and Evolution

Total Marks: 100
External Marks: 80 **Time allowed: 3 hrs**
Internal Assessment: 20 **Credits: 4**

Note: The examiner will set nine questions in all with two questions from each section. Q. No. 1 consisting of very short answer type questions covering the entire syllabus will be compulsory. Each question will be divided into parts and the distribution of marks will be indicated part-wise. Candidates will be required to attempt Q. No. 1 & four others, selecting one from each section.

Objectives:

- To review the genetic basis of heredity for both Mendelian and quantitative characters
- To review the scientific evidence for biological evolution
- To explore how selection influences the genetic composition of a population
- To review the current understanding of how species are originated and how biological diversity arises

Course outcomes: After the completion of the course, the students will be able to:

404B.1 Understand the mechanisms of heredity and evolution, and their consequences for population genetic structure and biodiversity

404B.2 Gain insight knowledge of transmission of hereditary characters

404B.3Understand the fundamentals of population genetics

404B.4 Get the insight knowledge of genetic and ecological processes in the biological evolution

SECTION- A

Inheritance: Mendelian principles; extensions of Mendelian principles (codominance, incomplete dominance, gene interactions, pleiotropy, genomic imprinting, penetrance, expressivity and phenocopy); cytoplasmic inheritance; concept of gene; allele (multiple and pseudo); linkage; sex linked inheritance, mutations and recombination.

SECTION - B

Human Genetics: Human karyotype: banding and nomenclature of banding and aberrant karyotypes; Common syndromes due to numerical chromosome changes (triploidy, trisomy, monosomy) and structural alterations (translocation, duplications, deletions and fragile sites); Linkage map and Pedigree analysis; Identification of human genetic diseases- positional cloning illustrated using examples- Duchenne muscular dystrophy, cystic fibrosis, Huntington's disease.

SECTION - C

Evolutionary Thoughts and History: Lamarckism and Darwinism; Adaption, Struggle, Fitness and natural selection; The evolutionary synthesis; The evolutionary time scales; Eras, periods and epoch; Origins of unicellular and multicellular organism; Major groups of plants and animals; Stages in primate evolution including Homo.

SECTION - D

Molecular Evolution: Concept of neutral evolution, origin of new genes and proteins (by gene disruption and exon shuffling); gene duplication and divergence; variation (phenotypes, chromosome structure, protein structure and nucleotide sequences); speciation, allopatry and sympatry; isolating mechanisms; convergent evolution; co-evolution; adaptive radiation. **Population Genetics:** Populations, Gene pool, Gene and allele frequency; Conservation of gene frequency; Hardy Weinberg Law; concepts of rate of change in gene frequency through natural selection; random genetic drift.

Suggested readings:

1. Essential genes (2006), BenzaminLewin, Pearson education international.
2. Human Molecular Genetics (2010), 4th ed., Tom Strachan and Andrew P Read, Garland Science.
3. Molecular Biology of Gene (2008), 6th ed., Watson, Baker *et al*, Levine and Losick, Pearson education Inc.
4. Principles of Genetics (2006), 8th ed., Gardener *et al*, John Wiley, New York.
5. Essential Genetics: A Genomic Perspective (2002), 3rd ed., Hart and Jones, Jones and Bartlett.
6. Genetics: Conceptual approach (2003), Benjamin A P, W H Freeman and Company, New York.
7. Principles of Genetics (2015), 7th ed., Snustad and Simmons, Wiley

Teaching Learning Process:

- Teaching is supported by Classroom Lectures, Power point presentations/ICT and related videos.
- Written assignments are assigned.
- Knowledge of the students is assessed through Oral test/surprise tests/ internal assessments.

CO-PO mapping matrix for BCH 404B (Genetics and Evolution)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 404B.1	3	3	-	2	-	1
404B.2	3	3	-	2	-	1
404B.3	3	3	-	2	-	1
404B.4	3	3	-	2	-	1
Average	3	3	-	2	-	1

CO-PSO mapping matrix for BCH 404B (Genetics and Evolution)

COs	PSO1	PSO2	PSO3	PSO4
BCH 404B.1	3	3	3	3
404B.2	3	3	3	3
404B.3	3	3	3	3
404B.4	3	3	3	3
Average	3	3	3	3

(*Core*)
M.Sc. (Biochemistry) Semester - IV
Paper: BCH –405
Practical-7 (Based on papers BCH-401 and BCH-402)

Total Marks: 100
External Marks: 80 **Time allowed: 8hrs**
Internal Assessment: 20 **Credits: 4**

Course outcomes:
After the completion of the course, the students will be able to:
405.1 Demonstrate the proficiency in concepts, practical skills in biotechniques
405.2 An understanding of cytotoxic and cell staining assays
405.3Develop skills in carrying out research projects in Gene cloning technology
405.4 Understand gene expression and purification system

List of experiments*

1. Western blotting
2. Cytotoxicity assays
3. Cell staining assays
4. To demonstrate Southern blotting and Northern blotting
5. To demonstrate Flow cytometery and Data analysis
6. Separation of poly RNA on oligodT column
7. To demonstrate preparation of *E. coli* competent cells and bacterial transformation
8. Isolation of Plasmid DNA
9. Digestion of vector using restriction enzymes
10. Ligation of vector and insert
11. Screening of recombinant colonies using Colony PCR.
12. Construction of restriction map of plasmid DNA
13. Gene Expression in *E. coli*
14. Purification of protein using His-Tag
15. Subcellular fractionation of organelles from animal/plant tissue

*****As per feasibility of practical(s), teacher concerned may conduct additional practical(s) in addition to the present list, which will also be the part of syllabus for evaluation.

CO-PO mapping matrix for BCH 405 (Practical-7)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH 405.1	2	2	-	2	-	3
405.2	2	2	-	2	-	3
405.3	3	2	-	2	-	3
405.4	3	2	-	2	-	3
Average	2.5	2	-	2	-	3

CO-PSO mapping matrix for BCH 405 (Practical-7)

COs	PSO1	PSO2	PSO3	PSO4
BCH 405.1	3	3	3	3
405.2	3	3	3	3
405.3	3	3	3	3
405.4	3	3	3	3
Average	3	3	3	3

Core

M.Sc. (Biochemistry) Semester - IV

Paper: BCH –406

Practical-8 (Based on papers BCH-403 and BCH-404A & B)

Total Marks: 100
External Marks: 80 **Time allowed: 8hrs**
Internal Assessment: 20 **Credits: 4**

Course outcomes:

After the completion of the course, the students will be able to:

406.1 Demonstrate the proficiency in concepts, practical skills in bioinformatics

406.2 Understand Designing of primers using bioinformatics

406.3 Understand Homology modelling and 3D- structure determination of proteins

406.4 Demonstrate molecular docking experiments

List of experiments*

1. PubMed Search
2. Search and download gene sequence from GenBank
3. Search and download protein sequence from Uniprot/Swissprot
4. BLAST analysis
5. GeneTranslator
6. Finding of ORF in a given sequence
7. Designing of primers using bioinformatics
8. Sequence alignment using ALIGN and multiple sequence alignment using bioinformatics
9. 3D- structure determination of proteins
10. Retrieval of sequence using ENTREZ
11. To draw phylogenetic tree and its analysis
12. To demonstrate Lipinski's rule of five and ADME
13. Molecular docking analysis
14. Molecular Visualization Tools
15. Molecular signalling pathways analysis
16. To understand the linkage dis-equilibrium between genes
17. To understand the Hardy Weinberg equilibrium in a population

*****As per feasibility of practical(s), teacher concerned may conduct additional practical(s) in addition to the present list, which will also be the part of syllabus for evaluation.

CO-PO mapping matrix for the course BCH–406 (Practical-8)

COs	PO1	PO2	PO3	PO4	PO5	PO6
BCH-406.1	3	3	3	-	3	3
BCH-406.2	3	3	3	-	3	3
BCH-406.3	3	3	1	2	3	3
BCH-406.4	3	3	1	-	2	3
Average	3	3	0.75	0.75	2.75	2.5

CO-PSO mapping matrix for the course BCH–406 (Practical-8)

COs	PSO1	PSO2	PSO3	PSO4
BCH-406.1	3	2	3	3
BCH-406.2	3	2	3	3
BCH-406.3	3	2	3	3
BCH-406.4	3	2	3	3
Average	3	2	3	3

CO-PO-PSO Mapping Matrix for all the courses of M.Sc. Biochemistry

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4
BCH-101	3	3	-	2	-	2	3	3	3	3
102	3	3	-	1.25	3	2.25	3	3	3	3
103	2.75	1	1.25	2	-	1	2.5	2.75	2.5	2.25
104	3	3	-	2.25	1	1.5	3	3	3	2
105	3	2.25	0.75	0.5	1.5	2.5	3	3	2	1.25
106	3	3	2	2	-	2	3	3	3	3
201	2.25	0.75	3	3	3	3	3	3	3	3
202A	3	3	0.75	2	1.75	2.5	3	3	3	2
202B	3	1.25	0.75	-	1.5	1.5	3	3	2.5	1.75
203	2.5	2.25	0.5	0.75	0.5	0.75	2.75	2.75	2.5	2.5
204	1.5	2.75	0.25	1.25	1	-	2.5	2.75	2.75	2.25
205	3	3	0.5	-	3	-	3	3	3	1
206	3	3	1	1	3	3	3	3	3	2
207	3	2	2	3	-	3	3	3	3	3
301	1.75	2.25	0.25	0.75	0.5	0.75	2.75	2.5	2.5	2.25
302	1.5	2.75	-	1.25	0.75	0.5	2.75	2.75	2.25	2.5
303	3	3	-	1.25	1.25	1.5	3	3	3	1.5
304	3	3	2.25	2	2.25	2.75	3	3	3	2
305	3	3	2.66	2.66	1.66	-	3	3	2	2.33
306	3	3	-	2	1	2	2	3	2	2
306A	3	3	3	3	2	3	3	3	3	3
307	3	3	2	3	-	3	3	3	3	3
308	3	3	2.25	2.25	2.75	2.5	3	3	3	2
401	2.75	0.5	1.75	1	0.5	1.5	2.75	2.5	2.5	1.75
402	3	2	1.5	2	-	2	2.75	2.75	3	3
403	3	2	-	1.75	-	2.5	3	3	3	3
404A	3	0.75	3	1.25	-	3	3	2	3	3
404B	3	3	-	2	-	1	3	3	3	3
405	2.5	2	-	2	-	3	3	3	3	3
406	3	3	0.75	0.75	2.75	2.5	3	2	3	3

Annexure to Item 10(17)

"Life Lessons from Gita"

Credits:-2
Contact Hours/week:-2
Total Marks-50

Learning outcomes-

On completion of this course the students will

(1) Have a basic understanding of the various philosophical themes in Gita. They will be able to understand the fundamentals of Universal philosophy i.e. yoga systems, karma, atma, prakriti.

(2) Use the knowledge in Gita for analyzing issues related to mental health and lifestyle.

(3) Appreciate the scientific backing of the Gita concepts.

Approaches to teaching

Lectures, power point Presentations, Group Discussion

Requirements

Regular attendance and active participation during the course; Books and reference material; assignments and presentations etc.

Evaluation

Knowledge gained and understanding will be evaluated against the expected learning course outcomes on the basis of class participation, regularity, quiz, discussion and assignments based on examples and situations. Evaluation will be conducted by concerned faculty.

Course Plan:

Lecture Number	Learning Objective	Topics to be covered
1-5	Modes of nature in Gita	General symptoms of three modes, worker and action in three modes. Understanding in three modes. Food and lifestyle in three modes.
6-10	Basis of ontology in Gita	Atma: the fundamental entity. Understanding reincarnation, process and evidence implication in everyday life of this ontology. Atma and Paramatma.
11-15	Overview of vedic scriptures	Basic epistemology. Shabda Praman and the Vedas. The various branches of vedic knowledge. Gita as the essence of all scriptures. Scientific basis of accepting shabda
16-25	Principles of Morality	Relative morality and dharmic morality. Basic concept of karma. Position of free will and destiny in the events of life. Vikarma and akarma
26-30	Understanding meaning of existence	Basic understanding of existence. Yoga as the way to spiritual life. Various kinds of Yoga. Adapting to a life according to teachings of Gita. Dharma and Para dharma. Bhakti yoga as a practical and easy means.

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Gita Adhyayan Kendra
Kurukshetra University, Kurukshetra
Gita-A Manual of Life

Scheme of Examination:

(i) Course Credit: 02 (ii) Contact Hours: 02 per week

(iii) Total Marks: 50 Marks (iv) Teaching will be based on the discussion in the class room

Note:- There will be no written examinations knowledge and understanding of Gita teachings will be assessed through discussion by the Students describing the knowledge and implementation of Gita's teachings in daily life for the betterment of our day today life.

Course Outcomes:

Unit-I : After studying the first unit of the course students will be able to understand meaning, background & relevance of Gita's teaching's in contemporary times.

Unit-II: After studying the second unit of the course students will be able to understand benefits of Karma Yoga, Bhakti Yoga and Janana Yoga in our daily life.

Unit-I

Gita for all: Meaning, background and relevance of Gitaopdesha Karmayoga as a way to right knowledge; Necessity of Loksamgraha for the service of Humanity.

Unit-II

Gita for Spiritual world: Karm Yogi as an Ideal Man of Gita, Sthitaprajna as a symbol of ideal master in Gita, Swadharma and Pradharma as a secret of Blissful society, Atma Samyama Yoga; a technique for building an ideal person according to Gita.

Suggested Books:

1. Swami Ramsukhdas, Gita Sadhak Sanjivani Teeka
2. Hnuman Prasad Poddhar, Gita Tattvavivechni Teeka
3. Gandhi Gita Matta
4. Gurudatta Srimadbhagvadgita Vyakhya
5. Satyavarta, Srimadbhagvadgita Vyakhya
6. Swami Jyanananda, Gita Prerna
7. Paramhamsa Yogananda, Srimadbhagvadgita God-Arjuna, Discoruse
8. Aurvind, Essays on Gita.
9. S. Radhakrishna, Bhagwvadgita Vyakhya
10. Jyaneshwar, Jyaneshwari Gita

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Paper B-HVE-101

Human Values & Ethics

Course Credit: 02
Contact hours/week: 02
Total Marks: 50

Course Outcomes:-

B-HVE-101.1:- The students will be able to correlate the need of human values to sustained happiness and prosperity- the core aspirations of human beings.

B-HVE-101.2:- The students will be able to express the knowledge of human values and analyse their importance in holistic perspective for a peaceful world.

Approaches to teaching
Lectures, power point Presentations, Group Discussion
Requirements
Regular attendance and active participation during the course; Books and reference material; assignments and presentations etc.
Evaluation
Knowledge gained and understanding will be evaluated against the expected learning course outcomes on the basis of class participation, regularity, quiz and discussions based examples and situations. Evaluation will be conducted by concerned faculty.

Unit –I.

Human Values : Meaning and Definitions

(a) Understanding the need of human values and value education. Self-exploration concept of happiness and prosperity, Right understanding, understanding body as an instrument of I, Living in harmony, reaching highest potential in digital age through care & empathy balancing interests and expectations.
(b) Basic human values: Honesty, kindness, integrity, courage, co-operation, commitment, cleanliness, spirituality, understanding duties & rights.

Unit-II

Life Values and universal ethics

(a) Life Values:- Understanding of harmony in yourself family: Trust and respect, society; Co-existence & unity in diversity Nature mutually interacting units and universe.
(b) Universal Ethics-Loyality, respect for others, adherence to the law, doing good and avoiding harm to other, accountability, sensitive towards environment, Transparency, impartiality and objectivity.

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Suggested Books:-

1) Ethics, Integrity and Aptitute (3rd Edition)- M. Karthikeyan Pub: McGrawHill.
2) A foundation course in Human Values and Professional Ethics- RR Gaur, R Sangal, GP Bagaria Pub: abebooks
3) Ebook- मूल्यप्रवाह- UGC (26-11-2019)
Pdf- Human Value www.ugc.ac.in (available on UGC Website)
4) Patanjala Yoga Sutra- Samadhi Pada.

-1-

Culture and Heritage of Haryana

Credits : 2
Total marks : 50
Assessment : Internal

Activity participation – 20 marks
Project/Assignment/ Presentation/Viva – 30 marks

Learning Outcomes: On successful completion of the course the students will be

1. Aware of folk culture and heritage
2. Inspired to conserve Haryanvi folk, language and culture

Requirements

Regular attendance and active participation during the course; assignments and presentations etc. data collection from friends, family and analysis

Mode of Evaluation

The performance of the students will be evaluated by Intrenal Examiner on basis of Activity participation, regular attendance, projects/assignments/ field report.

For successful completion of the course students will have to secure 50% marks of the evaluation

1. Stage Compeering
2. Class Room Workshop
3. Haryanvi Culture Field Work
4. Haryanvi Festival Visit
5. Haryana Craft Fair Visit
6. Lecture Series of Haryanvi Experts
7. Dissertation Writing on culture
8. Interaction with Event Managers
9. Interaction with Haryanvi Film Stars
10. Content writing on culture and heritage

Literary Club

Credits : 2
Total marks : 50
Assessment : Internal
Activity participation – 20 marks
Project/Assignment/ Presentation/Viva – 30 marks

Mode of Evaluation
The performance of the students will be evaluated by Internal Examiner on basis of Activity participation, regular attendance, projects/assignments .
For successful completion of the course students will have to secure 50% marks of the evaluation

Course Learning Outcomes
After completing the activity course, the students will be able to

1. write notices, reports, captions for pictures, haiku, story, press notes, writing poems on a given theme, paragraph and essay.
2. do creative writing, public speaking and story telling, perform in debates and group discussions.

Activities

To write notices, reports, captions for pictures, haiku, story, press notes, writing poems on a given theme, paragraph and essay.
To do creative writing, public speaking and story telling, perform in debates and group discussions.

Quantitative Aptitude

Credit:2
Total Marks: 50
Assessment: Internal
Activity Participation-20 Marks
Assignment/ Presentation/Quiz/Viva-30 marks

Learning Outcomes:

On successful completion of the course, the students will be able to:

- Analyze the concept of series.
- Understand the techniques of data interpretation.
- Calculate profit and loss and also learn the concept of ratio and proportion.
- Understand the concept of Time speed and distance.

Mode of Evaluation: The performance of the students will be evaluated by Internal Examiner on basis of activity participation, regular attendance, Assignment/ Presentation/ Quiz/Viva.

For successful completion of the course students will have to secure 50% marks of the evaluation.

Students will practice solving the problems base on-

1. Number Series: -Arithmetic series, Geometric series, completion of series, wrong term number series, Missing number in the middle, Missing number in the end.
2. Blood relationship, problem on ages.
3. Data Interpretation - Bar Graph, Pie Chart, Table, Line Chart, Combined Graph.
4. LCM & HCF, Percentage**,** Profit & loss.
5. Ratio and proportion, Averages.
6. Time and Work, Time, Speed and Distance

VEDIC MATHEMATICS

Credit:2
Total Marks: 50
Assessment: Internal
Activity Participation-20 Marks
Assignment/ Presentation/Quiz/Viva-30 marks

Learning Outcomes:

On successful completion of the course, the students will be able to:

- Perform simple arithmetic calculation with speed and accuracy
- Learn the techniques of multiplication.
- Generate tables of any number
- Understand the concept of division by simple techniques.
- Calculate square and square roots
- Analyze the cube and cube root

Mode of Evaluation: The performance of the students will be evaluated by the Internal Examiner on the basis of activity participation, regular attendance, Assignment/ Presentation/ Quiz/Viva.

For successful completion of the course students will have to secure 50% marks of the evaluation.

Students will practice solving the problems base on-

1. Beejank and check by Beejank;
2. Addition by completing the whole, from left to right, Shudh method, By one more than previous one (Ekadhikena Purvena);
3. Subtraction by completing the whole, from left to right, base method, By one less than previous one(Ekanyunean Purvena)
4. Multiplication by base method, sub base method, vinculum, multiplication by numbers consisting of all 9s by 11, multiplication by vertically & crosswise(Urdhvatiryagbhyam)
5. Generating Tables
6. Division by special method, straight division
7. Squaring and square roots Cube and Cube Roots.

Activity Class : Online Gaming

Credits : 2
Totam marks : 50
Assessment : Internal

Activity participation – 20 marks
Project/Assignment/ Presentation/Viva – 30 marks

Course objective:

- **Student will be able to understand the working of operating system in context of game playing**
- Student after completion of hobby class will be fluent in Key optimization and also in game playing along with shifting to levels.

Mode of Evaluation

The performance of the students will be evaluated by Internal Examiner on basis of Activity participation, regular attendance, projects/assignments .

For successful completion of the course students will have to secure 50% marks of the evaluation

Syllabus

Android programming, Game theory, Character Design for games
Digital art lab, Game designing lab, 3D game design, Assets Lab, Lighting and camera, Level designs for Games, Mobile and Web compatibility

.

Activity Class : Blogging

Credits : 2
Totam marks : 50
Assessment : Internal

Activity participation – 20 marks
Project/Assignment/ Presentation/Viva – 30 marks

Course objective:

- Student will be able to understand the working of Internet and Blogs
- Students will learn how to effectively write blog articles and posts through learning skills such as: how to write a captivating headline, finding the right audience,

Mode of Evaluation

The performance of the students will be evaluated nu Internal Examiner on basis of Activity participation, regular attendance, projects/assignments .

For successful completion of the course students will have to secure 50% marks of the evaluation

Syllabus

Blog fundamentals

The Art of Blogging: Learning How to Write and Think In The Age of Self-Publishing

- Writing an eye-catching intro , Subheadings

Formatting your work : Splitting up your ideas , Proper spaces/indents , Using list Paragraph length, Using fonts, finding right image, image placements, image size, cover page, efficient writing

Gender Sensitization

Credits : 2
Total marks : 50
Assessment : Internal

Activity participation – 20 marks
Project/Assignment/ Presentation/Viva – 30 marks

Learning Outcomes: On successful completion of the course the students will be able to

101.1 analyse the gender related issues and will be able to develop gender sensitive opinion

101.2 aware of the social and economic issues of women in family, locality and society and develop the understanding of responsibility

Approaches to teaching

Group Discussion, Power point Presentations, models, videos, physical exercises etc.

Requirements

Regular attendance and active participation during the course; assignments and presentations etc. data collection from friends, family and analysis

Mode of Evaluation

The performance of the students will be evaluated by Intrenal Examiner on basis of Activity participation, regular attendance, projects/assignments/ field report.

For successful completion of the course students will have to secure 50% marks of the evaluation

1. Discussions on difference between gender and sex. Gender sensitization with the help of examples, discussions on the issues in society impacting women and their developmentlike- declining sex ratio, female feticide, dowry, higher drop out from education, domestic violence, child marriage, gender bias at workplace, health opportunities etc.

2. Students will be vigilantly observing around them in institute, family, locality to point out the problems due to gender bias, discuss and suggest solutions along with individual`s responsibilities

3. The policies and programmes of institute and Government will be discussed.

4. Students will survey atleast 50 houses of their locality for education/ property rights/ health aspects and create awareness through advocacy.

Flora at University Campus

Credits: 2 Hours/Week
Total Marks: 50
Assessment: Internal

Participation in activity, regularity and punctuality = 20 marks

Performance in activity 30marks

Mode of Evaluation:

The evaluation of the students will be carried out by the concerned teacher/instructor from the Institute/college on the basis of activity participation, regularity, project/ assignment/ field report/ performance on ground or field to achieve learning outcomes .

For the successful completion of the course, students have to attain minimum 50%marks in evaluation.

The course will be evaluated as C (complete) or NC (non-complete).

Course Learning Outcomes:

On successful completion of the course the students will be able to

1. Identify different varieties of Plants in University Campus
2. Prepare E- Herbarium of plants
3. Economic Importance of plants

Activity in the Field

Survey of wild, cultivated, ornamental, medicinal and fruit plants in University Campus to know the type of plant like Algae, Fungi, Bryophytes, Pteridophytes, Gymnosperms and Angiosperms. Also Know the Category of plants like Herbs, Shrubs Creepers and Trees, Hydrophytes, Mesophytes, Xerophytes , Ornamental Plants, Wood Trees etc. Know Economic Importance of plants

During Visit in Campus Students take Photograph of different plants and prepare E-Herbarium. Preparation of Project work or field report of 4 to 6 field trips for plants study in different area of the campus.

HOD

Botany Deptt.,IIHS

Bird Watching

Credits: 2
Total Marks: 50
Assessment: Internal

Activity participation=20 Marks
Field Report/Project/Assignment/Presentation/Viva-voce= 30 Marks

Mode of Evaluation:

The performance of the students will be evaluated by internal examiner on the basis of activity participation, regular activities project/assignment/field report.

For successful completion of the course, the students have to secure 50% marks in the evaluation

Course Learning Outcomes:

On successful completion of the course the students will be able to

1. Identify local and migratory birds of an area
2. Prepare a checklist of birds in different habitats
2. Exhibit an insight of bird conservation

1. Introduction to external features of birds- head, neck, wings, feathers, feet and claws, etc. Importance of birds, bird classification, birds' routine activities: Flying, Walking, Eating, Perching on trees or wires, Drinking water, Singing, Nesting, Preening, Moulting, Bathing, Dust bath, Flocking, Roosting etc. Migration in birds- modes of flight in migration. problems of way finding, causes of migration, significance of migration, disadvantages of migration. Conservation of birds.
2. Bird watching- identification of birds, calls and songs, equipments for bird watching, principles of bird ethics. Bird photography-understanding camera basics & lenses, light conditions, photographing- water birds, small perching birds, birds in forests & shorebird, birds in urban setting, nesting birds. Project work or field report of 4 to 6 field trips for bird watching in different habitats. Preparation of bird checklist of an area/ habitat/landscape.

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Magnificent Health

Credits : 2
Total marks : 50
Assessment : Internal

Activity participation – 20 marks
Project/Assignment/ Presentation/Viva – 30 marks

Learning Outcomes: On successful completion of the course the students will be able to

1. apply the knowledge of health, its correlation to physical activity and life style

2. apply the insights of nutritional requirements, balanced diet, diet planning in correlation to energy requirements using available seasonal foods

Approaches to teaching

Group Discussion, Power point Presentations, models, videos, physical exercises etc.

Requirements

Regular attendance and active participation during the course; assignments and presentations etc. data collection from friends, family and analysis

Mode of Evaluation

The performance of the students will be evaluated by Intrenal Examiner on basis of Activity participation, regular attendance, projects/assignments .

For successful completion of the course students will have to secure 50% marks of the evaluation

1. Introduction to dimension and determinants of health ; Life style Health problem in India- obesity, hypertension, coronary heart disease, diabetes, osteoporosis, impact of use of alcohol, tobacco and drugs on health; Role of Physical activities and foods in maintaining health; use of seasonal, easily available foods in diet
2. Students will take up the following plans of physical activity and diet for 8 weeks regularly-
   a. 30 minute walk- 5 days per week /30 minute moderate exercise- 4 days per week / 30 minute Yoga exercises including breathing exercises-6 days per week
   b. Adequate and balanced diet with sufficient water, proteins and fiber

   Students will share their experiences before and after following the routine and will be guided to improve.

INSTITUTE OF INTEGRATED & HONORS STUDIES
KURUKSHETRA UNIVERSITY KURUKSHETRA

(Established by the State Legislature Act XII of 1956)
('A+' Grade, NAAC Accredited)

Name of Course: Activity Based Course
Nomenclature: Physics for You

Credits: 2
Total Marks: 50
Assessment: Internal

Mode of Evaluation:

- The evaluation of the students will be carried out by the concerned teacher/instructor from the Institute/college on the basis of activity participation, regularity, project/ assignment/ field report/ performance on ground or field to achieve learning outcomes as per matrix given below:-
- Participation in activity, regularity and punctuality = 20 marks
- Performance in activity (Beginners, Progressive, Proficient, Excellent) = 30marks
- For the successful completion of the course, students have to attain minimum 50%marks in evaluation

Course Learning Outcomes:

1. Students will learn about great physicists and their contribution through activities.
2. Students will learn about latest development in science and technology through activities
3. Students will learn about role of physics in daily life through activities.

ACTIVITIES

1. Student will learn Indian Great Physicists
2. Student will learn Indian Major discoveries in Physics
3. Student will Learn Latest development in the science and technology, national and international important days (related to Physics)
4. Student will Learn Physics in daily life
5. Student will Learn Basic Physics Principles through Models
6. At end of activities student will submit a model on the basis of Basic Physics Principles and will participate in Quiz Contest.

KATHAK DANCE

Credits: 2
Maximum Marks: 50
Assessment: Internal

Class participation = 20 marks
Project/Presentation/Assignment/Viva voce = 30 marks

MODE OF EVALUATION:

1. The performance of the students will be evaluated by internal examiner on the basis of activity participation, regular activities, project/assignment.

2. For successful completion of the course, students have to secure 50% marks in the evaluation.

COURSE LEARNING OUTCOMES:

1. After successful completion of the course, the students will be able to describe the Kathak & able to elaborate the terms and techniques of Kathak Dance.

2. After successful completion of the course, the students will be able to perform the Kathak Dance and able to demonstrate Padant of Kathak.

SYLLABUS

1. Introduction of Kathak and That, Toda, Aamad, Tihai, Chakkar, Hand movements.
2. Perform Vandana, Stuti, Kavit, Nagma, Tatkar in Teen Taal (Ekgun, Dugun, Chaugun).
3. The student will perform atleast one Vandana, one Kavit, one Nagma, one Tihai and one that.

PLAY INSTRUMENTS: SITAR

Credits: 2
Maximum Marks: 50
Assessment: Internal

Class participation = 20 marks
Performance/ Presentation/Assignment/ Viva voce = 30 marks

MODE OF EVALUATION:

3. The performance of the students will be evaluated by internal examiner on the basis of activity participation, regular activities, project/assignment.

4. For successful completion of the course, students have to secure 50% marks in the evaluation.

COURSE LEARNING OUTCOMES:

3. After successful completion of the course, the students will be able to describe the introduction of Sitar & able to elaborate the terms and techniques of Sitar.

4. After successful completion of the course, the students will be able to exhibit the techniques of Playing and able to demonstrate filmy songs and National anthem on Sitar.

SYLLABUS

4. Introduction of Sitar and its types, Gat, Aalap, Jhala, Ghaseet, Meend, Draw a picture of Sitar and mention its parts

5. Play Rajakhani Gat on Sitar in Rag Yaman and Bhupali, any Filmy and Folk Dhun on Sitar, Ability to demonstrate Teen Taal and Kehrava Taal on Hand

6. The student will perform atleast one Gat, one Dhun, one Folk tune, one Filmi song in prescribed Raga and Taal.

PLAY INSTRUMENTS : SYNTHESIZER

Credits: 2
Maximum Marks: 50
Assessment: Internal

Class participation = 20 marks
Performance/ Presentation/Assignment/Viva voce = 30 marks

MODE OF EVALUATION:

5. The performance of the students will be evaluated by internal examiner on the basis of activity participation, regular activities, project/assignment.

6. For successful completion of the course, students have to secure 50% marks in the evaluation.

COURSE LEARNING OUTCOMES:

1. After successful completion of the course, the students will be able to gain knowledge about different parts of Synthesizer and playing also.

2. After successful completion of the course, the students will be able to gain practical knowledge of Synthesizer & gain knowledge about singing with Synthesizer.

SYLLABUS

1. The different types of Synthesizer, keys in Standard Synthesizer, Sangeet. Saptak, Alankar , Chords, use of transpose fanction in Synthesizer, role of sound banks in Synthesizer.

2. Play Raga Bilawal and Bhairavi on Synthesizer, Filmy song/Tunes on Synthesizer, National Anthem on Synthesizer, demonstrate Teen Taal and Kehrava Taal on Hand.

3. The student will perform atleast one filmi song, National Anthem, tunes and chord in prescribed Raga and Taal.

PLAY INSTRUMENTS: HARMONIUM

Credits: 2
Maximum Marks: 50
Assessment: Internal

Class participation = 20 marks
Performance/ Presentation/ Assignment /Viva voce= 30 marks

MODE OF EVALUATION:

7. The performance of the students will be evaluated by internal examiner on the basis of activity participation, regular activities, project/assignment/field report.

8. For successful completion of the course, students have to secure 50% marks in the evaluation.

COURSE LEARNING OUTCOMES:

1. After successful completion of the course, the students will be able to gain knowledge about different parts of Harmonium and student will resolve tiny problems of tuning of Harmonium.

2. After successful completion of the course, the students will be able to gain practical knowledge of Harmonium and gain knowledge about singing with Harmonium.

SYLLABUS

1. Introduction to the Harmonium and its types, Parts of Harmonium, Swara, Alankar, Saptak and That, the universal Scale pattern, Teen Taal and Kehrava Taal.
2. Play and practice of any dhun on Harmonium, Alankar and That on Harmonium, Raga Yaman and Darbari withTeen Taal, any Filmi song, Semi classical and Folk Tune, Ability to demonstrate Teen Taal and Kehrava Taal on Hand.
3. The student will perform atleast one dhun, two Alankar, one Folk tune, one Filmi song in prescribed Raga and Taal.

PLAY INSTRUMENTS: GUITAR

Credits: 2
Maximum Marks: 50
Assessment: Internal

Activity participation = 20 marks
Performance/ Presentation/ Assignment /Viva voce = 30 marks

MODE OF EVALUATION:

9. The performance of the students will be evaluated by internal examiner on the basis of activity participation, regular activities.

10. For successful completion of the course, students have to secure 50% marks in the evaluation.

COURSE LEARNING OUTCOMES:

5. After successful completion of the course, the students will be able to describe the introduction of Guitar & able to elaborate the terms and techniques of Guitar.

6. After successful completion of the course, the students will be able to define the importance of Guitar in present scenario, to exhibit the techniques of Playing and to demonstrate songs on Guitar.

SYLLABUS

1. Introduction of Guitar, types of Guitar, Diagram and correct Posture of holding a Guitar, western names of Swaras as compare to Indian Classical Music Swaras, Major Chord, Minor Chord, Tempo, Barre Chord**.**
2. Play any Fusion/Folk/Bollywood song on Guitar, different Streaming patterns on Guitar, any western song on Guitar, different patterns of major and minor chord families.
3. The student will perform atleast one filmi song, one western song, tunes and chord in prescribed Raga and Taal.

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Sanskrit Activity Course I :

Course Under NEP 2020
(To be implemented in UG Courses w e f 2022-23)
Nomenclature : Recitation of Vedmantra & Shloka

(वेदमंत्र एवं श्लोकों का उच्चा □□)

Duration : One Semester

Credits : 2
Total Marks : 50

Activity participation = 20 Marks

Assignment / Field report = 30 Marks

Learning Outcomes : After successful completion of the course the student will be able to

1. Demonstrate the skill of practical recitation of Vedmantra / Shloka and understand The scientific importance and elementary knowledge of Sanskrit .
2. Exhibit mental and spiritual development. The Study of Sanskrit scriptures will lead to healthy life style.

Evaluation

The performance of student will be evaluated against the expected learning course outcomes on the basis of activity participation , regularity, punctuality, and performance in activity (Assignments / Field report) . For the successful completion of the above course students have to secure 50% Marks .

Activities

1. गायत्री मंत्र का शुद्ध उच्चारण
2. गीता के श्लोकों का शुद्ध उच्चारण
3. अलग अलग छंदों का उच्चारण
4. प्रार्थना मंत्रों का सस्वर पाठ
5. वेद / उपनिषद् के मंत्रों का शुद्ध उच्चारण
6. सामूहिक गान / सम्प्रेषण कौ शल

Sanskrit Activity Course II :

Course Under NEP 2020

(To be implemented in UG Courses w e f 2022-23)

Nomenclature : भारतीय ज्ञान परम्परा एवं यज्ञ

Indian Knowledge Tradition and Yagna

Duration : One Semester

Credits : 2

Total Marks : 50

Activity participation = 20 Marks

Assignment / Field report = 30 Marks

Learning Outcomes : After successful completion of the course the student will be able to

1. Understand the social , cultural and scientific importance of mentioned rituals and meditation. Communicate in Sanskrit Language.
2. Develop a healthy and stress free life style.

Evaluation

The performance of student will be evaluated against the expected learning course outcomes on the basis of activity participation , regularity, punctuality, and performance in activity (Assignments / Field report) . For the successful completion of the above course students have to secure 50% Marks .

Acivities

1. ध्यान पद्धति (Meditation)
2. प्राणायाम
3. संध्या
4. हवन
5. संस्कृत संभाषण (Sanskrit Speaking)

Photography

Credits: 2
Total Marks: 50
Assessment: Internal
Activity Participation: 20 marks
Project/Assignment/Presentation/Viva: 30 marks

Learning Outcomes: On successful completion of the course the students will be able to

Understand the basic difference between "Photography as a true Art form" vs. "Casual, Snap Shooting
Aware of camera types including Rangefinder, TLR (Twin Lens Reflex), SLR (Single Lens Reflex) (film based), DSLR (Digital Single Lens Reflex), Compact / Point & Shoot, Mobile Cameras and also the uses of Flash and Natural Light sources

Mode of Evaluation:
The performance of students will be evaluated by internal examiner on the basis of activity participation, regular attendance, projects/assignments/ field report.
For successful completion of the course students will have to secure 50% marks of the evaluation

1. Introduction to Aperture, Shutter Speed , ISO, Exposure, Camera Composition, Rule of Thirds, Golden Mean, 'S' Curve, Controls in making final picture (White Balance; Picture file Formats; Photo Resolution)

2. Practical Shooting in various Genres and Project work including Composition, Landscape Photography, Abstract Photography, Creative Photography, Nature Photography, Wild life Photography, Flowers Photography, Portrait Photography, Documentary Photography, Scientific data Photography.

3. Students will exhibit at least 2 captures of different genres.

References:
(1) Digital Photography by Scott Kelby
(2) The Art of Photography by Bruce Barnbaum
(3) Understanding Flash Photography: How to Shoot Great Photographs Using Electronic Flash by Bryan Peterson

ACTIVITY : HERITAGE AND TOURISM

Credits : 2
Total marks : 50
Assessment : Internal

Activity/ participation – 20 marks
Presentation/Viva – 30 marks

Course learning Outcomes:

- The course is designed to provide an understanding of the concepts of heritage tourism and explore issues such as current threats to cultural heritage,
- The students will be able to assess the roles of public as well as local Tourism bodies and authorities in the protection of cultural heritage

Mode of Evaluation

The performance of the students will be evaluated by the Internal Examiner on the basis of activity participation, regular attendance, projects/assignments.
For successful completion of the course students will have to secure 50% marks of the evaluation

Syllabus

- Heritage tourism：Visiting local heritage sites ,museums and monuments

- Participating in local fairs and festivals
- Volunteering in cultural events
- Impacts of Heritage Tourism :Contacting with local host population assessing the economic benefits of Heritage Tourism and its role in Infrastructure Development
- Collecting information from Tourist information Centre and local development bodies
- The students will submit Field trip report for the completion of the course

ACTIVITY : TRAVEL WRITING

Credits : 2
Total marks : 50
Assessment : Internal

Activity / participation – 20 marks
Presentation/Viva – 30 marks

Course learning Outcomes :

- Students will learn how to effectively write and post travel blog articles and travel stories.

Mode of Evaluation

The performance of the students will be evaluated by the Internal Examiner on the basis of activity participation, regular attendance, projects/assignments.
For successful completion of the course students will have to secure 50% marks of the evaluation

Syllabus

- The Art of Travel Writing: Learn how to write professional-quality travel tales
- Analyse a travel magazine in terms of content, style, format, tone, target market and demography.

- Identify the main components of an article: opening, main body and closure.
- Setting up of a travel blog and idea generation for content writing.
- Photography advice for a tourist destination.
- The students will prepare and submit a project report for the completion of the course

Accessories designing

Credit: 2
Total marks: 50
Activity participation: 20 marks
Performance: 30 marks

Learning outcomes: On successful completion of the course, the students will be able to

1. Prepare various types of jewellery
2. Sketch, paint and prepare decorative articles from scrap

Evaluation
The performance of students will be evaluated against the expected learning outcomes on the basis of their regularity, punctuality, performance and perfection.

1. The students will learn various types of painting and sketching of fashion accessories like belts, caps, hats, scarves, foot wears, handbags, hand watches etc. and will prepare any two articles of fashion accessories.
2. Students will learn Jewellery designing with the help of beads, clay, metal, paper quelling, resin and scrap etc.
3. Students will learn rendering and redesigning of decorative articles like pots, bottles, plates, glasses etc.
4. Students will learn recycling of the scrap into useful things.
5. Students will prepare and present at least 2 items based on learning of the course.

Activity Course
Surface Embellishment with Tie and Dye

Credit: 2
Total marks: 50
Activity participation: 20 marks
Performance: 30 marks

Learning outcomes: On successful completion of the course, the students will be able to

1. Exhibit the skill for Tying and dyeing of fabrics in different ways.
2. Apply different techniques of surface embellishment and started earning for themselves.

Evaluation

The performance of students will be evaluated against the expected learning outcomes on the basis of their regularity, punctuality, performance and perfection.

Surface Embellishment with Tie and Dye

- Introduction about Tie and dye, material and equipment's required.
- Students will prepare samples of Tie and Dye by using various techniques like object Tying, Knotting, Marbelling, Rouching, Tacking, Gift Wrapping, Circular Design, Fan Folding.
- Students will prepare any two articles of Tie and Dye by using any 2 or 3 techniques (Dupatta, Bed Sheet, T-shirt, Salwar Suit) and present in class.
- Students will learn the application of accessories (Beads, Pearls, Nalkies, Mirror's, Stones, etc) for embellishment on dyed fabrics.
- Students will learn the technique of Patch Work and application of different types of laces.
- Students will prepare a designer article by using different embellishment methods based on learning of the course.

Activity Course
Basic cooking skills

Credit: 2
Total marks: 50
Activity participation: 20 marks
Performance: 30 marks

Learning outcomes: On successful completion of the course, the students will be able to
1. Learn basic skills required for cooking
2. Prepare different types of basic food items

Evaluation
The performance of students will be evaluated against the expected learning outcomes on the basis of their regularity, punctuality, performance and perfection.

Basic cooking skills

1. Basic terminology used in cooking
2. Students will learn to prepare
    - Dhokla- simple and fried
    - Idli- stuffed and fried
    - Manchurian, cheese chilly
    - Dough nuts
    - Sponge cake and chocolate cake
    - Chocolate
    - Jam & squash
    - Pickle(any 2)
3. Students will prepare and present at least 2 recipes based on learning of the course.

Syllabus of NCC

Credits: 2
Total marks:50
Internal assessment: 50

Learning Outcomes: on successful completion of the course Students will be able to
1. Demonstrate the knowledge about the Organization of NCC and various incentives available to cadets
2. Exhibit an insight into National Integration and what are the threats faced by our nation

Requirements: Regular attendance and active participation during the course, reference material, assignments, presentations.

Evaluation: The performance of the students will be evaluated against the expected learning course outcomes on the basis of class participation, regularity, quiz, discussion and presentation and assignments.

Semester 1

1. **Introduction to the aims and objectives of NCC.**
2. **Importance and background of NCC song.**
3. **Students will develop an awareness about the incentives that are available to the NCC cadets**
4. **Students will become aware about National integration and develop an understanding about the challenges that confront India.**
5. **Student will also learn about freedom struggle and Nationalist movement in India.**
6. **Students will be trained through parades and activities and they will devote at least 25 hours during the semester.**

Semester 2

Credits: 2
Total marks:50
Internal assessment: 50

Learning Outcomes: on successful completion of the course Students will be able to
1. Demonstrate the knowledge about national integration, objectives, threats etc.
2. Exhibit an insight into National integration Council

Requirements: Regular attendance and active participation during the course, reference material, assignments, presentations.

Evaluation: The performance of the students will be evaluated against the expected learning course outcomes on the basis of class participation, regularity, quiz, discussion and presentation and assignments.

Semester II

1. **Students will learn about National Interests, Objectives, Threats and Opportunities**
2. **Students will develop an understanding about Problems/ Challenges of National Integration**
3. **Students will develop an awareness about the concept of Unity in Diversity**
4. **Students will gain first hand knowledge about National Integration Council**
5. **Students will develop an understanding about how their role is crucial in nation building**
6. **Students will understand about Personality development and the factors that influence/shape personality.**
7. **Students will develop an understanding about Self-awareness: Know yourself/Insight, sociability social skills, values, code of ethics**
8. **Students will be trained through parades and activities and they will devote at least 25 hours during the semester.**

National Service Scheme

Credit: 2
Total Marks:50
Assessment: Internal
Activity participation=20 marks
Field Report/Assignment/Presentation/Viva-Voice=30marks

Mode of evaluation

The performance of the students will be evaluated by internal examiner on the basis of activity participation, regular activities,project/assignment/field report. For successful completion of the course students have to secure 50% marks in the evaluation

Course Learning Outcomes: On successful completion of the course, students will be able to:

1. Demonstrate the knowledge about the organization of NSS and various incentives available to volunteers.
2. Understand the importance of having community problems and their solutions, Spread health awareness and learn disaster management skills..
3. Visit for a social community course, opening opportunities in different social activity related department.

I. **Introduction and Basic Concept of NSS:** History and Philosophy, Aims and Objectives, NSS Logo, NSS badge, NSS flag, NSS song, Lakshya Geet;

II. **Organization of NSS Regular Activity and Programs**: Organization Structure of NSS, Concept of regular activities, Methodology of conducting Survey, Maintenance of NSS work diary and calendar of NSS activities. **Day Camp, Special Camp and Personality Development:** Various dimensions of Day camp, special camp at college/university level.

III. **Importance and Role of Youth Leadership:** Meaning, types and traits of Leadership qualities of good leaders. **Healthy Youth:** Healthy life style, HIV/AIDS drugs and substance abuse, home nursing and First-aid, Yoga as a tool for healthy life, Youth and Yoga style.

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(Established by the State Legislature Act XII of 1956)
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Name of Course: Activity Based Course
Nomenclature: Red Cross and First Aid

Credits :2
Total Marks :50
Assessment: Internal

Mode of Evaluation:

- The evaluation of the students will be carried out by the concerned teacher/instructor from the Institute/college on the basis of activity participation, regularity, project/ assignment/ field report/ performance on ground or field to achieve learning outcomes as per matrix given below:-
- Participation in activity, regularity and punctuality = 20 marks
- Performance in activity (Beginners, Progressive, Proficient, Excellent) = 30marks
- For the successful completion of the course, students have to attain minimum 50%marks in evaluation

Course Learning Outcomes:

4. Students will learn about the role of Red Cross in Society through activities.
5. Personality of student will grow through Humanity and Volunteership through activities.
6. Students will be able to assess situations and circumstances in order to provide First Aid safely, promptly and effectively in a range of emergencies through activities.
7. Students will learn to administer first aid to an adult casualty with broken bones, burns, cuts, stings, eye injuries, sudden poisoning through activities.

ACTIVITIES

1. Student will learn about Self-care and wellness,
2. Student will learn about Breathing and cardiac emergencies (CPR, AED, choking),
3. Student will learn about Injuries (broken bones, burns, cuts, stings),
4. Student will learn about sudden illnesses (heat/cold emergencies, allergic reactions),
5. Student will learn about multiple Rescuer Response training, utilization a Bag-Valve Mask (BVM)
6. Student will perform at least two activities and will submit a activities report.

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Financial Literacy

Credits: 2
Total Marks: 50
Assessment: Internal

Activity Participation = 20 Marks

Field Report/Project/Assignment/

Presentation/Viva-voce = 30 Marks

Mode of Evaluation:

The performance of the students will be evaluated by internal examiner on the basis of activity participation, regularity assignment/field report/viva-voce.

For successful completion of the course, students have to secure 50% marks in the evaluation.

Course Learning Outcomes:

1 On successful completion of the course the student will be able to understand the financial investment options and return thereof.
2 To know about mutual funds, Systematic Investment Plans (SIP), Stock market Investments, Return on investments, Infrastructure bonds and Analytical analysis of various investment options.

Course Contents:

1. **Financial literacy-** Meaning, Scope and its importance, various investment instruments, returns from investment.

2. **Stock Market-** Meaning, scope and importance, kinds of shares, dividend income, investment in systematic investment plans and mutual funds, infrastructure bonds and insurance plans.

3. **Practical-** Visit to stock broking firm, Live stock market operations, opening of Demat account with stock broker, investment portfolio.

Banking Operations

Credits: 2
Total Marks: 50
Assessment: Internal

Activity Participation = 20 Marks

Field Report/Project/Assignment/

Presentation/Viva-voce = 30 Marks

Mode of Evaluation:

The performance of the students will be evaluated by internal examiner on the basis of activity participation, regularity assignment/field report/viva-voce.

For successful completion of the course, students have to secure 50% marks in the evaluation.

Course Learning Outcomes:

1. On successful completion of the course the students will be able to know different banking services offered by the banks.
2. To operate online/offline banking services.
3. To avail loan for different purposes.

Course Contents:

1. **Bank-** Meaning, Types of Banks, scope and functions of banks, online/offline banking, debit & credit cards, lockers & safe deposits, overseas banking services.

2. **Banking operations**-Opening & operating of bank account, Pass Book and Cheque Book, clearing of cheques, dishonor of cheque, penalty in banking, procedure for getting various types of loans, security and guarantee against loans.

3. **Practical-** Students will visit various banks (atleast three branches) and prepare a report on various banking services and their operational processes.

Activity Course

Table-Tennis

Credits:2

Total marks: 50
Assessment / Internal Activity
Participation: 20
Presentation/ Viva: 30

Learning outcomes... On successful completion of the course the student will be able to:

1 Demonstrate the knowledge about table tennis game, dimensions of table tennis court and equipments, rule and regulations, fundamental skills and techniques.

2 Importance of table tennis game for healthy life, improve physical and mental health, coordination and aerobic activities.

Requirements..... Table tennis court, table, net, racket, ball, score sheet.

Evaluation..... The performance of the students will be evaluated against the expected learning course outcomes on the basis of active participation, regularity, group discussion, quiz, assignments/ presentation/ performance.

1 Students will learn the Importance of table tennis game during practice.
2 Students will learn aim and objectives of the game during practice.
3 Students will improve the physical and mental health through activities on the ground.
4 Students will learn different techniques and terminology of table tennis game like holding the racket and ball, service
5 Students will be trained during sports activities and they will practise for at least 25 hrs on the ground.
6 Students will learn the importance of warming up and cooling down.

Activity Course

Badminton

Credits:2

Total marks: 50
Assessment / Internal Activity
Participation: 20
Presentation/ Viva: 30

Learning outcomes... On successful completion of the course the student will be able to..

1 Demonstrate the knowledge about badminton game, dimensions of badminton court and equipments, rule and regulations, fundamental skills and techniques.
2 importance of badminton game for healthy life, improve physical and mental health, coordination and aerobic activities.

Requirements..... Badminton court, pole, net, racket, shuttlecock , score sheet.

Evaluation..... .. the performance of the students will be avaluated against the expected learning course outcomes on the basis of active participation, regularity, group discussion, quiz, assignments/ presentation/ performance.

1 Students will learn the importance of badminton game during practice.
2 Students will learn aim and objectives of the game during practice.
3 Students will improve the physical and mental health through activities on the ground.
4 Students will learn different techniques and terminology of Basketball game like holding a racket and catch the shuttlecock
5 Students will be trained during sports activities and they will practise for atleast 25 hrs on the ground.
6 Students will learn the importance of warming up and cooling down.

Activity Course
Basketball

Credits:2

Total marks: 50
Assessment / Internal Activity

Participation: 20

Presentation/ Viva: 30

Learning outcomes... On successful completion of the course the student will be able to:-

1 Demonstrate the knowledge about basketball ball game, dimensions of volleyball court and equipment, rule and regulations, fundamental skills and techniques.

2 Importance of basketball for healthy life, improve physical and mental health, coordination and aerobic activities.

Requirements..... Basketball court, pole, net, ball, score sheet, stop watch.

Evaluation..... The performance of the students will be avaluated against the expected learning course outcomes on the basis of active participation, regularity, group discussion, quiz, assignments/ presentation/ performance.

1 Students will learn the importance of basketball game for healthy life.
2 students will learn neuromuscular coordination which is highly benefited for good health.
3 students will learn how to fit their anatomy and physiological system.
4 students will aware about the basketball game and the different techniques like. .Passing and shooting.
5 students will be trained during sports activities.
6 students will devote at least 25 hours for sports activities during the course.

Activity Course

Kabaddi

Credits:2

Total marks.50

Assessment / Internal Activity
Participation: 20
Presentation/ Viva: 30

Learning outcomes... On successful completion of the course the student will be able to:

1 Demonstrate the knowledge about badminton game, dimensions of Kabaddi court and equipments, rule and regulations, fundamental skills and techniques.

2 Importance of Kabaddi game for healthy life, improve physical and mental health, coordination and aerobic activities.

Requirements..... Kabaddi court, stopwatch,score sheet.

Evaluation..... . the performance of the students will be avaluated against the expected learning course outcomes on the basis of active participation, regularity, group discussion, quiz, assignments/ presentation/ performance.

1 Students will learn the importance of Kabaddi game during practice.
2 Students will learn aim and objectives of the game during practice.
3 Students will improve the physical and mental health through activities on the ground.
4 Students will learn different techniques and terminology of Kabaddi game like foot, touch toe touch and thrust.
5 Students will be trained during sports activities and they will practise for at least 25 hrs on the ground.
6 Students will learn the importance of warming up and cooling down.

Activity Course

Kho-Kho

Credits:2

Total marks: 50
Assessment / Internal Activity
Participation: 20
Presentation/ Viva: 30

Learning outcomes... On successful completion of the course the student will be able to:

1 Demonstrate the knowledge about kho-kho game, dimensions of Kabaddi court and equipments, rule and regulations, fundamental skills and techniques.

2 Importance of Kho-kho game for healthy life, improve physical and mental health, coordination and aerobic activities.

Requirements..... Kho-kho ground,poles, stopwatch,score sheet.

Evaluation..... .. The performance of the students will be avaluated against the expected learning course outcomes on the basis of active participation, regularity, group discussion, quiz, assignments/ presentation/ performance.

1 Students will learn the Importance of kho- kho during practice.
2 Students will learn aim and objectives of the game during practice.
3 Students will improve the physical and mental health through activities on the ground.
4 Students will learn different techniques and terminology of kho -kho game like sitting in square and runners in kho- kho.
5 Students will be trained during sports activities and they will practise for at least 25 hrs on the ground.
6 Students will learn the importance of warming up and cooling down.

Activity Course

Volleyball

Credits:2

Total marks: 50
Assessment / Internal Activity
Participation: 20
Presentation/ Viva: 30

Learning outcomes... On successful completion of the course the student will be able to:

1 Demonstrate the knowledge about volleyball game, dimensions of volleyball court and equipments, rule and regulations, fundamental skills and techniques.

2 Importance of volleyball game for healthy life, improve physical and mental health, coordination and aerobic activities.

Requirements... Volleyball court, antenna, pole, net, ball, score sheet.

Evaluation.. The performance of the students will be avaluated against the expected learning course outcomes on the basis of active participation, regularity, group discussion, quiz, assignments/ presentation/ performance.

1 Students will learn the Importance of volleyball game during practice.
2 Students will learn aim and objectives of the game during practice.
3 Students will improve the physical and mental health through activities on the ground.
4 Students will learn different techniques and terminology of volleyball game like service and under hand pass.
5 Students will be trained during sports activities and they will practise for at least 25 hrs on the ground.
6 Students will learn the importance of warming up and cooling down.

Activity Course

Yoga

Credits:2

Total marks: 50
Assessment / Internal Activity
Participation: 20
Presentation/ Viva: 30

Learning outcomes... On successful completion of the course the student will be able to:

1 Demonstrate the knowledge about yoga, asanas, kitiyas, rule and regulations, fundamental skills and techniques.
2 Importance of yoga for healthy life, improve physical and mental health, neuromuscular coordination and aerobic activities.

Requirements..... Open ground, stop watch, sheet, score sheet

Evaluation..... The performance of the students will be avaluated against the expected learning course outcomes on the basis of active participation, regularity, group discussion, quiz, assignments/ presentation/ performance.

1 Students will learn the meaning and Importance of yoga for daily life during practice.
2 Students will learn concept of yoga during practice.
3 Students will improve the physical and mental health through asanas during practice.
4 Students will learn different techniques of yoga during practice
5 Students will be trained during yogic kitiyas like asanas and they will practise for at least 25 hrs on the ground.
6 students will learn paranayam and it's benefits during practice.

Activity Course in the Subject of ELECTRONICS under NEP
Session 2022-23

Title: ELECTRONICS FOR BEGINNERS IN DAY TO DAY LIFE

Guidelines for the Activity based course are as under:

1. Each course will be of 2 credits i.e. 2 hours activity per week.
2. The course will be evaluated as C (complete) or NC (non-complete).
3. The course will be defined by Learning outcomes.
4. The evaluation of a student shall be carried out by the concerned teacher from the Institute on the basis of activity participation, regularity, project/assignment/field report performance on ground or field to achieve learning outcomes as per matrix given below:-
   A. Participation in activity, regularity and punctuality = 20 marks
   B. Performance in activity (Beginners, Progressive, Proficient, Excellent) = 30marks
6. For the successful completion of the course, students have to attain minimum 50% marks in evaluation.

UNIT-I

Passive components: Introduction, Resistors: (Units & Symbols, Factors on which Resistance depends, Types, Values & Tolerances, in series & parallel, applications, common faults, testing); Capacitors: (Units & Symbols, Factors on which Capacitance depends, Types, Values & Tolerances, in series & parallel, applications, common faults, testing); Inductors: (Units & Symbols, Factors on which Inductance depends, in series & parallel, applications, common faults, testing); Transformers: (Symbols, Losses in a transformer, applications, common faults, testing).

UNIT-II

Active components: Introduction, PN Junction Diode, Zener Diode, Light Emitting Diode, Bipolar Junction Transistor: Symbols, Types, Values, common applications, faults, identification of pins, testing).

Electronic Instruments: Basic mechanism and applications of Multimeter, CRO, Function Generator, Power Supply.

Integrated Circuits (IC): Difference between Digital and Analog Signals, Logic gates (Basic and Universal): logic, symbol, truth table; Types of ICs, Pin Identification of Digital ICs with internal diagram (74XX Series) and Analog ICs (Opamp 741, Timer 555, 78XX) with applications.

Reference: Electronic Instruments & Systems: Principles, Maintenance & Troubleshooting by R. G. Gupta