Department of Public Administration
Kurukshetra University Kurukshetra
Rectified Syllabus, Courses of Reading and Scheme of Examinations of M.A.- Public Administration Programme

(Under CBCS/LOCF)
For the Regular Students of Department of Public Administration, KUK
To be introduced w.e.f. the Session 2023-24 in phased manner

I. About the Programme:

The M.A. Public Administration Programme is designed to impart a comprehensive and analytical understanding of Public Administration in India. The Department offers variety of challenging courses to equip students with the knowledge of the nature of Public Administration and Comparative Public Administration, Evolution, Therotical methods and approaches, with specific focus on Indian Administration and different administrative mechaniery. Other recent emerging trends and themes in Public Administration such as Comparative Public Administration , Urban and Rural Local Administration, Thought and Theories are also tought. The MA (Public Administration) Programme intend to provide students with knowledge that is applicable to a wide range of careers such as administrative work, archival work, teaching, publishing, diplomats, global charity work. The Programme also equips them to pursue higher education and research in future.

II. Programme Structure:

The M.A. Public Administration is a two years Programme comprising 20 Courses covered over a period of four semesters. The students will take Five Courses in each Semester, i.e., 20 Courses in the full Programme. Each Course will carry 100 marks out of which 20 marks shall be earmarked for Internal Assessment. The students will also have the opportunity to take at least two Courses outside the Department during their second and third semesters. The University follows a credit-based semester system of teaching and evaluation.

III. Programme Outcomes:

Programme Outcomes (PO) of Post Graduate Social Sciences Programmes/Courses in the Faculty of Social Sciences, Kurukshetra University, Kurukshetra are as under:

1. **Self-Directed Learning:** Develop the ability to work independently as well as effectively in the changing environment.

2. **Knowledge:** Demonstrate knowledge of historical emergence, questions asked, and distinctive contributions of the social science disciplines to the analysis of human behavior and social issues.

3. **Problem Solving:** Visualize, conceptualize, articulate and solve complex problems through experimentation and observation using theoretical framework of social science disciplines.

4. **Critical Thinking:** Critically analyze everyday problems faced by the society, evaluate specific policy proposals, compare arguments with different conclusions to a specific societal issue and assess the role played by assumptions in such arguments.

5. **Scientific Enquiry:** Develop the capability of defining problems, formulate hypothesis, collect relevant data, develop empirical evidence and interpret the results of such analyses.

6. **Usage of Analytical Tools:** Develop the ability to apply appropriate quantitative/qualitative techniques used in social science disciplines along with ICT, softwares etc.

7. **Specialization and Employability:** Develop deeper understanding, creativity, originality, analytical and critical skills in chosen specialized areas of social science disciplines leading to employability.

8. **Inter-disciplinary Knowledge & Adaptation:** Enhance the ability to integrate as well as synthesize the acquired knowledge within the social sciences and beyond.

9. **Ethics:** Articulate and apply ethics, values and ideals that demonstrate awareness of current societal challenges.

10. **Leadership:** Build skills to work as part of a team and lead others, setting directions and formulating inspiring vision.

11. **Communication:** Communicate conclusions, interpretations and implications clearly, concisely and effectively, both orally and in writing for different types of audiences.

12. **Project Management:** Use investigative skills necessary for conducting disciplinary-appropriate projects/ research documents/term papers etc.

IV. Programme Specific Outcomes (PSOs):

Programme Specific Outcomes (PSO) of M.A.- Public Administration (Regular) are as under:

PSO1: The M.A. Public Administration Programme not only facilitate the students in enhancing their knowledge of the specializations of their choice, but also in fostering other important attributes of a civilized human society.

PSO2: The students will acquire conceptual understanding of different processes, currents and streams of Public Administration and the significance of Administrative developments since the professionalization of the discipline and their relevance to a student's specialist area of study.

PSO3: The students will acquire comprehensive understanding of the epistemological and methodological distinctiveness of Public Administration as a discipline, and an ability to reflect on the significance of the influence of other disciplines on the development of Public Administrative method.

PSO4: The students will acquire such a critical understanding of the Administrative developments which would further enable them to assess critical and scholarly writing in Public Administration.

V. The Scheme of Examinations and Credits for M.A. Public Administration Programme (Regular):

The Scheme of Examination will be as under:

Time	:	3 Hours
Maximum Marks of a Course:		100 Marks
Theory (External)	:	80 Marks
Internal Assessment	:	20 Marks, Division of Marks as given below:
A. Two Assignments/Seminars	:	50% (For Each Course) (Out of Two Units)
B. Two Class Tests	:	50 % (For Each Course) (Out of the Remaining Two Units)

(One Period Duration

The Examination System will be based on the **CBCS (Choice Based Credit System) and LOCF (Learning Outcomes-Based Curriculum Framework)** as per UGC/University guidelines. Under the CBCS system, the students will have a choice to study two more Additional Courses specifically offered in the syllabi of Non- Public Administration Programmes of the Master's Degree for such students in 2nd and 3rd Semester. Similarly, in M.A. Public Administration Programme such two Additional Courses will be offered in the course of 2nd and 3rd Semester to the students of Non- Public Administration Programmes of Master's Degree. Under the LOCF system, the syllabus of M.A. Public Administration Programme (Regular) has been designed to attain the desired outcomes by the students under the Choice Based Credit System.

The M.A. Examination in Public Administration (Regular) has been divided into four Semesters spread over two years. Every student has to pass 84 Credits (64 Compulsory + 16 Optional Credits and 4 Credits (2 in Semester-II and 2 in Semester-III from Additional Courses from other Department/Discipline) out of 100 Credits as necessary to earn the Degree under the New Scheme.

In each Semester, 4 Compulsory Credits and 1 Optional Credits shall be offered to the students. In addition to this, One Optional Course from Other Department/ Discipline of 2 Credits each in Semester-II and III shall also be offered to the students. However, the choice of Optional Credits is subjected to the availability of teaching faculty in the Department.

VI. Course Outcomes and Mapping Matrix:

1. Each Course of the M.A. Public Administration Programme results in four Course/Learning Outcomes (COs) which are broadly mapped or associated with POs as well as PSOs.

2. 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: Scale of Mapping between COs and POs & COs and PSOs

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
Scale 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
Scale 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

A. COs Attainment Levels for Internal Assessment:

Table given below shows the CO attainment levels for Internal Assessment assuming the set target of 60% marks:

Attainment Levels	Attainment of Course Outcomes
1 (Low level of Attainment)	60% of Students score more than 60% of marks in Assignments/Class Tests of a course
2 (Medium level of Attainment)	70% of Students score more than 55% of marks in Assignments/Class Tests of a course
3 (High level of Attainment)	80% of Students score more than 50% of marks in Assignments/Class Tests of a course

B. CO Attainment Levels for End Semester Examination (ESE):

Table given below shows the CO attainment levels for End Semester Examination assuming the set target of 60% marks.

Attainment Levels	Attainment of Course Outcomes
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 Programme) 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 Programmes) 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 Programmes) in ESE of a course

VII. The Programme Courses Details Semester-wise:

Course No.	Name of the Subject/Paper	No. of Credit	Teaching Scheme (Hrs/Week)			Examination Scheme (Marks)			Duration of Exam/ Time
			L	T	P	External Marks	Internal Marks	Max. Marks	
M.A. Public Administration Semester-I									
MPA (C) 101	Public Administration: An Introduction	4	4	½ hrs/ G	-	80	20	100	3 hrs
MPA (C) 102	Administrative Thinkers – I	4	4	½ hrs/ G	-	80	20	100	3 hrs
MPA (C) 103	Urban Local Governent in India, Britain, USA & France	4	4	½ hrs/ G	-	80	20	100	3 hrs
MPA (C) 104	Introduction to Public Policy	4	4	½ hrs/ G	-	80	20	100	3 hrs
One paper to be chosen from any of the following (from the corresponding option has to be taken in Semester-I)									
MPA (E) 105-I	Indian Constitution	4	4	½ hrs/G	-	80	20	100	3 hrs
MPA (E) 105-II	Administrative Law	4	4	½ hrs/ G	-	80	20	100	3 hrs
M.A. Public Administration Semester-II									
MPA (C) 201	Administrative Theories	4	4	½ hrs/ G	-	80	20	100	3 hrs
MPA (C) 202	Public Financial Administration	4	4	½ hr /G	-	80	20	100	3 hrs
MPA (C) 203	Research Methdology and Methods	4	4	½ hr /G	-	80	20	100	3 hrs
MPA (C) 204	Public Policy : Concepts and Models	4	4	½ hrs/ G	-	80	20	100	3 hrs
One paper to be chosen from any of the following (from the corresponding option was taken in Semester-II)									
MPA(E) 205-I	Social Welfare – Administration	4	4	½ hrs/ G	-	80	20	100	3 hrs
MPA(E) 205-II	Police Administration	4	4	½ hrs/ G	-	80	20	100	3 hrs

Code	Title								
OESS	Candidate is required to take one option elective, other than Public Administration from the Common lists of Papers of Social Sciences (Syllabus enclosed in the end)	2	2	-	-		-	50	2 hrs

M.A. Public Administration Semester-III

Code	Title								
MPA(C) 301	Public Administration in India	4	4	½ hrs/ G	-	80	20	100	3 hrs
MPA(C) 302	Development Administration	4	4	½ hrs/ G		80	20	100	3 hrs
MPA(C) 303	Administrative Thinkers-II	4	4	½ hrs/ G	-	80	20	100	3 hrs
MPA(C) 304	Public Sector Management	4	4	½ hrs/ G	-	80	20	100	3 hrs

One paper to be chosen from any of the following (from the corresponding option was taken in Semester-III)

Code	Title								
MPA(E) 305-I	Political Theory	4	4	½ hrs/ G	-	80	20	100	3 hrs
MPA(E) 305-II	International Law	4	4	½ hrs/ G	-	80	20	100	3 hrs
OESS	Candidate is required to take one option elective, other than Public Administration from the Common lists of Papers of Social Sciences (Syllabus enclosed in the end)	2	2	-	-		-	50	2 hrs

M.A. Public Administration Semester-IV

Code	Title								
MPA(C) 401	Accountability Reforms and Innovations in Administration	4	4	½ hrs/ G		80	20	100	3 hrs
MPA(C) 402	Rural and Urban Local Administration	4	4	½ hrs/ G		80	20	100	3 hrs
MPA(C) 403	Comparative Public Administration	4	4	½ hrs/ G		80	20	100	3 hrs
MPA(C) 404	Labour Welfare Administration	4	4	½ hrs/ G		80	20	100	3 hrs

One paper to be chosen from any of the following (from the corresponding option was taken in Semester-IV)

Code	Title								
MPA(E) 405-I	Public Personnel Administration in India, UK and USA	4	4	½ hrs/ G	-	80	20	100	3 hrs
MPA(E) 405-II	E-Governance	4	4	½ hrs/ G		80	20	100	3 hrs

MPA (C) 101: PUBLIC ADMINISTRATION: AN INTRODUCTION

Credits:04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Course Objectives:

The importance of public admisnitration derives from its crucial role in the governing of a society. All the great human events in history were probably achieved by what we today would call public administration. Organisation and administrative practices in collective or public settings are as old as civilization. This foundation course is set to analyze the transformations in public administration with emphasis on current intitiatives and emerging challenges in the field. Students are introduced to the study of public administration in a fast changing environment of globalized phenomenon

Course Outcomes:

Towards the end of this course, the students shall be able:

MPA(C) 101: Awareness about the evolution and growth of the discipline of PublicAdministration.

MPA(C) 102: Learning of basic principles and Challenges of Globalization and Public Administration.
MPA(C) 103: Understanding the Learning of basic principles and approaches of PublicAdministration.

MPA(C) 104: Theoretical clarity of basic concepts and dynamics (both ecological and others) relating

to Public organizations.

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks

UNIT-I: Introduction
a) Meaning , Nature, Scope and Importance of Public Administration
b) Evolution of Public Administration and its Present Status
c) Politics & Administration Dichotomy Debate
d) New Public Administration

UNIT-II: Globalization And Public Administration
a) Challenges of Liberalization and Privatization
b) Good Governance
c) New Public Management

UNIT-III: Principles
a) Hierarchy
b) Unity of Command
c) Span of Control
d) Division of Work and Coordination

UNIT-IV: Principles
a) Centralization, Decentralization and Delegation
b) Authority, Power and Responsibility
c) Supervision and Control
d) Line, Staff and Auxiliary Agencies

SELECT READINGS:

- Hoshiar Singh and Pardeep Sachdeva (2011) Public Administration: Theory and Practice, Pearson Publication, Noida.
- Avasthi & Maheshwari (2012), Public Administration, Lakshmi Naraian Agarwal, Agra
- Arguden, Yilmaz (2011), Keys to Governance: Strategic Leadership for Quality of Life, Macmillan, Hampshire
- Arndt Christiane and Charles Oman (2006), Uses and Abuses of Governance Indicators, OECD, Paris
- Bhattacharya, Mohit (2013), New Horizons of Public Administration: Issues, Challenges and Opportunities, New York, MO.E. Sharpe
- Henry, Nicholas (2006), Public Administration and Public Affairs, Prentice Hall of India, New Delhi
- Jan-Erik Lane, (2000), New Public Management: An Introduction, Routledge, London.
- Ravindra Prasad, D. Prasad, V S Prasad, Satyanarayana P, and Y Pardhasaradhi, (eds.,) (2013), Administrative Thinkers, Sterling, New Delhi
- Donald Menzel (ed.) (2011). The State of Public Administration; Issues, Challenges and Opportunity, New York: M.E. Sharpe
- Frank J. Goodnow, Politics and Administration: A study in Governance, Transaction Publishers, New York, 2003
- O'Leary, Rosemary Et.al. (2010), The Future of Public Administration around the World: The Minnowbrook Perspective, George Town University Press, DC
- Martin Albrow (1970), Bureaucracy, MacMillan, London, 1970
- UN, Department of Economic and Social Affairs, Development Administration; Current Approaches and Trends in Public Administration for Development, New York, UN, 1975
- Wilson, Woodrow."The Study of Administration," Political Science Quarterly 2(June 1887)

Mapping Matrix of Course MPA(C) –101

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course **(MPA (C) -101)** assuming that thereare 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA(C) – 101

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
MPA 101.1	3	3	3	-	-	3	2	2	3	2	2	3
MPA 102.2	3	3	3	-	-	3	2	2	3	2	2	3
MPA 103.3	3	3	3	-	-	3	2	2	3	2	2	3
MPA 104.4	3	3	3	-	-	3	2	2	3	2	2	3
Average	3	3	3	-	-	3	2	2	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO MappingMatrix)

Table 3 shows the CO-PSO mapping matrix for a course (MPA(C) – 101) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(C) – 101

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA 101.1	3	3	3	2
MPA 102.2	3	3	3	2
MPA 103.3	3	3	3	2
MPA 104.4	3	3	3	3
Average	3	3	3	2.25

MPA (C) 102: ADMINISTRATIVE THINKERS-I

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Course Objectives:

A theory, to be useful, in explaining and predicting a real world event or phenomenon. A theory of Public Administration is meant to promote understanding through definitions, concepts, and metaphors. The chronological narration of evolution of theory through classical and human relations school helps the student to grasp the electric prescription of theory in course of time. The work of the individual thinker and their struggle for the search of knowledge should be an inspiring experience for the students.

Course Outcomes:

Towards the end of this course, the students shall be able:

MPA(C)-102.1   To have broad understaning of dynamic Awareness about the evolution and growth of Public Administrative Theory.

MPA(C)-102.2   An understanding about the philosophy of ethics with special reference to ethics in Various Schools Of Thought.

MPA(C)-102.3   Learning of basic principles, Challenges of Administrative Structure and Principles of Public Administration.

MPA(C)-102.4 To develop the skill to analyse the Organization as Social System.

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT I: Evolution Of Administrative Theory

a)   History and Development of Administrative Thought

b)   Contribution of Kautilya and Woodrow Wilson

UNIT II : Various Schools Of Thought

a) Classical school of Thought

b) Human Relation school of Thought

c) Bureaucratic school of Thought

d) Behavioral school of Thought

UNIT III: Administrative Structure And Principles

a)   Henri Fayol- Foundations of Management

b)   Frederick Winslow Taylor- Scientific Management

c)   Luther Gulick and Lyndall Urwick- Science of Administration

d)   Max Weber – Bureaucracy

UNIT IV: Organization As Social System

a)   Mary Parker Follett - Constructive Conflict and Leadership

b)   Elton Mayo - Human Relations Movement

c)   Chester Barnard - Formal and Informal Organizations and Functions of   Executive

SELECT REFERENCES:

- Baker R J S (1972), Administrative Theory and Public Administration, Huthinson, London

- Barnard, Chester(1969),The Functions of Executive, Cambridge, Harvard University Press

- Donald Menzel and Harvey White (eds) (2011). *The State of Public Administration: Issues, Challenges and Opportunity.* New York: M. E. Sharpe.

- Frank Marini, (1971). Towards a New Public Administration: The Minnowbrook Perspective, Chandler Publications, University of Columbia.

- George H. Fredrickson (et al).(2003).The Public Administration Theory' Primer, Westview Press

- Golembeiwskhi, Robert T, (1977). Public Administration as a Developing Discipline, Marcel Dekkar.

- Golembiewski, Robert T, Public Administration as a Field: Four Developmental Phases, Politics & Policy, Volume 2, Issue 1, pages 21-49, March 1974.

- Henry Fayol,(1957). General and Industrial Management. Issac Pitman, London.

- Henry Nicholas (2007), Public Administration and Public Affairs, Prentice Hall of India, New Delhi

- Jay M. Shafritz (ed) (1998), International Encyclopedia of Public Policy and Administration, Westview Press

- Luther Gulick & Lyndall LJrwick (eds.)(1937), Papers on Science of Administration, New York Institution of Public Administration, New York.

- Lyndall Urwick & E F L Brech (1955), The Making of Scientific Management, Issac Pitman, London

- Lyndall Urwick (1947),The Elements of Administration, Issac Pitman & Sons, London Martin Albro, Bureaucracy (1970), MacMillan, London

- Prasad, Ravindra. D (et al) eds (2013). Administrative Thinkers , Sterling Publishers, New Delhi.

- Waldo, Dwight (1968),The Study of Public Administration, Random house, New York

- White, Jay D. and Guy B. Adams (1994), Research in Public Administration: Reflections on theory and Practice, Sage.

Mapping: Mapping is a process of representing the correlation between COs and POs, COsand 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	ontents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	ontents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix) Table 2 shows the CO-PO mapping matrix for a course (MPA(C) – 102) assuming that thereare 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA(C) – 102

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
MPA(C)-102.1	3	3	3	-	-	3	2	2	3	2	2	3
MPA(C)-102.2	3	3	3	-	-	3	2	2	3	2	2	3
MPA(C)-102.3	3	3	3	-	-	3	2	2	3	2	2	3
MPA(C)-102.4	3	3	3	-	-	3	2	2	3	2	2	3
Average	3	3	3	-	-	3	2	2	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSOMapping Matrix) Table 3 shows the CO-PSO mapping matrix for a course (**MPA**(C) – 102) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(C) – 102

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA(C)-102.1	3	3	3	3
MPA(C)-102.2	3	3	3	2
MPA(C)-102.3	3	3	3	3
MPA(C)-102.4	3	3	3	3
Average	3	3	3	2.75

MPA (C)103: URBAN LOCAL GOVERNMENT IN INDIA, BRITIAN, U.S.A. & FRANCE

Credits:04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Course Objective: The paper aims to acquaint the students with major concepts and theories that n 1882, the then Viceroy of India, Lord Ripon's resolution of local self-government laid the democratic forms of municipal governance in India. The current form and the structure of municipal bodies are based on Lord Ripon's Resolutions, which was adopted in 1882 as local self-government. Britain, France and USA. Municipal Finance in Britain and France.

Course outcomes: Towards the end of this course, the students shall be able

MPA (C)- 103.1 Historical background and growth of Urban Local Administration.

MPA (C)- 103.2 Grasping the role of Local Government in Different countries.

MPA (C)- 103.3 Understanding the in-built control mechanisms over constitutional bodies in particular and administration in general.

MPA (C)- 103.4 Acquire comprehensive knowledge of mainstream theories that haveshaped and influenced Local politics and assess the relevance ofthese theories in present context.

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

Unit-I: Meaning, Scope and Significance of Urban local Government. Features of Urban Local Government in India, UK, USA and France.

Unit-II: Structure, Organisation and Functions of Urban Local Governments in India, Britain, France and USA. Municipal Finance in Britain and France.

Unit-III State- Local Relations in India and USA. Central-Local Relations in Britain and France. Local Government Reforms in India, Britain, France and USA. Municipal Finance in USA.

Unit-IV Municipal Personnel Administration; Municipal Leadership; Role of Political Parties; People's Participation. Municipal Finance In India.

SELECT READINGS:

1. Pankaj Singh(2018)- Local Government in India, England, France & U.S.A –Kitab Mahal Publisher.
2. S.L.Kaushik: Leadership in Urban Government in India, Allahabad: Kitab Mahal 1989.
3. Sahib Singh and Swinder Singh: Local Government in India, Jalandhar: New Academic Publishing Co. 1991.
4. Pardeep Sachdeva: Dynamics of Municipal Government and Politics in India, New Delhi, KitabMahal 1991.
5. David Wilson & Chris Game &others: Local Government in the United Kingdom, London: Macmillan 1994.
6. Tony Byrne: Local Government in Britain, London: Penguin Press 5th Ed. 1990.
7. Vincent Ostrom and Others: Local Government in the United States, San Franscisco, California, ICS Press, 1988.
8. Michael Keating: Comparative Urban Politics, Edward Elgar Publishing Ltd. Hamshire, England, Gover House Croft road, Aldershot, 1992.
D.A. Chandler (ed.), Local Government in Liberal Democracies: An Introductory Survey, London: Routledge 11, New Fetter Lane, EC4P, 1992

Mapping Matrix of Course MPA(C) –103

Mapping: Mapping is a process of representing the correlation between COs and POs, COsand 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 particularPO 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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix) Table 2 shows the CO-PO mapping matrix for a course (**MPA(C) –103**) assuming that thereare 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA(C) –103

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
MPA(C)-103.1	3	3	3	-	-	3	3	3	3	3	2	3
MPA(C)-103.2	3	3	3	-	-	3	3	3	3	3	2	3
MPA(C)-103.3	3	3	3	-	-	3	3	3	3	3	2	3
MPA(C)-103.4	3	3	3	-	-	3	3	3	3	3	2	3
Average	3	3	3	-	-	3	3	3	3	3	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSOMapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (MPA(C) –103) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(C) –103

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA(C)-103.1	3	3	3	2
MPA(C)-103.2	3	3	3	3
MPA(C)-103.3	3	3	3	2
MPA(C)-103.4	3	3	3	3
Average	3	3	3	2.5

MPA (C) 104: INTRODUCTION TO PUBLIC POLICY

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Course Objectives:

The field of public policy has assumed considerable importance in response to the increasing complexity of the government activity. The advancements of technology, changes in the social organization structures, rapid growth of urbanization added to the complexities. The study of Public Policy aspires to provide an in-depth understanding of the ills prevailing in the society and aids to identify the solutions for them. Public policy is an important mechanism for moving a social system from the past to the future and helps to cope with the future. The main objective of this foundation course is to provide an opportunity to the student to learn the basic areas of public policy on the largest gamut of its canvas.

Course outcomes: Towards the end of this course, the students shall be able

MPA(C)104.1 Understanding the basic concepts such as public policy, policy analysis, public policy process and governance

MPA(C)104.2 Knowledge of different stages of the Public policy process in terms of theoretical formulation and the process

MPA(C)104.3 Necessary competence to undertake policy Implementation analysis

MPA(C)104.4 Policy Evaluation –Concept, Techniques and Policy Impact and Policy Outcomes.

Note: The question paper will consist of nine questions. The candidate shall attemptfive questions   in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more   questions selecting at least one from eachUnit. Each question will carry 16 marks.

UNIT-I: Introduction
a) Public Policy- Meaning, Nature, Scope and Importance
b) Evolution of Public Policy Sciences
c) Public Policy and Public Administration

UNIT-II: Theories And Public Policy Making
a) Perspectives of Policy Making Process
b) Theories and Models of Public Policy Making (Group Theoretic, Elite, Incremental, Institutional, Rational, Game Theoretic and System Theoretic Model)
c) Institutions of Policy Making Process

UNIT-III: Policy Implementation
a) Policy Implementation- Concept
b) Policy Implementation- Determinants Techniques
c) Policy Implementations- Problems and issues

UNIT-IV: Policy Evaluation
a) Policy Evaluation –Concept
b) Policy Evaluation- Techniques
c) Policy Impact and Policy Outcomes

SELECT READINGS:

Anderson J.E. (2006) Public Policy Making: An Introduction, Boston, Houghton.

Bardach, Eugene (1977) The Implementation Game: What Happens After a Bill Becomes a Law, Cambridge, MA: MIT

Bergerson, Peter J. (ed.), (1991), Teaching Public Policy: Theory, Research and Practice, Westport, RI, Greenwood Press.

Birkland Thomas A., (2005), An Introduction to The Policy Process: Theories, Concepts, And Models of Public Policy Making Armonk; M.E. Sharpe.

Brewer, Gary D., and Peter de Leon (1983), The Foundations of Policy Analysis, Homewood, IL: The Dorsey Press.

Dahl, Robert and Charles Lindblom, (1976), Politics, Economics and Welfare, New York Harper

Dror, Y. (1989), Public Policy Making Re-examined, 2nd ed., San Francisco, Chandler

Dye Thomas (2008), Understanding Public Policy Singapore, Pearson Education.

Hill Michael, (2005), The Public Policy Process, Harlow, UK, Pearson Education 5th Edition.

Howlett, Michael, and M. Ramesh (1995) Studying Public Policy, Policy Cycles and Policy Subsystems, OUP, Toronto.

Jones, C.O, (1970): An Introduction to the Study of Public Policy, Belmont, Prentice Hall.

Learner, D. and H.D. Lasswell (eds.), (1951), The Policy Sciences, Stanford, Stanford University Press.

Lindblom, C.E., and E.J, Woodhouse, (1993), The Policy making Process, 3es ed. New Jersey., Prentice Hall.

McCool Daniel C. (ed.) (1995) Public Policy Theories, Models, and Concepts: An Anthology, NJ; Prentice Hall.

Moran Mitchel and Robert Goodin, (2006), The Oxford Handbook of Public Policy, Oxford University Press, New York.

Nachmias, David, (1979), Public Policy Evaluation: Approaches and Methods, New York: St. Martin's Press.

Jay M. Shafritz (ed.) (1998), International Encyclopedia of Public policy and Administration, Westview Press.

Mapping Matrix of Course MPA(C) – 104

Mapping: Mapping is a process of representing the correlation between COs and POs, COsand 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 particularPO 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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix) Table 2 shows the CO-PO mapping matrix for a course (MPA(C) – 104) assuming that thereare 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA(C) – 104

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
MPA(C)-104.1	3	3	3	-	-	3	3	3	3	3	2	3
MPA(C)-104.2	3	3	3	-	-	3	3	3	3	3	2	3
MPA(C)-104.3	3	3	3	-	-	3	3	3	3	3	2	3
MPA(C)-104.4	3	3	3	-	-	3	3	3	3	3	2	3
Average	3	3	3	-	-	3	3	3	3	3	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSOMapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (MPA(C) – 104) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(C) – 104

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA(C)-104.1	3	3	3	2
MPA(C)-104.2	3	3	3	3
MPA(C)-104.3	3	3	3	2
MPA(C)-104.4	3	3	3	3
Average	3	3	3	2.5

MPA (E) 105 (I) INDIAN CONSTITUTION

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Course Objectives:
This course aims to acquaint the students of public administration about the basic features of indian constitution along with its institutional arrangements.

Course outcomes: Towards the end of this course, the students shall be able

MPA(E) 105-I.1 Knowledge about the evolution, growth, framing, framing and features of Indian Constitution

MPA(E) 105-I.1 To acquire comprehensive knowledge of Basic Premises and Institutions i.e. Preamble, Fundamental Rights and Fundamental Duties and Directive Principles of State Policy.

MPA(E) 105-I.1 Understanding the in-built control mechanisms over constitutional bodies in particular and administration in general

MPA(E) 105-I.1 Awareness about the institutions and mechanism of Indian Constitutional Commissions

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. TheCandidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT-I: Introduction
a) Framing of Indian Constitution (1947-1950)
b) Salient Features and Significance
c) Indian Federation: Features, Provisions and Issues

UNIT-II: Basic Premises And Institutions
a) Preamble
b) Fundamental Rights and Fundamental Duties
c) Directive Principles of State Policy

UNIT-III: Institutions And Distinctive Features
a) Parliament and State Legislatures
b) Supreme Court and High Courts
c) Emergency Provisions
d) Constitutional Amendment Process

UNIT-IV Constitutional Commissions

a) National Commission for Scheduled Castes
b) National Commission for Scheduled Tribes
c) National Commission for Backward Classes
d) National Commission for Minorities

SELECT READINGS:

Avasthi & Avasthi (2002), Indian Administration, Laxmi Narain Aggarwal, Agra

Basu, D.D. (2000), Introduction to the Constitution of India, Wadhwa and Company, New Delhi.

Fadia and Fadia, Indian Administration (2012), Sahitya Bhawan Publication, Agra.

Granville Austin (1999), The Indian Constitution – Corner Stone of a Nation, OUP, New Delhi.

Maheshwari, S.R. (2001), Indian Administration, Orient Black Swan, Hyderabad.

Pylee, M.V. (2009), An Introduction to the Constitution of India, Vikas, New Delhi.

Ramesh K. Arora and Rajni Goyal (2012), Indian Public Administration, Vishwa Parkashan, New Delhi.

Sathe, S.P. (2002), Judicial Activism in India, New Delhi: Oxford University Press.

Subash C. Kashyap (1989), Indian Polity: Retrospect and Prospect, Allahabad University Alumni Association, National Public House.

The Constitution of India, Government of India, 2009.

Tummala K. Krishna (1996), Public Administration in India, Allied Publications, New Delhi.

Mapping Matrix of Course MPA (E) 105-I

Mapping: Mapping is a process of representing the correlation between COs and POs, COsand 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 particularPO 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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix) Table 2 shows the CO-PO mapping matrix for a course (MPA (E) 105-I) assuming thatthere are 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA(E) 105-I

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MPA(E)-105-I.1	3	3	3	3	3	3	3	3	3	3	2	3
MPA(E)-105-I.2	3	3	3	3	3	3	3	3	3	3	2	3
MPA(E)-105-I.3	3	3	3	3	3	3	3	3	3	3	2	3
MPA(E)-105-I.4	3	3	3	3	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	3	3	3	3	3	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSOMapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (MPA (E) − 105-I) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(E) 105-I

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA(E)-105-I.1	3	3	3	2
MPA(E)-105-I.2	3	3	2	3
MPA(E)-105-I.3	3	3	3	2
MPA(E)-105-I.4	3	2	2	3
Average	3	2.75	2.5	2.5

MPA (E)105 (II) ADMINISTRATIVE LAW

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

COURSE OBJECTIVES:

This paper familiarize the students of Public Administration about the concept and growth of Administrative Law in India by covering major areas in this field like delegated legislation, tribunals, ombudsman, etc.

Course outcomes: Towards the end of this course, the students shall be able

MPA(E) 105-II.1 Developing an understanding of Administrative Law- Scope & Importance, Legal Basis of Modern State, Doctrine of Separation of Powers; Principles of Checks and Balances, and Principles of National Justice

MPA(E) 105-II.2 To acquire comprehensive knowledge of Basic Administrative Control i.e Delegated Legislation, Doctrine of Ultra Virus, Droit Administration and Principles and Natural Justice.

MPA(E) 105-II.3 To understanding the changing nature of Administrative Tribunal: Reason for Growth, Procedure,Types of Administrative Tribunals and Administrative Authorities.

MPA(E) 105-II.4 Grasping the genesis, growth and concept of Administrative Appellate Authority: Central Administrative Tribunals, Income Tax Appellate – Tribunals,Regulatory and Insurance Regulatory And Development Authority (IRDA)

Note: The paper aims to acquaint the students with the history and development of Political Geography as a discipline. Along with the Models of World Structure and their Relevance, the paper also explores the global strategic views of thinkers like Mahan, Mackinder, Spykman, Hoosan etc along with various approaches to study Geographical thought.

UNIT – I Introduction
(a)   Administrative Law- Meaning, Nature, Scope & Importance
(b)   Legal Basis of Modern State, Government and Administration;
(c) Constitutional Concepts in Relation to Administrative Law: Rule of Law (U.K.), Doctrine of Separation of Powers; Principles of Checks and Balances, and Principles of National Justice.

UNIT – II   Administrative Control
(a)   Delegated Legislation- Meaning, Need, Scope, Importance and Control
(b)   Doctrine of Ultra Virus
(c) Droit Administration
(d)   Judicial Control of Administration Power
(e) Rights Remedies writs and Principles and Natural Justice.

UNIT – III   Administrative Tribunals
(a)Administrative Tribunal: Reason for Growth, General Structure and Procedure
(b)   Types of Administrative Tribunals
(c)Administrative Authorities and Tribunals: Railway Rates Tribunals, Income Tax Appellate Tribunals, Haryana Administrative Tribunal for Disciplinary Proceedings.

UNIT – IV   Administrative Appellate Authority

(a)Central Administrative Tribunals, Composition, Functions, and Powers

(B)   Income Tax Appellate – Tribunals

(C)   Regulatory Authority – Telecom Regulatory Authority of India (TRAI)
      Insurance Regulatory And Development Authority (IRDA)

REFERENCES

1. Jai Jai Ram Uppadhya, Administrative Law, Central Law Agency 30-D/1, Moti Lal Nehru Road, Allahabad-2 (U.P.) 2015.
2. M .P. Jain & S. N. Jain, Principles of Administrative Law, (6th edition), Published by Wadhwa Book Company, Delhi Law House, New Delhi 2013,
3. M.A. F, Judicial Control of Administrative Action in India, Oxford Clarendon Press, London ,(1969).
4. Genevra Richardson and Hazel Genn , Administrative law and government action : the courts and alternative mechanisms of review, Oxford (England): Clarendon Press, 1994.
5. D. G.T. Williams, Administrative Law in England: The Emergence of a New Remedy, Wolfson College, Oxford Clarendon Press, London ,(1969).
6. J.A.G. Griffith, Principles of Administrative Law (4th Ed.), Published by Pitman Publishing Lincoln, United Kingdom, 1973
7. A. P. Hassumani: Some Problems of Administrative Law in India, Published by Asia Publishing House, Mumbai, India, 1984.
8. Christopher Forsyth, Mark Elliott, Swati Jhaveri, *Effective Judicial Review: A Cornerstone of Good Governance* (Oxford University Press, 2010).
9. Christopher N. May and Allan Ides, Constitutional Law: National Power and Federalism (3rd Edition, Aspen Publishers, 2004).
10.   Elizabeth Giussani, Constitutional and Administrative Law (Sweet and Maxwell, 2008).
11.   Mahendra P. Singh, Comparative Constitutional Law (Eastern Book Company, 1989).
12.   Neal Devins and Louis Fisher, The Democratic Constitution (Oxford University Press, 2010).
13.   Sudhir Krishna Swamy, Democracy and constitutionalism in India – A study of the   Basic Structure Doctrine (Oxford University Press, 2009).
14.   Vikram David Amar, Mark Tushnet, Global Perspectives on Constitutional Law   (Oxford University Press, 2009).
15.   Bharati on Constitutional Status of Fundamental Rights", Vol. 26 (2) South Asian Studies 299-309 (July-December 2011).
16.   Anne Smith, "Internationalization and Constitutional Borrowing in Drafting Bills of Rights" 60(4) International and Comparative Law Quarterly 867-894 (2011October).
14.   Daryl Levinson and Richard H. Pildes "Separation of Parties, Not Powers" 119(8) Harvard Law Review. 2311-2386 (2006).
15.   Daryl Levinson and Richard H. Pildes, "Separation of Parties, Not Powers" 119(8) Harvard Law Review 2311-2386 (2006).
16.   David Annoussamy, "Who Governs India?" 14 (4) South Asia Politics 18-21 (August 2011).
17.   David King, "Formalizing Local Constitutional Standards of Review and the Implications for Federalism" 97 (7) Virginia Law Review 1685-1726 (November 2011).
18.   David Staruss, "Do we Have a Living Constitution" 59 (4) Drake Law Review 973-984 (2011 Summer)
19.   Devi Prasad Singh, "Sovereignty, Judicial Review and Separation of Power", 7(5) Supreme Court Cases J-13 (September 2012)
20.   G.N. Ray, "Mass Media and Parliamentary Democracy" 31 (2) Press Council of India Review 1-10 (April 2010).

Mapping Matrix of Course MPA (E) 105-II

Mapping: Mapping is a process of representing the correlation between COs and POs, COsand 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 particularPO 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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix) Table 2 shows the CO-PO mapping matrix for a course (MPA(E) 105-II) assuming thatthere are 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA(E) 105-II

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
MPA(E) 105-II.1	3	3	3	-	-	3	3	3	3	2	2	3
MPA(E) 105-II.2	3	3	3	-	-	3	3	3	3	2	2	3
MPA(E) 105-II.3	3	3	3	-	-	3	3	3	3	2	2	3
MPA(E) 105-II.4	3	3	3	-	-	3	3	3	3	2	2	3
Average	3	3	3	-	-	3	3	3	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSOMapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (MPE(E) 105-II) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(E) 105-II

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA(E) 105-II.1	3	2	3	2
MPA(E) 105-II.2	3	3	3	3
MPA(E) 105-II.3	3	3	3	2
MPA(E) 105-II.4	3	3	3	3
Average	3	2.75	3	2.5

SEMESTER-II
MPA (C) 201: ADMINISTRATIVE THEORIES

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Course Objective

This paper will familiarize the students with the basic concepts of Public Administration in developed and developing countries. In addition, the course will also cover new areas and new developments in the field of Public Administration particularly Good Governance, New Public Administration, etc. The paper will also cover various theories of organization

Course outcomes: Towards the end of this course, the students shall be able

MPA(C) 201.1 Awareness about the evolution and growth of the Organization Theories: System and contingency, Ministries and Departments, Boards, Commissions, Corporations and Companies

MPA(C) 201.2 Understanding the basic concepts such as Administrative Behaviour.

MPA(C) 201.3 Learning of basic principles and approaches of PublicAdministration i.e. Concepts, Process and Techniques

MPA(C) 201.4 Theoretical clarityof basic concepts and dynamics Public Accountability, Legislative , Executive Judicial Control relating to Public organizations.

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT-I: Organisation Theories, Structure And Forms
a) Organization Theories: System and contingency
b) Ministries and Departments
c) Boards and Commissions
d) Corporations and Companies

UNIT-II: Administrative Behaviour
a) Chief Executive
b) Headquarters and Field Relationships
c) Leadership Theories –Traditional and Modern
d) Morale and Motivation Theories-Contents and Process

UNIT-III: Concepts, Process And Techniques
a) Communication
b) Decision Making
c) Public Relations

UNIT-IV: Public Accountability And Control
a) Public Accountability
b) Legislative Control
c) Executive Control
d) Judicial Control

SELECT READINGS:

- Avasthi & Maheshwari (2012), Public Administration, Lakshmi Naraian Agarwal, Agra
- Arguden, Yilmaz (2011), Keys to Governance: Strategic Leadership for Quality of Life, Macmillan, Hampshire
- Arndt Christiane and Charles Oman (2006), Uses and Abuses of Governance Indicators, OECD, Paris
- Bhattacharya, Mohit (2013), New Horizons of Public Administration: Issues, Challenges and Opportunities, New York, MO.E. Sharpe
- Henry, Nicholas (2006), Public Administration and Public Affairs, Prentice Hall of India, New Delhi
- Jan-Erik Lane, (2000), New Public Management: An Introduction, Routledge, London.
- Ravindra Prasad, D. Prasad, V S Prasad, Satyanarayana P, and Y Pardhasaradhi, (eds.,) (2013), Administrative Thinkers, Sterling, New Delhi
- Donald Menzel (ed.) (2011). The State of Public Administration; Issues, Challenges and Opportunity, New York: M.E. Sharpe
- Frank J. Goodnow, Politics and Administration: A study in Governance, Transaction Publishers, New York, 2003
- O'Leary, Rosemary Et.al. (2010), The Future of Public Administration around the World: The Minnowbrook Perspective, George Town University Press, DC
- Martin Albrow (1970), Bureaucracy, MacMillan, London, 1970
- UN, Department of Economic and Social Affairs, Development Administration; Current Approaches and Trends in Public Administration for Development, New York, UN, 1975
- Wilson, Woodrow."The Study of Administration," Political Science Quarterly 2(June 1887)

Mapping Matrix of Course MPA(C) 201

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (MPA (C) 201) assuming that thereare 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA (C) 201

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
MPA 201.1	3	3	3	-	-	3	2	3	3	2	2	3
MPA 201.2	3	3	3	-	-	3	2	3	3	2	2	3
MPA 201.3	3	3	3	-	-	3	2	3	3	2	2	3
MPA 201.4	3	3	3	-	-	3	2	3	3	2	2	3
Average	3	3	3	-	-	3	2	3	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (MPA(C) 201) assuming that thereare 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(C) 201

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA 201.1	3	3	3	2
MPA 201.2	3	3	3	2
MPA 201.3	3	3	3	2
MPA 201.4	3	3	3	2
Average	3	3	3	2

SEMESTER - II

MPA (C) 202- PUBLIC FINANCIAL ADMINISTRATION

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

COURSE OBJECTIVES

This course provides an overview of activities and policies involved in the collection, custody and expenditure of public revenue at various levels of government. After completion of course student will be able to grasp the knowledge of basic principal of public finance, accounting, auditing and that relates to public budgeting and budgetary process.

Course outcomes: Towards the end of this course, the students shall be able

MPA 202.1 Knowledge of various aspects of Public Financial Administration in general and in the Indian context in particular

MPA 202.2 UnderstandingPublic budgeting, Public financial institutions and financial resource mobilization strategies in the Indian context

MPA 202.3 Comprehendingthe system and dynamics of Indian fiscal federalism

MPA 202.4 Deep understanding ofthe role of Comptroller and Auditor General   Reserve   Bank   of India in a public financial administration.

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT – I: Introduction

a) Meaning , Significance, Scope, Agencies and Principles of Public Financial Administration

b) Tax Administration : Principles, Types and Method of Taxation,

c) Tax Avoidance, and Evasion: Issues and Challenges

d) Evaluation of the Indian Tax System

UNIT – II Budgeting And Governance

a) Budget: Meaning , Evolution and Principles

b) Budget Preparation, Authorization and Execution with special reference to India.

c) Budget as Instrument of Management

d) Types of Budget: Zero Based Budget, Gender Budget, Green Budget and Sunset Budget

e) Centre state Financial Relations

UNIT – III Financial Management

a) Financial Institution: IFCI, IDBI, SFC

b) Working Capital: Concept, Component, Importance and Factors

c) Indian Money Market: Composition, Features and Reforms.

d) Fiscal Policy: Objectives, Instruments, Techniques and Limitations.

e) Monitory Policy: Objectives, Principals, International Monitory Policy

UNIT-IV Control Over Finance

a) Ministry of Financing as an Agency of Expenditure Control

b) Financial Committee: PAC, EC, COPU

c) Controller and Auditor General of India (CAGI)

d) Reserve Bank of India: Organisation, Function, Credit Control, Monitory Policy of RBI

REFERENCES

- Carlos , Santiso(2009) the political economy of government auditing, Taylor and Francis

- Sanjev Kumar Mahajan and Anupama Puri Mahajan, Financial Administration in India, PHI Learning Private Limited.. Delhi 2014.

- Manjusha Sharma & O.P. Bohra, Financial Administration in India, Kitab Publication, Delhi, 2015

- Chen Greg g et. Al (eds) (2008), budget tools: financial methods in the public sector, CQ press.

- Government of India, second administrative reforms commission, fourteenth report, strengthening financial management, systems, April 2009.

- L.kjha (1986), Economic Administration in India - Retrospect s and Prospect, New Delhi: IIPA lee Robert d. Jr., et al (eds) (2007), public budgeting systems, jones & Bartlett learning. Mahajan Sanjeev Kumar And Anupama Puri Mahajan (2014), financial administration in India, phi Learning, Delhi

- Mikesedjohn (2010), fisCal Administration, Cengage Learning.

- Pritchard W (2010) Taxation and State Building: Towards a Governance Focused Tax REFORM AGENDA. IDS WORKING PAPER

- R.K. Lekhi and Joginder Singh(2013), Public Finance, Kalyani Publishers, New Delhi.

- Rabin Jack, W Bartley Hildreth, Gerald J. Miller (2006) Handbook of Public Financial Management, Taylor & Francis Group.

- Sharma M.K. (2006), Financial Administration, Anmol Publications, New Delhi.

- Steppan J. Beiley (1995), public Sector Economics: Theory, Policy and Practice, London Wang Xiaohu (2010), financial management in the public Sector: Tools, Applications, and Cases, M. E. Sharpe.

- World bank (2007) Strengthening World Bank Group Engagement on Governance and Anticorruption. Washington DC

Mapping Matrix of Course MPA(C) 202

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (MPA(C) 202) assuming that thereare 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA(C) 202

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
MPA(C) 202.1	3	3	3	-	-	3	3	3	3	2	2	3
MPA(C) 202.2	3	3	3	-	-	3	3	3	3	2	2	3
MPA(C) 202.3	3	3	3	-	-	3	3	3	3	2	2	3
MPA(C) 202.4	3	3	3	-	-	3	3	3	3	2	2	3
Average	3	3	3	-	-	3	3	3	3	2	2	3

Note: *It is not necessary that each CO has a correlation with all the POs.*

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (MPA(C) 202) assuming that thereare 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(C) 202

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA(C) 202.1	3	3	3	3
MPA(C) 202.2	3	3	3	3
MPA(C) 202.3	3	3	3	3
MPA(C) 202.4	3	3	3	3
Average	3	3	3	3

MPA(C) 203: RESEARCH METHDOLOGY AND METHODS

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Course Objectives

Reserch in common parlance refers to the search for knowledge. We can define research as as scienfic and systematic searach for pertinent information on a specific topic. In fact, research is an art of scientific investigation. Research Methods for Social Science explains different research methods used today for conducting research in particular with public administration, governance and public policy. This couse is intended as a sound sound introduction to study the research methods with an objective of understanding the difference between qualitative and quantitative research and able to use appropriative tools and techniques for problem solving.

Course outcomes: (Towards the end of this course, the students shall be able)

MPA(C) 203.1 Development of an intellectual understanding of the fundamental knowledge of research methodology.

MPA(C) 203.2 Comprehend the research process in an appropriate manner

MPA(C) 203.3 Inculcation of the necessary skills to use research tools to undertake research study

MPA(C) 203.4 Competence to evaluate governmental policy or programme/projects on the basis of primary and secondary data

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT-I: Introduction
a) Social Science Research: Conceptual Dimensions
b) Types of Social Science Research
c) Research Process

UNIT-II: Tools and Methods
a) Identification and Formulation of Research Questions and Hypotheses
b) Research Designs: Qualitative and Quantitative
c) Sampling Methods and Techniques

UNIT-III: Metods And Technoques Of Data Collection & Its Organization
a) Methods of Data Collection: Documents
b) Observation Method
c) Questionnaire and Interview methods
d) Case Study Method
e) Coding, Tabulation and Scaling Techniques

UNIT-IV: Data Analysis Research Writing

a) Statistical Methods: Meaning, Significance and Basic Techniques like Central tendencies and Measures of Dispersion

b) SPSS Based Statistical Analysis

c) Writing a Research Paper / Research Report: Contents and Guidelines

d) Writing Notes and References

e)   Research Ethics in Public Administration

SELECT READINGS:

- Bajpai, S.R.: Methods of Social Survey & Research (Hindi & English), Kanpur, Kitab Mahal.
- Brent Edward E., Jt. Ronal E. Anderson (1990), Computer Applications in the Social Sciences, McGraw Hill
- Bryman, Alan (2004), Social Research Methods, Delhi: Oxford University Press
- Burton, Dawn (Eds.) (2000) Research Training for Social Scientists, Sage Publications, New Delhi
- Gerber Eller (2013), Public Administration Research Methods – Tools for Evaluation and Evidence based practices, Rutledge, New York.
- Galtung, John(1967) Theory & Methods of Social Research, New Delhi, Colombia University Press
- Goode William J. and Paul K. Hatt (2006), Methods in Social Research, McGraw Hill Book Company, USA
- Gupta S.P. (2011), Statistical Methods, Sultan Chand & Sons, New Delhi
- Kothari, C.R., and Gaurav Garg (2014), Research Methodology – Methods and Techniques, New Age, New Delhi
- Locke, L.E., et.al (2007) Proposal that Work: A Guide for Planning Dissertations and Grant Proposals, New Delhi: Sage.
- Loseke, Donileen R. (2013), Methodological Thinking, New Delhi: Sage
- McNabb David E (2013). Research Methods in Public Administration and Nonprofit Management Quantitative and Qualitative Approaches, M. E. Sharpe
- Trivedi, R.N. and Shukla O.P.: Research Methodology, Jaipur Research Publication (Hindi).
- Miller Gerald J., Kaifeng Yang (2007) Handbook of Research Methods in Public Administration, CRC Press.
- Pearsons, C.J.(1973) Thesis & Project Work, A Guide to Research & Thesis Writing, London; Allen & Unwin
- White Jay (Eds.) (1994), Research in Public Administration: Reflection on Theory and Practice, Sage, London.
- Young, Pauline V. (1970) Scientific Social Survey & Research, New Delhi, Printice Hall of India

Mapping Matrix of Course MPA(C) 203

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (MPA(C) 203) assuming that thereare 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA(C) – 203

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
MPA(C) 203.1	3	3	3	-	-	3	2	3	3	2	2	3
MPA(C) 203.2	3	3	3	-	-	3	2	3	3	2	2	3
MPA(C) 203.3	3	3	3	-	-	3	2	3	3	2	2	3
MPA(C) 203.4	3	3	3	-	-	3	2	3	3	2	2	3
Average	3	3	3	-	-	3	2	3	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (MPA(C) 203) assuming that thereare 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(C) 203

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA(C) 203.1	3	3	3	3
MPA(C) 203.2	3	3	3	3
MPA(C) 203.3	3	3	3	3
MPA(C) 203.4	3	3	3	3
Average	3	3	3	3

MPA(C) 204 : PUBLIC POLICY: CONCEPTS AND MODELS

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Course Objectives

Public policy making is not merely a technical function of government; rather it is a complex interactive process intluenced by the diverse nature of socio-political and other environmental forces. Public policies in the developing countries possess certain peculiarities of their own by virtue of being influenced by an unstable socio-political environment, and face various problems and challenges. This course outline of concepts and models provide useful guidance and helps the students to undertake a comprehensive investigation for the suitable models to analyze our policy making process.

Learning outcomes: Towards the end of this course, the students shall be able

MPA(C) 204.1 Understanding the basic concepts such as public policy, policy analysis, public policy process and governance

MPA(C) 204.2 Knowledge of different stages of the Public policy process in terms of theoretical formulation and the process

MPA(C) 204.3 Necessary competence to undertake policy analysis and different Modles.

MPA(C) 204.4 Understanding about the report writing of research methdology

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT-I: Concepts
a) Public Policy
b) Institutionalism
c) Policy as a Political Activity
d) Public Choice
e) Strategic Planning

UNIT-II: Models-I
a) Vilfredo Pareto: Optimality and Improvements
b) John Rawls: A Theory of Justice
c) Almond Gabriel: Interest Aggregation and Articulation

UNIT-III: Models-II
a) Harold Lasswell: Policy Sciences
b) Yehezkel Dror: Mega Policy and Meta Policy
c) Charles Lindblom: Incrementalism

UNIT-IV: Models-III
a) William Niskanen: Budget Maximizing Model
b) Elinor Ostrom: Institutional Rational Choice
c) Amartya Sen: Development as Freedom

SELECT READINGS:

- Anderson J.E., (2006) Public Policy Making: An Introduction, Boston, Houghton
- Ashford, Doug (ed.), (1992), History and Context in Comparative Public Policy, Ithaca, New York: University of Pittsburgh Press.
- Bardach, Eugene (1977), The implementation Game: What Happens After a Bill Becomes a Law, Cambridge, MA: MIT.
- Barker, Antony ad B. Guy Peters (eds.) (1993), The Politics of Experts Advice: Creating, Using and Manipulating Scientific Knowledge for Public Policy, Ithica, NY: University of Pittsburg Press.
- Brazelay Michael 1992, Breaking Through Bureaucracy: A New Version for Managing in Government, UCP.
- Bergerson pepter (1991) Teaching public policy: Theory research and practice, Westport RI Greenwood Press
- Birkland Thomas A (2005) An introduction to the policy process: Theories concepts and models of public policy making, Armonk, M E Sharpe
- Dror Y (1989) public policy making re-examined, 2nd edition , san francisco, chandler.
- Fischer Frank (1995), Evaluating public policy, Singapore, pearson.
- Hill Michael (2005) The Public Policy Process, Harlow UK: Pearson.
- John M. Shafritz (1998) International Encylopedia of public policy and administration, westview press.
- John peters (2012) Analyzing Public Policy, 2nd Edition, Routlidge, Taylor And Francis Group, London.
- Lasswell Harold (1971) A preview of Public policy sciences, New York, Elsevier
- Lerner D. and H. D. Lassell (1951) The Policy sciences, Stanford, Stanford University Press
- Kindblom C E and E J Woodhouse (993|) The Policy Making Process, New Jersey, Prentice Hall.
- McCool Daniel C (1995) Public Policy Theories, Models And Concepts: An Anthology, NJ: Prentice Hall.

Mapping Matrix of Course MPA(C) 204

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 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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (MPA(E) 205-II) assuming that thereare 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA(C) 204

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
MPA(C) 204.1	3	3	3	-	-	3	2	3	3	2	2	3
MPA(C) 204.2	3	3	3	-	-	3	2	3	3	2	2	3
MPA(C) 204.3	3	3	2	-	-	3	2	3	3	2	2	3
MPA(C) 204.4	3	3	3	-	-	3	2	2	3	3	2	3
Average	3	3	2.75	-	-	3	2	2.75	3	2.25	2	3

Note: *It is not necessary that each CO has a correlation with all the POs.*

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (MPA(C) 204) assuming that thereare 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(C) 204

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA(C) 204.1	3	3	3	2
MPA(C) 204.2	2	3	3	2
MPA(C) 204.3	3	3	3	3
MPA(C) 204.4	3	3	3	3
Average	2.75	3	3	2.5

MPA(E) 205 (I): SOCIAL WELFARE ADMINISTRATION

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Course Objectives

The history of social welfare is an interdisciplinary study of the evolution of charitable works, organized activities related to social reform movements and non-profit or public social services designed to protect or benefit individuals, families and citizens of the larger society. Social Welfare Administration is the process of efficiently providing resources and services to meet the needs of the individuals, families, groups and communities to facilitate social relationship and adjustment necessary to social functioning. From functional point of view, it encompasses three facets of social problems: (i) Restoration Page 6 6 of impaired social functioning; (ii) Provision of resources, social and individual, for more effective social functioning; (iii) Prevention of social dysfunction. Developing an understanding of human behavior, culture and beliefs. Being committed to the ethics and values of social work.

Course outcomes: (Towards the end of this course, the students shall be able)

MPA(C) 205.1 Social Administration. Social Policy – A Study of Relevant Constitutional Articles and Provisions in the Five Year Plan Documents. Need for Adoption of a Social Resolution for India.

MPA(C) 205.2 Field of Social Administration. Need for Creation of State and Local Cadre of Social Administration.

MPA(C) 205.3 National Commission for SCs and STs – Programmes for the Development of SCs & STs and Women.

MPA(C) 205.4 Major Social Sectors – Health and Education, Social Planning and Five Year Plans.

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT-I: Introduction of Social Welfare Administration

Concepts of Social Welfare, Social Justice and Social Change. Meaning, Nature, Scope and Principles of Social

Administration. Social Policy – A Study of Relevant Constitutional Articles and Provisions in the Five Year

Plan Documents. Need for Adoption of a Social Resolution for India. Post Independence Social Legislation

with Special Reference to Legislation for Women and Children.

UNIT-II: Organisation of Social Welfare Administration

Organisation and Functions: Ministry of Social Justice and Empowerment. Department of Women and Child Development at Central Level Need for Integration of Social Functions at Central level. Central Social Welfare Board – Its Composition, Functions and Status.

UNIT-III: Organisation of State Social Welfare Administration

Organisation at the State Level (Haryana) – Directorates of Social Justice and Empowerment, Welfare of SCs & BCs; and Women & Child Development – Composition and Functions. State Social Welfare Advisory Board: Composition, Powers and Personnel Practices in the Field of Social Administration. Need for Creation of State and Local Cadre of Social Administration.

UNIT-IV: Major Social Sectors of State Social Welfare Administration

National Commission for SCs and STs – Programmes for the Development of SCs & STs and Women. Welfare of the Disabled and Aged. Drug De-addiction. Methods of Social Administration: Social Case Work; Group Work; and Community Organisation and their Applicability in India. Major Social Sectors – Health and Education, Social Planning and Five Year Plans. Role of Voluntary/Non-Governmental Agencies in Socio-economic Development.

Books Recommended

1. Surendra Kataria, Social Administration (Hindi), RBSA Publishers, SMS High Way, Jhaipur, 2002.

2. C.P. Barthwal (Ed.), Social Justice in India, Bharat Book Centre, 17, Ashok Marg, Lucknow, 1998.

3. D.R. Sachdeva, Social Welfare Administration (English and Hindi), Kitab Mahal, Allahabad, 2004.

4. Davis C. March: An Introduction to Social Administration, Routledge and Kegan Paul, London, 1965.

5. P.D.Kulkarni: Centre Social Welfare Board, New Delhi: Asia Publishing House, 1961.

6. V. Jaganadhan: Social Welfare Organisation, New Delhi, IIPA 1966.

7. D.K.Mishra: social Administration (Hindi) Jaipur: College Book Depot, Tripolia Bazar, 1990.

8. D. Paul Chowdhry: Social Welfare Administration, New Delhi, Atma Ram & Sons, 1979.

9. S.L.Goel and R.K.Jain: Social Welfare Administration, vol. I, New Delhi: Deep & Deep, 1988.

10. T.N.Chaturvedi and S.K. Chandra: Social Administration Development and Change, New Delhi, IIPA 1980.

11. D.P. Chowdhry: Social Welfare Administration, Atma Ram & Sons, Deli 1992.

12. Mohinder Singh (ed.): Social Policy and Administration in India, M.D. Publications Pvt.Ltd., New Delhi, 1996.

Mapping Matrix of Course MPA(E) 205 (I)

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course MPA(E) 205 (I)assuming that thereare 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA(E) – 205-I

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
MPA(E) 205.1	3	3	3	-	-	3	2	3	3	2	2	3
MPA(E) 205.2	3	3	3	-	-	3	2	3	3	2	2	3
MPA(E) 205.3	3	3	3	-	-	3	2	3	3	2	2	3
MPA(E) 205.4	3	3	3	-	-	3	2	3	3	2	2	3
Average	3	3	3	-	-	3	2	3	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (MPA(E) 205-I) assuming that thereare 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(E) 205-I

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA(E) 205.1	3	3	3	3
MPA(E) 205.2	3	3	3	3
MPA(E) 205.3	3	3	3	3
MPA(E) 205.4	3	3	3	3
Average	3	3	3	3

SEMESTER - II

MPA (E) 205(II): POLICE ADMINISTRATION

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

COURSE OBJECTIVES:

This paper introduces to the students to introduce to the students the concept and rationale of police in the society and its evolution. An effort would also be made to familiarize the students with the working of police organizations at the union, state and local level. In addition, the endeavor would be to throw light on the latest developments in the field of police reforms.

Course outcomes: Towards the end of this course, the students shall be able

MPA(E) 205.1 This course intends to familiarize the students with the concept and rationale of organizational behavior with special reference to police administration;

MPA(E) 205.2 To acquire comprehensive knowledge of status, role, norms and values and concepts of social conformity, and social change; crowd, Violence, Castism, Communalism and Ethnic Conflicts along with the role of police in dealing with them;

MPA(E) 205.3 To understanding the methods of investigation/ interrogation; good qualities of an investigating officer; the procedure to be followed for registering an First Information Report to investigation and charge sheets/final report preparation in various crime cases;

MPA(E) 205.4 designed to impart knowledge to the students on the laws governing the 'prevention and detection of crime' which is laid downas the primary duty in the Indian Police Act 1861, which include (i) the Indian Penal Code 1860; (ii) the Code of Criminal Procedure 1973; and (iii) the Evidence Act.

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks

UNIT – I Introduction

a) Police Personnel Administration: Meaning, Nature, Scope and Significance. Principles of Personnel Administration.

b) Union Ministry of Home Affairs; Organization and Working of Central Police organizations- Central Armed Police Forces, Central Investigating Agencies-CBI, NIA, IB & RAW; Bureau of Police Research and Development;

c) State Policing System: Organization of Police Force at the State and District level; Commissionerate System of Policing; Police and Panchayati Raj Relations.

UNIT – II   Police Procedures and Investigation Techniques

(a) Detection and Investigation: Qualities of Investigating Officer (IO). Preparation for interviewing.

(b) FIR: Essential ingredients. Procedure for Recording of Statements. Search and Seizure. Arrest and Test Identification Parade (TIP).

(c) Disastrous situations: Duties of police in controlling and rehabilitation. Preventive measures: Duties and procedure for preventing crime.

UNIT – III   Correctional Administration

(d)   Prison Administration: Origin of Prison System, Statutory Prisons in India. Classification and Organization of Various Categories of Prisons in India.

(b) Parole: Concept, Origin and Development. Parole in India. Parole Conditions, Revocation and Discharge. Furlough

(c) Probation: Concept, Origin and Development. Probation in India including Probation of Offenders Act, 1958. Probationary Supervision, Pre- Sentence Report, Revocation and

UNIT – IV   Police Psychology

(a) Introduction and Scope of Psychology – Application of Psychology to Police Working. Trait Theories of Personality. Personality Development. Police Personality.

(b) Psychological Aspects of Aggression, Violence and Suicide. Stress: Symptoms and Theories. Stress Among Police Force and Coping Strategies.

(c) Emotions: Definition and Types. Motivation: Meaning and Theories in the Context of Policing. Abnormality: Definition and Type of Mental illness.

REFERENCES

1. Scaramella, Gene L.: Introduction to Policing Sage PublicationCox steven M. India Pvt. Ltd., New Delhi, 2011.
2. Gupta, Anandswarup: The Police in British India: 1861-1947, Bureau of Police Research & Development, NewDelhi, 2007.
3. Bharti, Dalbir: *Police Evam Log: Donon ke Adhikar Va Zimmedarian,* A.P.H. Publishing Corporation,New Delhi, 2007.
4. Chaturvedi, J.C.: Police Administration and Investigation of Crime, Isha Books, Delhi, 2006.
5. Dempsey, John S. &:An Introduction to Policing, Thomson-Linda S. Forst Wadsworth, CA, 2005.
6. Dogra, R.S.D.: Nation Keepers: Central Reserve Police Force, (C.R.P.F.), A.P.H. Publishing Corporation.
7. Srivastava, Aparna : Role of Police in a Changing Society, A.P.H. Publishing Corporation, New Delhi, 1999.
8. Sen, Shankar: Indian Police Today, Ashish Publishing House, New Delhi, 1994.
9. Ghosh, S.K. and: Encyclopaedia of Police in India, Volume I Rustamji, K.F. Ashish Publishing House, New Delhi, 1993.
10. Sharma, K.K.: Law and Order Administration, National Book Organization, New Delhi, 1985

Mapping: Mapping is a process of representing the correlation between COs and POs, COsand 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 particularPO 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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix) Table 2 shows the CO-PO mapping matrix for a course (MPA(E) 205 (II)) assuming thatthere are 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA(E) 205(II)

Note: It is not necessary that each CO has a correlation with all the POs.

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MPA(E) 205	3	3	3	-	-	3	3	3	3	2	2	3
MPA(E) 205	3	3	3	-	-	3	3	3	3	2	2	3
MPA(E) 205	3	3	3	-	-	3	3	3	3	2	2	3
MPA(E) 205	3	3	3	-	-	3	3	3	3	2	2	3
Average	3	3	3	-	-	3	3	3	3	2	2	3

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSOMapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (MPA(E) 205 (II)) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(E) 205(II)

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA(E) 205	3	2	3	2
MPA(E) 205	3	3	3	3
MPA(E) 205	3	3	3	2
MPA(E) 205	3	3	3	3
Average	3	2.75	3	2.5

SEMESTER II
INDIAN CONSTITUTION, SOCIAL JUSTICE AND ADMINISTRATION
(OPTIONAL ELECTIVE SOCIAL SCIENCES PAPER) (OESS)

Credit: 02

Max. Marks: 50
Time: 2 hours

Course Objective: The Paper aims to acquaint the students about the basic features of Indian Constitution along with its institutional arrangements.

Learning outcomes: (Towards the end of this course, the students shall be able)

1. Knowledge about the evolution and growth of constitutional framework on which Indian Administration is based.

2. Acquiring the theoretical knowledge and understanding of the Centre – State Relations and Local Self Government with special reference to Decentralization Experiments in India

3. Understanding about the State Government and Social Welfare Administration Programmes, functions, and resources of State Government

4. Awareness about the institutions and mechanism Accountability & Control Legislative, Executive, Judicial Control and Right to Information Act.

Note: The question paper will consist of eight questions. The candidate shall attempt four questions in all. Each question carries equal marks.

UNIT - I : Indian Constitution:
a) Nature of the Constitution salient features – Preamble
b) Fundamental Rights, Directive Principles – Fundamental Duties
c) Amendments of the Constitution: Procedure for Amendment – Emergency Provisions

UNIT - II: Centre – State Relations and Local Self Government
a) Distinctive features of Indian Federation
b) Legislative, Administrative and Financial relations between the Union and the States
c) Decentralization Experiments in India – 73rd and 74th Amendments and their implementation

UNIT - III: State Government and Social Welfare Administration
a) Governor, Chief Minister and Council of Ministers
b) Changing Nature of District Administration and the role of District Collector
c) Reservations for SC,ST and Backward classes

UNIT IV: Accountability & Control
a) Legislative and Executive Control
b) Judicial Control and Judicial Review
c) Right to Information Act
d) National SC and ST Commission; Women's Commission

SELECT REFERENCES:

- Avasthi and Avasthi (2002), Indian Administration, Laxmi Narain Aggarwal, Agra.
- Basu, D.D. (2000), Introduction to the Constitution of India, Wadhwa and Company, New Delhi.
- Fadia and Fadia, Indian Administration (2002), Sahitya Bhavan Publications, Agra.
- Granville Austin (1999), The Indian Constitution – Corner Stone of a Nation, OUP, New Delhi.
- Maheshwari, S.R. (2001) Indian Administration, Orient Blackswan, Hyderabad
- Pylee, M.V. (2009), An Introduction to the Constitution of India, Vikas, New Delhi.
- Ramesh K. Arora and Rajni Goyal (2000(, India Public Administration, Vishwa Parkashan, New Delhi.
- Sathe, S.P. (2002), Judicial Activism in India, New Delhi: Oxford University Press.
- Subhash C. Kashyap (2010), Indian Constitution: Conflicts and Controversies, Vitasta,
- The Constitution of India, Government of India, 2009.
- Tummala K. Krishna (1996), Public Administration in India, Allied Publications, New Delhi.

Mapping Matrix of Course OESS – Semster -II

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix) Table 2 shows the CO-PO mapping matrix for a course (OESS–SEMESTER-II) assuming that there are12 POs and 4COs.

Table 2: CO-PO Matrix for the Course OESS–(OESS–SEMESTER-II)

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
OESS-1	3	3	3	-	-	3	3	3	3	2	2	3
OESS-2	3	3	3	-	-	3	3	3	3	2	2	3
OESS-3	3	3	3	-	-	3	3	3	3	2	2	3
OESS-4	3	3	3	-	-	3	3	3	3	2	2	3
Average	3	3	3	-	-	3	3	3	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO MappingMatrix)

Table 3 shows the CO-PSO mapping matrix for a course ((OESS–SEMESTER-II)) assuming that there are4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course OESS (SEMESTER II)

CO	PSO 1	PSO 2	PSO 3	PSO 4
OESS-05.1	3	3	3	2
OESS-05.2	3	3	3	2
OESS-05.3	3	3	3	2
OESS-05.4	3	3	3	2
Average	3	3	3	2

Credits:04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Course Objective: This paper attempts to familiarizes the students of Public Administration with the basic features of Indian Constitution, particularly those having relevance for the administrative set up in India. It also covers the administrative set up and structure at central level in addition to critical areas like centre-state relations, Ayoge, National Commission for SC, ST OBC etc. and Niti Ayoge.

Course outcomes: Towards the end of this course, the students shall be able

MPA (C)- 301.1 Knowledge about the evolution and growth of Indian Administration

MPA (C)- 301.2 Grasping the role of Union Executive

MPA (C)- 301.3 Understanding the in-built control mechanisms over constitutional bodies in particular and administration in general

MPA (C)- 301.4 Delineating the constitutional provisions and dynamics of union -state relationships. Awareness about the institutions and mechanism in force for citizen-state interface.

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT-I: Historical Background And Constitutional Context
a) Evolution
b) Constitutional Context: Parliament, Executive and Judiciary- Structures, functions and work processes
c) Salient Features

UNIT-II: Union Executive
a) President
b) Prime Minister and Council of Ministers –Cabinet and Cabinet Committees
c) Cabinet Secretariat & Prime Minister Office
d) Central Secretariat
e) Ministry of Home Affairs

UNIT-III: System Of Government
a) Federal and Unitary Features in constitutional context
b) Union-States Relations and Trends in Centre-State Relations
c) Union Government and Law Order Administration-National Police Commission, Central Police and Paramilitary Forces including NIA
d) Inter-States Relations- Issues and Resolution Mechanism

UNIT-IV: Constitutional, Statutory And Non-Statutory Authorities
a) Election Commission of India
b) National Human Rights Commission
c) National Commissions for- Scheduled Castes, Scheduled Tribes, Backward Classes, Minorities, Women and Children
d) Niti Ayog and National Development Council

SELECT READINGS:

- Hoshiar Singh & Pankaj Singh(2012) Indian Administration ,Pearson's Publication, Noida
- Hoshiar Singh & Pankaj Singh(2012) Bhartiya Prashasan (Hindi) Pearson's Publication, Noida
- Pankaj Singh(2006) Administrative Reforms, Kitab Mahal Publisher, New Delhi.
- Avasthi and Avasthi (2002) Indian Administration, Laxmi Narain Aggarwal: Agra
- Basu, D.D. (2000) Introduction to the Constitution of India, Wadhwa & Company: New Delhi
- Bhambri, C. P. (1973) Public Administration in India, Delhi, Vikas
- Bhaskar Rao, V.Venkateshwarulu,B.(eds.) (1987) Parliamentary Democracy in India: Trends and Issues, Delhi: Mittal Publications
- Chatterjee, Sibranjan (1997) Restructuring Centre-State Relations: The Sarkaria Commission and Beyond, Minerva Associates: Calcutta
- Government of India (2005) Second Administrative Reform Commission Reports (1-15), Ministry of Personnel, Public Grievances & Pensions, Department of Administrative Reforms and Public Grievances: New Delhi
- Granville, Austin (1999) The Indian Constitution-Cornerstone of Nation, OUP: New Delhi
- Jain R.B.(1976) Contemporary Issues in Indian Administration, Delhi: Vishal
- Kashyap, Subash C. (2010) Indian Constitution: Conflicts and Controversies, Vitasta
- Maheshwari, S.R.(2004) Indian Administration, Orient Blackswan : Delhi
- Sarkar, Jadunath (2009) The Mughal Administration, Six Lectures BiblioLife
- Singh, Hoshiar & Singh, Mohinder (1990) Public Administration in India: Theory & Practice, New Delhi: Sterling

Mapping Matrix of Course MPA(C) – 301

Mapping: Mapping is a process of representing the correlation between COs and POs, COsand 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 particularPO to a small extent) with the particular Programme outcome
2	ontents of course have medium correlation (i.e. in agreement with the particular PO to a reasonable extent) with the particular Programme outcome
3	ontents of course have strong correlation (i.e. in agreement with the particular PO to a large extent) with the particular Programme outcome

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix) Table 2 shows the CO-PO mapping matrix for a course (**MPA(C) – 301**) assuming that thereare 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA(C) – 301

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
MPA(C)-301.1	3	3	3	-	-	3	2	2	3	2	2	3
MPA(C)-301.2	3	3	3	-	-	3	2	2	3	2	2	3
MPA(C)-301.3	3	3	3	-	-	3	2	2	3	2	2	3
MPA(C)-301.4	3	3	3	-	-	3	2	2	3	2	2	3
Average	3	3	3	-	-	3	2	2	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSOMapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (**MPA(C) – 301**) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(C) – 301

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA(C)-301.1	3	3	3	3
MPA(C)-301.2	3	3	3	2
MPA(C)-301.3	3	3	3	3
MPA(C)-301.4	3	3	3	3
Average	3	3	3	2.75

MPA (C) 302 : DEVELOPMENT ADMINISTRATION

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

COURSE OBJECTIVES:

In the fourth semester, all students exposed to the core area of Development Administration, besides being offered opportunities for pursuing individual areas of interest in the applied areas through elective courses in the next semester as well. The aim of the paper is to provide introductory knowledge and skills needed to formulate, analyze and evaluate policy considerations, besides implementation, related to various dimensions of Development Administration. The coursework covers concept and significance of Development, Sustainable Development, Gender and Development, Human Development and Inclusive Development

Course outcomes: (Towards the end of this course, the students shall be able)

MPA (C) 302.1 Developing a basic intellectual understanding of development, its approaches and sustainable development

MPA (C) 302.2 Gaining conceptual and theoretical understanding of Development Administration including theecological and post-globalization contexts

MPA (C) 302.3 Gaining familiarity with issues/new perspectives such as Development Methods And Strategy in India

MPA (C) 302.4 Learning of basic other issues and Non-National Agencies and Globalization and Development (PPP Model)

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT-I: Introduction
a) Development and its Socio-cultural, Political and Economic Dimensions
b) Nature, Scope and Elements of Development Administration
c) Development and Non Development Dichotomy
d) Goals and Challenges of Development Administration

UNIT-II: Theory And Models
a) F.W. Riggs
b) Sustainable Development
c) Human Development
d) Inclusive Development

UNIT-III: Development Methods And Strategy In India
a) Mixed Economy Approach
b) Economic Planning and Development- Institutions and Process in Historical Perspective
c) Niti Ayog and National Development Council
d) Decentralized Planning

UNIT-IV: Other Issues And Non-National Agencies
a) Gender and Development
b) NGOs and Development
c) Globalization and Development (PPP Model)
d) United Nation and other International Agencies in Development

Select Readings:
- Ali Farazmand, (2001), Handbook of Comparative and Development Public Administration, Marcel Dekker, New York.
- Montgomery, J. (1966), Approaches to development politics, administration and change, New York, McGraw Hill.
- Pai Panandikar, V.A., (1964). Development administration: An approach. Indian Journal of Public Administration, 10(1), 34-44.
- Riggs F.W. Ed. (19)The Frontiers of Development Administration, Durham, North Carolina: Duke University Press.
- Riggs, F.W. (1970), The Ecology of administration, Bloomington: Indiana University.
- Riggs, F.W. (1956), Public Administration: A neglected factor in economic development. Annals of the American Academy of Political and Social Sciences, No.305, Agarian Societies in Transition (May 1956), 70-80.
- Swerdlow, L. (1963), Ed.), Development Administration: Concepts and Problems, Syracuse, New York: Syracuse university Press.
- W.E. Weidner (Ed.) (1970), Development administration in Asia, Durham, North Caroline: Duke University Press.

Mapping Matrix of Course MPA (C) – 302

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (MPA (C)–302) assuming thatthere are 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA (C) –302

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
MPA(C)-302.1	3	3	3	-	-	3	2	3	3	2	2	3
MPA(C)-302.2	3	3	3	-	-	3	3	3	3	2	2	3
MPA(C)-302.3	3	3	3	-	-	3	3	3	3	2	2	3
MPA(C)-302.4	3	3	3	-	-	3	2	3	3	2	2	3
Average	3	3	3	-	-	3	2.5	3	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3: shows the CO-PSO mapping matrix for a course (MPA (C)–302) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA (C) –302

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA(C)-302.1	3	3	3	2
MPA(C)-302.2	3	3	3	2
MPA(C)-302.3	3	3	3	3
MPA(C)-302.4	2	3	3	3
Average	2.75	3	3	2.5

MPA(C) 303: ADMINISTRATIVE THINKERS-II

Credits:04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

COURSE OBJECTIVES

This course is an extension of the first semester course to discuss the behaviouralism, organizational humanism, and to make the student of Public Administration aware of the behaviour of human beings in an organization, After completion of this course, students are in a position to comprehend the basic tenets and development of administrative theory.

Course outcomes: (Towards the end of this course, the students shall be able)

MPA (C)- 303.1 An understanding about the philosophy of ethics with special Administrative Ecology and Behaviourlism : Structural – Functional Approach, Theory of Prismatic Society and Development Models.

MPA (C)- 303.2 Understanding the basic concepts such as Motivational Concept Theories – I and II.

MPA (C)- 303.3 Knowledge of different Organizational Behaviour: Rationale, Change: Concept Process, Resistance to Change and Rationale .

MPA (C)- 303.4 Grasp various methods of Frederick Herzberg: Hygiene and Motivation Factors
Chris Argyris: Integrating the Individual and the Organization

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT I: Administrative Ecology and Behaviourlism

a)   Ecology of Public Administration

b)   Structural – Functional Approach

c)   Theory of Prismatic Society

d)   Development Models

Unit II: People in Organization: Motivational Concept Theories – I

a)   Abraham Maslow: Needs Hierarchy

b)   Victor Vroom: Expectancy Theory of Motivation

c)   Douglas McGregor: Theory X and Theory Y

d)   Herbert Simon. Behaviouralism and Decision Making

UNIT III: People in Organization: Motivational Concept Theories - II

a) Frederick Herzberg: Hygiene and Motivation Factors

b) Chris Argyris: Integrating the Individual and the Organization

c) Rensis Likert: Systems Management

UNIT IV: Organizational Behaviour:

a) Organizational Behaviour: Concept and Rationale

b) Organizational Change: Concept Process, Resistance to Change

c) Organizational Effectiveness: Concept and Approaches

d) Organizational Development: Concept and Rationale

SELECT REFERENCES:

- Argyris, Chris (1957), Personality and Organization, Harper, New York

- Donald Menzel et.al (eds) (2011). The State of Public Administration: Issues, Challenges and Opportunity. M. E. Sharpe.

- Drucker, Peter (2012), Management Challenges for the 21st Century, Harper business. Fox, Richard C (2005), Critical Social Theory in Public Administration, PHI, New Delhi George Frederickson (2008),The Public Administration Primer,Westview Press.

- Herbert A. Simon (1965), Administrative Behavior: A Study of Decision-making Process in Administrative Organizations, Free Press, New York.

- JanetV. Denhardt and Robert B. Denhard (2007),The New Public Service, Serving, Not Steering, M.E.Sharpe, New York

- Likert, Rensis (1976), New Patterns of Management, McGraw-Hill, New York

- Luthans, Fred, (2005) Organizational Behaviour, McGraw- Hill, New York

- Maslow, Abraham (1954), Motivation and Personality, Harper & Row. NY

- McGregor, Douglas(1960),The Human Side of Enterprise, McGraw- Hill, New York

- Miller, H and Fox.CJ (2007), Post Modern Public Administration, ME Sharp, New York

- Ostrom, Elinor (2003), Governing the Commons-The Evolution of Institutions for collective Action, Cambridge

- Ostrom,Vincent (1973) The Intellectual Crisis in American Public Administration. University of Alabama Press: Alabama.

- Prasad, Ravindra D (et al) eds. Administrative Thinkers (2013), Sterling Publishers, New Delhi

- Vroom, Victor H (1964),Work Motivation, John Wiely and Sons, New York

- Waldo, Dwight (1968),The Study of Public Administration, Random house, New York

- Warren Bemiis (2005), Reinventing Leadership: Strategies to Empower the Organization, HarperBusiness, NY

- Warren Bennis, (1993), Beyond Bureaucracy: Development and Evolution of Human Organization, John Wiley & Sons,NY

- Curtis Cook, Phillip Hunsaker, Roberty Coffey Management and Organisational Behaviour

- (New York: McGraw Hill, 2001)

- Geert Hofstede and Bob Garratt Cultures and Organisations: Inter Cultural Cooperation and its Importance for Survival (New York: Profile Books, 2003)

- Keith Davis, John W. Newstrom et al Organisation Behaviour: Human Behaviour at Work (New York: McGraw Hill, 13th ed., 2010)

- Ken Blanchard and Hersey Blanchard Management of Organisational Behaviour (Washington: Pearson Higher Education, 9th edition, 2009)

- Mirza S. Saiyadain Organisational Behaviour (New Delhi : Tata McGraw Hill, 2nd ed., 2006)

- Nigel Nicholson Encyclopaedic Dictionary of OB (London: Blackwell Publishers,1998)

- Stephen P. Robbins, Seema Sanghi, Timothy Judge Organisational Behaviour: Concepts, Controversies and Applications (New Delhi: Pearson, 13th edition, 2009)

- Steven Mcshane and Mary von Glinow Organisation Behaviour (New York: McGraw Hill, 5th ed., 2009)

Mapping Matrix of Course MPA (C) – 303

Mapping: Mapping is a process of representing the correlation between COs and POs, COsand 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 particularPO 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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix) Table 2 shows the CO-PO mapping matrix for a course (MPA(C) 303) assuming thatthere are 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA (C) 303

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
MPA (C) 303.1	3	3	3	3	3	3	3	3	3	3	2	3
MPA (C) 303.2	3	3	3	3	3	3	3	3	3	3	2	3
MPA (C) 303.3	3	3	3	3	3	3	3	3	3	3	2	3
MPA (C) 303.4	3	3	3	3	3	3	3	3	3	3	2	3
Average	3	3	3	3	3	3	3	3	3	3	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSOMapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (MPA(C) 303) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(C) 303

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA (C) 303.1	3	3	3	2
MPA (C) 303.2	3	3	2	3
MPA (C) 303.3	3	3	3	2
MPA (C) 303.4	3	2	2	3
Average	3	2.75	2.5	2.5

MPA (C) 304: PUBLIC SECTOR MANAGEMENT

Credits:04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

COURSE OBJECTIVES:

Public Sectors were incepted to achieve desired socio-economic objectives of the workers and society. This course gives an overview of structure and functioning of public Enterprises in India. It also enhances the understanding of the students regarding role played by Public Enterprises in developmental process.

Course Outcomes: (Towards the end of this course, the students shall be able)

MPA (C)- 304.1 Knowledge about the evolution and growth of Public Enterprises Growth, Rationale, Objectives and Environment of Public Enterprises.

MPA (C)- 304.2 Familiarity with the constitutional framework on Structure Of PublicEnterprises which Indian Administration is based.

MPA (C)- 304.3 Understanding the in-built control mechanisms over constitutional bodies in particular Personal Policies Of Public Enterprises.

MPA (C)- 304. 4 Awareness about the institutions and mechanism in Stress Management, Business Ethics and Corporate Responsibility; and Time Management.

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT– I   Introduction
a) Public Enterprises Meaning, Nature and Types
b) Growth and Environment of Public Enterprises.
c) Rationale and Objectives. Government's Policy Towards Public Enterprises.

UNIT-II   Structure Of Public Enterprises
(a)   Role of Public Sector in India
(b)   Forms of Organization
(c)Public Corporation; Public Company; Department- Forms, Types and Structure.
(d)   The Board of Directors – its Constitution and Functions.

UNIT-III   Personal Policies Of Public Enterprises

a) Industrial Relations and Woker's Participation in Management.
b) Personnel Management-Recruitment and Training. Performance Evaluation
c) Privatisation of Public Enterprises;
d) Performance Appraisal: Meaning, Methods, Techniques.

UNIT-IV   Issues

a) Stress Management: Meaning, Features, Types & Causes;
b) Corporate Governance Act – 2013
c) Business Ethics and Corporate Responsibility;
d) Public Enterprises: Meaning, Features, Types & Causes;
e) Time Management- Features, Causes & Techniques of Public Enterprises;

REFERENCES

- R. K. Singla: Business Management, V.K. Globle Publications Pvt. Ltd., 4323/3 Ansari Road, Darya Ganj, New Delhi-110002
- A. Ghosh: Indian Economy – its Nature and Problems, Calcutta: The World Press Pvt.
- Dutt and Sundharam: Indian Economy, Delhi: S. Chand & Co., 2004.
- B.L. Mathur: Economic Policy and Administration (Hindi), Jaipur: RBSA Publishers, SMS Highway 1990.
- C. B. Mamoria & S. V. Gankar: Human Resource Management, Himalaya Publishing House, Ramdoot, Dr. Bhalerao Marg, Girgaon, Mumbai-400004.(Branch Office: Pooja Appartments', 4-B, Murari Lal Street, Ansari Road, Darya Ganj, New Delhi-110002
- V.V. Ramanadhan (ed.), Public Enterprises and Developing World, London: Groom Helm, 1984.
- A.H. Hansen: Public Enterprises and Econmic Development, London: Routledge and Kegan, 1972.
- Laxmi Narain: Principles and Practice of Public Enterprises Management, New Delhi: S.Chand & Co.
- S.C. Kuchhal: The Industrial Economy of India. Agra: Chitanya Pub. House, 1987.
- Prahlad Kumar Basu: Public Enterprises: Policy Performance and Professionalism, New Delhi, Allied 1982.

Mapping Matrix of Course MPA (C)–304

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix) Table 2 shows the CO-PO mapping matrix for a course (**MPA (C) 304**) assuming that there are 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA (C) 304

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
MPA (C) 304.1	3	3	3	-	-	3	3	3	3	2	2	3
MPA (C) 304.2	3	3	3	-	-	3	3	3	3	2	2	3
MPA (C) 304.3	3	3	3	-	-	3	3	3	3	2	2	3
MPA (C) 304.4	3	3	3	-	-	3	3	3	3	2	2	3
Average	3	3	3	-	-	3	3	3	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (**MPA (C) 304**) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA (C) 304

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA (C) 304.1	3	2	3	2
MPA (C) 304.2	3	3	3	3
MPA (C) 304.3	3	3	3	2
MPA (C) 304.4	3	3	3	3
Average	3	2.75	3	2.5

MPA (E) 305-I: POLITICAL THEORY

Credits:04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Course Objective: The paper aims at acquainting the students with the Political theory and practice of political Behaviour Approach, Structural Functional Approach. Systems. It also explores the issues and problems related to Political Development, Modernization, Nation Building and Its Problems,Typologies of Power and Decision-Making and Political Leadership and Nation-Building in India.

Course Outcomes:
After the completion of this course, the students will be able to:

MPA(E)-305.1	Understand the comparativist perspective and approaches to study political Political Theory Major Traditions of Political Theory.
MPA(E)-305.2	Analyze various issues and problems of Major Concepts, Origin and Theories of State, Classifications and Elements of State
MPA(E)-305.3	Understand the Political Theory: Political Development, Modernization, Nation Building and Its Problems.
MPA(E)-305.4	Develop an understanding of the Political Ideologies: Pluralism, Liberalism, Individualism, Idealism.

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

Unit-I: Politics and Political Theory Major Traditions of Political Theory, Approaches to the Study of Political Theory: Behaviour Approach, Structural Functional Approach. Systems Approach and Marxist Approach.

Unit-II Major Concepts, Origin and Theories of State, Classifications and Elements of State. Basis Concepts; powers and authority; Liberty and Equality, Lights and Duties: Consensus and Legitimacy.

Unit –III Political Culture, Political Delegation, Political Socialisation and Revolution. Contemporary Political Theory: Political Development, Modernization, Nation Building and Its Problems.

Unit-IV Political Ideologies: Pluralism, Liberalism, Individualism, Idealism, Syndicalism, Guild Socialism. Potalitarianism and Socialism, Marxism and Democracy.

Books Recommended

1. C. James, Charlesworth (ed.) Contemporary Political Analysis, New York, 1967.
2. Robert Jahl: Modern Political Analysis, New Delhi 1967.
3. C.L. Waper, Political Thought, London, 1973.
4. Andres Lacker – Political Theory: Philosophy, Ideology and Sciences, New York 1961.
5. Lucian N. Pye: Aspects of Political Development, New Delhi: Amerind Publishing Co. Pvt. Ltd. 1966.
6. Gester, Jones and Lancastar, Masters Political Thought Vols.I, II and III, London, George Haprer, 1959.
7. P. Chatterjee: The State of Political Theory, Calcutta: K.P. Bagchi and Co. 1978.
8. S.P.Verma: Modern Political Theory – A Critical Survey, Delhi: Vikas, 1975.
9. David Easton: The Political System, II Varieties of Political Theories, Englewood Cliffs, Prentice Hall 1966
10. J.R. Siwach: Dynamics of Indian Government and Politics, New Delhi, Sterling Pub. Ltd., 1985.
11. S. Kothari & Ramashray: Relations Between Politicians and Administrators, New Delhi: Indian Institute of Public Administration 1969.

Mapping Matrix of Course MPA (E) 305-I

Mapping: Mapping is a process of representing the correlation between COs and POs, COsand 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 particularPO 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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix) Table 2 shows the CO-PO mapping matrix for a course (**MPA (E) 305-I**) assuming thatthere are 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA (E) –305-I

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
MPA (E) 305-I.I	3	3	3	-	-	3	3	3	3	3	2	3
MPA (E) 305-I.2	3	3	3	-	-	3	3	3	3	3	2	3
MPA (E) 305-I.3	3	3	3	-	-	3	3	3	3	3	2	3
MPA (E) 305-I.4	3	3	3	-	-	3	3	3	3	3	2	3
Average	3	3	3	-	-	3	3	3	3	3	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSOMapping Matrix)

Table 3 shows the CO-PSO mapping matrix for a course (**MPA (E) 305-I**) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA (E) 305-I

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA (E) –304-I.I	3	3	3	3
MPA (E) –304-I.2	2	3	3	2
MPA (E) –304-I.3	3	3	3	2
MPA (E) –304-I.4	2	3	3	3
Average	2.5	3	3	2.5

SEMESTER - III
MPA (E) 305-II: INTERNATIONAL LAW

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Objective: The paper aims to acquaint the students with the core elements of International Law. It explores themes like War and its effects, Means for settlement of Disputes, Laws of War, Termination of War, Neutrality and Cooperative Law, among others.

Course Outcomes:
After the completion of this course, the students will be able to:

MPA (E) 305-II.1	Comprehend the meaning and effects of war and settlement of international disputes.
MPA (E) 305-II.2	Understand the significance of the laws of war and legality of instruments of warfare.
MPA (E) 305-II.3	Understand war crimes; treatment of POWs; rights and duties of neutral states.
MPA (E) 305-II.4	Understand various laws with regard to outer space and sea.

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT-I War and its effects; Enemy Character; Means for Settlement of Disputes – Amicable and Coercive.

UNIT-II Laws of War – Land, Aerial and Maritime Warfare, Legality of Instruments of Warfare.

UNIT-III Termination of War, Treatment of POWs, War Crimes, Prize Courts.

Neutrality – Definition, Status, Rights and Duties, Blockade and Contraband.

UNIT-IV Cooperative Law – Laws of Sea, Laws of Outer Space and Environmental Conferences.

Suggested Readings

1. Brownline, Principles of Public International Law, Oxford, Clarendon Press, 1973,Second Edition.

2. C.G. Fenwick, International Law, Bombay, Vakils, 1971.

3. J.G. Starke, An Introduction to International Law, London, Butterworths, 1972.

4. P.E. Corbett, Law and Diplomacy, Princeton NJ, Princeton University Press, 1959.

5. K. Deutsc and S. Hoffman (ed.), The Relevance of International Law, Oxford,Clarendon Press, 1955.

6. L. Duguit, Law in the Modern State, New York, B.W. Huebsch, 1919.

7. W. Friedmann, The Changing Structure of International Law, New York, ColumbiaUniversity Press, 1964.

8. H. Kelsen, Principles of International Law, New York, Rinehart and Co., 1952.

9. J. Mattern, Concepts of State, Sovereignty and International Law, Baltimore, JohnsHopkins Press, 1928.

10. L. Oppeheimer, International Law Vol. 1, 1969, Revised edn., Vol II, 1953.

11. J. Stone, Legal Controls of International Conflict, New York, Rinehart and Company,1954.

12. C. de Visscher, Theory and Reality in Public International Law, Princeton NJ,Princeton University Press, 1957.

13. Sir J.F. Williams, Aspects of Modern International Law, New York, OxfordUniversity Press, 1939.

Mapping Matrix of Course MPA (E) 305-II

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (MPA (E) 305-II) assuming thatthere are 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA (E) 305-II

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
MPA (E) 305-II.1	3	3	3	-	-	3	3	3	3	2	2	3
MPA (E) 305-II.2	3	3	3	-	-	3	3	3	3	2	2	3
MPA (E) 305-II.3	3	3	3	-	-	3	3	3	3	2	2	3
MPA (E) 305-II.4	3	3	3	-	-	3	3	3	3	2	2	3
Average	3	3	3	-	-	3	3	3	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO MappingMatrix)

Table 3 shows the CO-PSO mapping matrix for a course (MPA (E) 305-II) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA (E) 305-II

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA (E) 305-II.1	3	3	3	3
MPA (E) 305-II.2	2	3	3	2
MPA (E) 305-II.3	3	3	3	3
MPA (E) 305-II.4	3	3	3	3
Average	2.75	3	3	2.75

SEMESTER – III
CIVIL SERVICES IN INDIA
(OPTIONAL ELECTIVE SOCIAL SCIENCES PAPER) (OESS)

Credit: 02   Max. Marks: 50
                                                        Time: 2 hours

COURSE OBJECTIVE

The term 'civil services' covers the large number of permanent officials required to run the machinery of government. The core of parliamentary government, which we have adopted in India, is that the ultimate responsibility for running the administration rests with the elected representatives of the people. Ministers lay down the policy and it is for the civil servants to carry out this policy. The interdisciplinary course aims to present an overview of the structure, trends and issues related to the civil services in India.

Learning outcomes: (Towards the end of this course, the students shall be able)

1. Conceptual clarity All India Services, Central Services, State Services and Local Services, its issues, career systems and other terms covering various aspects of civil services in India.

2. Detailed understanding of the Public personnel system of the Indian Bureaucracy.

3. Learning of basic principles, Challenges of Recruitment, Training and Disciplinary Procedure for Civil Servants in Indian Public Personnel System.

4. Critical understanding of issues like Civil Services – Citizenry Interface and processes and Civil Service Reforms

Note:- Attempt any four questions out of the eight questins. All questions carry equal marks.

UNIT – I: Civil Services: Concept and Evolution
   a) Concept, Significance and Evolution of Civil Services.
   b) Classification of Civil services (All India Services, Central Services, State Services and Local Services)
   c) Union Public Service Commission and other Service Commissions

UNIT – II: Bureaucracy
   a) Concept of Bureaucracy – Historical Evolution
   b) Civil Service: Neutrality and Commitment
   c) Relationship between Politicians and Civil Servants

UNIT – III: Public Personnel Administration
   a) Recruitment: Methods and significance
   b) Training of Public Servants in India – Promotion System in India
   c) Disciplinary Procedure for Civil Servants

UNIT – IV: Civil Services – Citizenry Interface
   a) Civil Society and Administration
   b) Technology and Changing Nature of Public Services
   c) Ethics and Accountability
   d) Civil Service Reforms – IInd ARC Recommendations
   e) Civil Services in the context of Globalization

REFERENCES:

- Armstrong, Michael (200&09, A Handbook of Human Resource Management Practice, Kogan Page, London.
- Aswathappa K. (2013), Human Resource Management: Text and Cases, McGraw Hill, New Delhi.
- Farazmand, Ali (1994), Hand of Bureaucracy, Taylor & Francis, New York.
- Flippo Edvin B., (1976), Principles of Personnel Management, McGraw Hill
- Goel, S.L. & Rajneesh, Shalini (2003), Public Personnel Administration, Deep & Deep, New Delhi.
- Government of India, Second ARC, Tenth Report on 'Refurbishing of Personnel Administration.
- Jack Robin, et al (eds) (1994), Handbook of Public Personnel Administration, Taylor & Francis, New York.
- Jain, R.B. (1994), Aspects of Personnel Administration, IIPA, New Delhi.
- Maheshwari Sriram (2005), Public Administration in India: The higher Civil Service, Oxford University Press, New Delhi.
- Naff, Katherine C., Norma M. Riccucci, (2014), Personnel Management in Government: Politics and Process (Seventh Edition), CRC Taylor & Francis, New York.
- Riccucci, Norma(2007), Public Personnel Administration and Labor Relations, M.E. Sharpe, New York.
- Shafritz Jay M et.al. (2001), Personnel Management in Government, Marcel Dekker, New York.
- Stahl O. Glenn (1983), Public Personnel Administration, Harper & Row.
- Tead, Ordway (1920), Personnel Administration, University of California Libraries.

Mapping Matrix of Course OESS – Semster -III

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix) Table 2 shows the CO-PO mapping matrix for a course (OESS–SEMESTER-III) assuming that there are 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course OESS–(OESS–SEMESTER-III)

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
OESS.1	3	3	3	-	-	3	3	3	3	2	2	3
OESS.2	3	3	3	-	-	3	3	3	3	2	2	3
OESS.3	3	3	3	-	-	3	3	3	3	2	2	3
OESS.4	3	3	3	-	-	3	3	3	3	2	2	3
Average	3	3	3	-	-	3	3	3	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO MappingMatrix)

Table 3 shows the CO-PSO mapping matrix for a course ((OESS–SEMESTER-III)) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course OESS –(OESS–SEMESTER-III)

CO	PSO 1	PSO 2	PSO 3	PSO 4
OESS.1	3	3	3	2
OESS.2	3	3	3	2
OESS.3	3	3	3	2
OESS.4	3	3	3	2
Average	3	3	3	2

MPA (C) 401: ACCOUNTABILITY, REFORMS AND INNOVATIONS IN ADMINISTRATION

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Course Objectives

The paper will familiarize the students with new frontiers and Emerging Areas in the discipline of Public Administration i.e. Public Private Partnership, Right to Service, Social Audit, Corporate Social Responsibility and Citizen Administration Interface. The paper will focus on the Accountablity Reforms and Innovation in Administration.

Course outcomes: (Towards the end of this course, the students shall be able)

MPA (C) 401.1: Attaining a theoretical understanding of administrative process of Introduction and Accountability, Value Premises of Administration,Control Mechanism,Integrity and Prevention of Corruption Issues and Responsiveness in administration

MPA (C) 401.2: Clarity of key concepts and knowledge of theoretical perspectives relating to regulation, regulatory governance and Administrative Reforms Initiatives.

MPA (C) 401.3: Delineation of the issues of independence, Some Innovations, Citizens Administration Interface, Right to Service, Social Audit, Public Private Partnership and Corporate Social Responsibility

MPA (C) 401.4: Exposure to mechanism and efficacy of regulators in various leading sectors.

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT-I: Introduction And Accountability
a) Value Premises of Administration
b) Accountability and Control Mechanism
c) Integrity and Prevention of Corruption Issues
d) Responsiveness in administration

UNIT-II: Refroms
a) Administrative Reforms Initiatives
b) Good Governance and Citizen Centric Governance
c) Transparency and Right to Information
d) Citizen Charters

UNIT-III Reforms And Instiutions
a) Regulatory Authorities
b) Lok Pal and Lok Ayuktas
c) Grievance Redressal Mechanism

UNIT-IV: Some Innovations
a) Citizens Administration Interface
b) Right to Service
c) Social Audit
d) Public Private Partnership
e) Corporate Social Responsibility

SELECT READINGS:
- Anttiroikoet.al Eds. (2011) Innovations in Public Governance, IOS Press
- Arora, R.K. and Rajni Goyal (2002) Indian Public Administration, Vishwa Prakashan, New Delhi
- Avasthi and Avasthi (2002) Indian Administration, Laxmi Narain Aggarwal: Agra
- Basu, D.D. (2000) Introduction to the Constitution of India, Wadhwa & Company: New Delhi
- Bevir Mark ed. (2010) The Sage Handbook of Governance, Thousan Oaks CA: Sage Publications
- Bhambri, C. P. (1973) Public Administration in India, Delhi, Vikas
- Government of India (2005) Second Administrative Reform Commission Reports (1-15), Ministry of Personnel, Public Grievances & Pensions, Department of Administrative Reforms and Public Grievances: New Delhi
- Granville, Austin (1999) The Indian Constitution-Cornerstone of Nation, OUP: New Delhi
- Government of India (2005-2014) Second Administrative Reforms Commission Reports (1-15)Min
- Jain R.B.(1976) Contemporary Issues in Indian Administration, Delhi: Vishal
- Kashyap, Subash C. (2010) Indian Constitution: Conflicts and Controversies, Vitasta
- Maheshwari, S.R.(2004) Indian Administration, Orient Blackswan : Delhi.

Mapping Matrix of Course MPA (C) – 401

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (**MPA (C) – 401**) assuming that there are 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA (C) – 401

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
MPA (C) -- 401.1	3	3	3	-	-	3	3	3	3	2	2	3
MPA (C) -- 401.2	3	3	3	-	-	3	2	3	3	2	2	3
MPA (C) -- 401.3	3	3	3	-	-	3	2	3	3	2	2	3
MPA (C) -- 401.4	3	3	3	-	-	3	3	3	3	2	2	3
Average	3	3	3	-	-	3	2.5	3	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3: shows the CO-PSO mapping matrix for a course (**MPA (C) – 401**) assuming that there are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA (C) – 401

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA (C) – 401.1	3	3	3	2
MPA (C) – 401.2	3	3	3	2
MPA (C) – 401.3	2	3	3	3
MPA (C) – 401.4	3	3	3	3
Average	2.75	3	3	2.5

MPA (C) 402: RURAL AND URBAN LOCAL ADMINISRATION

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Course Objectives

The main objectives of this course is to sensitize students to major isssues and challenges in the rural and urban sector and to provide opportunity to systematically study these isseus in the field.

Course outcomes: (Towards the end of this course, the students shall be able)

MPA (C) 402.1 Acquiring the theoretical knowledge and understanding of the evolution and growth of rural local governance with special reference to Panchayati raj institutions

MPA (C) 402.2 Understanding about the Rural Development Programmes, functions, and resources of rural local bodies

MPA (C) 402.3 Understanding of the Urbanization Trends and Challenges working of urban development programmes

MPA (C) 402.4 Gaining insights about Programmes, Services & Trends of Urban Development Programmes

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT-I: Introduction

a) Panchayati Raj in India: Evolution and Growth since independence

b) 73rd Constitutional (Amendment) Act.1992

c) E-Panchayats

d) Panchayati Raj in Haryana

UNIT-II: Programmes And Issues

a) Rural Development: Perspectives

b) Rural Development Programmes: IRDP, SGSY, MNREGA and NRLM etc.

c) Rural Credit

d) Village Administration

UNIT-III: Urban Governance

a) Urbanization Trends and Challenges

b) 74th Constitutional (Amendment) Act.1992

c) Metropolitan Governance

d) Municipal Finance

UNIT-IV: Programmes, Services & Trends

a) Urban Development Programmes

b) Urban Services (Water supply, Drainage, Sewerage and Sanitation)

c) Urban Housing

d) Emerging Issues and Challenges

SELECT READINGS:

- Pankaj Singh (2018) Rural Local Government In India, Kitab Mahal Publisher, New Delhi.
- Pankaj Singh (2013) Urban Local Government in India , Kitab Mahal Publisher, New Delhi.
- Aziz Abdul (ed.), (1996), Decentralised Governance in Asian Countries, Sage, New Delhi.
- Baud, Isa S A, J De Wit (2009), New Forms of Urban Governance in India: Shifts, Models, Networks and Contestations, Sage Publications.
- Burns, Danny et. al. (1994), The Politics of Decentralization: Revitalizing Local Democracy, Macmillan, London.
- Chaturvedi T.N. and Abhijit Datta (1984), Local Governance, IIPA, New Delhi.
- Maheshwari, SR (2003), Local Government in India, Lakshmi Narain Aggarwal, Agra.
- Oakley Peter (1991), Projects with People: The Practice of Participation in Rural Development, ILO, Geneva.
- Pierre, Jon (2011), The Politics of Urban Governance: Rethinking the Local State, Palgrave, MacMillan.
- Prasad, RN (2007), Urban Local Self-Government in India, With reference to North-Eastern States, Mittal Pub.
- Sivaramakrishana, KC, et. al. (1993), Urbanisation in India: Basic Services and Peoples' Participation, ISS, New Delhi.
- Sengupta, Chandan and Stuart, Corbridge (eds) (2010), Democracy, Development and Decentralission in India, routledge, New Delhi.
- Bardhan, P & D Moorkherjee eds. (2007), Decentralization and Local Governance in Developing Countries: A comparative perspective, oxfords university press, New Delhi.
- Fraser, Thomas G. (2013), India's Rural Transformation and Development: Issues, Processes and Direction, Suryodaya Books, New Delhi.
- Kartar Singh (2008), Rural Development, Principles, Policies and Management, Sage, New Delhi.
- Kumar, Girish (2006), Local Democracy in India: Interpreting Decentralization, Sage, New Delhi.
- Nawani, N P (2006), District Administration: Theory and Practice, Publications Division, Ministry of I & B, New Delhi.
- Palanithurai, G and R Ramesh (2011), Globalization and Rural Development, Jain books, New Delhi.

Mapping Matrix of Course MPA (C) – 402

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (**MPA (C) – 402**) assuming that there are 12 POs and 4 COs.

Table 2: CO-PO Matrix for the Course MPA (C) – 402

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
MPA (C) – 402.1	3	3	3	-	-	3	3	3	3	2	2	3
MPA (C) – 402.2	3	3	3	-	-	3	3	3	3	2	2	3
MPA (C) – 402.3	3	3	3	-	-	3	3	3	3	2	2	3
MPA (C) – 402.4	3	3	3	-	-	3	3	3	3	2	2	3
Average	3	3	3	-	-	3	3	3	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)

Table 3: shows the CO-PSO mapping matrix for a course (**MPA (C) – 402**) assuming that there are 4 PSOs and 4 COs.

Table 3: CO-PSO Matrix for the Course MPA (C) – 402

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA (C) – 402.1	3	3	3	2
MPA (C) – 402.2	3	3	3	3
MPA (C) – 402.3	3	3	3	3
MPA (C) – 402.4	3	3	3	3
Average	3	3	3	2.75

MPA (C) 403: COMPARATIVE PUBLIC ADMINISTRATION

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

COURSE OBJECTIVE

Comparative Public Administration is the youngest discipline among the family of social sciences. As an academic discipline, it came into existence in the post Second-World War period. The comparative study of administrative system has grown up with the comparative study of cross-cultural and cross-national settings. This course presents a comparative outlook of performance of government, bureaucracy and institutions of developed and developing countries

Course outcomes: (Towards the end of this course, the students shall be able)

MPA (C) 403.1 Will be equipped with the knowledge and conceptual clarity of Evolution, Importance, International, and Critique of Comparative Public Administration

MPA (C) 403.2 Knowledge about the Approaches Bureaucratic, General Systems, Decision Making and Ecological Approach

MPA (C) 403.3 Knowledge of different Development Models of F.W. Riggs

MPA (C) 403.4 Clarity re-administrative systems and their accountability mechanisms of India, USA, UK and Japan

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT – I: Introduction

(a) Nature, Scope, Characteristics and Importance of Comparative Public Administration
(b)   Evolution of Comparative Public Administration
(c) International Comparative Public Administration
(d)   Critique of Comparative Public Administration

UNIT – II Approaches

(a) Bureaucratic Approach
(b)   General Systems Approach
(c) Decision Making Approach
(d)   Ecological Approach

UNIT – III C. P. A. : Contribution of F.W. Riggs

(a)Structural Functional Approach

(b)   Theory of Prismatic Society

(c)Development Models

(d)   Riggs views on Development Models

UNIT – IV Developing Administrative System In India

(a)Developing Administrative System – India

(b)   Developing Administrative System – USA

(c)Developing Administrative System – UK

(d)   Modern Administrative System – Japan

REFERENCES:

- Ali Farazmand, (2001) Handbook of Comparative and Development Public Administration, Marcel Dekker, NY.

- Esman, Milton J. (1970). CA Gand the study of public administration. In F.W.Riggs (Ed.), The frontiers of development administration (pp.41-71). Durham, North Carolina: Duke University Press.

- Heady, F (1996). Public administration: A comparative perspective (5thed.). New York: Marcel Dekker. Heaphey, J. (1968). Comparative public administration: Comments on current characteristics. Public Administration Review, 28(3),242-249.

- Montgomery, J. (1966). Approaches to development politics, administration and change, New York: McGraw Hill.

- Pai Panandikar, V.A. (1964). Development administration: An approach. Indian Journal of PublicAdministration,10(1),34-44. Raphaeli, N.(1967). Readings in comparative public administration, Boston, Massachusetts: Ally and Bacon.

- Riggs, F.W. (1970). The ecology of administration. Bloomington: Indiana University.

- Riggs, F.W. (1956). Public administration: An elected factor in economic development. Annal so the American Academy of Political and Social Sciences, No.305,Agrarian Societies in Transition (May1956),70-80.

- Swerdlow, I. (1963). (Ed.) Development administration: concepts and problems. Syracuse, New York: Syracuse University Press.

- W.E. Weidner (Ed.) (1970), Development administration in Asia, Durham, North Carolina: Duke University Press.

- Waldo, D.(1963). Comparative public administration prologue, performance and problems. Indian Journal of Political Science, 24(3), 177-216.

- Weidner, W .E. (1970a). (Ed.), Development administration in Asia, Durham, North Carolina: Duke

- F. W. Riggs: Administration in Developing Countries - The Theory of Prismatic Society, Houghton Miffen Co. Boston 1964.

- F. Heady and Stokes: Papers in Comparative Public Administration, Institute of Public Administration, University of Michigan USA., 1964

- Arora, R.K. and Sharma, Sangeeta, Comparative and Development Administration, Ideas and Actions (ed.) Jaipur, Arihand Centre for Administrative Change, 1992

- Chaturvedi, T.N., Tulntmak Lok Prashashan, Jaipur, College Book Depot, 1994.

- Kataria Surender, Tulnatmak Lok Prashasha, Jaipur: RBSA Publishers, 2001

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (**MPA (C) – 403**) assuming thatthere are 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA (C) – 403

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
MPA (C) – 403.1	3	3	3	-	-	3	3	3	3	3	2	3
MPA (C) – 403.2	3	3	3	-	-	3	3	3	3	3	2	3
MPA (C) – 403.3	3	3	3	-	-	3	3	3	3	3	2	3
MPA (C) – 403.4	3	3	3	-	-	3	3	3	3	3	2	3
Average	3	3	3	-	-	3	3	3	3	3	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO MappingMatrix)

Table 3: shows the CO-PSO mapping matrix for a course (MPA(C)–403) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(C) –403

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA (C) – 403.1	3	3	3	3
MPA (C) – 403.2	3	3	3	3
MPA (C) – 403.3	3	3	3	3
MPA (C) – 403.4	3	3	3	3
Average	3	3	3	3

MPA (C) 404: LABOUR WELFARE ADMINISTRATION

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

COURSE OBJECTIVES:

The paper aims to acquaint the students with the nature of Labour Welfare and Labour Administration. Theories of Labour Welfare. Labour Policy in India. Five Year Plans and Labour Welfare in India. National Commission on Labour Organisation: Powers and functions. Organisation and Working of State Labour Department and Directorate of Labour. Labour Legislation in India with special reference to the Study of the Main Provisions of the following legislations and their Administrative Problems.

Course outcomes: (Towards the end of this course, the students shall be able)

MPA (C) 404.1 Will be equipped with the knowledge and conceptual clarity of Evolution, Importance, International, and Labour Welfare and Labour Administration

MPA (C) 404.2 Knowledge about the Approaches Organisation and Working of State Labour Department and Directorate of Labour. Dispute Settlement: Machinery at District, Factory and Plant levels.

MPA (C) 404.3 Knowledge of different Development Machinery at District, Factory and Plant levels.

MPA (C) 404.4 Clarity re-administrative systems and their accountability mechanisms of Workers Participation in Management.

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT – I: INTRODUCTION

Meaning, Nature, Scope and Principles of Labour Welfare and Labour Administration. Theories of Labour Welfare. Labour Policy in India. Five Year Plans and Labour Welfare in India. Labour Welfare with Special Reference to the Study of Worker's Education and Training, Housing Schemes and Health.

UNIT – II: ORGANISATIOAL MACHINERY

Ministry of Labour, Government of India – Organisation and Functions. National Commission on Labour Organisation: Powers and functions. Organisation and Working of State Labour Department and Directorate of Labour. Dispute Settlement: Machinery at District, Factory and Plant levels.

UNIT – III: INSTITUTIONAL SET-UP

Labour Welfare Officer its – Powers, Functions, Status and Role. Trade Union – Brief History, Organisation and Role. Workers Participation in Management. Main Recommendations of National Commission on Labour (with Special Reference to Labour Welfare), ILO and Labour Welfare in India.

UNIT – IV: LABOUR LEGISLATIONS

Labour Legislation in India with special reference to the Study of the Main Provisions of the following legislations and their Administrative Problems.

(a) Factories Act 1948; Industrial Disputes 1947;

(b) Trade Unions Act 1926;

(c) Main Provisions and Administrative Problems of: Payment of Wages Act, 1936;

(d) Employees State Insurance Act,1948;

(e) Employees Provident Act 1952; and Industrial Employment (Standing Orders) Act,1946; Equal Remuneration Act 1976.

Books Recommended

1. Factories Act 1948; Industrial Disputes 1947; Trade Unions Act 1926; Minimum Wages Act 1948; Workmen's Compensation Act 1923.

2. K.N.Vaid: Labour Welfare in India, Sri Ram Centre for Industrial Relations, New Delhi, 1970.

3. India: Report of the Committee on Labour Welfare, Ministry of Labour, Employment and Rehabilitation 1969.

4. R.C.Saxena: Labour Problems and Social Welfare, Meerut: K. Nath and Co. 1988.

5. M.L.Monga: Industrial Relations and Labour Laws in India, New Delhi: Deep & Deep 1984.

6. G.K.Sharma: Labour Movement in India, New Delhi: Sterling Publishers, 1972.

7. Malhotra: The Law of Industrial Disputes, NM Tripathi, Bombay 1968.

8. K.M. Subramaniam: Labour Management Relations in India, Bombay: Asia Pub. House, 1967.

9. S. Malik: Industrial Law, Eastern Book Company, Delhi, 1983.

10. S.N.Mishra, Labour and Industrial Laws, Allahabad Law Agency, 1976.

11. C.B. Memoria & S. Memoria: Dynamics of Industrial Relations in India, Bombay: Himalaya Publishing House, 1987.

12. Deepak Bhatnagar: Labour Welfare and Social Security Legislation in India, New Delhi: Deep & Deep 1985.

13. D.C. Sharma and R.C. Sharma: Personnel Management and Industrial Relations, Meerut: SJ Publishers, 1988.

Mapping Matrix of Course MPA (C) – 404

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (**MPA (C) – 404**) assuming thatthere are 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA (C) – 404

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
MPA (C) – 404.1	3	3	3	-	-	3	2	3	3	2	2	3
MPA (C) – 404.2	3	3	3	-	-	3	2	3	3	3	2	3
MPA (C) – 404.3	3	3	3	-	-	3	2	3	3	2	2	3
MPA (C) – 404.4	3	3	3	-	-	3	2	3	3	3	2	3
Average	3	3	3	-	-	3	2	3	3	2.5	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO MappingMatrix)

Table 3: shows the CO-PSO mapping matrix for a course (**MPA (C) – 404**) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA (C) – 404

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA (C) – 404.1	3	3	3	3
MPA (C) – 404.2	3	3	3	2
MPA (C) – 404.3	3	3	3	3
MPA (C) – 404.4	3	3	3	3
Average	3	3	3	2.75

MPA (E)405-I: PUBLIC PERSONNEL ADMINISTRATION IN INDIA, U.K. AND U.S.A.

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

COURSE OBJECTIVE

The term civil services covers the large number of permanent officials required to run the machinery of government. The Core of parliamentary government, which we have adopted in India, is that the ultimate responsibility for running the administration rests with the elected representatives of the people. After completion of the course students are in position to have an overview of the structure, trends and issues related to the personal administration in INDIA, UK and USA

Course Outcomes:

Towards the end of this course, the students shall be able

MPA(E) 405.1 Conceptual clarity re. Public personnel Administration, its issues, career systems and other terms covering various aspectsof personnel administration

MPA(E) 405.2 Detailed understanding of the Public personnel system of the Indian personnel administration

MPA(E) 405.3 Learning of basic principles, Challenges of Administrative Structure and Principles of USA Public Personnel System

MPA(E) 405.4 Critical understanding of issues like UK Public Personnel System and processes and Civil Service Reforms

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT – I Introduction

(a)Public Personnel Administration – Meaning Nature Scope and Importance

(b)   Recruitment – Principles, Methods Selection Process

(c)Personnel Agencies – UPSC and State, Public Service Commission

UNIT – II – Public Personnel Administration

(a)Training: Objectives, Nature, Dimensions, Types,

(b)   Training: Methods Techniques and Needs Assessment,

(c)Performance Evaluation Promotion; Pay and Pay Commission;

(d)   Conduct and Discipline; Conditions of Services Superannuation.

UNIT – III – USA Public Personnel System

(a) With special reference to classification

(b)   With special reference to Recruitment,

(c) With special reference to Training,

(d)   With special reference to Compensation and Right of the Civil Servant

UNIT – IV – UK Public Personnel System

(a) With special reference to classification

(b)   With special reference to Recruitment,

(c) With special reference to Training,

(D)   With special reference to Compensation and Right of the Civil Servant

REFERENCES

- Armstrong, Michael (2007), A Handbook of Human Resource Management Practice, Kogan Page, London.

- Aswathappa K. (2013) Human Resource Management: Text and Cases, McGraw Hill, New Delhi

- Farazmand, Ali (1994), Handbook of Bureaucracy, Taylor & Francis, New York

- Flippo Edvin B., (1976), Principles of Personnel Management, McGraw-Hill

- Goel, S.L.& Rajneeesh, Shalini(2003), Public Personnel Administration, Deep & Deep, New Delhi

- Government of India, Second ARC,Tenth Report on 'Refurbishing of Personnel Administration'

- Jack Robin, et al (eds) (1994), Handbook of Public Personnel Administration,Taylor *8c* Francis, New York.

- Jain, R.B.(1994), Aspects of Personnel Administration, IIPA, New Delhi

- Maheswari Sriram (2005), Public Administration in India: The higher Civil Service, Oxford University Press, New Delhi

- Naff , Katherine C, Norma M. Riccucci, (2014) personnel Management in Government: Politics and Process(Seventh Edition), CRC, Taylor &" Francis, New York.

- Riccucci ,Norma(2007), Public Personnel Administration and Labor Relations, M.E. Sharpe, New York.

- Shafritzjay M et.al. (2001), Personnel Management in Government, Marcel Dekker, New York.

- Stahl O. Glenn (1983), Public Personnel Administration, Harper & Row.

- Tead , Ordway (1920), Personnel Administration, University of California Libraries.

- C.M. Jain, H.C. Sharma and A.S. Rathod, Research Publications, 89 Tripolia Bazar, Jaipur, 2014

Mapping Matrix of Course MPA(E) 405-I

- **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 particularPO 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

- Same scale may be used to define the correlation between Cos and PSOs

- **Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)** Table 2 shows the CO-PO mapping matrix for a course (MPA(E) 405-I) assuming that thereare 12 POs and 4COs.

- *Table 2: CO-PO Matrix for the Course MPA(E) 405-I*

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
MPA(E)-405.1	3	3	3	-	-	3	3	3	3	2	2	3
MPA(E)-405.2	3	3	3	-	-	3	3	3	3	2	2	3
MPA(E)-405.3	3	3	3	-	-	3	3	3	3	2	2	3
MPA(E)-405.4	3	3	3	-	-	3	3	3	3	2	2	3
Average	3	3	3	-	-	3	3	3	3	2	2	3

- *Note: It is not necessary that each CO has a correlation with all the POs.*

- **Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO Mapping Matrix)**

- Table 3 shows the CO-PSO mapping matrix for a course (MPA(E) 405-I) assuming thatthere are 4 PSOs and 4COs.

- *Table 3: CO-PSO Matrix for the Course MPA(E) 404-I*

CO	PSO1	PSO 2	PSO 3	PSO 4
MPA(E)-405.1	3	3	3	2
MPA(E)-405.2	3	3	2	2
MPA(E)-405.3	3	3	3	2
MPA(E)-405.4	3	3	3	2
Average	3	3	2.75	2

SEMESTER-IV
MPA (E) 405-II: E-GOVERNANCE

Credit: 04

Max. Marks: 100
Internal Marks: 20
External Marks: 80
Time: 3 Hours

Course Objectives

E-Governance is a new concept and implies ungrading of the efficiency and effectiveness of the administrative machinery through the combination of ICT to deliver better, cost effective and speedy services to the citizen. Transition of electronic delivery of services in government not only involve changes to the systems, procedures and processes of relevant services but also affects the way in which the public and business community deals with the government. The aim of this course is to introduce the major discourses on e-governmance for better understanding of students.

Course outcomes: (Towards the end of this course, the students shall be able)

MPA (E) 405-II.I Knowledge about the concept, evolution, Models of e-governance concept of citizen centric governance

MPA (E) 405-II.2 Theoretical and conceptual knowledge of National e-Governance Plan, e-Governance in Urban Administration and e-Governance in Rural Development

MPA (E) 405-II. 3 Understanding about the Cases : Electronic Citizen Services, E-Literacy, Digitalization of Land Records: Haryana and E-Disha

MPA (E) 405-II. 4 Facing the challenges in establishing Issues: e-Readiness, e-Governance Critical Factors, Digital Divide

Note: The question paper will consist of nine questions. The candidate shall attempt five questions in all. Question No. 1 will be compulsory. The compulsory question will consist of four short answer type conceptual/thematic questions of equal marks (i.e. 4 marks each) spread over the whole syllabus. The Candidate shall attempt four more questions selecting at least one from each Unit. Each question will carry 16 marks.

UNIT-I: Introduction

a) E-Governance-Meaning, Definitions, Scope and Importance
b) Evolution of e-Governance
c) Models of e-governance (General Information Dissemination, Critical Information Dissemination, Advocacy and Interactive Models)

UNIT-III NEGP And Applications

a) National e-Governance Plan
b) e-Governance in Urban Administration
c) e-Governance in Rural Development

UNIT-III: Cases

a) Electronic Citizen Services: A Comparative Outlook

b) E-Literacy: Akshaya in Kerala

c) Digitalization of Land Records: Haryana

d) e-Disha

UNIT-IV: Issues

a) e-Readiness

b) e-Governance Critical Factors

c) Digital Divide

d) E-Governance: Issues and Challenges

SELECT READINGS:

- Bellamy, Christine and John, A., Taylor (1998), Governing in the Information Age, Buckingham Open University Press
- Bhatnagar, S.C. (2004) E-Government – from Vision to Implementation: A practical guide with case studies, Sage Publications, New Delhi
- Bhatnagar S.C. (2009), Unlocking E-Government Potential: Concepts, cases and practical insights, Sage Publications, New Delhi
- Bouwman, Harry, and et. al., (2005), Information and Communication Technology in Organization, Sage Publications, London
- Heeks, R., (2006), Implementing and Managing e-Government: An international text, Sage
- Marchionini, G., (1965), Information Seeking in Electronic Environments, New York, The Press Syndicate of the University of Cambridge, USA
- Michael E., Milakovich, (2012), digital governance – New Technologies for improving Public Service an Participation, Rutledge, Taylor and Francis group, New York.
- Pardhasaradhi, Y. (et.al.) (2009), E-Governance and Indian Society; An Impact of Study, Kanishka, New Delhi.
- Satyanarayana, J., (2004), E-Government: The Science of the possible, PHI Learning Pvt. Ltd., New Delhi.

Mapping Matrix of Course MPA (E) 405-II

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

Same scale may be used to define the correlation between Cos and PSOs

Mapping of Course Outcomes to Programme Outcomes: (CO-PO Mapping Matrix)

Table 2 shows the CO-PO mapping matrix for a course (MPA (E) 405-II) assuming thatthere are 12 POs and 4COs.

Table 2: CO-PO Matrix for the Course MPA (E) 405-II

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
MPA(E) 405-II.1	3	3	3	-	-	3	2	3	3	2	2	3
MPA(E) 405-II.2	3	3	3	-	-	3	2	3	3	2	2	3
MPA(E) 405-II.3	3	3	3	-	-	3	2	3	3	2	2	3
MPA(E) 405-II.4	3	3	3	-	-	3	2	3	3	2	2	3
Average	3	3	3	-	-	3	2	3	3	2	2	3

Note: It is not necessary that each CO has a correlation with all the POs.

Mapping of Course Outcomes to Programme Specific Outcomes: (CO-PSO MappingMatrix)

Table 3: shows the CO-PSO mapping matrix for a course (MPA (E) 405-II) assuming thatthere are 4 PSOs and 4COs.

Table 3: CO-PSO Matrix for the Course MPA(E) 405-II

CO	PSO 1	PSO 2	PSO 3	PSO 4
MPA(E)-404-II.1	2	3	3	2
MPA(E)-404-II.2	3	3	3	3
MPA(E)-404-II.3	3	3	3	3
MPA(E)-404-II.4	3	3	3	3
Average	2.75	3	3	2.75

Department of History
Kurukshetra University Kurukshetra
(Establishment by the State Legislature Act XII of 1956)

Structure, Syllabus of the Courses of Reading and Scheme of Examinations
For the UG Programmes
Subject: History
(Semester I - IV)
(according to the CurriculumFramework of U.G. Programmes under NEP-2020)
To be implemented w.e.f. the Session 2023-24
(in *Phased Manner*)

I Complete Scheme of the U.G. Courses (History):

Semester	CourseType	Course Code	Name of the Course	Credits	Contact Hours	Internal Assessment Marks	End Term Exam Marks	Max. Marks	Duration of Exam (Hrs.)
1	CC-1 MCC-1	B23-HIS-101	Idea of Bharat	4	4	30	70	100	3
	MCC-2	B23-HIS-102	Ancient World	4	4	30	70	100	3
	CC-M1	B23-HIS-103	Indian History & Culture	2	2	15	35	50	3
	MDC-1	B23-HIS-104	Glimpses of Ancient India	3	3	25	50	75	3
2	CC-2 MCC-3	B23-HIS-201	History of India (From Earliest Times to 1206)	4	4	30	70	100	3
	CC-M2	B23-HIS-202	Orality and Oral Culture in India	2	2	15	35	50	3
	DSEC-1	B23-HIS-203	History: Theory & Method	4	4	30	70	100	3
	MDC-2	B23-HIS-204	Glimpses of Medieval India	3	3	25	50	75	3
3	CC-3 MCC-4	B23-HIS-301	History of India (1206-1757)	4	4	30	70	100	3
	MCC-5	B23-HIS-302	Medieval World	4	4	30	70	100	3
	MDC-3	B23-HIS-303	Glimpses of Modern India	3	3	25	50	75	3
4	CC-4 MCC-6	B23-HIS-401	History of India (1757-1947)	4	4	30	70	100	3
	MCC-7	B23-HIS-402	Medieval Europe	4	4	30	70	100	3
	MCC-8	B23-HIS-403	History of Haryana (From Earliest Times to 1966)	4	4	30	70	100	3
	DSE-1	B23-HIS-404	Social Formations and Cultural Patterns in	4	4	30	70	100	3

			Ancient & Medieval Times						
			OR						
		B23-HIS-405	Patterns of Capitalism in Modern Times	4	4	30	70	100	3
5	CC-5 MCC-9	B23-HIS-501	Early Modern World	4	4	30	70	100	3
	MCC-10	B23-HIS-502	History of Europe (1789-1914)	4	4	30	70	100	3
	DSE-2	B23-HIS-503	History of Britain (1815-1900)	4	4	30	70	100	3
			OR						
		B23-HIS-504	History of the U.S.A. (1776-1865)	4	4	30	70	100	3
	DSE-3	B23-HIS-505	South Asia in Modern Times-I	4	4	30	70	100	3
			OR						
		B23-HIS-506	East Asia in Modern Times: China	4	4	30	70	100	3
6	CC-6 MCC-11	B23-HIS-601	Modern World	4	4	30	70	100	3
	MCC-12	B23-HIS-602	History of Europe (1914-1945)	4	4	30	70	100	3
	DSE-4	B23-HIS-603	History of Britain (1900-1945)	4	4	30	70	100	3
			OR						
		B23-HIS-604	History of the U.S.A. (1865-1945)	4	4	30	70	100	3
	DSE-5	B23-HIS-605	South Asia in Modern Times-II	4	4	30	70	100	3
			OR						
		B23-HIS-606	East Asia in Modern Times: Japan	4	4	30	70	100	3
7	CC-H1	B23-HIS-701	Indian National Movement (1885-1920)	4	4	30	70	100	3

	CC-H2	B23-HIS-702	Contemporary India: State and Politics (1947-1964)	4	4	30	70	100	3
	CC-H3	B23-HIS-703	History of Historical Writing-I	4	4	30	70	100	3
	DSE-6	B23-HIS-704	Introduction to Indian Art History	4	4	30	70	100	3
			OR						
		B23-HIS-705	Understanding Heritage	4	4	30	70	100	3
	PC-H1	B23-HIS-706	Historical Seminar-I	4	4	30	70	100	3
8	CC-H4	B23-HIS-801	Indian National Movement (1920-1947)	4	4	30	70	100	3
	CC-H5	B23-HIS-802	Contemporary India: Socio-Economic Change (1947-1964)	4	4	30	70	100	3
	CC-H6	B23-HIS-803	History of Historical Writing-II	4	4	30	70	100	3
	DSE-7	B23-HIS-804	Historical Tourism: Theory & Practice	4	4	30	70	100	3
			OR						
		B23-HIS-805	Understanding Popular Culture	4	4	30	70	100	3
	PC-H2	B23-HIS-806	Historical Seminar-II	4	4	30	70	100	3

II. Detailed Syllabus, Courses of Reading and Scheme of Examinations of U.G. Programmes (History):

<u>Semester-I:</u>

CC-1/MCC-1

Session: 2023-24	
PartA–Introduction	
Subject	History
Semester	1st
Name of the Course	Idea of Bharat
Course Code	B23-HIS-101
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC/MCC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (ifany)	Senior Secondary (10+2) or equalant in any stream.
CourseLearningOutcomes (CLO):	After completing this course, the learner will be able to: 1. Acquaint with the concept of *Bharat*/*Bharatvarsha* and itseternity and major Knowledge Traditions and Educational System in ancient India. 2. Understand the concepts, ideas and developments in the spheres of *Dharma*, Philosophy, Art and Culture in ancient India. 3. Grasp the concepts, ideas and developments in the spheres of Science,Environment, Polity and Economy in ancient India. 4. Demonstrate the Political Contours of ancient *Bharatvarsha*; Places of ancient Indian Arts;Important ancient *Janpadas*and ancient Maritime Commerce on the outline map of India and also explicate it historically.

Credits	Theory	Practical/Tutorial	Total
	03	01	04
Contact Hours	03	01	04
Max. Marks: Internal Assessment Marks: End Term Exam Marks:	100 30 70	Time: 3 Hrs.	

	PartB-Contentsofthe Course	
	Instructions for Paper-Setter:	

Instructions for Paper-Setter:

1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 14 marks.
2. The Compulsory Question shall consist of *seven* short answer type questions of 2 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.
4. The Map Questions shall be carrying 14 marks each (09 Marks for map work and 05 marks for Explanatory Note). For visually disabled students, the part relating to the Explanatory Note shall carry full marks.

Unit	Topics	Contact Hours
I	**The Concept of *Bharatvarsha*:** Indian Knowledge Traditions: Understanding of *Bharatvarsha*and its Political Contours Indian Concept of Time and Space The Historical Glory of Ancient Indian Literature: *Vedas, Upanishads,* Epics*, Puranas,* Jain andBuddhist Literature etc. Ancient Indian Educational System	15
II	**Dharma, Philosophy, Art and Culture** Indian Perception of *Dharma* and *Darshan* The Concept of *VasudhaivaKutumbakam*: Man, Family, Society and World Polity and Governance: Concept of *Janpada*&*GramSwarajya* Salient Features of Indian Arts Salient features of Indian Culture	15
III	**Science,Environment and Economy** Science, Technology & Mathematics in Ancient India Health Consciousness (Science of Life): *Ayurveda*, *Yoga* and Naturopathy Environmental Conservation: Indian View Indian Economic Thoughts: Agriculture**,** Industry, Trade and Maritime Commerce	15
IV	**Maps (India):** Political Contours of ancient *Bharatvarsha* Places of Indian Arts in ancient times Important *Janpadas* of ancient India Maritime Commercein ancient India	15
V*	**Practical/Tutorial**	15
SuggestedEvaluationMethods		

InternalAssessment:	30 Marks	End Term Examination: 70 Marks
➢ **Theory**		
• Class Participation:	05Marks	
• Seminar/presentation/assignment/quiz/class test etc.:	10 Marks	
• Mid-Term Exam:	15 Marks	
➢ **Practicum**	**N.A.**	
• Class Participation:		
• Seminar/Demonstration/Viva-voce/Lab records etc.:		
• Mid-Term Exam:		

PartC-Learning Resources

Recommended Books/e-resources/LMS:

Altekar, A.S, *Education in Ancient India,*Nand Kishore & Bros, Varanasi, 1944.

Arrhenius, G., *Evolution for Space*.

Arvind, Shri, *BhartiyaSanskritiKeAdhar,*Arbindo Ashram, Pondeycheri.

Bhagvadatt, *Vrihad Bharat KaItihas*, PranavPrakashan, New Delhi.

Dharampal, *The Beautiful Tree*, Other India Press, Delhi,1995.

Dinkar, Ramdhari Singh, *SanskritiKe Char Adhyaya,* Sahitya Academy, New Delhi, 1956.

Durant, Will, *The Story of Civilization*, US, Jan. 1993 (11 Vol).

Dwivedi, KapilDev, *Vedon Mein TatvaGyan*, TatvaBhartiAnusandhanParishad, New Delhi, 2014.

Elliott, Faith Robertson, Elliott, *Gender, Family and Society,* St. Martin press, New York,1996

Ginshurg, Zekuthial, *New light on Our Numerals*

Maurice, Thomas, *Indian Antiquities*, Pub. T. Maurice, 1806, London.

Mittal, Satish Chand, *BhartiyaSanskritiKe Char Adhyaya,* ABISY, New Delhi, 2018

Mohan, Narendra,*BhartiyaSanskriti*, PrabhatPrakashan, New Delhi, 2011.

Mookherjee, Radha, *The Fundamental Unity of India,*Longsman, Calcutta, 1914.

Mookherjee, RadhaKumud, *Indian Shipping,* Pub. South Asia Books, 1999.

Pandey, Govind Chandra, *BhartiyaSanskriti*, Hindi Grantha Academy, Bhopal, 2008.

---------,*Vedic Sanskriti*, LokBhartiPrakashan, Allahabad.

Pandey, Omprakash, *DrishvyaJagatKayatatat,*PrabhatPrakashan, New Delhi, 2005.

Pandey, Rajbali, *BhartiyaPuralipi*, LokBhartiPrakashan, Allahabad, 1998

Sihag, Balbir Singh, *Kautilya: The True Founder of Economics,* Vitasta Publishing Pvt. Ltd, Delhi, 2014.

MCC-2

Session: 2023-24

PartA–Introduction	
Subject	History
Semester	1st
Name of the Course	Ancient World
Course Code	B23-HIS-102

CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (ifany)	Senior Secondary (10+2) or equalant in any stream.
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Acquaint with the Evolution of Humankind; Beginning of Agriculture & Animal Husbandry and the Society, Culture, and Economy of Nomadic Groups in ancient Central and West Asia. 2. Learn the Polity, Economy, Society, Culture, Arts, Science & Technology of the ancient Civilizations of Mesopotamia, Egypt and China. 3. Grasp the Use of Iron and its Implications on Humankind and the salient features, andmajor developments in Ancient Greece and Rome until the Fall of Roman Empire. 4. Demonstrate the Main Sites of Paleolithic and Mesolithic Cultures and Extent and Important Places connected with the Civilizations of Mesopotamia, Egypt, China and Greece on the outline map of World and also explicate it historically.

Credits	Theory	Practical/Tutorial	Total
	03	01	04
Contact Hours	03	01	04

Max. Marks: Internal Assessment Marks: End Term Exam Marks:	100 30 70	Time: 3 Hrs.

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PartB-Contentsofthe Course

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Instructions for Paper-Setter:

1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 14 marks.

2. The Compulsory Question shall consist of *seven* short answer type questions of 2 marks each which shall be spread over the whole syllabus.

3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.

4. The Map Questions shall be carrying 14 marks each (09 Marks for map work and 05 marks for Explanatory Note). For visually disabled students, the part relating to the

Explanatory Note shall carry full marks.		
Unit	**Topics**	**Contact Hours**
I	Evolution of Humankind: Paleolithic and Mesolithic Cultures Food Production: Beginning of Agriculture and Animal Husbandry Nomadic Groups in Central and West Asia: Their Society, Culture and Economy	15
II	Civilization of Mesopotamia: Polity, Economy, Society, Culture, Arts, Science & Technology Civilization of Egypt: Polity, Economy, Society, Culture, Arts, Science & Technology Civilization of China: Polity, Economy, Society, Culture, Arts, Science & Technology	15
III	Use of Iron and its Implications Ancient Greece and Rome: Agrarian Economy, Trade and Urbanization Political Apparatus: Athenian Democracy, Roman Republic and Roman Empire Fall of Roman Empire	15
IV	**Maps (World):** Main Sites of Paleolithic and Mesolithic Cultures Extent and Important Places connected with the Civilization of Mesopotamia Extent and Important Places connected with the Civilization of Egypt Extent and Important Places connected with the Civilization of China Extent and Important Centers of Greek Civilization	15
V*	**Practical/Tutorial**	15
SuggestedEvaluationMethods		

InternalAssessment: **30 Marks**
➢ **Theory**
  • Class Participation: 05Marks
  • Seminar/presentation/assignment/quiz/class test etc.:   10 Marks
  • Mid-Term Exam: 15 Marks
➢ **Practicum**   **N.A.**
  • Class Participation:
  • Seminar/Demonstration/Viva-voce/Lab records etc.:
  • Mid-Term Exam:
		End Term Examination: 70 Marks

PartC-Learning Resources		

Recommended Books/e-resources/LMS:

Amar Faruqqi	*PrachinAurMadhyakalinSamajikSanrachanayainAurSanskritiya* Hindi)
B. Fagan	*People of the Earth*
B. Trigger	*Ancient Egypt : A Social History*
BajShaoyi	*An Outline History of China*
Burns and Ralph	*World Civilizations*
G. Clark	*World Prehistory : A New perspective*
G. Rook	*Ancient Iraq*
Glyn Daniel	*First Civilisations*
H.W.F. Saggs	*The Greatness That Was Babylon*
Jacquetta Hawkes	*First Civilizations*
M.I. Finley	*The Ancient Economy*
R.J. Wenke	*Patterns in Prehistory*
Shri Ram Goyal	*Vishaw Ki Sabhyatayen*(Hindi)
V. Gordon Childe	*What Happened in History*
V.L. Aleveev	*The Origins of the Human Race*

CC-M1

Session: 2023-24	
PartA–Introduction	
Subject	History
Semester	1st
Name of the Course	Indian History & Culture
Course Code	B23-HIS-103
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-M
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (ifany)	Senior Secondary (10+2) or equalant in any stream.
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to:
	1. Acquaint with the Idea of History in India;Ancient Indian Literature and its Historicity, and Myths and Reality *vis-à-vis* Historical Understanding in India.
	2. Understand the deep rooted impact of social inequalities based on Class, Caste & Gender in shaping historically the Culture of India.
	3. Grasp the Cultural Assimilation and Cultural Heritage in India with particular reference to Great & Little

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	Traditions; Emergence of Composite Culture; Main Components of Cultural Heritage in India, and Built Heritage and Historical Tourism in Indian Context. 4. Familiar with the Cultural Forms and Cultural Expressions like Performing Arts, Fairs & Festivals, and the issues of Cultural Identity in the era of Globalization.		
Credits	Theory	Practical/Tutorial	Total
	02	-	02
Contact Hours	02	-	02
Max. Marks: 50 Internal Assessment Marks: 15 End Term Exam Marks: 35	Time: 3 Hrs.		

PartB-Contentsofthe Course

Instructions for Paper-Setter:

1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 07 marks.
2. The Compulsory Question shall consist of *seven* short answer type questions of 01 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.

Unit	Topics	Contact Hours
I	**Historical Understanding in India** Indian Knowledge Traditions: Idea of History and Concept of Time & Space Ancient Indian Literature and its Historicity: *Vedas, Ramayana, Mahabharata, Puranas*and*Tripatakas* Historical Understanding in India: Myths and Reality	7
II	**Social Inequalities in Indian Culture** Feudal Culture in India Religion, Gender and Caste in Indian Culture SocialStatus of the Subaltern Groups Status of Women across the Religions and Castes	8
III	**Cultural Assimilation and Cultural Heritage** Great & Little Traditions of IndianCulture Emergence of Composite Culture in Medieval Times Main Components of Cultural Heritage	8

	Built Heritage and Historical Tourism in Indian Context	
IV	**Cultural Forms & Cultural Expressions:** The City and Civil Society in Indian History and Culture Performing Arts Fairs & Festivals Changing Cultural Identity in the Age Globalization	7
V*	**Practical/Tutorial**	-

<table>
<tr><td colspan="3" align="center">SuggestedEvaluationMethods</td></tr>
<tr>
<td>
InternalAssessment:
➢ Theory
   • Class Participation:
   • Seminar/presentation/assignment/quiz/class test etc.:
   • Mid-Term Exam:
➢ Practicum
   • Class Participation:
   • Seminar/Demonstration/Viva-voce/Lab records etc.:
   • Mid-Term Exam:
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<td>
15 Marks

04Marks
04 Marks
07 Marks
N.A.
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<td>
End Term Examination: 35 Marks
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</tr>
</table>

PartC-Learning Resources

Recommended Books/e-resources/LMS:

Agarwal, V.S., *Indian Art*, Varanasi, PrithviPrakasahan, 1972.

-----------------, *PaninikaleenBharatvarsha*, PrithaviPrakashan, Varanasi.

Banga, Indu, ed. *The City in Indian History: Urban Demography, Society & Polity*, Delhi, Manohar, 1991.

Basham, A.L, *The Wonder that was India,* Rupa, Delhi, 1994.

Bhagvadatt, *Vrihad Bharat KaItihas*, PranavPrakashan, New Delhi.

Biswas, S.S., *Protecting the Cultural Heritage* (National Legislations and International Conventions). New Delhi: INTACH, 1999.

Brown, Percy, *Indian Architecture*, Bombay, D.B.Taraporevala Sons & Co, 1940

Chahal, S.K.,*Dalits Patronized: Indian National Congress and the Untouchables of India 1921-1947,* Shubhi Publication, New Delhi, 2002. (Only Introduction & Chapter I)

———, *Hindu Social Reform: Framework of Jotirao Phule* (Only Introduction & Chapter I)

Dinkar, Ramdhari Singh, *SanskritiKe Char Adhyaya,* Sahitya Academy, New Delhi, 1956.

Elliott, Faith Robertson, Elliott, *Gender, Family and Society,* St. Martin press, New York,1996**.**

Harle, James, *The Art & Architecture of the Indian Subcontinent*, Penguin, Hormondsworth, 1988.

Koch, E. *Mughal Art & Imperial Ideology,* Oxford University Press, New York, 2001.

Kumar, Radha, *History of Doing: An Illustrated Account of Movements for Women's Rights &Feminism in India 1880-1990*, Zubaan, 2007

Kumar, Sunil, *The Present in Delhi's Past*, Gyan Publishing House, Delhi 2002.

Lahiri, N., *Marshaling the Past - Ancient India and its Modern Histories*, Permanent Black, Ranikhet, 2012. Chapters 4 and 5.

Lowenthal, David, *Possessed by The Past: The Heritage Crusade and The Spoils of History,*

Cambridge, 2010

Parikh, B., *Composite Culture in a Multicultural Society*, NBT, Delhi, 2007.

Mehta, N., *Introduction: Satellite Television, Identity &Globalization in Contemporary India* in N. Mehta, ED, *Television in India*, New York, Routledge, 2008

Mittal, Satish Chand, *BhartiyaSanskritiKe Char Adhyaya,* ABISY, New Delhi, 2018

Mookherjee, Radha, *The Fundamental Unity of India,*Longsman, Calcutta, 1914.

Oberoi, Patricia, *Freedom and Destiny: Gender, Family and Popular Culture in India*, Delhi, 2009

O'Hanlon, Rosalind, *Caste, Conflict and Ideology: Mahatma Jotirao Phule and the Low Caste Protest in Nineteenth Century Western India*

Omvedt, Gail,*Dalits and the Democratic Revolution: Dr. Ambedkar and the Dalit Movement in Colonial India*

Singh, V., *The Human Footprint on Environment: Issues in India*, New Delhi, and Macmillan, 2012

Storey, John, *Cultural Theory and Popular Culture*, London, 2001

Vasudev, V., *Fairs &Festivals, Incredible India Series*, 2007.

MDC-1

Session: 2023-24	
PartA–Introduction	
Subject	History
Semester	1st
Name of the Course	Glimpses of Ancient India
Course Code	B23-HIS-104
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MDC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (ifany)	Senior Secondary (10+2) or equalant in any stream.
CourseLearningOutcomes (CLO):	After completing this course, the learner will be able to: 1. Learn the major historical developments from the origins of Harappan Civilization upto the rise of Buddhism and Jainism in ancient India. 2. Understand the major historical developments pertaining to the rise ofMagdha empire, Mauryan Empire and Post-Mauryan states in ancient India. 3. Acquaint with historical developments pertaining to the rise of Gupta Empire and Post-Gupta Powers like Pushpabhuties&Chalukayas and Triangular Struggle for

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| | | Hegemony of Kannauj in ancient India. |
| | | 4. Familiar with the Polity and Administration of Cholas; Rise of Rajputs, and invasions of MahmoodGhaznavi and Muhammad Ghori in India and its historical outcome. |

Credits	Theory	Practical/Tutorial	Total
	03	-	03
Contact Hours	03	-	03

Max. Marks:	75	Time: 3 Hrs.
Internal Assessment Marks:	25	
End Term Exam Marks:	50	

PartB-Contentsofthe Course

<u>**Instructions for Paper-Setter:**</u>
1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 10 marks.
2. The Compulsory Question shall consist of *five* short answer type questions of 02 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.

Unit	Topics	Contact Hours
I	Harappan Civilization: Origin, Extent, Urbanization, Society, Economy and Decline Vedic Age: Religion, Polity, Society and Economy Religious Movements: Buddhism and Jainism	12
II	Mahajanapada: Rise of Magdha Empire Mauryan Empire: Chandragupta Maurya and Ashoka Post-Mauryan State: Kushanas and Satvahanas	11
III	Gupta Empire: Conquests of Samudragupta and Chandragupta II; Administration of Guptas Post-Gupta Period: Pushpabhuties and Chalukayas Triangular Struggle for Hegemony of Kannauj	11
IV	Polity and Administration of Cholas Rise of Rajputs with Special Reference to Tomars MahmoodGhaznavi and Muhammad Ghori: Conflicts with Indian States and its Impact	11
V*	**Practical/Tutorial**	-

SuggestedEvaluationMethods		
InternalAssessment: **25 Marks** ➢ **Theory** • Class Participation: 05Marks • Seminar/presentation/assignment/quiz/class test etc.: 07 Marks • Mid-Term Exam: 13 Marks ➢ **Practicum** **N.A.** • Class Participation: • Seminar/Demonstration/Viva-voce/Lab records etc.: • Mid-Term Exam:		**End Term Examination: 50 Marks**

PartC-Learning Resources

Recommended Books/e-resources/LMS:

Allchin, B. and Allchin R.   *Origins of a Civilization: The Pre-history and Early Archaeology of South Asia*, Viking, New Delhi, 1997.

Basham, A. L.   *The Wonder that was India*, Rupa Publications, Bombay, 1971.

Bhandarkar, D. R.   *Some Aspects of Ancient Hindu Polity*, Benares, 1929.

Bogucki, P.   *The Origin of Human Society*, Wiley-Blackwell, Massachusetts, 1999.

Burton, Stein,   *History of India*, OUP, New Delhi, 1998.

Carr, E. H.   *ItihasKyaHai*, Macmillan Publication, New Delhi 1976.

Chandra Satish   *Medieval India from the Sultanate to the Mughals*, Delhi 1997.

------------------   *History of Medieval India*, Orient Blackman, Reprint Hyderabad, 2018

------------------   *Madhyakalin Bharat: RajnitiSamaj and Sanskirti*, Delhi, 2007.

Dinkar, Ramdhari Singh,   *SanskritiKe Char Adhyaya,* Sahitya Academy, 1956.

Farukhi, A.   *PrachinEvamMadhyakalinSamajikSanrachanaye aurSanskritiya*, ManakPrakashan, Delhi, 2015.

Habib, Irfan,   *The Indus Civilization*, Tulika, New Delhi, 2002.

Jayasval, K. P.   *Hindu Polity*, Calcutta, 1924.

Jha, D. N. and Shrimali, K. M.   *Prachin Bharat KaItihas*, New Delhi, 1990.

Kosambi, D. D.   *PrachinBhartiyaSabhyataEvamSanskriti*, Rajkamal, New Delhi.

Lahri, Nayanjot, ed.   *The Decline and Fall of the Indus Civilization*, Permanent Black, New Delhi, 2000.

Majumdar, R. C.   *History and Culture of the Indian People*, V Vols., BhartiyaVidhyaBhavan Series, Bombay, 1970, 1979, 1980.

Sharma, R. S.   *India's Ancient Past*, OUP, New Delhi, 2007.

------------------   *Looking for the Aryans*, Orient Longman Publishers, Delhi, 1995.

----------------	*Aspects of Political Ideas and Institution in Ancient India*, MotilalBanarsidas, New Delhi, 1991.
Rao, N. S. Subba	*Lectures on the Economic Condition of Ancient India, Being an Analytical Study of the Jatakas*, Mysore, 1911.
Thapar, Romila	*The Past Before Us: Historical Traditions of Early India*, Permanent Black, Part – I, Delhi, 2013.
------------------	*A History of Ancient India,* Vol. IPenguin India, New Delhi, 2000.
Tripathi, Ramashankar	*History of Ancient India*, MotilalBanarsidas Publishers Pvt. Ltd., New Delhi, 2006.

Semester-II:

CC-2/MCC-3

Session: 2023-24	
PartA–Introduction	
Subject	History
Semester	2nd
Name of the Course	History of India (From Earliest Times to 1206)
Course Code	B23-HIS-201
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC/MCC
Level of the course (As per Annexure-I	200-299
Pre-requisite for the course (ifany)	N.A.
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Learn about the Sources for reconstructing the history of Ancient India and also know the major historical developments from the origins of Harappan Civilization upto the rise of Magdha Empire in ancient India. 2 Understand the major historical developments pertaining to the rise of Mauryan Empire, Post-Mauryan states like Kushana and Satvahana, rise of Gupta Empire, and Post-Gupta Powers in ancient India. 3. Grasp the major historical developments pertaining to the Triangular Struggle for Hegemony of Kannauj among Palas, Pritiharas and Rashtrakutas; Polity and

| | | Administration of Cholas; Rise of Rajputs, and invasions of MahmoodGhaznavi and Muhammad Ghori in India. 4 Demonstrate the sites of Harappan Civilization, extent of Ashoka's Empire, extent of Kanishka's Empire and extent of Harsha's Empire on the outline map of India and also explicate it historically. | |

Credits	Theory	Practical/Tutorial	Total
	03	01	04
Contact Hours	03	01	04

Max. Marks: 100 Internal Assessment Marks: 30 End Term Exam Marks: 70	Time: 3 Hrs.

PartB-Contentsofthe Course

Instructions for Paper-Setter:

1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 14 marks.
2. The Compulsory Question shall consist of *seven* short answer type questions of 2 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.
4. The Map Questions shall be carrying 14 marks each (09 Marks for map work and 05 marks for Explanatory Note). For visually disabled students, the part relating to the Explanatory Note shall carry full marks.

Unit	Topics	Contact Hours
I	Meaning of History and Sources of Ancient Indian History Harappan Civilization: Origin, Extent, Urbanization, Society, Economy and Decline Vedic Age: Religion, Polity, Society and Economy Religious Movements: Buddhism and Jainism Mahajanapada: Rise of Magdha Empire	15
II	Mauryan Empire: Chandragupta Maurya and Ashoka Post-Mauryan State: Kushanas and Satvahanas Gupta Empire: Conquests of Samudragupta and Chandragupta II; Administration of Guptas Post-Gupta Period: Pushpabhuties and Chalukayas	15

III	Triangular Struggle for Hegemony of Kannauj: Palas, Pritiharas and Rashtrakutas Polity and Administration of Cholas Rise of Rajputs with Special Reference to Tomars MahmoodGhaznavi and Muhammad Ghori: Conflicts with Indian States and Impact	15
IV	**Maps (India):** Important Sites of Harappan Civilization Expansion of Ashoka's Empire Expansion of Kanishka's Empire Expansion of Harsha's Empire	15
V*	**Practical/Tutorial**	15

SuggestedEvaluationMethods		

InternalAssessment: **30 Marks**
➢ **Theory**
   • Class Participation: 05Marks
   • Seminar/presentation/assignment/quiz/class test etc.: 10 Marks
   • Mid-Term Exam: 15 Marks
➢ **Practicum**   **N.A.**
   • Class Participation:
   • Seminar/Demonstration/Viva-voce/Lab records etc.:
   • Mid-Term Exam:
		End Term Examin ation: 70 Marks

PartC-Learning Resources

Recommended Books/e-resources/LMS:

Allchin, B. and Allchin R.	*Origins of a Civilization: The Pre-history and Early Archaeology of South Asia*, Viking, New Delhi, 1997.
Basham, A. L.	*The Wonder that was India*, Rupa Publications, Bombay, 1971.
Bhandarkar, D. R.	*Some Aspects of Ancient Hindu Polity*, Benares, 1929.
Bogucki, P.	*The Origin of Human Society*, Wiley-Blackwell, Massachusetts, 1999.
Burton, Stein	*History of India*, OUP, New Delhi, 1998.
Carr, E. H.	*ItihasKyaHai*, Macmillan Publication, New Delhi 1976.
Chandra Satish	*Medieval India: From the Sultanate to the Mughals*, Delhi 1997.
------------------	*History of Medieval India*, Orient Blackman, Reprint Hyderabad, 2018
------------------	*Madhyakalin Bharat: RajnitiSamaj and Sanskirti*, Delhi, 2007.
Dinkar, Ramdhari Singh	*SanskritiKe Char Adhyaya,* Sahitya Academy, 1956.

Farukhi, A.	*PrachinEvamMadhyakalinSamajikSanrachanaye aurSanskritiya*, ManakPrakashan, Delhi, 2015.
Habib, Irfan,	*The Indus Civilization*, Tulika, New Delhi, 2002.
Jayasval, K. P.,	*Hindu Polity*, Calcutta, 1924.
Jha, D. N. and Shrimali, K. M.	*Prachin Bharat KaItihas*, New Delhi, 1990.
Kosambi, D. D.	*PrachinBhartiyaSabhyataEvamSanskriti*, Rajkamal, New Delhi.
Lahri, Nayanjot, ed.	*The Decline and Fall of the Indus Civilization*, Permanent Black, New Delhi, 2000.
Majumdar, R. C.	*History and Culture of the Indian People*, V Vols., BhartiyaVidhyaBhavan Series, Bombay, 1970, 1979, 1980.
Sharma, R. S.	*India's Ancient Past*, OUP, New Delhi, 2007.
-----------------	*Looking for the Aryans*, Orient Longman Publishers, Delhi, 1995.
----------------	*Aspects of Political Ideas and Institution in Ancient India*, MotilalBanarsidas, New Delhi, 1991.
Rao, N. S. Subba	*Lectures on the Economic Condition of Ancient India, Being an Analytical Study of the Jatakas*, Mysore, 1911.
Thapar, Romila	*The Past Before Us: Historical Traditions of Early India*, Permanent Black, Part – I, Delhi, 2013.
-------------------	*A History of Ancient India,* Vol. IPenguin India, New Delhi, 2000.
Tripathi, Ramashankar	*History of Ancient India*, MotilalBanarsidas Publishers Pvt. Ltd., New Delhi, 2006.

CC-M2

Session: 2023-24	
PartA - Introduction	
Subject	History
Semester	2nd
Name of the Course	Orality and Oral Culture in India
Course Code	B23-HIS-202
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-M
Level of the course (As per Annexure-I	200-299
Pre-requisite for the course (ifany)	N.A.

CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Acquaint with the different Definitions of Orality and History/Historiography of Orality**. 2. Grasp the Theatrical Debate on Power/Knowledge Paradigm and Control as well as Ideology, Identity and Knowledge Production with special reference to Gender and Caste. 3. Understand the historical significance of Life Stories and its Sociological Aspects with special reference to the Autobiographies of Women &Dalits and the Method how to Record Life Histories. 4. Familiar with the Research Methodologies of Oral History and different forms of Documentation, particularly Written & Visual Representations.		

Credits	Theory	Practical/Tutorial	Total
	02	-	02
Contact Hours	02	-	02

Max. Marks: 50 Internal Assessment Marks: 15 End Term Exam Marks: 35	Time: 3 Hrs.

PartB-Contentsofthe Course

Instructions for Paper-Setter:

1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 07 marks.
2. The Compulsory Question shall consist of *seven* short answer type questions of 01 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.

Unit	Topics	Contact Hours
I	Defining Orality History and Historiography of Orality	7
II	Power/Knowledge Paradigm and Control: Theatrical Debate Ideology, Identity and Knowledge Production: Gender and Caste	8
III	Life Stories: Sociological Aspects with special reference to the Autobiographies of Women &Dalits Recording Life Histories	8

IV	Research Methodologies of Oral History Documentation: Written & Visual Representations	7
V*	**Practical/Tutorial**	-

SuggestedEvaluationMethods		
InternalAssessment:	**15 Marks**	**End Term Examination: 35 Marks**
➢ **Theory**		
• Class Participation:	04Marks	
• Seminar/presentation/assignment/quiz/class test etc.:	04 Marks	
• Mid-Term Exam:	07 Marks	
➢ **Practicum**	**N.A.**	
• Class Participation:		
• Seminar/Demonstration/Viva-voce/Lab records etc.:		
• Mid-Term Exam:		

PartC-Learning Resources

Recommended Books/e-resources/LMS:

Bandyopadhyay,Shekhar,*Caste,ProtestandIdentityinColonialIndia:TheNamasudrasofBengal,1872-1947*,Curzon,Surrey,1997.

Dirks, Nicholas,*CastesofMind:ColonialismandtheMakingofModernIndia,*Delhi:PermanentBlack, 2006.

Das, Veena (ed.), *Mirrors of Violence: Communities, Riots & Survivors in South Asia*, Delhi, OUP,1990.

Foley, John Miles, *Oral Formulaic-Theory: An Introduction &Annotated Bibliography*, New York & London: Garland, 1985.

Foucault, Michael, *Power/Knowledge: Selected Interviews and Other Writings* (edited by Colin Gordon), Pantheon Books, New York, 1980.

———, *The Order of Things: An Archaeology of Human Sciences*, Pantheon Books, New York, 1970.

———, *Ethics: Subjectivity and Truth,* Vol. I, Penguin, New Delhi, 2002.

Humphries, Stephen, *The Handbook of Oral History: Recording Life Stories*.University of Michigan: Inter-Action Imprint, 1984.

Mahadeva, Prasad M., *Ideology of the Hindi Film: A Historical Construction*. Delhi: OUP, 1998. M.F.D. *Knowledge & Control*, London,1971.

Malhotra,Anshu,*Gender,CasteandReligiousIdentities:RestructuringClass inColonialPunjab*, OxfordUniversityPress,Delhi,2002.

Narayan,Badri,andA.R.Misra (ed.),*MultipleMarginalities:AnAnthologyofIdentifiedDalitWriting*,Manohar,Delhi,2004.

Omvedt, Gail, *Cultural Revolt in a Colonial Society: Non-Brahman Movement in Western India 1873-1930*.

O'Hanlon, Rosalind. [1985] 2002, rpt. 2010. *Caste, Conflict and Ideology: Mahatma Jotirao Phule and the Low Caste Protest in Nineteenth Century Western India.*

Pawar, *Daya, Achhoot,* RadhakrishanPrakashan, New Delhi, 2006.

Prasad,ChandraBhan,*DalitDiary:1999-*

2003:ReflectionsonApartheidinIndia,Pondicherry,Navayana,2004.

Rao,Anupama(ed.),*GenderandCaste,* KaliforWomen,Delhi,2003.

———,*TheCasteQuestion:DalitsandthePoliticsofModernIndia*,PermanentBlack,Delhi,2009.

Rege,Sharmila,*WritingCaste/WritingGender:NarratingDalitWomen'sTestimonies*,Zubaan,Delhi,2006.

Roberts,Elizabeth,*AWoman'sPlace:AnOralHistoryofWorkingClassWomen,1890-1940,* Blackwell,Oxford,1996.

Roberts, H. (ed.), *Doing Feminist Research*, London: Routledge&Kegan Paul, 1981.

Rosenthal,JoelT.(ed.),*MedievalWomenandtheSourcesofMedievalHistory.*Athensand London: UniversityofGeorgia Press, 1990.

Rousseau, ConstanceM.andJoelT.Rosenthal,*Women,Marriage,andFamilyinMedievalChristendom,*Kalamazoo:MedievalInstitutePublications, 1998.

Roy, Srirupa, "The Post-Colonial State and Visual Representations of India" *Contributions to Indian Sociology*, 2006, 36,1& 2:233-263.

Sangari,KumkumandSudeshVaid(eds),*RecastingWomen:EssaysinColonialHistory*, Kali for Women, Delhi, 1989.

Uberoi,Patricia,*FreedomandDestiny: Gender,FamilyandPopularCultureinIndia.* Delhi: OUP, 2006.

Valmiki, Om Prakash*, Joothan: A Dalit's Life,* Atlantic Publishers, New Delhi, 2007.

DSEC-1

Session: 2023-24	
PartA–Introduction	
Subject	History
Semester	2nd
Name of the Course	History: Theory &Method
Course Code	B23-HIS-203
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	DSEC
Level of the course (As per Annexure-I	200-299
Pre-requisite for the course (ifany)	N.A.
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Learn the historical debates on Meaning, Nature, Scope and Utility of History; Emerging Areas of History like New History, Big History, Gender History and Sub Histories, and Relations of History withOtherDisciplines. 2. Understand the historical debates on the

issues/problems concerning the Theoryof History particularly the Nature of Historical Facts, ObjectivityinHistory, Causation in History and ValueJudgment in History.

3. Acquaint with the different Methods of History particularly the Techniques of DataCollection/Selection, Method of HistoricalCriticism and Method of Historical Explanation and framing Generalizations/Hypothesis.

4. Acquaint with the key steps towards HistoricalResearch, e.g., Selection of Theme, Survey of Literature, Preparation of Synopsis, Proposition of ResearchWork, Useof ICT in HistoricalResearch,ArrangementofReferences and Making Bibliography.

Credits	Theory	Practical/Tutorial	Total
	03	01	04
Contact Hours	03	01	04

Max. Marks:	100	Time: 3 Hrs.
Internal Assessment Marks:	30	
End Term Exam Marks:	70	

<div align="center">PartB-Contentsofthe Course</div>

Instructions for Paper-Setter:

1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 14 marks.
2. The Compulsory Question shall consist of *seven* short answer type questions of 2 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.

Unit	Topics	Contact Hours
I	**Understanding History:** Meaning, NatureandScope Utility of History Relations of History withOtherSocial Sciences Emerging Areas: New History, Big History, Gender History etc.	15
II	**Theoryof History:** Nature of Historical Facts ObjectivityinHistory Causation in History	15

	ValueJudgment in History	
III	**Methods of History:** Types of Historical Sources Techniques of DataCollectionandSelection HistoricalCriticism HistoricalExplanation:Interpretations, Generalizations andHypothesis	15
IV	**Towards HistoricalResearch:** Selection of Topic Literature Review Preparation of Synopsis Useof ICT in HistoricalResearch Footnotes/Endnotes,References and Bibliography	15
V*	**Practical/Tutorial**	15

SuggestedEvaluationMethods

InternalAssessment:	**30 Marks**	**End Term Examin ation: 70 Marks**
➢ **Theory**		
• Class Participation:	05Marks	
• Seminar/presentation/assignment/quiz/class test etc.:	10 Marks	
• Mid-Term Exam:	15 Marks	
➢ **Practicum**	**N.A.**	
• Class Participation:		
• Seminar/Demonstration/Viva-voce/Lab records etc.:		
• Mid-Term Exam:		

PartC-Learning Resources

Recommended Books/e-resources/LMS:

Ali, B. Sheikh *History: its Theory and Method* , Madras, 1978

Atkinson, R.F. *Knowledge and Explanation in History* , London , 1978

Bajaj, Satish, K. *Recent Trends in Historiography,* New Delhi, 1988

Barnes, H.E. *A History of Historical Writing* , Oklahoma Norman , 1937

Bentley, Michael (ed) *Companion to Historiography* , London, 1997

Bitterns, Hans *The Idea of Post Modern : A History*, London, 1995

Block, Marc *The Historian's Craft*, Manchester, 1954

Buddha Prakash *ItihasDarshan* (Hindi) , Varanasi , 1962

Butterfield, H. *The Whig Interpretation of History* , London, 1951

Cannon, John (ed.) *The Historian at Work*, London 1980

Carr , E.H. *What is History,* Reprint, London, 1983 (First Publication: 1964)

Clark, K. *Guide for Research Students Working on Historical Subjects* Cambridge, 1969

Clark, Stuart *The Annals Historians: Critical Assessment*, Vol. I, London, 1999

Collingwood, R. G. *The Idea of History*, oxford , 1946

Delanlez, Jean (ed.) *A Guide to Historical Method* , New York, 1946

Dictionary of History of Ideas, Vols. 1 & 2 , New York, d.d.

Dray, Arthur	*On History and philosophers of History*, New York, 1989
Durant, Will and Ariel Durant	*The Story of Civilization*, Vols. I-IX, d.d.
Elton, Geoffrey	*The Practice of History*, London, 1967
-----------------	*Returns to Essentials: Some Reflections on the Present State of Historical Study*, Cambridge, 1991
Encyclopedia of Islam , New Edition , Vols. 3 & 4 , 1979	
Evans, j. Richard	*In Defense of History*, London, 1997
Foucault , Michel	*Power /Knowledge: Selected Interviews and Others Writings,* Brighton, 1980
Gayle , Peter	*Debates with Historians* , New York, 1958
Gooch, G. P.	*History and Historians of the Nineteenth Century* , London 1952 (First Publication : 1913)
Hegel , G.P.	*The Philosophy of History* , New York, 1958
Hackett, H.C.	*The Critical method in Historical Research and Writing*, New York, 1955
Hughes , Warrington	*Fifty Key Thinkers on History*, London , 2000
Hasan, Mohibbul (ed.)	*Historians of Medieval India* , Meerut , 1968
Jenkins , Keith (ed.)	*Post-Modern History Reader*, London 1997
-----------------	*Why History? Reflections on the Possible End of History and Ethics Under the Impact of the Postmodern* , London , 1999
Marwick, Arthur	*The Nature of History , Reprint* , London , 1970 (First Publication : 1984)
-----------------	*What History Is and Why It Is Important*? Buckinghamshire, 1970
Marx, Karl and Fredrick Angles	*The Communist Manifesto* (edited by A. P. J. Taylor) , London 1974
Munslow , Alun	*Deconstructing History,* London , 1997
Reiner , G.T.	*History : Its Purpose and Method* , London, 1961
Russel , Bertrand	*History of Western Philosophy* , London , 1947
Shefer, R. J .	*A Guide to Historical Method* , Homewood, 1974
Sridharan , E.	*A Textbook of Historiography 500 B.C. to A. D. 2000*, New Delhi, 2004
Thompson, J. W. & Holm Bernard	*A History of Historical Writing*, Vols. 1 & 2, New York, 1942

MDC-2

Session: 2023-24
PartA–Introduction

Subject	History
Semester	2nd
Name of the Course	Glimpses of Medieval India
Course Code	B23-HIS-204

CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MDC		
Level of the course (As per Annexure-I	200-299		
Pre-requisite for the course (ifany)	N.A.		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Learn the major historical developments pertaining to the Emergence and Consolidation of Delhi Sultanate; State Apparatus of the Sultanate; rise of Bahmani and Vijaynagar Empires, and the growth of Bhakti and Sufi Movements in medieval India. 2. Understand the major historical developments pertaining to the Establishment of Mughal Rule; rise of ShershahSuri and his Administration, and Polity & Policies of the Great Mughals. 3. Grasp the features of Society and Economy under the Mughals; nature of Mughal Systems of Mansabdari, Zabti, Jagirdari and Izaradari, and the causes of Disintegration of Mughal Empire. 4. Acquaint with the Emergence of Regional Powers in 18th century; Rivalry between European Powers in India and Carnatic Wars, and the Conquest of East India Company over Bengal.		
Credits	Theory	Practical/Tutorial	Total
	03	-	03
Contact Hours	03	-	03
Max. Marks: 75 Internal Assessment Marks: 25 End Term Exam Marks: 50	Time: 3 Hrs.		

PartB-Contentsofthe Course

Instructions for Paper-Setter:

1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 10 marks.
2. The Compulsory Question shall consist of *five* short answer type questions of 02 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.

Unit	Topics	Contact Hours
I	Establishment and Consolidation of Delhi Sultanate: Polity of the Sultans State Apparatus of Delhi Sultanate: Administration with special reference to *Iqtadari* System Bahmani and Vijaynagar Empires Bhakti and Sufi Movements	12
II	Establishment of Mughal Rule: Babur and Humayun ShershahSuri and his Administration The Great Mughals: Akbar to Aurangzeb – Polity and Policies	11
III	Society and Economy under Mughals Mughal Systems: Mansabdari, Zabti, Jagirdari and Izaradari Disintegration of Mughal Empire.	11
IV	Emergence of Regional Powers: Bengal, Hyderabad, Marathas and Sikhs Rivalry between European Powers in India and the Carnatic Wars Conquest of East India Company over Bengal: Battle of Plessey	11
V*	**Practical/Tutorial**	-

SuggestedEvaluationMethods		

InternalAssessment: **25 Marks**		**End Term Examination: 50 Marks**
➢ **Theory**		
• Class Participation:	05Marks	
• Seminar/presentation/assignment/quiz/class test etc.:	07 Marks	
• Mid-Term Exam:	13 Marks	
➢ **Practicum**	**N.A.**	
• Class Participation:		
• Seminar/Demonstration/Viva-voce/Lab records etc.:		
• Mid-Term Exam:		

PartC-Learning Resources		

Recommended Books/e-resources/LMS:

Aziz, A. *The Mansabdari System and the Mughal Army*, Idarah-i-Adabiyat, New Delhi, 1954.

Chandra Bipan *History of Modern India*, Orient Blackman, Hyderabad, 2019, Reprint.

Chandra Satish *Medieval India from the Sultanate to the Mughals*, Delhi 1997.

------------------ *History of Medieval India*, Orient Blackman, Reprint Hyderabad, 2018

------------------ *Madhyakalin Bharat: RajnitiSamaj and Sanskirti*, Delhi, 2007.

Chaurasia, R. S. *History of Modern India*, Atlantic, New Delhi, 2002.

Habib, Irfan	*The Agrarian System of Mughal India, 1526-1707*, OUP, New Delhi, 1999.
Dinkar, Ramdhari Singh	*SanskritiKe Char Adhyaya,* Sahitya Academy, 1956.
Habibullah, A. B. M.	*The Foundation of Muslim Rule in India*, Central Book Depot, Allahabad, 1967.
Grover, B. L. and Alka Mehta	Modern Indian History, S. Chand and Company, New Delhi, 2018.
Majumdar, R.C., J.N. Chaudhri, & S. Chaudhari	*The Mughal Empire*, Vol. 7, BhartiVidhya Bhawan, Bombay, 1960.
Moreland, W. H.	*The Agrarian System of Moslem India*, Central Books, Allahabad, 1920.
Prasad, Beni	*History of Jahangir*, OUP, London, 1922.
Prasad, Ishwari,	*The Life and Times of Humayun*, Orient Longman, Calcutta, 1955.
Raychaudhary, Tapan&IrfanHabib	*The Cambridge Economic History of India*, Vol. I, Orient Longman, Hyderabad, 1984.
Richards, J. F.	*The Mughal Empire*, Foundation Books, New Delhi, 1993.
Sarkar, J. N.	*History of Aurangzeb*, 5 Vols. J. Sarkar& Sons, Calcutta, 1912-14.
Sastri, K. A. Nilakanta	*A History of South India*, OUP, New Delhi, 1976.
Srivastava, A. L.	*Akbar the Great*, 2 Vols. ShilLalAgarwal& Co., Agra, 1962, 1967.
Tripathi, R. P.	*Rise and Fall of the Mughal Empire*, Central Book Depot., Allahabad, 1956.
Quereshi, I. H.	*The Administration of the Mughal Empire*, OUP, Karachi, 1866.

Semester-III:

CC-3/MCC-4

Session: 2024-25

PartA - Introduction	
Subject	History
Semester	3rd
Name of the Course	History of India (1206-1757)
Course Code	B23-HIS-301
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC/MCC

Level of the course (As per Annexure-I	300-399		
Pre-requisite for the course (ifany)	N.A.		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Learn the major historical developments pertaining to the Emergence and Consolidation of Delhi Sultanate; State Apparatus of the Sultanate; rise of Bahmani and Vijaynagar Empires, and the growth of Bhakti and Sufi Movements in medieval India. 2. Understand the major historical developments pertaining to the Establishment of Mughal Rule; rise of ShershahSuri and his Administration; Polity and Policies of the Great Mughals; the features of Mughal Systems, and Society and Economy under Mughals. 3. Grasp the Disintegration of Mughal Empire, Emergence of Regional Powers in 18th century; Rivalry between European Powers in India and Wars of Carnatic, and Conquest of East India Company over Bengal. 4. Demonstrate the Expansion of AlauddinKhilji's Empire, Political Conditions of India in 1526, Extent of Mughal Empire at the Death of Akbar (1605) and Extent of Mughal Empire at the Death of Aurangzeb (1707) on the outline map of India and also explicate it historically.		
Credits	Theory	Practical/Tutorial	Total
	03	01	04
Contact Hours	03	01	04
Max. Marks: 100 Internal Assessment Marks: 30 End Term Exam Marks: 70		Time: 3 Hrs.	

PartB-Contentsofthe Course

Instructions for Paper-Setter:

1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 14 marks.
2. The Compulsory Question shall consist of *seven* short answer type questions of 2 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.
4. The Map Questions shall be carrying 14 marks each (09 Marks for map work and 05 marks for Explanatory Note). For visually disabled students, the part relating to the

Unit	Topics	Contact Hours
	Explanatory Note shall carry full marks.	
I	Emergence of Delhi Sultanate: QutubuddinAibek, Iltutmish and Balban Consolidation of Delhi Sultanate: AlauddinKhilji and Muhammad Tughlaq State Apparatus of Delhi Sultanate: Polity, Administration (especially Iqtadari) and Economy Rise of Bahmani and Vijaynagar Empires and its Administrative Set Up Bhakti Movement and Sufism	15
II	Establishment of Mughal Rule: Babur and Humayun ShershahSuri and his Administration The Great Mughals: Akbar to Aurangzeb – Polity and Policies Mughal Systems: Mansabdari, Zabti, Jagirdari and Izaradari Society and Economy under Mughals	15
III	Disintegration of Mughal Empire Emergence of Regional Powers: Bengal, Hyderabad, Marathas and Sikhs Rivalry between European Powers in India and Wars of Carnatic Conquest of East India Company over Bengal: Battle of Plessey	15
IV	**Maps (India):** Expansion of AlauddinKhilji's Empire Political Conditions of India in 1526 Extent of Mughal Empire at the Death of Akbar (1605) Extent of Mughal Empire at the Death of Aurangzeb (1707)	15
V*	**Practical/Tutorial**	15

SuggestedEvaluationMethods		

InternalAssessment: **30 Marks**
➢ **Theory**
  • Class Participation: 05Marks
  • Seminar/presentation/assignment/quiz/class test etc.:   10 Marks
  • Mid-Term Exam: 15 Marks
➢ **Practicum**   **N.A.**
  • Class Participation:
  • Seminar/Demonstration/Viva-voce/Lab records etc.:
  • Mid-Term Exam:
		End Term Examination: 70 Marks

PartC-Learning Resources		

Recommended Books/e-resources/LMS:

Aziz, A.	*The Mansabdari System and the Mughal Army*, Idarah-i-Adabiyat, New Delhi, 1954.
Chandra Bipan,	*History of Modern India*, Orient Blackman, Hyderabad, 2019, Reprint.
Chandra Satish	*Medieval India from the Sultanate to the Mughals*, Delhi 1997.
------------------	*History of Medieval India*, Orient Blackman, Reprint Hyderabad, 2018
------------------	*Madhyakalin Bharat: RajnitiSamaj and Sanskirti*, Delhi, 2007.
Chaurasia, R. S.	*History of Modern India*, Atlantic, New Delhi, 2002.
Habib, Irfan	*The Agrarian System of Mughal India, 1526-1707*, OUP, New Delhi, 1999.
Dinkar, Ramdhari Singh	*SanskritiKe Char Adhyaya,* Sahitya Academy, 1956.
Habibullah, A. B. M.	*The Foundation of Muslim Rule in India*, Central Book Depot, Allahabad, 1967.
Grover, B. L. and Alka Mehta	Modern Indian History, S. Chand and Company, New Delhi, 2018.
Majumdar, R. C., J. N. Chaudhri, and S Chaudhari	*The Mughal Empire*, Vol. 7, BhartiVidhya Bhawan, Bombay, 1960.
Moreland, W. H.	*The Agrarian System of Moslem India*, Central Books, Allahabad, 1920.
Prasad, Beni	*History of Jahangir*, OUP, London, 1922.
Prasad, Ishwari,	*The Life and Times of Humayun*, Orient Longman, Calcutta, 1955.
Raychaudhary, Tapan&IrfanHabib,	*The Cambridge Economic History of India*, Vol. I, Orient Longman, Hyderabad, 1984.
Richards, J. F.	*The Mughal Empire*, Foundation Books, New Delhi, 1993.
Sarkar, J. N.	*History of Aurangzeb*, 5 Vols. J. Sarkar& Sons, Calcutta, 1912-14.
Sastri, K. A. Nilakanta	*A History of South India*, OUP, New Delhi, 1976.
Srivastava, A. L.	*Akbar the Great*, 2 Vols. ShilLalAgarwal& Co., Agra, 1962, 1967.
Tripathi, R. P.	*Rise and Fall of the Mughal Empire*, Central Book Depot., Allahabad, 1956.
Quereshi, I. H.	*The Administration of the Mughal Empire*, OUP, Karachi, 1866.

MCC-5

Session: 2024-25
PartA - Introduction

Subject	History

Semester	3rd
Name of the Course	Medieval World
Course Code	B23-HIS-302
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC
Level of the course (As per Annexure-I	300-399
Pre-requisite for the course (ifany)	N.A.
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Learn the historical transitions from Subsistence Economy to Feudal Economy in Europe; nature of Feudalism in Europe and Technological Innovations; Trade and Commerce, and Growth of Towns in medieval Europe. 2. Understand the Rise of Papacy and Church in medieval Europe; Decline of Feudalism, and Emergence of Islam in Arabia under Hazrat Muhammad and Pious Caliphs. 3. Acquaint with the Evolution of Islamic State under Umayyads and Abbasids, and major Social, Cultural, Religious and Economic Developments in Islamic World. 4. Demonstrate the Major Ports and Urban Centers in Medieval World, Expansion of Islam under Prophet Muhammad and Pious Caliphs, Extent of Arab Empire upto 732 A.D and Extent of Arab Empire in 1258 A.D. on the outline map of World and also explicate it historically.

Credits	Theory	Practical/Tutorial	Total
	03	01	04
Contact Hours	03	01	04

Max. Marks: 100 Internal Assessment Marks: 30 End Term Exam Marks: 70	Time: 3 Hrs.	

PartB-Contentsofthe Course

Instructions for Paper-Setter:

1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 14 marks.

2. The Compulsory Question shall consist of *seven* short answer type questions of 2 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.
4. The Map Questions shall be carrying 14 marks each (09 Marks for map work and 05 marks for Explanatory Note). For visually disabled students, the part relating to the Explanatory Note shall carry full marks.

Unit	Topics	Contact Hours
I	From Subsistence Economy to Feudal Economy in Europe (from 7th to 15th Centuries) Nature of Feudalism in Europe: Manorial System, Organization of Production, Conditions of Peasants and Artisans Technological Innovations, Trade and Commerce, Growth of Towns	15
II	Medieval Church and State: Rise of Papacy and Clergy Class Decline of Feudalism Arabia before Islam Emergence of Islam under Hazrat Muhammad and Pious Caliphs	15
III	Evolution of Islamic State under Umayyads and Abbasids Islamic World: Society, Education, Literature, Art and Architecture Religious Developments: Origins of Sufism Trade and Commerce, Urbanization	15
IV	**Maps (World):** Major Ports and Urban Centers in Medieval World Expansion of Islam under Prophet Muhammad Extent of Arab Empire upto 732 A.D. Arab Empire in 1258 A.D.	15
V*	**Practical/Tutorial**	15
SuggestedEvaluationMethods	

InternalAssessment:	30 Marks	End Term Examination: 70 Marks
➢ **Theory**		
• Class Participation:	05Marks	
• Seminar/presentation/assignment/quiz/class test etc.:	10 Marks	
• Mid-Term Exam:	15 Marks	
➢ **Practicum**	N.A.	
• Class Participation:		
• Seminar/Demonstration/Viva-voce/Lab records etc.:		
• Mid-Term Exam:		

PartC-Learning Resources

Recommended Books/e-resources/LMS:

Jones, A.H.M.	*Constantine and Conversion of Europe*
A.J. Wensinck	*The Muslim Creed*
A.R. Burn	*Pelican History of Greek*
A.S. Trinton	*Islam*
A. Ali	*The Spirit of Islam*
Bernard Lewis	*The Arabs in History*
C.E. Bosworth and Joseph Schacht	*The Legacy of Islam*
C. Stephenson	*Medieval Feudalism*
Carl Stephenson	*Medieval History of Europe From 2nd to 16th Century*
Dominique Sourdel	*Medieval Islam*
Francesco Gabrielle	*The Arab Revival*
Herbert Heaton	*Economic History of Europe*
H.A.R. Gibo	*Mohammedanism: A Historical Survey*
J.W. Thompson	*Middle Ages. 2 Vols.*
K.P. Shahu	*Islam: UdbhavAurVikas*
Margaret Deanesly	*A History of Early Medieval Europe*
M.I. Finley	*The Ancient Economy*
March Bloch	*Feudal Society, Vols. I and II*
Maurice Keen	*A History of the Medieval Europe*
Montgomery Watt	*Muhammad in Mecca and Madina*
W. Muir	*The Caliphate.*
Perry Anderson	*Passages from Antiquity to Feudalism*
P.K. Hatti	*History of the Arabs*
----------------	*Islam: A Way of Life*
Robert Latouche	*The Birth of Western Economy*
R. Levy	*The Social Structure of Islam*
Solomon Katz	*The Social Structure of Islam*
Shepard B. Clough	*The Economic Development of Western Europe*
S.N. Kramer	*The Sumerians*

MDC-3

Session: 2024-25	
PartA - Introduction	
Subject	History
Semester	3rd
Name of the Course	Glimpses of Modern India
Course Code	B23-HIS-303
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MDC

Level of the course (As per Annexure-I	300-399		
Pre-requisite for the course (ifany)	N.A.		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Learn the major historical developments pertaining to the Establishment, Expansion and Consolidation of the British Rule in India; different Tools/Methods used for it by the British, and Annexation of the States of Punjab, Sindh and Awadh. 2. Understand the major historical developments pertaining to the Uprising of 1857; Beginning of the Crown's Rule, and Impact of Social Reform Movements like BrahmoSamaj, AryaSamaj, SatyashodhakSamaj and Ramkrishan Mission. 3. Grasp the major historical developments related to the Emergence of Indian National Movement; Political Reforms of 1909 and 1919; Depressed Class Movement, and the Revolutionaries' Movement. 4. Acquaint with the role of Mahatma Gandhi in National Movement, role of Subhash Chandra Bose and INA, Prajamandal Movements in Princely States, and the circumstances leading to the Partition and Independence of India.		
Credits	Theory	Practical/Tutorial	Total
	03	-	03
Contact Hours	03	-	03
Max. Marks: 75 Internal Assessment Marks: 25 End Term Exam Marks: 50		Time: 3 Hrs.	

PartB-Contentsofthe Course

Instructions for Paper-Setter:

1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 10 marks.
2. The Compulsory Question shall consist of *five* short answer type questions of 02 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.

Unit	Topics	Contact Hours

I	Establishment of the British Rule: Battle of Buxar and its Aftermath Expansion of British Rule: Mysore and Marathas Consolidation of British Rule: Subsidiary Alliance System and Doctrine of Lapse Annexation of the States of Punjab, Sindh and Awadh	12
II	Uprising of 1857: Causes, Expansion and Results Government of India Act of 1858 and the Beginning of the Crown's Regime Socio-Religious Reform Movements: BrahmoSamaj, AryaSamaj, SatyashodhakSamaj and Ramkrishan Mission	11
III	Emergence of Indian National Movement under the Congress Political Reforms of 1909 and 1919 Depressed Class Movement with special reference to the Role of Dr. B.R. Ambedkar Revolutionaries in National Movement with special reference to Bhagat Singh	11
IV	Mahatma Gandhi and Indian Nationalism: Non-Cooperation, Civil Disobedience and Quit India Movements Subhash Chandra Bose and INA Prajamandal Movements in Princely States Communal Politics, Partition and Independence	11
V*	**Practical/Tutorial**	-
SuggestedEvaluationMethods		
InternalAssessment: **25 Marks** ➢ **Theory** • Class Participation: 05Marks • Seminar/presentation/assignment/quiz/class test etc.: 07 Marks • Mid-Term Exam: 13 Marks ➢ **Practicum** **N.A.** • Class Participation: • Seminar/Demonstration/Viva-voce/Lab records etc.: • Mid-Term Exam:		**End Term Examination: 50 Marks**
PartC-Learning Resources		
Recommended Books/e-resources/LMS: Bayly, C. A. *Indian Society and the Making of British Empire*, Cambridge, 1987. Bandopadhyaya, Shekhae *From Plassuy to Partition: A History of Modern India*, New Delhi,2004. Chahal, S.K. *Dalits Patronized: Indian National Congress and the Untouchables of India 1921-1947* (Only Introduction & Chapter I) ----------------- *Dr. B.R. Ambedkar: The Maker of Modern India*		

-----------------	*Hindu Social Reform: Framework of Jotirao Phule*
Chand, Tara	*History of Freedom Movement*, New Delhi, 1965.
Chandra Bipan,	*History of Modern India*, Orient Blackman, Hyderabad, 2019, Reprint.
-----------------	*Adhanuk Bharat KaItihas*, Delhi, 2009.
Chaurasia, R. S.	*History of Modern India*, Atlantic, New Delhi, 2002.
Desai, A. R.	*Social Background of Indian Nationalism*, Popular Book Depot., Bombay, 1959.
Dinkar, Ramdhari Singh	*SanskritiKe Char Adhyaya,* Sahitya Academy, 1956.
Dutt, R. C.	*Economic History of India*, 2 Vols. London, 1901, 1903.
Fisher, Michael (ed.)	*The Politics of the British Annexation of India, 1757-1857*, New Delhi, 1999.
Gopal, S.	*British Policy in India 1858-1905*, Cambridge University Press, Cambridge, 1965.
Grover, B. L. and Alka Mehta	*Modern Indian History*, S. Chand and Company, New Delhi, 2018.
Habibullah, A. B. M.	*The Foundation of Muslim Rule in India*, Central Book Depot, Allahabad, 1967
Kaul, Jolly Mohan	*Problems of National Integration*, New Delhi, 1963
Kothari, Rajni,	*Politics in India*, New Delhi 1947.
Kumaramangalam, S. Mohan,	*India's Language Crisis*, Madras, 1965.
Menon, V. P.	*Integration of the Indian States*, Madras 1985.
Omvedt, Gail	*Dalits and the Democratic Revolution: Dr. Ambedkar and the Dalit Movement in Colonial India*
O'Hanlon, Rosalind	*Caste, Conflict and Ideology: Mahatma Jotirao Phule and the Low Caste Protest in Nineteenth Century Western India*
Marshall, P. J.	*The Eighteenth Century in Indian History*, New Delhi, 2003.
Muir, R.	*The Making of British India, 1756-1857*, New Delhi, 1985.
Naoroji, Dadabhai	*Poverty and Un-British Rule in India*, London, 1901.
Pandey, Gyanendra,	*The Construction of Communalism in Colonial North India,* New Delhi, 1990.
Sarkar, Sumit,	*Aadhunik Bharat,* New Delhi, 2000.
Singh, Amarjit	*Divided Punjab: Politics of the Muslim League and Partition, 1935-1947*, New Delhi, 2001.
Spear, P.	*Oxford History of India*, New Delhi, 1974.
Stein, Burton	*A History of India*, Sussex, 2010.
Shukla, R. L. (ed.)	*Aadhunik Bharat KaItihas*, New Delhi, Delhi, 2003.

Semester-IV:

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CC-4/MCC-6

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Session: 2024-25	
PartA - Introduction	
Subject	History
Semester	4th
Name of the Course	History of India (1757-1947)
Course Code	B23-HIS-401
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC/MCC
Level of the course (As per Annexure-I	400-499
Pre-requisite for the course (ifany)	N.A.
CourseLearningOutcomes (CLO):	After completing this course, the learner will be able to: 1. Learn the major historical developments pertaining to the Establishment, Expansion and Consolidation of the British Rule in India and different Tools/Methods used for it by the British, and their Policy towards Princely States upto 1857. 2. Understand the major historical developments pertaining to the Uprising of 1857; Beginning of the Crown's Rule; Impact of Social Reform Movements like BrahmoSamaj, AryaSamaj, SatyashodhakSamaj and Ramkrishan Mission; Emergence of Indian National Movement under the Congress, and the Political Reforms of 1909 and 1919. 3. Grasp the major historical developments related to role of Revolutionaries in National Movement; the rise of Depressed Class Movement; Role of Mahatma Gandhi in National Movement; Role of Subhash Chandra Bose and INA in freedom struggle; Prajamandal Movements in Princely States and, the circumstances leading to the Partition and Independence of India. 4. Demonstrate the Expansion of the British Empire upto 1856, Centers of the Uprising of 1857, Centers of Revolutionary Movement and Centers of Gandhian Movements on the outline map of India and also explicate it historically.

Credits	Theory	Practical/Tutoria	Total

		1	
	03	01	04
Contact Hours	03	01	04

Max. Marks:	100	Time: 3 Hrs.
Internal Assessment Marks:	30	
End Term Exam Marks:	70	

PartB-Contentsofthe Course

Instructions for Paper-Setter:

1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 14 marks.
2. The Compulsory Question shall consist of *seven* short answer type questions of 2 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.
4. The Map Questions shall be carrying 14 marks each (09 Marks for map work and 05 marks for Explanatory Note). For visually disabled students, the part relating to the Explanatory Note shall carry full marks.

Unit	Topics	Contact Hours
I	Establishment of the British Rule: Battle of Buxar and its Aftermath Expansion of British Rule: Mysore and Marathas Consolidation of British Rule: Subsidiary Alliance System and Doctrine of Lapse British Policy towards Princely States: Punjab, Sindh and Awadh	15
II	Uprising of 1857: Causes, Expansion and Results Beginning of the Crown's Regime Socio-Religious Reform Movements: BrahmoSamaj, AryaSamaj, SatyashodhakSamaj and Ramkrishan Mission Emergence of Indian National Movement under the Congress Political Reforms of 1909 and 1919	15
III	Revolutionaries in National Movement with special reference to Bhagat Singh Depressed Class Movement with special reference to the Role of Dr. B.R. Ambedkar Mahatma Gandhi and Indian Nationalism: Non-Cooperation, Civil Disobedience and Quit India Movements Subhash Chandra Bose and INA Prajamandal Movements in Princely States Communal Politics, Partition and Independence	15

IV	**Maps (India):** Expansion of the British Empire upto 1856 Centers of the Uprising of 1857 Centers of Revolutionary Movement Centers of Gandhian Movements from 1920-1942	15
V*	**Practical/Tutorial**	15

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SuggestedEvaluationMethods

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InternalAssessment:	**30 Marks**	**End Term Examination: 70 Marks**
➢ **Theory**		
• Class Participation:	05Marks	
• Seminar/presentation/assignment/quiz/class test etc.:	10 Marks	
• Mid-Term Exam:	15 Marks	
➢ **Practicum**	**N.A.**	
• Class Participation:		
• Seminar/Demonstration/Viva-voce/Lab records etc.:		
• Mid-Term Exam:		

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PartC-Learning Resources

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Recommended Books/e-resources/LMS:

Bayly, C. A.   *Indian Society and the Making of British Empire*, Cambridge, 1987.

Bandopadhyaya, Shekhae   *From Plassuy to Partition: A History of Modern India*, New Delhi,2004.

Chahal, S.K.   *Dalits Patronized: Indian National Congress and the Untouchables of India 1921-1947*

--------------   *Dr. B.R. Ambedkar: The Maker of Modern India*

--------------   *Hindu Social Reform: Framework of Jotirao Phule*

Chand, Tara   *History of Freedom Movement*, New Delhi, 1965.

Chandra Bipan   *History of Modern India*, Orient Blackman, Hyderabad, 2019, Reprint.

---------------   *Adhanuk Bharat KaItihas*, Delhi, 2009.

Chaurasia, R. S.   *History of Modern India*, Atlantic, New Delhi, 2002.

Desai, A. R.   *Social Background of Indian Nationalism*, Popular Book Depot., Bombay, 1959.

Dinkar, Ramdhari Singh   *SanskritiKe Char Adhyaya,* Sahitya Academy, 1956.

Dutt, R. C.   *Economic History of India*, 2 Vols. London, 1901, 1903.

Fisher, Michael (ed.)   *The Politics of the British Annexation of India, 1757-1857*, New Delhi, 1999.

Gopal, S.   *British Policy in India, 1858-1905*, Cambridge University Press, Cambridge, 1965.

Grover, B. L. and Alka Mehta   *Modern Indian History*, S. Chand and Company, New Delhi, 2018.

Habibullah, A. B. M.   *The Foundation of Muslim Rule in India*, Central

	Book Depot, Allahabad, 1967
Kaul, Jolly Mohan	*Problems of National Integration*, New Delhi, 1963
Kothari, Rajni,	*Politics in India*, New Delhi 1947.
Kumaramangalam, S. Mohan	*India's Language Crisis*, Madras, 1965.
Menon, V. P.	*Integration of the Indian States*, Madras 1985.
Omvedt, Gail	*Dalits and the Democratic Revolution: Dr. Ambedkar and the Dalit Movement in Colonial India*
O'Hanlon, Rosalind	*Caste, Conflict and Ideology: Mahatma Jotirao Phule and the Low Caste Protest in Nineteenth Century Western India*
Marshall, P. J.	*The Eighteenth Century in Indian History*, New Delhi, 2003.
Muir, R.	*The Making of British India, 1756-1857*, New Delhi, 1985.
Naoroji, Dadabhai	*Poverty and Un-British Rule in India*, London, 1901.
Pandey, Gyanendra,	*The Construction of Communalism in Colonial North India,* New Delhi, 1990.
Sarkar, Sumit,	*Aadhunik Bharat,* New Delhi, 2000.
Singh, Amarjit	*Divided Punjab: Politics of the Muslim League and Partition, 1935-1947*, New Delhi, 2001.
Spear, P.	*Oxford History of India*, New Delhi, 1974.
Stein, Burton	*A History of India*, Sussex, 2010.
Shukla, R. L. (ed.)	*Aadhunik Bharat KaItihas*, New Delhi, Delhi, 2003.

MCC-7

Session: 2024-25	
PartA - Introduction	
Subject	History
Semester	4th
Name of the Course	Medieval Europe
Course Code	B23-HIS-402
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC
Level of the course (As per Annexure-I	400-499
Pre-requisite for the course (ifany)	N.A.
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to:

	1. Learn the major historical developments pertaining to the emergence of Carolingian Empire and its nature after the downfall of Roman Empire in medieval Europe. 2. Understand the major historical developments pertaining to the Imperial Age in medieval Europe, especially under the regime of Otto the Great, Frederic Barbosa, Frederic-II and Philip Augustus. 3. Grasp the historical processes pertaining to the rise of Feudalism; Feudal Culture & Society; Rise of Papacy and Causes and Effects of Crusades in Europe. Demonstrate the Political Conditions after the downfall of Roman Empire, Political Conditions under Charles the Great and Philip Augustus and Major Places connected with the Crusades on the outline map of Europe and also explicate it historically.		

Credits	Theory	Practical/Tutorial	Total
	03	01	04
Contact Hours	03	01	04

Max. Marks: Internal Assessment Marks: End Term Exam Marks:	100 30 70	Time: 3 Hrs.	

PartB-Contentsofthe Course

Instructions for Paper-Setter:

1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 14 marks.
2. The Compulsory Question shall consist of *seven* short answer type questions of 2 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.
4. The Map Questions shall be carrying 14 marks each (09 Marks for map work and 05 marks for Explanatory Note). For visually disabled students, the part relating to the Explanatory Note shall carry full marks.

Unit	Topics	Contact Hours
I	**The Carolingian Empire** Downfall of Roman Empire Coronation of Charlemagne Administration of Charles the Great Carolingian Renaissance	15

II	**The Imperial Age** Otto the Great Frederic Barbosa Frederic-II Philip Augustus	15
III	**Feudal Europe and Rise of Papacy** Rise of Feudalism Society & Culture of Feudal Europe Rise of Papacy: Investiture Controversy Pope Gregory VII and Pope Innocent III Crusades: Causes and Effects	15
IV	**Maps (Europe):** Political Conditions of Europe after the downfall of Roman Empire Europe under Charles the Great Europe under Philip Augustus Major Places Connected with the Crusades	15
V*	**Practical/Tutorial**	15

SuggestedEvaluationMethods

InternalAssessment: **30 Marks** ➢ **Theory** • Class Participation: 05Marks • Seminar/presentation/assignment/quiz/class test etc.: 10 Marks • Mid-Term Exam: 15 Marks ➢ **Practicum** **N.A.** • Class Participation: • Seminar/Demonstration/Viva-voce/Lab records etc.: • Mid-Term Exam:	**End Term Examinati on: 70 Marks**

PartC-Learning Resources

Recommended Books/e-resources/LMS:
- Anderson, Perry. *Passages from Antiquity to Feudalism*. London: NLB, 1974.
- Burns, J.H. (ed.). *The Cambridge History of Medieval Political Thought, 350-1450*. Cambridge: CUP, 2008.
- Figg, Kristen Mossler and John Block Friedman(ed.). *Arts and Humanities through the Ages: Medieval Europe, 814-1450*. New York: Thomson Gale, 2005.
- Gibbon, Edward. *The History of the Decline and Fall of the Roman Empire*. New York: Harper and Brothers, 1836 (4 Volumes).
- Gies, Frances and Joseph Gies. *Life in a Medieval Village*. London: HarperCollins, 2016.
- Hummer, Hans J. *Politics and Power in Early Medieval Europe: Alsace and Frankish Realm, 600-1000*. Cambridge: CUP, 2005.

- Lawrence, C.H. *Medieval Monasticism: Forms of Religious Life in Western Europe in the Middle Ages*. New York: Routledge, 2015.
- Mitchell, Linda E. *Family Life in the Middle Ages*. London: Greenwood Press, 2007.
- Nelson, Janet L. *Politics and Ritual in Early Medieval Europe*. London: The Hambleton Press, 1986.
- Pirenne, Henry. *Economic and Social History of Medieval Europe*. New York: A Harvest Book, 1937.
- Pirenne, Henry. *Medieval Cities: Their Origins and the Revival of Trade*. Princeton: Princeton University Press, 1969.
- Poston, M.M (ed.). *The Cambridge Economic History of Europe (Vol. III)*. Cambridge: CUP, 1965.
- Singman. Jeffrey L. *Daily Life in Medieval Europe*. London: Greenwood Press, 1999.
- Smith, Julia M.H. *Europe after Rome: A New Cultural History, 500-1000*. New York: OUP. 2005.
- Wickham, Chris. *Framing the Early Middle Ages: Europe and the Early Mediterranean, 400-800*. New York: OUP, 2005.
- Whalen Brett Edward. *The Medieval Papacy*. London: Palgrave Macmillan, 2014.

MCC-8

Session: 2024-25	
PartA - Introduction	
Subject	History
Semester	4th
Name of the Course	History of Haryana (From Earliest Times to 1966)
Course Code	B23-HIS-403
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC
Level of the course (As per Annexure-I	400-499
Pre-requisite for the course (ifany)	N.A.
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Learn the sources of History of Haryana; Extent of Harappan Civilization; Expansion of Vedic Culture; Rise of Republics of Yaudheyas, Kunindas and Pushpabhutis, and Rise of Pratiharas, Tomars and Chauhana in Haryana. 2. Acquaint with Invasions of Ghaznavi and Ghori and Establishment of Turkish Rule; Polity and Administration of Mughals; Impact of Islam, and Struggle for Supremacy among the Marathas, Jats, Sikhs and George Thomas

	during the 18th Century in Haryana. 3. Understand the major historical developments pertaining to the Establishment of the British Rule; Causes, Course and Effects of the Uprising of 1857; Social Awakening & Reform Movements; Freedom Struggle upto 1947; Parjamandal Movement in Princely States, and Formation of the State of Haryana. 4 Demonstrate the Major Excavated and Explored Sites of Harappan Civilization, Important Urban Centers during the Mughal Period, Major Centers of Uprising of 1857, Important Places connected with the Freedom Struggle, and Princely States connected with the Prajamandal Movement on the outline map of Haryana and also explicate it historically.		

Credits	Theory	Practical/Tutorial	Total
	03	01	04
Contact Hours	03	01	04

Max. Marks: Internal Assessment Marks: End Term Exam Marks:	100 30 70	Time: 3 Hrs.	

PartB-Contentsofthe Course

Instructions for Paper-Setter:

1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 14 marks.
2. The Compulsory Question shall consist of *seven* short answer type questions of 2 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.
4. The Map Questions shall be carrying 14 marks each (09 Marks for map work and 05 marks for Explanatory Note). For visually disabled students, the part relating to the Explanatory Note shall carry full marks.

Unit	Topics	Contact Hours
I	Sources of History of Haryana Extent of Harappan Civilization in Haryana Haryana under Vedic Age: Polity, Society and Culture Rise of Republics: Yaudheyas, Kunindas and Pushpabhutis Rise of Pratiharas, Tomars and Chauhans	15
II	Invasions of Ghaznavi and Ghori: Impact on Haryana Establishment of Turkish Rule: Resistance and Reconciliation	15

	Mughal Rule in Haryana: Polity and Administration Impact of Islam on Society and Culture Struggle for Supremacy during the 18th Century: Marathas, Jats, Sikhs and George Thomas		
III	Establishment of the British Rule and Effects Uprising of 1857: Causes, Course and Effects Social Awakening & Reforms: AryaSamaj and SanatanDharamSabha Freedom Struggle in Haryana upto 1947 Prajamandal Movement in Princely States Formation of Haryana State	15
IV	**Maps (Haryana):** Major Excavated and Explored Sites of Harappan Civilization Important Urban Centers during the Mughal Period Major Centers of Uprising of 1857 Important Places connected with the Freedom Struggle Princely States connected with the Prajamandal Movement	15
V*	**Practical/Tutorial**	15

SuggestedEvaluationMethods

InternalAssessment: **30 Marks**
  ➢ **Theory**
     • Class Participation: 05Marks
     • Seminar/presentation/assignment/quiz/class test etc.:   10 Marks
     • Mid-Term Exam: 15 Marks
  ➢ **Practicum**   **N.A.**
     • Class Participation:
     • Seminar/Demonstration/Viva-voce/Lab records etc.:
     • Mid-Term Exam:
	End Term Examinati on: 70 Marks

PartC-Learning Resources

Recommended Books/e-resources/LMS:

Buddha, Prakash — *Glimpses of Haryana*

-------------- — *Haryana Through the Ages*

Chhotu Ram — *BecharaKisan*(Hindi tr. by K.C. Yadav)

Darling, Malcolm — *Punjab Peasantry in Prosperity and Debt*

Gopal, Madan — *Sir Chhotu Ram : A Political Biography*

Griffin, L.H. — *The Rajas of Punjab*

Gupta, H.R. — *The Marathas and Panipat*

Hussain, Azim — *Fazl-i-Hussain : A Political Biography*

Jagdish Chandra — *Freedom Movement in Haryana*

-------------- — *Gandhi and Haryana*

Jones, K.W. — *Arya Dharma : Hindu Consciousness in the* 19th *Century Punjab*

Jones, K.W. — *Socio-Religious Reform Movements in British India*

Juneja, M.M. — *History of Hisar*

Kayo, Johan William — *Life of Lord Metcalfe,* Vols. I & II

Kundu, C.L. and Udai Shankar — *Education in Haryana*

Mittal, S.C. — *Haryana : A Historical Perspective*

Muztar, B.K. — *Haryana : Political and Cultural*

Nanda, J. — *Punjab Uprooted : A Survey of the Punjab Riots and Rehabilitation Problems*

Nurullah, S. &J.P.Naik — *History of Education in India*

Phadke, H.A. — *Haryana : Ancient and Medieval*

PremChaudhury — *Punjab Politics and the Role of Sir Chhotu Ram*

Saini, B.S. — *Social and Economic History of Punjab*

Sarkar, J.N. — *Fall of the Mughal Empire*

Sharma, S.R. — *Haryana KeSwantantrataSainani* (Hindi)

Shukla, S.P. — *Indian Freedom Struggle and the Role of Haryana*

Singh, Chattar — *Social and Economic Change in Haryana*

Singh, Chetan — *Region and Empire : Punjab in the* 17th *Century*

Singh, Fauja — *History of Punjab*

Singh, Pardaman, and S.P. Shukla — *Freedom Struggle in Haryana and Indian National Congress 1885-1985*

Singh, Ranjit — *Haryana KeAryaSamajKaItihas*(Hindi)

Talbot, Ian — *Punjab and the Raj*

Tanwar, R. — *The Politics of Sharing Power : The Punjab Unionist Party*

-------------- — *Reporting Partition of Punjab 1947 : Press, Public and Other Opinions*

Verma, D.C. — *Sir Chhotu Ram: Life and Times*

Yadav, B.N.S. — *Society and Culture of Northern India in the* 12th *Century*

Yadav, K.C. — *Haryana: Studies in History and Culture*

-------------- — *Haryana: ItihasEvamSanskriti*(Hindi), Vols. I & II

Session: 2024-25			
PartA - Introduction			
Subject	History		
Semester	4th		
Name of the Course	Social Formations and Cultural Patterns in Ancient & Medieval Times		
Course Code	B23-HIS-404		
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	DSE		
Level of the course (As per Annexure-I	400-499		
Pre-requisite for the course (ifany)	N.A.		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Learn the Role of Kinship Social Institutions in the Development of Early Societies; State Structure, Religion and Social Stratification in Civilizations of Egypt and China; Slave Society in Ancient Greece & Rome, and Polis in the Culture of Greek City States of Athens and Sparta. 2. Understand the Tribal Organization of Bedouin Society in Arabia; Tribal Formations and Organization of Mongol Society; Unification of the Tribes under Chenghiz Khan, and Rise of the Mongol Empire and its Socio-Cultural Impact. 3 Grasp the Principal Causes of Crisis of the Roman Empire; Debate on the Origins and Crisis of Feudal Society;Role of Church and Monastery; Society, Classes and Culture in Medieval Europe, and Position of Women in Medieval Europe. 4 Acquaint with Conversion of the Turks into Islam from Buddhism; Rise of the Ottoman Empire and its Society and Administration; Judaism and Christianity under Islam; rise of Carolingian Renaissance, and Art and Architecture in Medieval Europe.		
Credits	Theory	Practical/Tutorial	Total
	03	01	04

Contact Hours		03	01	04
Max. Marks: Internal Assessment Marks: End Term Exam Marks:		100 30 70	Time: 3 Hrs.	

PartB-Contentsofthe Course

Instructions for Paper-Setter:
1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 14 marks.
2. The Compulsory Question shall consist of *seven* short answer type questions of 2 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.

Unit	Topics	Contact Hours
I	Role of Kinship Social Institutions in the Development of Early Societies: Paleolithic and Mesolithic Cultures Civilizations of Egypt (Old Kingdom) and China (Shang): State Structure, Religion and Social Stratification Slave Society in Ancient Greece & Rome Polis in Ancient Greece: Athens and Sparta; Greek Culture	15
II	Bedouin Society in Arabia: Tribal Organization (Families and Clans), System of Alliances, Language and Poetry Mongol Society: Tribal Formations and Organization, Unification of the Tribes under Chenghiz Khan Rise of the Mongol Empire: 'The Golden Horde' – Tatar Rule in Russia and its Socio-Cultural Impact	15
III	Crisis of the Roman Empire and its Principal Causes The Feudal Society: Debate on its Origins and Crisis Religious Organizations: Role of Church and Monastery Society, Classes and Culture in Medieval Europe Position of Women in Medieval Europe: Witchcraft and Magic	15
IV	Conversion of the Turks into Islam from Buddhism Seljuks and Ottomans: Rise of the Ottoman Empire –Society and Administration Judaism and Christianity under Islam Carolingian Renaissance Art and Architecture in Medieval Europe	15
V*	**Practical/Tutorial**	15

SuggestedEvaluationMethods		
InternalAssessment: ➢ **Theory** • Class Participation: • Seminar/presentation/assignment/quiz/class test etc.: • Mid-Term Exam: ➢ **Practicum** • Class Participation: • Seminar/Demonstration/Viva-voce/Lab records etc.: • Mid-Term Exam:	**30 Marks** 05Marks 10 Marks 15 Marks **N.A.**	**End Term Examination: 70 Marks**

PartC-Learning Resources

Recommended Books/e-resources/LMS:

Allsen, Thomas T., *Culture and Conquest in Mongol Eurasia*, Cambridge University Press, March 2004.

Baker, Simon, *Ancient Rome: The Rise and Fall of an Empire*, Ebury Publishing, 2006.

Barthold, V., *A Secret History of the Mongols*, Cheng &Tsui Co, June 1999.

Bernal, Martin, *Black Athena: The Afro-Asiatic Roots of Classical Civilization*, Brunswick: Rutgers University Press, 1991.

Biran Michael, *The Empire of the QaraKhitai in Eurasian History Between China and the Islamic World*, Cambridge University Press, June 2008.

Bloch, Marc, *Feudal Society* (2 Vols.), Aakar Books, Revised Edition, July, 2017.

Brundage (ed.), *The Crusades*, Marquette University Press, 1962.

Burke, Edmund & Ira M. Lapidus, *Islam: Politics and Social Movements*, University of California Press, 1988.

Childe, V. Gordon, *What happened in History,* Peregrine Books, 1985.

Clark, G., *World Prehistory: A New Perspective*, Cambridge University Press, 1977.

Cohen, Mark, *Under Crescent and Cross: The Jews in the Middle Ages*, Princeton University Press, 2008.

Deansley, Margaret, *A History of Early Medieval Europe 476 to 911*, Methuen, 1956.

Farooqui, Amar, *Early Social Formations,* Manak Publications Pvt. Ltd. 2002.

Fagan, B., *People of the Earth: An Introduction to World Prehistory*, New York, NY Harper Collins College Publishers, 1977.

Glyn, Daniel, *First Civilizations,* New York: Thomas Y. Crowell (Apollo. Editions), 1968

Goff, Le, *Medieval Civilizations (400-1500)*, Blackwell Publishing, August 1991.

Hawkes, Jacquetta, *First Civilizations: Life in Mesopotamia, the Indus Valley and Egypt – The History of Human Society*, New York: Knopf, 1973.

Hitti, Philip K., *History of the Arabs*, Macmillan Education Ltd., First Edition, 1937.

Ikram, Salia, *Death & Burial in Ancient Egypt,* Cairo University Press, 2015)

Inalcik, Halil, *The Ottoman Empire*, Phoenix, December 2001.

Lewis, Bernard, *The Arabs in History*, Oxford University Press, 6th Edition, May 2002.

Lewis, Bernard, *The Jews of Islam*, 1984.

Man, John, *The Mongol Empire*, Penguin Random House, May 2015.

Pirenne, Heim, *Medieval Cities*, Princeton University Press, 1969.

Shaoyi, Bai, *An Outline History of China*, Beijing, Foreign Languages Press,1982.

Burns and Ralph, *World Civilizations*.
Smith, Leslie &Leyser, Conrad; *Motherhood, Women and Society in Medieval Europe (400-1400)*, Ashgate Publishing Ltd, 2011.
Stuard, Susan Mosher (Ed.), *Women in Medieval History and Historiography*, University of Pennsylvania Press; New edition, December, 1988.
Trigger, B., *Ancient Egypt: A Social History*, Cambridge University Press, 1983.
UNESCO Series: *History of Mankind*, Vols. I –III, 1963
Wenke, R.J., *Patterns in Prehistory*, Oxford University Press, USA; 5th edition 2006.

OR

DSE-1

Session: 2024-25	
PartA - Introduction	
Subject	History
Semester	4th
Name of the Course	Patterns of Capitalism in Modern Times
Course Code	B23-HIS-405
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	DSE
Level of the course (As per Annexure-I	400-499
Pre-requisite for the course (ifany)	N.A.
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to:
	1. Learn the major historical developments pertaining to the Transition from Feudalism to Capitalism; the Commercial Capital Stage, and the Agricultural Revolution in Europe.
	2. Understand the major historical developments pertaining to the beginning of Free Trade Capital Stage; Nature of Industrial Revolution in England, France and Germany, relation between Capitalism and Colonialism, and Impact of Industrial Capitalism on Europe.
	3 Grasp the major historical developments related to the Financial Capitalism Stage; relation between Capitalism and Imperialism; Crisis of Capitalism (1929); rise of Socialist Movements in Europe, and Capitalism and the World Wars.
	4 Demonstrate the Major Centers of Mercantile Capital,

		Centers of Industrial Capital, Centers of Big Business and Centers of Socialist Movements in Europe on the outline map of Europe and also explicate it historically.		
Credits		Theory	Practical/Tutorial	Total
		03	01	04
Contact Hours		03	01	04

Max. Marks: 100 Internal Assessment Marks: 30 End Term Exam Marks: 70	Time: 3 Hrs.

PartB-Contentsofthe Course

Instructions for Paper-Setter:
1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 14 marks.
2. The Compulsory Question shall consist of *seven* short answer type questions of 2 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.
4. The Map Questions shall be carrying 14 marks each (09 Marks for map work and 05 marks for Explanatory Note). For visually disabled students, the part relating to the Explanatory Note shall carry full marks.

Unit	Topics	Contact Hours
I	Capitalism: Definitions & Concepts Transition from Feudalism to Capitalism: Problems and Debates The First Stage: Commercial Capitalism and Mercantilism (1500-1750) – Origins, Nature & Impact Agricultural Revolution and the Enclosure Movement in Europe	15
II	The Second Stage: Free Trade Capitalism Nature of Industrial Revolution in England, France and Germany Capitalism and Colonialism Impact of Industrial Capitalism on European Society, Polity & Economy	15
III	The Third Stage: Financial Capitalism – Growth of Big Business in the Western World Capitalism and Imperialism Capitalism and World War – I Crisis of Capitalism: Economic Depression of 1929 Capitalism verses Socialism: Socialist Movements in Europe Capitalism and World War – II	15

IV	**Maps (Europe):** Major Centers of Mercantile Capital Major Centers of Industrial Capital Major Centers of Big Business Major Centers of Socialist Movements	15
V*	**Practical/Tutorial**	15

SuggestedEvaluationMethods		
InternalAssessment: **30 Marks** ➢ **Theory** • Class Participation: 05Marks • Seminar/presentation/assignment/quiz/class test etc.: 10 Marks • Mid-Term Exam: 15 Marks ➢ **Practicum** **N.A.** • Class Participation: • Seminar/Demonstration/Viva-voce/Lab records etc.: • Mid-Term Exam:		**End Term Examination: 70 Marks**

PartC-Learning Resources

Recommended Books/e-resources/LMS:

Chauhan, D. S.	*Europe KaItihas*(Hindi)
--------------	*Samkalin Europe* (Hindi)
Cipolla, Carlo M	*Before the Industrial Revolution: European Society and Economy1000-1700*
--------------	*Fontana Economic History of Europe,* Vols. II and III
Coleman, D. C. (ed.)	*Revisions in Mercantilism*
Davis, H. A. (ed.).	*Outline History of the World*
Davis, Ralph	*The Rise of the Atlantic Economics*
Dobb, Maurice	*Studies in the Developments of Capitalism*
Fisher, H.A.L.	*A History of Europe*
Gupta, Parthasarthi (ed.)	*AdhunikPaschimKaUday*(Hindi)
--------------	*Europe KaItihas*(Hindi)
Henderson, O. P.	*The Industrial Revolution on the Continent*
Hill, Christopher	*From Reformation to Industrial Revolution*
Hensley, F.H. (ed.)	*Modern History: Material Progress and World Wide Problems*
Joll, James	*Europe Since 1870: An International History* (Harper-Row, 1973)
--------------	*1870 Se Europe* (Hindi)
Morgan, K.O.	*Oxford Illustrated History of Britain 1789-1983*
Muller, Jerry	*The Mind & the Market*
Parker, G. and L. M. Smith	*General Crises of the Seventeenth Century*
Polanyi, Karl	*The Great Transformation: The Political and Economic Origins of Our Time*
Porter, Andrew	*European Imperialism 1860-1914*
Roberts, J.M.	*Europe 1880-1945*

Schumpeter, Joseph,	*Capitalism, Socialism and Democracy*
Vries, Jan De	*The Industrial Revolution and the Industrious Revolution*
Stavrianes, L. S.	*The World Since 1500*
Stephen, J. Lee.	*Aspects of European History 1494-1789*
Wallenstein,	*World System Analysis: An Introduction*
Wood, Anthony	*History of Europe 1915-1960*

Department of History
Kurukshetra University Kurukshetra
(Establishment by the State Legislature Act XII of 1956)

Structure, Syllabus of the Courses of Reading and Scheme of Examinations
Value Aided Courses
(History)
(according to the Curriculum Framework of U.G. Programmes under NEP-2020)
To be implemented w.e.f. the Session 2023-24
(in *Phased Manner*)

IScheme of the U.G. (VAC) Courses (History):

Semester	CourseType	CourseCode	Name of the Course	Credits	Contact Hours (per week)	Internal Assessment Marks	End Term Exam Marks	Max. Marks	Duration of Exam (Hrs.)
3	VAC-3	B23-VAC-314	Foundational Literature of Indian Civilization	2	2	15	35	50	3
4	VAC-4	B23-VAC-422	Historical Roots of Indian Knowledge Systems	2	2	15	35	50	3

VAC-3

Session: 2024-25	
PartA - Introduction	
Subject	History
Semester	3rd
Name of the Course	Foundational Literature of Indian Civilization
Course Code	B23-VAC-314
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	VAC
Level of the course (As per Annexure-I	300-399
Pre-requisite for the course (ifany)	-

CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to:
	1. Learn the different segments of Vedic literature, like, *Shruti, Smriti, Itihasa* and *Upveda*.
	2. Understand the different segments of Sangam literature, like, *Tolkappiyam, Ettuttokoi/Ettuthokai*, Pattuppattu, Patinenkilkanakku and thepost- Sangam works.
	3. Acquaint with different Buddhist texts, like, Tripitakas, *Jatakas, Milinda Panha, Dipavamsa, Mahavamsa Culavamsa, Mahavastu, Buddha Charita* and *Lalitavistara,* works of Select Buddhist Scholars and the Jain Religious Canons.
	4. Familiar with theEarly Scholars in Sanskrit and their Works, Sanskrit Literature in Science & Technology and Sanskrit Literature in Early Medieval India.

Credits	Theory	Practical/Tutorial	Total
	02	-	02
Contact Hours	02	-	02

Max. Marks:	50	Time: 3 Hrs.
Internal Assessment Marks:	15	
End Term Exam Marks:	35	

PartB-Contentsofthe Course

Instructions for Paper-Setter:
1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 07 marks.
2. The Compulsory Question shall consist of *seven* short answer type questions of 01 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.

Unit	Topics	Contact Hours
I	**Vedic Literature:** *Shruti Literature:* Vedas *and their* Samhitas, Brahmanas (attached to each Samhita); Aranyakas; Upanishads *Smriti Literature:* Vedangas*,* Smritis (*Manusmriti* and Others) *Itihasa:* Puranas, *Ramayana* and *Mahabharta* *Upveda:* Ayurveda, Dhanurveda, Gandharvaveda*, Upangas*	7
II	**Sangam Literature:** 2nd Sangam work: *Tolkappiyam*	8

140

	3nd Sangam works:*Ettuttokoi/Ettuthokai,* Pattuppattu and Patinenkilkanakku Post-Sangam works: Silappadikaram, Manimekalai, Jivaka Chintamani, Valaiyapati and Kundalakesi	
III	**Buddhist & Jain Literature** Buddhist Texts: Tripitakas, *Jatakas, Milinda Panha, Dipavamsa, Mahavamsa Culavamsa, Mahavastu, Buddha Charita* and *Lalitavistara* Select Buddhist Scholars:Moggaliputta Tissa,Asvaghosa, Nagarjuna Jain Religious Canons: *12 Angas, 12 Upangas, 6 Chedasutras, 4 Mulasutras, 10 Prakirnaka sutras, 2 Culikasutras, Acharang Sutra (Acaranga Sutra), Kalpa Sutra*	8
IV	Early Scholars in Sanskrit and their Works: Baudhayana, Manava, Apastamba, Katyayan, Asvaghosha, Sudraka, Bhasa, Kalidasa, Bharavi, Magha Vishakhadatta and Vatsyayana Sanskrit Literature in Science & Technology:Aryabhatta, Varahamihira, Bhaskaracharya, Pingala, Bhaskara, Madhava Sanskrit Literature in Early Medieval India: *Shriharsha,Kalhana* and *Jayadeva*	7
V*	**Practical/Tutorial**	-

<table>
<tr><td colspan="3" align="center">SuggestedEvaluationMethods</td></tr>
</table>

InternalAssessment:	**15 Marks**	**End Term Examination: 35 Marks**
➢ **Theory**		
• Class Participation:	04Marks	
• Seminar/presentation/assignment/quiz/class test etc.:	04 Marks	
• Mid-Term Exam:	07 Marks	
➢ **Practicum**	**N.A.**	
• Class Participation:		
• Seminar/Demonstration/Viva-voce/Lab records etc.:		
• Mid-Term Exam:		

<table>
<tr><td colspan="3" align="center">PartC-Learning Resources</td></tr>
</table>

Recommended Books/e-resources/LMS:

Arvind, Shri, *Bhartiya Sanskriti Ke Adhar*(Hindi)*,*Arbindo Ashram, Pondeycheri.
Bhagvadatt, *Vrihad Bharat Ka Itihas*(Hindi), Pranav Prakashan, New Delhi.
Dharampal, *The Beautiful Tree*, Other India Press, Delhi,1995.
Dinkar, Ramdhari Singh, *Sanskriti Ke Char Adhyaya*(Hindi)*,* Sahitya Academy, New Delhi, 1956.
Durant, Will, *The Story of Civilization*, US, Jan. 1993 (11 Vol)
Dwivedi, Kapil Dev, *Vedon Mein Tatva Gyan*(Hindi), Tatva Bharti Anusandhan Parishad, New Delhi, 2014.
Elliott, Faith Robertson, Elliott, *Gender, Family and Society,* St. Martin press, New York,1996.
Ginshurg, Zekuthial, *New light on Our Numerals.*

Flueckiger,JoyceandLaurieSears(eds.),
BoundariesoftheText:EpicPerformancesinSouthandSoutheastAsia,AnnArbor:CentreforSouthandSoutheastAsianStudies, 1991.

Karashima,Noboru,   *SouthIndianHistoryandSociety:StudiesfromInscriptions,AD850-1800*,New Delhi, 1984.

———,*SouthIndianSocietyinTransition:AncienttoMedieval*,NewDelhi, 2009.

Klokke,Marijke(ed.),
NarrativeSculptureandLiteraryTraditionsinSouthandSoutheastAsia(Studiesin
AsianArtand Archaeology,Vol.23)Leiden,Boston,Köln:Brill, 2000.

Mahalingam,T.V., *SouthIndianPolity*,Madras, 1955.

Maurice, Thomas, *Indian Antiquities*, Pub. T. Maurice, London,1806.

Mittal, Satish Chand, *Bhartiya Sanskriti Ke Char Adhyaya*(Hindi)*,* ABISY, New Delhi, 2018.

Mohan, Narendra, *Bhartiya Sanskriti*(Hindi), Prabhat Prakashan, New Delhi, 2011.

Pande,AnupaandParulPandyaDhar(eds.),
*CulturalInterfaceofIndiawithAsia:Religion,Artand
Architecture,*D.K.Printworld,NewDelhi, 2004.

Pandey, Govind Chandra, *Bhartiya Sanskriti*, Hindi Grantha Academy, Bhopal, 2008.

———, *Vedic Sanskriti*, Lok Bharti Prakashan, Allahabad.

Pandey, Omprakash, *Drishvya Jagat Kayatatat*(Hindi), Prabhat Prakashan, New Delhi, 2005.

Pandey, Rajbali, *Bhartiya Puralipi*(Hindi),Lok Bharti Prakashan, Allahabad, 1998.

Pollock,Sheldon,   *LanguageoftheGodsintheWorldofMen:Sanskrit,CultureandPower   in
Pre-modernIndia,*PhilipE. LilienthalBooks, 2006.

Rao,
Narayana,Velcheru,DavidShulaman&SanjaySubrahmanyam,*SymbolsofSubstance:CourtandStateinNayakaPeriodTamilnadu*,NewDelhi, 1992.

Ray,HimanshuPrabha
(ed.),*SacredLandscapesinAsia:SharedTraditions,MultipleHistories*,IICAsiaProject,Manohar,NewDelhi, 2007.

SchobertJuliane(ed.),*SacredBiographyintheBuddhistTraditionsofSouthandSoutheastAsia*,UniversityofHawaiiPress, Honolulu, 1997.

Tarling,Nicholas   (ed.),
*TheCambridgeHistoryofSoutheastAsia,*Vol.I,Part1(beginningsto1500CE),   Cambridge
University Press.

VAC-4

Session: 2024-25	
PartA - Introduction	
Subject	History
Semester	4th
Name of the Course	Historical Roots of Indian Knowledge Systems
Course Code	B23-VAC-422
CourseType: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	VAC
Level of the course (As per Annexure-I	400-499
Pre-requisite for the course (ifany)	N.A.
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Acquaint with theDebates onTime, Space, Nature and Character in Ancient India;Philosophical Thoughts, particularly Perceptionof *Dharma* and *Darshan;*Political and Economic Thoughts;Health Consciousness and Systems of Preventive Medicine & Therapies, and Indian Worldview of Knowledge, Individual and Society. 2. Understand the Major Developments in Scientific Knowledge in India till 12th Century; Social Organization of Knowledge and Interlinkage between Folk and Classical Traditions; Concept of Rationality and Scientific Ideas in Indo-Islamic Thought, and Indigenous Technical Knowledge Traditions in India. 3. Grasp the Introduction ofArabic Technologies and its Vital Impact on India; Interaction between Unani and Ayurveda in Medieval India, and Astronomy in the Arabic Science and its Impact on India. 4. Familiar with the Colonial Knowledge Interventions and Interaction between Indian and Western Knowledge Systems; Nationalist and other Discourses on Indian Knowledge Traditions; Emergence of the 'National

	Science' in Modern India, and Contributions of M.L. Sarkar, P.C. Ray, J.C. Bose and Meghnad Saha.

Credits	Theory	Practical/Tutorial	Total
	02	-	02
Contact Hours	02	-	02

Max. Marks:	50	Time: 3 Hrs.	
Internal Assessment Marks:	15		
End Term Exam Marks:	35		

<table>
<tr><td colspan="4" align="center">PartB-Contentsofthe Course</td></tr>
</table>

Instructions for Paper-Setter:

1. Nine questions shall be set in all, two questions from each Unit I-IV and Question No 1, that is, Compulsory Question, by taking CLOs into consideration. Each question shall carry 07 marks.
2. The Compulsory Question shall consist of *seven* short answer type questions of 01 marks each which shall be spread over the whole syllabus.
3. The candidate shall be required to attempt *five* questions in all selecting one each question from Unit I-IV and the Compulsory Question.

Unit	Topics	Contact Hours
I	Ancient Indian Knowledge Systems: Debates onTime, Space, Nature and Character IndianPhilosophical Thoughts: Perception of *Dharma/Dhamma* and *Darshan* Indian Political & Economic Thoughts Health Consciousness (Science of Life) and the Systems of Preventive Medicine & Therapies: *Ayurveda*, *Yoga* and Naturopathy Knowledge, Individual and Society: The Indian Worldview	8
II	Major Developments in Scientific Knowledge in India till 12th Century: Mathematics, Astronomy and Medical Science Social Organization of Knowledge: Folk and Classical Traditions and its Interlinkage Concept of Rationality and Scientific Ideas in Indo-Islamic Thought: Fathullah Shirazi and others Indigenous Technical Knowledge Traditions	7
III	Introduction of Arabic Technologies and its Vital Impact on India: Persian Wheel, Gun Powder, Textiles, Bridge Building and Alchemy	7

	Developments in Medical Knowledge and Interaction between Unani and Ayurveda in Medieval India Astronomy in the Arabic Science and its Impact on India with Special Reference to Sawai Jaisingh	
IV	Colonial Knowledge Interventions and Interaction between Indian and Western Knowledge Systems Nationalist and other Discourses on Indian Knowledge Traditions: Vivekananda, M.K. Gandhi, Ravindranath Tagore, Jawaharlal Nehruand B.R. Ambedkar Emergence of the 'National Science' in Modern India Contributions of M.L. Sarkar, P.C. Ray, J.C. Bose and Meghnad Saha	8
V*	**Practical/Tutorial**	-

SuggestedEvaluationMethods		

InternalAssessment:	**15 Marks**	**End Term Examination: 35 Marks**
➢ **Theory**		
• Class Participation:	04Marks	
• Seminar/presentation/assignment/quiz/class test etc.:	04 Marks	
• Mid-Term Exam:	07 Marks	
➢ **Practicum**	**N.A.**	
• Class Participation:		
• Seminar/Demonstration/Viva-voce/Lab records etc.:		
• Mid-Term Exam:		

PartC-Learning Resources

Recommended Books/e-resources/LMS:

Alavi, M.A. & A. Rahman, *Fathullah Shirazi: A Sixteenth Century Indian Scientist*

Alavi, S. & Attewell, G.N.A., *Islam and Healing: Loss and Recovery of an Indo-Muslim Medical Tradition 1600-1900*. Basingstoke: Palgrave Macmillan, 2008.

Altekar, A.S., *Education in Ancient India,* Nand Kishore & Bros, Varanasi, 1944.

Arnold, D.,*ColonizingtheBody:StateMedicineandEpidemicDiseaseinNineteenth-Century*Arvind, Shri, *Bhartiya Sanskriti Ke Adhar* (Hindi),Arbindo Ashram, Pondeycheri.

Baber, Zaheer, *The Science of Empire: Scientific Knowledge, Civilization and Colonial Rule in India.*

Bagchi, Ashoke K, *Medicine in Medieval India: 11th to 18th Centuries*, KonarkPublishers,Delhi,1997.

Bhagvadatt, *Vrihad Bharat Ka Itihas*(Hindi), Pranav Prakashan, New Delhi.

Bose, D.M. et. al., *A Concise History of Science in India.*

Brooke, J.H., *Science and Religion: Some Historical Perspectives.*

Chattopadhaya, Debiprasad, *History of Science and Technology in Ancient India.*

Dharampal, *The Beautiful Tree*, Other India Press, Delhi,1995.

Dinkar, Ramdhari Singh, *Sanskriti Ke Char Adhyaya*(Hindi)*,* Sahitya Academy, New Delhi, 1956.

Dwivedi, Kapil Dev, *Vedon Mein Tatva Gyan*(Hindi), Tatva Bharti Anusandhan Parishad, New

Delhi, 2014.

Garcia-Balleser, Luis, *MedicineinaMulticulturalSociety:Christian,JewishandMuslimPractitionersintheSpanish Kingdoms 1222-1610*,England,AshgatePublishing,2001.

Ghosh, A.K., *A Short History of the Development of Homeopathy in India*, New Delhi: Orient Longman, 2007.

Gupta, Beni,*MedicalBeliefsandSuperstitions,*SundeepPrakashan,Delhi,1979.

Guy, Attewell,*RefiguringUnaniTibb:PluralHealinginLateColonialIndia*,NewDelhi:OrientLongman, 2007.

Habib, Irfan, *Medieval Technology: Exchanges between India and Islamic World*

Harrison, Mark, *Public Health in British India: Anglo-Indian Preventive Medicine1859-1914*,Cambridge:CambridgeUniversityPress,1994.

Hassan, Ahmad Y. & Donald R. Hill, *Islamic Technology: An Illustrated History*

Kumar, Deepak, *Science and the Raj*

Mukharji, P.B., *Nationalizing the Body: The Medical Market, Print and DaktariMedicine*,London: Anthem2009.

Pande,AnupaandParulPandyaDhar(eds.), *CulturalInterfaceofIndiawithAsia:Religion,Artand Architecture,*D.K.Printworld,NewDelhi, 2004.

Pati, BiswamoyandMarkHarrison (eds.),*TheSocialHistoryofHealthandMedicineinColonialIndia,* London:Routledge,2009.

———, *Health, Medicine and Empire*, NewDelhi:Orient Longman, 2001.

Pollock,Sheldon, *LanguageoftheGodsintheWorldofMen:Sanskrit,CultureandPower in Pre-ModernIndia,*PhilipE. LilienthalBooks, 2006.

Macleod, Roy & Deepak Kumar (eds.), *Technology and the Raj: Western Technology and Technical Transfers to India 1700-1947*

Mittal, Satish Chand, *Bhartiya Sanskriti Ke Char Adhyaya*(Hindi),ABISY, New Delhi, 2018.

Mookherjee, Radha K., *The Fundamental Unity of India,* Longsman, Calcutta, 1914.

Qaisar, A.J., *Indian Response to European Technology and Culture*

Ray, Aniruddha & S.K. Bagchi, *Technology in Ancient and Medieval India*

Ray,HimanshuPrabha (ed.),*SacredLandscapesinAsia:SharedTraditions,MultipleHistories*,IICAsiaProject,Man ohar,NewDelhi, 2007.

Sangwan, Satpal, *Science, Technology and Colonization: An Indian Experience*

SchobertJuliane(ed.),*SacredBiographyintheBuddhistTraditionsofSouthandSoutheastAsia ,*UniversityofHawaiiPress, Honolulu, 1997.

Tarling,Nicholas (ed.), *TheCambridgeHistoryofSoutheastAsia,*Vol.I,Part1(beginningsto1500CE), Cambridge University Press.

Wujastyk, D. *The Roots of Ayurveda,* New Delhi: Penguin, 1999.

Bachelor of Business Administration (Honours)
Scheme of Examination (w.e.f. the Session 2021-22)
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AECCB-EVS-N100
Environment Studies

Credits: 2; Maximum Marks: 50 (25/Int. + 25/End-Term);
Minimum Pass Marks: 20 (10/Int. + 10/End-Term); Time for End-Term Exam: 3 Hours

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)

<div align="right">(8 lectures)</div>

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

<div align="right">(16 lectures)</div>

Unit III

Environmental Pollution

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

•Nuclear hazards and human health risks

<div align="center">148</div>

•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

Bachelor of Business Administration (Honours)
Scheme of Examination (w.e.f. the Session 2021-22)

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Notes regarding paper code:
(a). CC = Core Course; SEC = Skill Enhancement Course; AEC = Ability Enhancement Course; DSE = Discipline Specific Elective
(b). The first digit represents the Semester; the second digit differentiates among the Subjects in a semester

Semester I (Marks: 600; Credits: 27)

Code	Nomenclature	Credits	Maximum Marks (Internal + End-Term)	Minimum Pass Marks (Internal + End-Term)	Time for End-Term Examination
CC-11	Conceptual Foundations of Management	5	100 (30+70)	40 (12+28)	3 Hours
CC-12	Business Economics	5	100 (30+70)	40 (12+28)	3 Hours
CC-13	Fundamentals of Accounting	5	100 (30+70)	40 (12+28)	3 Hours
SEC-11	Business Mathematics	4	100 (30+70)	40 (12+28)	3 Hours
SEC-12	Essential Computer Skills	4	100 (30+30^{Practical}+40)	40 (12+12^{Practical}+16)	2 Hours
AEC-11	Vyavharik Hindi	4	100 (30+70)	40 (12+28)	3 Hours
	OR				
AEC-12	Fundamentals of English[*]	4	100 (30+70)	40 (12+28)	3 Hours

[*] for foreign students only.

Semester II (Marks: 600; Credits: 27)

Code	Nomenclature	Credits	Maximum Marks (Internal + End-Term)	Minimum Pass Marks (Internal + End-Term)	Time for End-Term Examination
CC-21	Organization Behavior	5	100 (30+70)	40 (12+28)	3 Hours
CC-22	Principles of Marketing	5	100 (30+70)	40 (12+28)	3 Hours
CC-23	Entrepreneurial Development	5	100 (30+70)	40 (12+28)	3 Hours
SEC-21	Soft Skills & Personality Development	4	100^{Internal}	40	-NA-
AEC-21	Proficiency in English	4	100 (30+70)	40 (12+28)	3 Hours
B-EVS-N100	Environment Studies	2	50 (25+25)	20 (10+10)	3 Hours
AEC-23	Viva-Voce [a]	2	50	20	-NA-

on the learning in the first two semesters.

Bachelor of Business Administration (Honours)
Scheme of Examination (w.e.f. the Session 2021-22)

Notes regarding paper code:
   (a). CC = Core Course; SEC = Skill Enhancement Course; AEC = Ability Enhancement Course; DSE = Discipline Specific Elective
   (b). The first digit represents the Semester; the second digit differentiates among the Subjects in a semester

Semester V
CC-51: Cost Accounting
Credits: 4; Maximum Marks: 100 (30/Int. + 70/End-Term);
Minimum Pass Marks: 40 (12/Int. + 28/End-Term); Time for End-Term Exam: 3 Hours
Course Objectives: To make the students understand the basics of cost accounting.

Course Content:

Unit-I: Cost Accounting: Meaning, Definition, Objectives, Advantages and Limitations; Difference between Cost Accounting and Financial Accounting. Installation of a Costing System. Difficulties s in Installing a Costing System. Methods and techniques of Cost Accounting; Cost Units and Cost Centers; Elementsand Classification of Cost. Cost Sheet and Components of Total Cost.

Unit-II: Materials Control: Meaning, Need, Purchasing and Function of Purchase Department. Purchase Procedure. Stores Control: Maximum Level, Minimum Level, Safety Level, EOQ, Material Records, Stores Ledger, Perpetual Inventory System, Continuous Stock-taking.

Unit-III: Labor Cost, System of Wage Payment, Time Wage System and Piece Rate System. Premium and Bonus Plans. Marginal Costing: Meaning, Characteristics, Merits and Limitations.

Unit-IV: Overheads: Introduction, Classification, Codification, Source of Collection, Departmentalization, Allocation, and Apportionment. Job and Batch Costing, Process Costing.

Unit-V: Contract Costing: Reconciliation of Cost and Financial Accounts, Cost Audit and Cost Reduction.

Note:The examiner will set *eleven* questions in all. Question number one will be compulsory, and would contain *five* parts of *four* marks each (one part from each unit). Further, *two* questions of *ten* marks each are to be set from each of the five units. The students will be required to attempt *six* questions—the compulsory question, and one question from each of the five units.

Suggested Readings:
   1. Saxena, V. K.: Basics of Cost Accounting, Excel Books, NewDelhi,2004.
   2. Arora, M. N.: Cost Accounting Principles and Practices, Vikas Publishing House, New Delhi, 2009.
   3. Pillai: Cost Accountings. Chand, New Delhi,2005.
   4. Thakur, K. S.: Cost Accounting Theory and Practice, Excel Books, 2009.
   5. Jain: Cost Accounting, Prentice Hall, New Delhi, 2005.
   6. Kishore Ravi: Cost & Management Accounting, Taxman Allied Services, New Delhi, 2005.

CC-52: International Business

Credits: 4; Maximum Marks: 100 (30/Int. + 70/End-Term);
Minimum Pass Marks: 40 (12/Int. + 28/End-Term); Time for End-Term Exam: 3 Hours

Course Objectives: To make the students acquaint the students with concepts of international business, focus areas in the international trade and globalization trends.

Course Content:

Unit-I: International Business: Concept, Nature, Importance, and Growth of International Business in India. Recent trends in export and import in India. Top ten Indian trade partners/countries in last decade.

Unit-II: Foreign investment: Nature, Status and Trends in Foreign Direct Investment (FDI), Foreign Institutional Investment (FII), Overseas Direct Investment (ODI), Overseas Indirect/Portfolio Investment, Salient Features of MNEs, Positive and Negative Impacts of MNE's on home and host countries.

Unit-III: Environmental impact of factors in international business: Cultural Environment and Cultural Shock, Political Environment- Political Risk and Management, Solution to legal Issues and economic factors/indicators affecting business.

Unit-IV: Ways to conduct international business, Rationale for Government intervention and control, Trade Barriers and Facilities provided by Govt. to business enterprises operating internationally. Role of WTO in promoting world Trade.

Unit-V: International economic and business integrations: Reasons for Integration, Types of Integrations, Objectives and impacts of USMCA (earlier NAFTA) and Learnings to India from USMCA, Objectives and impacts of SAARC, SAFTA, BRICS, G-20 and role of India in these economic forums.

*Note***:**The examiner will set *eleven* questions in all. Question number one will be compulsory, and would contain *five* parts of *four* marks each (one part from each unit). Further, *two* questions of *ten* marks each are to be set from each of the five units. The students will be required to attempt *six* questions—the compulsory question, and one question from each of the five units.

Suggested Readings:

1. Daniels, Johan and Lee H. RedeBaugh: International Business Environment and Operations, Readings.
2. Blackand Sundaram: International Business Environment, Prentice Hall of India, New Delhi.
3. Ashwathappa, International Business
4. P.G. Apte, International Financial Management, TMH.
5. Czinkota Ronkainen Moffett, International Business, Wiley India
6. Vyuptakesh Sharan, International Business, Pearson Education
7. Cullen and Parboteeah, International Business, Routledge

CC-53: Taxation Laws

Credits: 4; Maximum Marks: 100 (30/Int. + 70/End-Term);
Minimum Pass Marks: 40 (12/Int. + 28/End-Term); Time for End-Term Exam: 3 Hours

Course Objectives: This course is aimed at making the students to learn direct tax laws, which in turn would help them in assessing tax liability of different entities.

Course Content:

Unit-I: Income Tax Act 1961: Basic Concepts: Assessment Year, Previous Year, Person, Assesses, Income under Income Tax Act 1961, Agricultural Income, Tax Planning and Tax Management, Residential Status, Incidence of Tax, Income Exempted from Tax. Recent major amendments in Income Tax Act 1961.

Unit-II: Heads Classification & Computation of Income Tax: Salaries, Income from House Property.

Unit-III: Heads Classification & Computation of Income Tax: Income from Business or Profession, Capital Gains & Income from Other Sources, Aggregation of Income, Set Off & Carry Forward of Losses, Clubbing of Income.

Unit-IV: Deductions from Gross Total Income & Tax Liability, Rebates and Relief from Income Tax, Assessment of Individual Income Tax.

Unit-V: TDS, Advance Tax, An Overview of Income Tax Authorities of India, Types of Returns, Types of assessment, PAN, E-Filing of return, Recovery and refund of tax.

Note:The examiner will set *eleven* questions in all. Question number one will be compulsory, and would contain *five* parts of *four* marks each (one part from each unit). Further, *two* questions of *ten* marks each are to be set from each of the five units. The students will be required to attempt *six* questions—the compulsory question, and one question from each of the five units.

Suggested Readings:

1. Lal, B. B. & Vashisht Nitin: Income Tax & Central Sales Tax- Law & Practice, (Pearson Education).
2. Singhania, Vinod K. & Singhania Monica: Students Guide to Income tax, (Taxman).
3. Mehrotra: Indian Taxation Laws, (Sahitya Bahvan).
4. Ahuja, G. K.& Ravi Gupta: Systematic Approach to Income Tax
5. Lokhotia, R.N.: Corporate Tax Planning, Latest Edition, (Vision Publications, Delhi)
6. Singhania, V.K.: Direct Tax Planning & Management, (Taxman Publication, Delhi).
7. K.C. Jain & V.K. Gaur: Taxation – Law & Practice (Kalyani Publications).
8. Jagdish Gupta, Mukta Jain and Rakesh Jain- Income tax (V.K. Publication).

CC-54: Labor Laws

Credits: 4; Maximum Marks: 100 (30/Int. + 70/End-Term);
Minimum Pass Marks: 40 (12/Int. + 28/End-Term); Time for End-Term Exam: 3 Hours

Course Objectives: The course aims at providing students good understanding of such labour laws as have major bearing on the Industrial Relations in India.The laws are to be studied with reference to its Objectives, Major Provisions, and Working.

Course Content:

Unit-I: Labour Legislation: Meaning, Need, Importance, Fundamental Principles Labour Policy in India; Growth of Labour Legislation in India

Unit-II: Salient features and recent amendments in The Industrial Disputes Act, 1947.

Unit-III: Salient features and recent amendments in Trade Union Act 1923, Industrial Employment (Standing Orders) Act, 1946, and The Maternity Benefits Act, 1961.

Unit-IV: Salient features and recent amendments in The Factories Act, 1948.

Unit-V: Salient features and recent amendments in The Workmen's Compensation Act, 1923 and The Employee's State Insurance Act, 1948.

Note:The examiner will set *eleven* questions in all. Question number one will be compulsory, and would contain *five* parts of *four* marks each (one part from each unit). Further, *two* questions of *ten* marks each are to be set from each of the five units. The students will be required to attempt *six* questions—the compulsory question, and one question from each of the five units.

Suggested Readings:
1. Kapoor, N.D.: Industrial Laws, Sultan Chand & Sons, New Delhi.
2. Malik, P.K.: Industrial Law, Eastern Book Co, Lucknow.
3. Universals Labour Law Reference, Universal Law Publishing Co., Delhi.
4. Mishra S.N. & S.K. Mishra S.K.: An Introduction to Labour & Industrial Laws, Central Law Publications, Allahabad.
5. Pillai, K.M.: Labour & Industrial Laws, Allahabad Law Agency, Faridabad.

SEC-51: Business Research Methods

Credits: 4; Maximum Marks: 100 (30/Int. + 70/End-Term);
Minimum Pass Marks: 40 (12/Int. + 28/End-Term); Time for End-Term Exam: 3 Hours

Course Objectives: To acquaint the students with thefundamentals ofbusiness research methods

Course Content:

Unit-I: Introduction to Business Research: Importance and relevance of research in business administration; Types of business research; An overview of research process. Ethical considerations in business research:Informed consent and data privacy; Avoiding plagiarism and academic misconduct

Unit-II: Research design and methodology: Formulating research questions and objectives; Experimental, survey, case study, and observational research designs; Sampling techniques and sampling errors

Unit-III: Data collection methods: Questionnaire design and survey administration; Interviews: structured, semi-structured, and unstructured; Observational research methods; Secondary data sources and archival research; Validity and reliability in research

Unit-IV: Data preparation: Editing, coding, data entry. Data Analysis:Descriptive statistics and inferential statistics in the business context; Hypothesis testing and statistical significance in business research; Introduction to statistical software (e.g., SPSS, Excel) for business data analysis

Unit-V: Advanced topics in business research: Factor analysis; Conjoint Analysis, Cluster Analysis, Multidimensional Scaling. Big data analytics and data mining applications in business research. Reporting and Presentation of Business Research Findings

*Note***:**The examiner will set *eleven* questions in all. Question number one will be compulsory, and would contain *five* parts of *four* marks each (one part from each unit). Further, *two* questions of *ten* marks each are to be set from each of the five units. The students will be required to attempt *six* questions—the compulsory question, and one question from each of the five units.

Suggested Readings:

1. Cooper and Schindler: Business Research Methods, 8thedition, Tata McGraw Hill.
2. Kothari, C. R.: Research Methodology, New Age International Publishers.
3. Shekharan &Uma: Business Research Methods, A Skill-Building Approach, 7th ed., New York, John Willy, 2002.
4. Creswell, John W.: Research Design-Qualitative & Quantitative Methods, New York, John Willy, 2002.

DSE-51: Principles of Insurance

Credits: 5; Maximum Marks: 100 (30/Int. + 70/End-Term);
Minimum Pass Marks: 40 (12/Int. + 28/End-Term); Time for End-Term Exam: 3 Hours

Course Objectives: To acquaint students with the managerial issues in the insurance sector

Course Content:

Unit-I: Insurance-Evolution, Nature, Classification-Life, Non-life and Re-insurance, Principles of Insurance, Rights and Duties of Insurer and Insured, An overview of Laws related to insurance.

Unit-II: Importance of Insurance, Distribution Channels in insurance and their functions- Individual Agents, Corporate Agents etc.

Unit-III: Role of Actuaries, Role of IRDAI, Conflict resolution mechanism and protection of rights of insured in India.

Unit-IV: Life Insurance–Concept; Top performing Life Insurance companies in India sector-wise, Public &Pvt. Sector companies in India – their products, schemes & plans.

Unit- V: General Insurance–Concept, Types; Top performing General Insurance companies in India sector-wise Public and Pvt. Sector companies in India– their products, schemes & plans.

*Note***:** The examiner will set *eleven* questions in all. Question number one will be compulsory, and would contain *five* parts of *four* marks each (one part from each unit). Further, *two* questions of *ten* marks each are to be set from each of the five units. The students will be required to attempt *six* questions—the compulsory question, and one question from each of the five units.

Suggested Readings:

1. Nalini Prave Tripathy, Prabir Pal, 'Insurance theory and practice', TMH Jyotsna Sethi & Nishevan Bhatia, 'Elements of Banking and Insurance', PHI
2. Neelam C. Gulatik,'Principles of Insurance Management', Excel Books

DSE-52: Sales Management

Credits: 5; Maximum Marks: 100 (30/Int. + 70/End-Term);
Minimum Pass Marks: 40 (12/Int. + 28/End-Term); Time for End-Term Exam: 3 Hours

Course Objectives: To develop fundamental sales management skills

Course Content:

Unit-I: Sales Management: Concept, Objectives, and Functions; Personal Selling: Concept & Importance, Classification of Sales Jobs; Buyer-Seller Dyads; Personal Selling process; Theories of selling. Sales Force Management challenges.

Unit-II: Sales Planning: Importance, Approaches and Process of Sales Planning; Sales Forecasting; Sales Budgeting, Sales Organization: Purpose, Principles and Process of setting up a Sales Organization; Sales Organization Structures; Organizing for Global Sales, Determining Size of Sales Force.

Unit-III: Managing the Sales Force: Recruitment, Selection, Training, Compensation, Motivating and Leading the Sales-Force; Sales Meetings and Contests.

Unit-IV: Territory and Quota Management: Need, Procedure for setting up Sales Territories; Time Management; Sales Quotas: Purpose, Types of Quotas, Administration of Sales Quota.

Unit-V: Control process: Analysis of Sales Volume, Cost, and Profitability; Management of Sales Expenses, Evaluating Sale-Force Performance; Ethical Issues in Sales Management. Role of IT in Sales Management.

Note: The examiner will set *eleven* questions in all. Question number one will be compulsory, and would contain *five* parts of *four* marks each (one part from each unit). Further, *two* questions of *ten* marks each are to be set from each of the five units. The students will be required to attempt *six* questions—the compulsory question, and one question from each of the five units.

Suggested Readings:

1. Spiro, Stanton & Rich: Management of a Sales Force, Tata McGraw-Hill: 11th edition, 2003.
2. Still, Cundiff & Govoni: Sales Management, 5th edition 2007.
3. Tapan K. Panda, Sunil Sahadev: Sales and Distribution Management, Oxford University Press, 2008
4. Tanner, Honeycutt, Erffmeyer: Sales Management, Pearson Education India, 1st edition, 2009
5. Gupta, S. L.: Sales and Distribution Management, Excel Books, 1st Edition, 2005.
6. David Jobber, Geoff Lancaster: Selling and Sales Management, Pearson Education India, 6th edition, 2003.

DSE-53: Business Analytics-I

Credits: 5; Maximum Marks: 100 (30/Int. + 70/End-Term);
Minimum Pass Marks: 40 (12/Int. + 28/End-Term); Time for End-Term Exam: 3 Hours

Course Objectives:to introduce students to the fundamental concepts and principles of business analytics, providing them with a solid foundation in data analysis techniques and tools

Course Content:

Unit-I: Introduction to Business Analytics: Overview and its importance in decision-making; Key concepts and terminology in business analytics; Application areas and industries benefiting from business analytics; Introduction to data-driven decision making; Ethical considerations in business analytics

Unit-II: Foundations of Data Analysis: Data collection methods and sources; Data cleaning and preprocessing techniques; Exploratory data analysis and visualization; Descriptive statistics and data summarization using MS-Excel

Unit-III: Data Mining Techniques: Overview of data mining and its applications; Association analysis and market basket analysis; Classification and prediction techniques; Introduction to text mining and sentiment analysis

Unit-IV: Business Intelligence (BI) and Reporting: Introduction to BI and reporting tools; Data visualization for effective communication; Key performance indicators (KPIs) and metrics; Using BI tools for decision support and reporting

Unit-V: Business Analytics Applications: Customer analytics and segmentation; Supply chain analytics and optimization; Financial analytics and risk assessment; Marketing analytics and campaign optimization; HR Analytics

Note:The examiner will set *eleven* questions in all. Question number one will be compulsory, and would contain *five* parts of *four* marks each (one part from each unit). Further, *two* questions of *ten* marks each are to be set from each of the five units. The students will be required to attempt *six* questions—the compulsory question, and one question from each of the five units.

Suggested Readings:

1. *Business Analytics: Methods, Models, and Decisions* by James R. Evans
2. *Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking* by Foster Provost and Tom Fawcett
3. *Business Intelligence Guidebook: From Data Integration to Analytics* by Rick Sherman
4. *Business Analytics: The Science of Data - Driven Decision Making* by U Dinesh Kumar

Semester VI

CC-61: Internship

Credits: 15; Maximum Marks: 300 (150/Int. + 150/End-Term);
Minimum Pass Marks: 120 (60/Int. + 60/End-Term)

During the 6th Semester, every student shall be required to undergo 14-16 weeks' internship (during the months from January to April) in an Industrial/Commercial/Service Organization in Private/Public/Co-operative/Joint Sector as approved by the Director. After completion of the training, every student shall be required to prepare and submit a report, and present the same before a panel of two experts as approved by the Director. The report and its presentation will carry 150 marks, in total. Besides, the supervisor/ mentor of the apprentice student will make evaluation out of 150 marks.

AEC-61: Viva-Voce

Credits: 2; Maximum Marks: 50, Minimum Pass Marks: 20

The Viva-Voce will be based on the courses studied by the students in the whole program (Semesters I to Semester VI). It will be conducted jointly by External and Internal examiners.

DSE-61: Principles of Banking

Credits: 5; Maximum Marks: 100 (30/Int. + 70/End-Term);
Minimum Pass Marks: 40 (12/Int. + 28/End-Term); Time for End-Term Exam: 3 Hours

Course Objectives: Theobjectiveofthiscourseistofamiliarizethestudentswiththebasic concepts,functions, and processes of banking.

Course Content:

Unit-I: Bank- Evolution of bank and banking in India, Nature and functions of banks, Classification of Banks and their different objectives. Contribution of banking sector in Indian economy.

Unit-II: Legal framework for regulation of banks: -Banking Regulation Act 1949: Salient features and main amendments, RBI Act 1934: Salient features and main amendments.

Unit-III: Main functions of RBI- Reserve requirements, different roles of RBI, FDI in banking sector, Types of banks- Public, private, cooperative and Foreign banks

Unit-IV: Brief discussion on forms of banking- Cooperative Banking, Corporate Banking, Rural Banking, Retail Banking, International Banking, e-banking, mobile banking, e-wallets, payment banks, small banks.

Unit-V: Banker-customer relationship, Payment and collection of cheques, special (fee based) services rendered by banks, Reforms in banking after 2008 sub-prime crises, Changing role of banks: from domestic to universal banking.

*Note***:**The examiner will set *eleven* questions in all. Question number one will be compulsory, and would contain *five* parts of *four* marks each (one part from each unit). Further, *two* questions of *ten* marks each are to be set from each of the five units. The students will be required to attempt *six* questions—the compulsory question, and one question from each of the five units.

Suggested Readings:
 1. Justin Paul and Padmalatha Suresh, 'Management of Banking and financial services', TMH 2009.
 2. M. Ravathy Sriram and P.K. Bamanan, 'Core banking solution' PHI2008
 3. Jyotsna Sethi and Nishevan Bhatia, 'Elements of Banking and Insurance' PHI2008.
 4. Vijayaragavan Iyengar, 'Introduction to Banking' Excel Books Pvt.Itd. 2007.
 5. Viganim, BML, 'Banking, law and practice' Konak Publication 2005
 6. K. C. Shekhar, Lakshmy Shekhar, 'Banking, theory andpractice'Pearsonpublications, 2009.

DSE-62: Retail Management

Credits: 5; Maximum Marks: 100 (30/Int. + 70/End-Term);
Minimum Pass Marks: 40 (12/Int. + 28/End-Term); Time for End-Term Exam: 3 Hours

Course Objectives: Theobjectiveofthiscourseistofamiliarizethestudentswiththebasic concepts,functions, and processes of marketing.

Course Content:

Unit-I: Retailing: Concept, functions, Scope & Trends in Retailing, Issues & Challenges in Organized Retailing. Retail Evolution & Growth in Indian Context, Understanding Retail Consumers.

Unit-II: Retailing strategy: Process & Development, Types of Retailing Formats. Retail Location Strategy, Retail Promotion Strategy, CRM in Retailing.

Unit-III: Retail Merchandising: Concept, Merchandising Planning Process, Methods of Merchandising Procurement, Retail Pricing & Evaluating Merchandising Performance.

Unit-IV: Retail Marketing and Branding, Retailing & MIS, Servicing the Retail Customer, Store Management.

Unit-V: Store Layout, Design & Visual Merchandising, Private Labels, Retail Franchising, Category Management in Retailing. Multi-channel Retailing, Role of Technology in Retailing.

Note:The examiner will set *eleven* questions in all. Question number one will be compulsory, and would contain *five* parts of *four* marks each (one part from each unit). Further, *two* questions of *ten* marks each are to be set from each of the five units. The students will be required to attempt *six* questions—the compulsory question, and one question from each of the five units.

Suggested Readings:

1. Pradhan Swapna : Retailing Management - Text & Cases, 3rd edition, 2009
2. Michael Levy & Barton A Weitz: Retailing Management, Tata McGraw-Hill Publication, 5th edition.
3. David Gilbert: Retail Marketing Management, Pearson Education India 2nd Edition.
4. Barry Berman and Joel R. Evans : Retail Management-A Strategic Approach, PHI 10th Edition.
5. Chetan Bajaj, Rajnish Tuli, Nidhi Srivastava : Retail Management ,Oxford Publication,1st edition, 2005

6. Roger Cox & Paul Brittain: Retailing- an Introduction, Pearson Education India, 5th edition, 2006

DSE-63: Business Analytics-II

Credits: 5; Maximum Marks: 100 (30/Int. + 70/End-Term);
Minimum Pass Marks: 40 (12/Int. + 28/End-Term); Time for End-Term Exam: 3 Hours

Course Objectives: to enhance students' knowledge and skills in advanced techniques and methodologies of business analytics

Course Content:

Unit-I: Advanced Statistical Analysis using MS-Excel: Advanced statistical modeling techniques; Hypothesis testing and inference; Regression analysis and model interpretation; Time series analysis and forecasting

Unit-II: Predictive Analytics: Overview of predictive analytics and its applications; Feature selection and dimensionality reduction; Evaluation and validation of predictive models

Unit-III: Big Data Analytics: Introduction to big data and its characteristics; Distributed computing frameworks; Data processing and analysis in a big data environment; Machine learning on big data; Real-time analytics and streaming data processing

Unit-IV: Prescriptive Analytics: Optimization modeling and linear programming; Network optimization and graph algorithms; Decision analysis and decision support systems; Prescriptive analytics in supply chain management and operations

Unit-V: Advanced Business Analytics Applications: Social media analytics and sentiment analysis; Fraud detection and anomaly detection; Web analytics and clickstream analysis; Recommendation systems and personalization

Note: The examiner will set *eleven* questions in all. Question number one will be compulsory, and would contain *five* parts of *four* marks each (one part from each unit). Further, *two* questions of *ten* marks each are to be set from each of the five units. The students will be required to attempt *six* questions—the compulsory question, and one question from each of the five units.

Suggested Readings:

1. *Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie, or Die* by Eric Siegel
2. *Big Data: A Revolution that Will Transform how We Live, Work, and Think* by Viktor Mayer-Schönberger and Kenneth Cukier
3. *Prescriptive Analytics: The Final Frontier for Evidence-Based Management and Optimal Decision Making* by Dursun Delen
4. *Web Analytics 2.0: The Art of Online Accountability and Science of Customer Centricity* by Avinash Kaushik
5. *Pattern Recognition and Machine Learning* by Christopher M. Bishop

CC-51: Cost Accounting	
COs	After completing this course, the students will be able to:
CC-51.1	understand the basic concept of cost accounting
CC-51.2	understand the responsibilities of various cost heads to control the cost
CC-51.3	understand labour costing and marginal costing
CC-51.4	understand different components of overheads and different types of costing methods
CC-51.5	make cost reconciliation and cost reduction

Mapping Matrix

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
CC-51.1	3	2	3	3	3	2	3	3	2	2	2	2
CC-51.2	2	3	2	3	2	3	3	2	3	3	2	3
CC-51.3	3	2	3	3	2	2	2	3	2	2	3	3
CC-51.4	2	3	2	2	2	3	3	3	3	3	3	2
CC-51.5	2	2	2	3	3	3	3	3	3	2	2	3
Average	**2.4**	**2.4**	**2.4**	**2.8**	**2.4**	**2.6**	**2.8**	**2.8**	**2.6**	**2.4**	**2.4**	**2.6**

CC-52: International Business	
COs	After completion of this course the students will be able to:
CC-52.1	understand the role of international business in economic development
CC-52.2	comprehend latest technologies being traded, investment invited and made by Indian and foreign investors
CC-52.3	understand the environment in the context of internal business
CC-52.4	understand the ways of conducting international business, and role of government in international business
CC-52.5	understand the formation and functioning of economic blocs and their role in promoting international/ regional trade

Mapping Matrix

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
CC-52.1	2	3	2	2	3	3	3	2	3	3	2	3
CC-52.2	2	3	3	2	2	3	3	2	3	3	3	3
CC-52.3	2	3	3	2	2	3	3	2	3	3	3	3
CC-52.4	2	2	2	2	2	2	2	2	3	3	2	3
CC-52.5	2	3	3	2	2	3	3	2	3	2	2	3
Average	**2.0**	**2.8**	**2.6**	**2.0**	**2.2**	**2.8**	**2.8**	**2.0**	**3.0**	**2.8**	**2.4**	**3.0**

CC-53: Taxation Laws	
COs	After completion of this course the students will be able:
CC-53.1	to understand the basic concepts of income tax act 1961
CC-53.2	to understand the computation of income from salaries and income from house property
CC-53.3	to understand the heads classification and computation of income tax
CC-53.4	to understand the deductions from gross total income & tax liability
CC-53.5	to understand the overview of income tax authorities and their role

Mapping Matrix

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
CC-53.1	3	3	1	2	2	3	3	1	2	1	1	1
CC-53.2	1	1	3	2	1	1	3	3	1	3	2	1
CC-53.3	2	1	3	3	2	3	3	2	3	3	3	3
CC-53.4	2	1	1	3	1	1	2	3	2	2	3	3
CC-53.5	1	3	3	3	1	1	3	2	1	3	2	1
Average	**1.8**	**1.8**	**2.2**	**2.6**	**1.4**	**1.8**	**2.8**	**2.2**	**1.8**	**2.4**	**2.2**	**1.8**

CC-54: Labour Laws	
COs	After completing this course the students will be able to:
CC-54.1	understand the need, importance and fundamental principles of labour legislation in India
CC-54.2	understand salient features and legal framework of The Industrial Dispute Act, 1947
CC-54.3	develop an understanding of several social security laws like Trade Union Act 1926, Industrial Employment (Standing Orders) Act, 1946 and The Maternity Benefit Act, 1961
CC-54.4	Know the features and recent amendments in The Factories Act, 1948
CC-54.5	understand a few welfare and wage legislation in India i.e. The Workmen's compensation Act, 1923 and The Employee State Insurance Act, 1948

Mapping Matrix

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
CC-54.1	3	3	1	3	2	1	2	2	3	1	3	2
CC-54.2	3	3	1	3	2	1	2	3	2	2	3	2
CC-54.3	3	3	1	3	2	1	3	3	3	2	3	2
CC-54.4	3	3	1	3	2	1	3	3	3	2	3	3
CC-54.5	3	3	1	3	2	1	3	3	3	2	3	3
Average	**3.0**	**3.0**	**1.0**	**3.0**	**2.0**	**1.0**	**2.6**	**2.8**	**2.8**	**1.8**	**3.0**	**2.4**

SEC-51: Business Research Methods	
COs	After completion of this course the students will be able:
SEC-51.1	To understand the concepts and process of Business research.
SEC-51.2	To formulate research problem and develop an understanding of various major research designs.
SEC-51.3	To determine various data sources and to design data collection tools
SEC-51.4	To develop understanding of data collection field work and to analyse data using various techniques.
SEC-51.5	To apprehend various software used for data analysis and presentation of research results.

Mapping Matrix

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
SEC-51.1	3	2	3	3	3	3	2	3	2	2	2	2
SEC-51.2	3	3	2	3	3	3	2	2	3	3	2	3
SEC-51.3	3	3	2	3	2	3	2	2	3	2	2	2
SEC-51.4	2	3	2	3	2	3	3	3	3	3	3	3
SEC-51.5	2	2	2	3	3	3	3	2	1	2	2	2
Average	**2.6**	**2.6**	**2.2**	**3.0**	**2.6**	**3.0**	**2.4**	**2.4**	**2.4**	**2.4**	**2.2**	**2.4**

DSE-51: Principles of Insurance	
COs	After completion of this course the students will be able:
DSE-51.1	Understand the fundamentals of insurance, rights and duties of parties involved.
DSE-51.2	Understand the distribution channel and function of agents.
DSE-51.3	Understand the role of regulatory authorities for insurance and how to settle claims and working of Actuaries in India
DSE-51.4	Understand the concept of life insurance business, and type & product of life insurance companies in India.
DSE-51.5	Understand the concept of general insurance business, and type & product of life insurance companies in India.

Mapping Matrix

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
DSE-51.1	3	3	3	2	3	2	2	2	3	2	2	2
DSE-51.2	2	3	2	3	3	2	3	3	2	2	2	2
DSE-51.3	3	2	3	2	2	2	2	3	2	2	3	3
DSE-51.4	3	3	2	3	2	2	3	3	3	2	2	2
DSE-51.5	2	2	3	3	3	2	3	3	3	3	3	3
Average	**2.6**	**2.6**	**2.6**	**2.6**	**2.6**	**2.0**	**2.6**	**2.8**	**2.6**	**2.2**	**2.4**	**2.4**

DSE-52: Sales Management	
COs	After completion of this course the students will be able:
DSE-52.1	to understand the fundamentals of sales management and get knowledge of the basics of personal selling
DSE-52.2	to understand sales planning and organization
DSE-52.3	to gain an understanding of managing the salesforce
DSE-52.4	to understand the essentials of sales territory and sales quota
DSE-52.5	to understand the essentials of sales control

Mapping Matrix

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
DSE-52.1	3	3	3	3	3	3	3	2	3	3	2	3
DSE-52.2	2	3	3	2	3	3	3	1	3	3	2	3
DSE-52.3	3	3	3	3	3	2	3	2	3	3	3	3
DSE-52.4	2	3	3	3	3	3	3	2	3	3	3	3
DSE-52.5	3	3	3	3	2	3	2	1	3	2	2	3
Average	**2.6**	**3.0**	**3.0**	**2.8**	**2.8**	**2.8**	**2.8**	**1.6**	**3.0**	**2.8**	**2.4**	**3.0**

DSE-53: Business Analytics-I	
COs	After completion of this course the students will be able to:
DSE-53.1	Describe the role of business analytics in improving decision-making processes and gaining a competitive edge in various industries
DSE-53.2	Collect and pre-process data using appropriate techniques, ensuring data quality and integrity
DSE-53.3	Apply data mining techniques such as association analysis and classification to extract meaningful insights from datasets
DSE-53.4	Create interactive dashboards and reports using business intelligence tools for effective data visualization and decision support
DSE-53.5	Apply business analytics techniques to solve real-world problems in areas such as customer analytics, supply chain management, and marketing

Mapping Matrix

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
DSE-53.1	1	1	3	1	1	3	3	1	3	2	1	1
DSE-53.2	1	1	3	1	1	3	3	1	3	2	1	1
DSE-53.3	1	1	3	1	1	3	3	1	3	2	1	1
DSE-53.4	1	1	3	1	1	3	3	1	3	2	1	1
DSE-53.5	1	1	3	1	1	3	3	1	3	2	1	1
Average	**1.0**	**1.0**	**3.0**	**1.0**	**1.0**	**3.0**	**3.0**	**1.0**	**3.0**	**2.0**	**1.0**	**1.0**

CC-61: Internship	
COs	Upon completion of the course, students will be able to:
CC-61.1	Demonstrate a practical understanding of the professional workplace, industry-specific skills, and effective communication and adaptability in a real-world setting.

Mapping Matrix

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
CC-61.1	3	3	3	3	3	3	3	2	3	3	3	3

AEC-61: Viva-Voce	
COs	The students will be able to:
AEC-61.1	exhibit their communication skills, recalling abilities, and understanding of all the subjects/ courses studied during the whole program (Semesters I to Semester VI). The students become able to analyse their SWOT

Mapping Matrix

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
AEC-61.1	2	3	2	2	3	3	3	2	3	3	3	3

DSE-61: Principles of Banking	
COs	After completion of this course the students will be able:
DSE-61.1	to understand evolution of banks and banking in India, classification of banks and their contribution to Indian economy
DSE-61.2	to know the legal framework for regulation of banks in India
DSE-61.3	to understand the role and functions of RBI and types of banks in India
DSE-61.4	to know the different forms of banking in India
DSE-61.5	to understand banker-customer relationship, cheque services, fee based services and reforms in the banking sector after 1991

Mapping Matrix

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
DSE-61.1	3	3	3	2	3	2	2	2	3	2	2	2
DSE-61.2	2	3	2	3	3	2	3	3	2	2	2	2
DSE-61.3	3	2	3	2	2	2	2	3	2	2	3	3
DSE-61.4	3	3	2	3	2	2	3	3	3	2	2	2
DSE-61.5	2	2	3	3	3	2	3	3	3	3	3	3
Average	**2.6**	**2.6**	**2.6**	**2.6**	**2.6**	**2.0**	**2.6**	**2.8**	**2.6**	**2.2**	**2.4**	**2.4**

DSE-62: Retail Management	
COs	After completion of this course the students will be able:
DSE-62.1	to understand the conceptual framework of retailing and retail consumers' behaviour
DSE-62.2	to understand the essentials of retailing strategy, and basics of CRM in the context of retail
DSE-62.3	to understand the essentials of merchandise planning and pricing in retail
DSE-62.4	to understand the role of information system, branding and servicing in retail store management
DSE-62.5	to understand different options for visual merchandising and technology in retailing

Mapping Matrix

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
DSE-62.1	2	2	1	2	1	2	2	2	2	2	2	3
DSE-62.2	3	2	3	3	2	3	3	2	2	3	2	3
DSE-62.3	3	2	3	2	3	3	3	3	3	3	3	3
DSE-62.4	3	2	3	2	3	3	3	3	3	3	3	3
DSE-62.5	3	2	3	3	3	3	3	3	3	3	3	3
Average	**2.8**	**2.0**	**2.6**	**2.4**	**2.4**	**2.8**	**2.8**	**2.6**	**2.6**	**2.8**	**2.6**	**3.0**

DSE-63: Business Analytics-II	
COs	After completion of this course the students will be able:
DSE-63.1	Apply advanced statistical analysis techniques to analyze complex datasets and draw valid inferences
DSE-63.2	Build and evaluate predictive models using advanced classification and regression algorithms
DSE-63.3	Process and analyze large-scale datasets using big data analytics techniques and distributed computing frameworks
DSE-63.4	Formulate optimization problems and apply prescriptive analytics techniques for decision support and optimization
DSE-63.5	Apply advanced business analytics techniques in diverse domains such as social media analytics, fraud detection, or recommendation systems

Mapping Matrix

CO#	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
DSE-63.1	1	1	3	1	1	3	3	1	3	2	1	1
DSE-63.2	1	1	3	1	1	3	3	1	3	2	1	1
DSE-63.3	1	1	3	1	1	3	3	1	3	2	1	1
DSE-63.4	1	1	3	1	1	3	3	1	3	2	1	1
DSE-63.5	1	1	3	1	1	3	3	1	3	2	1	1
Average	**1.0**	**1.0**	**3.0**	**1.0**	**1.0**	**3.0**	**3.0**	**1.0**	**3.0**	**2.0**	**1.0**	**1.0**

Syllabi for Under-Graduate Programmes in the subject of Psychology with Multiple Entry-Exit, Internship and Choice Based Credit System – Learning Outcomes Based Curriculum Framework – (CBCS-LOCF) in accordance with New Education Policy (NEP) 2020 with effect from the session 2023-24 (in phased manner)

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KURUKSHETRA UNIVERSITY KURUKSHETRA
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Undergraduate Programs (Psychology) Syllabus, Semester –I

Session: 2023-24	
PartA-Introduction	
Subject	Psychology
Semester	I
NameoftheCourse	Foundations of Psychology
CourseCode	B23-PSY-101
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC/MCC
Levelofthecourse(AsperAnnexure-I	100-199
Pre-requisiteforthecourse(ifany)	10+2 or equivalent
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. demonstrate an understanding of foundational concepts of psychology and human behaviour. 2. understand the structure and function of sensory processes. 3. comprehend theoretical concepts of emotion and motivation. 4. understand various theories and factors affecting personality and intelligence. 5. conduct experiments and tests related to Foundations of Psychology

Credits	Theory	Practical	Total
	3	1	4
ContactHours	3 Per week	2 per week/ Per group	5 per week / per group

Max.Marks: 100 **Internal Assessment Marks:30** **EndTermExamMarks: 70**	**Time: 3 Hours (Each theory & practical)**

PartB-ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 5 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Introduction: Nature and Scope of Psychology; Psychology as a Science and Present Status, Psychology in India. Methods to Study Behaviour: Interview, Case study and Experimental.	14
II	Sensation: Nature, Characteristicsand Types Structure and Functions of Visual and Auditory sensation. Attention: Nature and Characteristics.	14
III	Emotion: Nature, Factors Affecting and Theories: James-Lange, Cannon- Bard and Schachter-Singer. Motivation: Needs, Drives, Incentives, Biological and Social Motives.	14
IV	Personality: Nature, Factors Affecting and Theories: Allport, Cattell and Eysenck. Intelligence: Nature, Factors Affecting and Theories: Spearman, Thurstone, and Cattell.	14
	Practical 1. NEO-FFI/ Personality Test 2. Retinal Colour Zones / Colour Blindness 3. Study of Emotions. 4. Simple Reaction Time 5. Verbal Test of Intelligence. 6. Performance Test of Intelligence/RPM. 7. 16PF Questionnaire Note: Students will perform at least five practical.The examiner will allot one practical at the time of end term examination for evaluation.	32

Suggested Evaluation Methods	
InternalAssessment:	**EndTermExamination:**
➢ **Theory (20 Marks)** • ClassParticipation:**05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.:**05 Marks** • Mid-TermExam:**10 Marks**	**50 Marks**
➢ **Practical (10 Marks)** • ClassParticipation:**Nil** • Seminar/Demonstration/Viva-voce/Labrecordsetc.:**10 Marks** • Mid-TermExam:**Nil**	**20 Marks**
PartC-LearningResources	

RecommendedBooks/e-resources/LMS:

Baron, R.A & Misra, G.(2014). Psychology. New Delhi: Pearson Education.
Ciccarelli, S.K., Meyer, G.E. &Misra, G. (2013). Psychology: South Asian Edition. New Delhi: Pearson Eudcation.
Passer, M.W & Smith, R.E. (2013). Psychology: The Science of Mind and Behaviour. New Delhi: Tata McGraw-Hill
Chaplin.T,.&Kraweic.T.S.(1979). Systems & Theories of Psychology (4th Ed.). New York: Holt Rinehart.
Singh.A. and Singh.U.(1984). Samanya Manovigyan.Bhiwani: VaidicPrakashan.
Singh, A.K. (2009). Uchatar Samnya Manovigyan. Delhi:Moti Lal Banarsidas.

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Undergraduate Programs (Psychology) Syllabus, Semester –I

Session: 2023-24	
PartA-Introduction	
Subject	Psychology
Semester	I
NameoftheCourse	**Elementary Statistics**
CourseCode	B23-PSY-102
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC
Levelofthecourse(AsperAnnexure-I	100-199
Pre-requisiteforthecourse(ifany)	10+2 or equivalent
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. develop insight about statistics and level of measurements. 2. have in depth understanding of types, frequency distribution and graphical representation of data. 3. have knowledge about measures of central tendency and variability. 4. develop insight about normal probability curve and methods of correlation. 5. draw different types of graph and calculations of central tendencies through excel.

Credits	Theory	Practical	Total
	3	1	4
ContactHours	3 Per week	2 per week/ Per group	5 per week / per group

Max.Marks: 100 **Internal Assessment Marks:30** **EndTermExamMarks: 70**	**Time: 3 Hours (Each theory & practical)**

PartB-ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 5 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Statistics: Meaning, Types, Scope, and Advantages and Disadvantages of statistics. Measurement: Meaning, Levels of Measurement: Nominal, Ordinal, Interval and Ratio. Uses of Measurement.	14
II	Unit-II Data: Meaning, Types-Primary and Secondary. Difference between Primary and Secondary Data. Frequency Distribution, Graphical Representation of Data: Frequency Polygon, Histogram and Bar Diagram .	14
III	Measures of Central Tendencies: Mean, Median and Mode. Measures of Variability: Range, Mean Deviation, Standard Deviation and Quartile Deviation.	14
IV	Normal Probability Curve: Meaning and Characteristics. Correlation: Meaning, Types of Correlation. Method: Spearman Rank Difference, Pearson Product Moment and Tetrachoric	14
	Practical 1. Drawing of Histogram 2. Drawing of Bar Diagram 3. Drawing of Polygon 4. Drawing of Pie-chart 5. Calculation of Mean in Excel/Spreadsheet. 6. Calculation of Median in Excel/Spreadsheet 7. Calculation of Mode in Excel/Spreadsheet. Note: Students will perform at least five practical. The examiner will allot one practical at the time of end term examination for evaluation.	32

Suggested Evaluation Methods	
InternalAssessment:	**EndTermExamination:**
➢ **Theory (20 Marks)** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **05 Marks** • Mid-TermExam: **10 Marks**	**50 Marks**
➢ **Practical (10 Marks)** • ClassParticipation: **Nil** • Seminar/Demonstration/Viva-voce/Labrecordsetc.: **10 Marks** • Mid-TermExam: **Nil**	**20 Marks**
PartC-LearningResources	

RecommendedBooks/e-resources/LMS:

Garrett, H.E.(1926) Statistics in Psychology and Education, Longmans, Green and Co.

Suleman,M. (2016) Statistics in Psychology, Education and other Social Sciences,5th edition,Delhi: Moti Lal Bnarsi Das.

Singh, R. and RadheShyam (2008) Comprehensive Statistics for Behavioural Sciences. Delhi: Sanjay Prakashan.

Gupta,L., Singh,R. and RadheyShyam (2015) Fundamental Statistics for Social Sciences. Intellectual foundation,India.

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Undergraduate Programs (Psychology) Syllabus, Semester –I

Session: 2023-24	
PartA–Introduction	
Subject	Psychology
Semester	I
NameoftheCourse	**Problems of Adolescence**
CourseCode	B23-PSY-103
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC - M
Levelofthecourse(AsperAnnexure-I	100-199
Pre-requisiteforthecourse(ifany)	10+2 or equivalent
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. get awareness regarding different domains of development during adolescence. 2. understand various mental health issues. 3. develop insight regarding different health issues. 4. know about etiology and psychosocial management of adolescents' health issues.

Credits	Theory	Practical	Total
	2	NA	2
ContactHours	2 Per week	NA	2 Per Week

Max.Marks: 50 **Internal Assessment Marks:15** **EndTermExamMarks: 35**	**Time: 3 Hours**

PartB-ContentsoftheCourse
InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 5 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Adolescence: Nature, Adolescent's Maturation, Pubertal Changes and Hormonal Influences.	7
II	Mental Health Issues: Stress, Anxiety, Depression and Suicide.	7
III	Health Issues:Nutrition and Eating disorders. Substance Abuse - Smoking, Tobacco and Alcohol.	7
IV	Sexually Transmitted Infections: Types and Management-Psychosocial. Coping with Stress.	7

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory** • ClassParticipation: **04 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **04 Marks** • Mid-TermExam: **07Marks**	**EndTermExamination:** **35 Marks**

PartC-LearningResources
RecommendedBooks/e-resources/LMS: Berk, L.E. (2004). Developmental Through the Life Span. Delhi: Pearson Education. Sheffer, D.R. & Katherine, K. (2007). Developmental Psychology: Childhood And Adolescence NewYork: Thomson Wadsworth. Santrock, J.W. (1997). Life Span Development: Dubuque: Brown and Benchmark.

KURUKSHETRA UNIVERSITY KURUKSHETRA
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Undergraduate Programs (Psychology) Syllabus, Semester –I

Session: 2023-24			
PartA-Introduction			
Subject	Psychology		
Semester	I		
NameoftheCourse	**Understanding Psychology**		
CourseCode	B23-PSY-104		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MDC		
Levelofthecourse(AsperAnnexure-I	100-199		
Pre-requisiteforthecourse(ifany)	10+2 or equivalent		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: **1.** provide basic understanding about historical development and domains of psychology. **2.** get understanding of studymethods of psychology. **3.** acquaint the students with learning process in psychology. **4.** acquaint the students with memory process in psychology. **5.** conduct experiment on learning and memory.		
Credits	Theory	Practical	Total
	2	1	3
ContactHours	2 Per week	2 per week/ Per group	4 per week / per group
Max.Marks: 75 **Internal Assessment Marks:20** **EndTermExamMarks: 55**	**Time: 3 Hours (Each theory & practical)**		

PartB-ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions (1 mark each) uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 7 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Psychology: Nature, Historical background and Fields of Psychology, Emergence of Psychology as a Science.	7
II	Methods: Experimental, Interview, Observation and Case Study.	7
III	Learning: Nature and Factors Affecting. Classical and Instrumental Conditioning.	7
IV	Memory: Nature, Study Methods, Factors Affecting Memory. Types of Memory.	7
	Practical 1. Sound Localization. 2. Experiment on STM 3. Experiment on LTM 4. Study of Primacy and Recency Effect 5. Simple Reaction time. 6. Observation. 7. Transfer of Training. 8. Note: Students will perform at least five practical. The examiner will allot one practical at the time of end term examination for evaluation.	32

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory (15 Marks)** • ClassParticipation: **04 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **04 Marks** • Mid-TermExam: **07 Marks** ➢ **Practical (5 Marks)** • ClassParticipation: **Nil** • Seminar/Demonstration/Viva-voce/Labrecordsetc.: **5 Marks** • Mid-TermExam: **Nil**	**EndTermExamination:** **35 Marks** **20 Marks**

PartC-LearningResources
RecommendedBooks/e-resources/LMS: Atkinson, R.L., Atkinson, R.L. et. Al. (1985). Introduction to Psychology. N.Y. HBJ Publishers. Ciccarelli, S.K. & Meyer, G.E. (2006). Psychology. New Delhi: Pearson Education Inc. Singh, A.K. (2009). Uchatar Samnya Manovigyan. Delhi:Moti Lal Banarsidas.

KURUKSHETRA UNIVERSITY KURUKSHETRA
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Undergraduate Programs (Psychology) Syllabus, Semester –II

Session: 2023-24	
PartA-Introduction	
Subject	Psychology
Semester	II
NameoftheCourse	**Social Psychology**
CourseCode	B23-PSY- 201
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC/MCC
Levelofthecourse(AsperAnnexure-I	100-199
Pre-requisiteforthecourse(ifany)	10+2 or equivalent
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. demonstrate an understanding of the foundational concepts of social behaviour and methods of study. 2. demonstrate understanding of socialization process, person perception and attitudes. 3. acquaint with interpersonal attraction, pro-social behaviour and aggression. 4. understand the concept of leadership and dynamics of group and collective behaviour. 5. Acquaint with different types of psychological test related to social phenomenon.

Credits	Theory	Practical	Total
	3	1	4
ContactHours	3 Per week	2 per week/ Per group	5 per week / per group

Max.Marks: 100 **Internal Assessment Marks:30** **EndTermExamMarks: 70**	**Time: 3 Hours (Each theory & practical)**

PartB-ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 5 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Introduction: Meaning,History, Scope and Relationship of Social Psychology with Anthropology and Sociology. Determinants of Social Behaviour. Method: Observation, Sociometry and Survey.	14
II	Socialization: Nature, Agencies and Factors Affecting Socialization. Person perception: Nature and Determinants. Attitude: Nature, Formation, Change and Resistance to Change.	14
III	Interpersonal Attraction: Nature and Determinants. Pro-social behaviour: Meaning, Stages and Determinants. Aggression: Nature, Causes and Control.	14
IV	Group Behaviour: Meaning, Formation, Types and Functions of Group. Leadership: Nature, Characteristics and Types. Collective Behaviour: Crowd and Mob.	14
	Practical 1. Sociometry 2. Measurement of Attitude 3. Altruism Scale 4. Stereotype Scale 5. Aggression Scale 6. Prejudice Scale 7. Leadership Styles Note: Students will perform at least five practical. The examiner will allot one practical at the time of end term examination for evaluation.	32

Suggested Evaluation Methods	
InternalAssessment:	**EndTermExamination:**
➢ **Theory (20 Marks)** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **05 Marks** • Mid-TermExam: **10 Marks**	**50 Marks**
➢ **Practical (10 Marks)** • ClassParticipation: **Nil** • Seminar/Demonstration/Viva-voce/Labrecordsetc.: **10 Marks** • Mid-TermExam: **Nil**	**20 Marks**
PartC-LearningResources	

RecommendedBooks/e-resources/LMS:

Baron, R.A., Byrne, D. & Bhardwaj. G (2010).Social Psychology (12th Ed).New
Delhi: Pearson.
Chadha, N.K. (2012). Social Psychology. MacMillan: New Delhi.
McDavid, J. W. &Harrari, H. (1968).Social Psychology. New York: Harper & Row.
Kretch and Crutchfield (1948).Theory and Problems of Social Psychology. New York: McGraw Hill.
Myers, D.G. (2008). Social psychology. New Delhi: Tata McGraw-Hill.

KURUKSHETRA UNIVERSITY KURUKSHETRA
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Undergraduate Programs (Psychology) Syllabus, Semester –II

Session: 2023-24			
PartA-Introduction			
Subject	Psychology		
Semester	II		
NameoftheCourse	Assessment of Personality and Intelligence		
CourseCode	B23-PSY-202		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	DSEC		
Levelofthecourse(AsperAnnexure-I	100-199		
Pre-requisiteforthecourse(ifany)	10+2 or equivalent		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. understand basic nature of personality assessment tools and get acquainted with most widely used self-report measures of personality. 2. understand the characteristic features of projective techniques and to have in-depth knowledge of prominent techniques and their application. 3. look into the seminal work toward testing of human abilities and grasp the conceptualization of the scaling of intelligence. 4. have understanding of application of variety of intelligence tests. 5. administer, score and interpret the psychological tests.		
Credits	Theory	Practical	Total
	3	1	4
ContactHours	3 Per week	2 per week/ Per group	5 per week / per group
Max.Marks: 100 **Internal Assessment Marks:30** **EndTermExamMarks: 70**	**Time: 3 Hours (Each theory & practical)**		

PartB-ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 5 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Personality: Historical Antecedents of Personality. Meaning and purpose of Personality Assessment. Personality Tests: Nature, Self-Report Measures: MMPI, 16 PF and EPQ. Ethical Issues in Personality Assessment.	14
II	Projective Technique: Nature and Salient Features. Word Association Test, Sentence Completion Test,Rorschach Inkblot Test and Thematic Apperception Test.	14
III	Intelligence: Historical Background of Intelligence Testing. Nature and Purpose of Intelligence Test. Concept of IQ and Deviation IQ. Measures of Intelligence: Alexander Pass-Along Test, Cattell's Culture Fair Test, and RPM.	14
IV	Measurement of Intelligence: GMAT, Wechsler Adult Intelligence Scale, Wechsler Intelligence Scale for Children, Wechsler Preschool and Primary Scale of Intelligence. Difference between Individual and Group Testing.	14
	Practical 1. EPQ 2. GMAT 3. 16PF Questionnaire 4. Culture Fair Test 5. WAT 6. Alexander Pass Along Test 7. Sentence Completion Test Note: Students will perform at least five practical. The examiner will allot one practical at the time of end term examination for evaluation.	32

Suggested Evaluation Methods	
InternalAssessment:	**EndTermExamination:**
➢ **Theory (20 Marks)** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **05 Marks** • Mid-TermExam: **10 Marks**	**50 Marks**
➢ **Practical (10 Marks)** • ClassParticipation: **Nil** • Seminar/Demonstration/Viva-voce/Labrecordsetc.: **10 Marks** • Mid-TermExam: **Nil**	**20 Marks**
PartC-LearningResources	

RecommendedBooks/e-resources/LMS:

Anastasi, A.&, Urbina, S., (2009). Psychological Testing. PHI Learning Private Ltd.: New Delhi.

Aiken, L.S.,& Marnat, G.G.(2009). Psychological Testing and Assessment (12th edition). Dorling Kindersley India Pvt. Ltd.: New Delhi.

Singh, A.K.(2012) .Tests, Measurements and Research Methods in Behavioural Sciences.: Moti Lal Banarsidas: New Delhi.

Singh, A.K. (2009). Uchattar Samanaya Manovigyan.: Moti Lal Banarsidas: New Delhi.

KURUKSHETRA UNIVERSITY KURUKSHETRA
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Undergraduate Programs (Psychology) Syllabus, Semester –II

Session: 2023-24			
PartA-Introduction			
Subject	Psychology		
Semester	II		
NameoftheCourse	**Understanding Abnormal Behaviour**		
CourseCode	B23-PSY-203		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MDC		
Levelofthecourse(AsperAnnexure-I	100-199		
Pre-requisiteforthecourse(ifany)	10+2 or equivalent		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. acquaint with the abnormal behaviour and its criteria and characteristics. 2. understand models of abnormality. **3.** gain knowledge about anxiety based and mood disorders. 4. understand the concept of psychotherapies. 5. develop skill to apply the psychological tests for assessment.		
Credits	Theory	Practical	Total
	2	1	3
ContactHours	2 Per week	2 per week/ Per group	4 per week / per group
Max.Marks: 75 **Internal Assessment Marks:20** **EndTermExamMarks: 55**		**Time: 3 Hours (Each theory & practical)**	

PartB-ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions (1 mark each) uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 7 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Abnormal Behaviour: Meaning, Criteria and Characteristics. Causes of Abnormal Behaviour.	7
II	Models of Abnormality: Biological, Psychologicaland Socio-cultural.	7
III	Anxiety Based Disorders: Obsessive Compulsive Disorder, Phobia, Panic Attack: Etiology and Management. Mood Disorder: Types and Causes.	7
IV	Psychotherapies: Psychoanalysis, Behaviour Therapy and Cognitive Behaviour Therapy.	7
	Practical 1. Obsessive- compulsion Checklist 2. Depression Inventory 3. Adjustment Inventory 4. Mental Health Questionnaire 5. Anxiety Inventory 6. PGI- Memory Scale 7. Defence Mechanism Inventory Note: Students will perform at least five practical. The examiner will allot one practical at the time of end term examination for evaluation.	32

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory (15 Marks)** • ClassParticipation: **04 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **04 Marks** • Mid-TermExam: **07Marks** ➢ **Practical (5 Marks)** • ClassParticipation: **Nil** • Seminar/Demonstration/Viva-voce/Labrecordsetc.: **5 Marks** • Mid-TermExam: **Nil**	**EndTermExamination:** **35 Marks** **20 Marks**

PartC-LearningResources

RecommendedBooks/e-resources/LMS:

Anand, V. and Srivastva, R. (2003).*ManovikritiVigyan*, Delhi: MotiLalBanarsiDas.

Carson, R.C.; Butcher, J.N., et al. (2007). *Abnormal Psychology.*(13th Ed.) New Delhi: Pearson Education.

Davison, G.C. & Neale, J.M. (1998).*Abnormal Psychology* (7th Ed.) New York: Willy.

Sarason, I.G. and Sarason, B.R. (2005). *Abnormal Psychology: The Problem of MaladaptiveBehaviour* (10th Ed.) New Delhi: Pearson Education Inc.

Singh, A.K. (2006). *AdhunikAsamanyaManovigyan*, Delhi: Moti Lal Banarasi Das.

Srivastava, D.N. (1991) *AdhunikAsamnyaManovigyan* (6th Ed.) Agra: Sahitya.

KURUKSHETRA UNIVERSITY KURUKSHETRA
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Undergraduate Programs (Psychology) Syllabus, Semester –II

Session: 2023-24	
PartA-Introduction	
Subject	Psychology
Semester	II
NameoftheCourse	**Stress Management**
CourseCode	B23-PSY-204
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-M
Levelofthecourse(AsperAnnexure-I	100-199
Pre-requisiteforthecourse(ifany)	10+2 or equivalent
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. acquaint with the main symptoms and sources of stress. 2. understand the effect of stress on health. **3.** learn various stress management techniques. 4. learn different ways of coping with stress.

Credits	Theory	Practical	Total
	2	NA	2
ContactHours	2 Per week	NA	2 per week

Max.Marks: 50 **Internal Assessment Marks:15** **EndTermExamMarks: 35**	**Time: 3 Hours**

PartB-ContentsoftheCourse
InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions (1 mark each) uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 7 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Stress: Nature, Symptoms and Sources of Stress.	7
II	Stress and Health: Effect of Stress on Cardio-Vascular System, Endocrine System and Immune System.	7
III	Managing Stress: Methods- Yoga, Meditation, Relaxation Training and Biofeedback	7
IV	Coping with Stress: Use of Distraction, Imagery and resilience	7

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory (15 Marks)** • ClassParticipation: **04 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **04 Marks** • Mid-TermExam: **07Marks**	**EndTermExamination:** **35 Marks**

PartC-LearningResources
RecommendedBooks/e-resources/LMS: Carr A. (2004). Positive Psychology: The science of happiness and human strength. UK: Routledge. DiMatteo, M.R. & Martin, L.R (2002). Health Psychology, New Delhi: Pearson. Neiten, W. & Lloyd, M.A. (2007). Psychology applied to Modern life. Thomson Detmar Learning Taylor, S.E. (2006). Health Psychology, 6th Edition, New Delhi: Tata McGraw Hill.

KURUKSHETRA UNIVERSITY KURUKSHETRA
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Undergraduate Programs (Psychology) Syllabus, Semester –III

Session: 2023-24			
PartA-Introduction			
Subject	Psychology		
Semester	III		
NameoftheCourse	**Experimental Psychology**		
CourseCode	B23-PSY-301		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC/MCC		
Levelofthecourse(AsperAnnexure-I	200-299		
Pre-requisiteforthecourse(ifany)	-		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. develop understanding regarding experimental procedure and perception. 2. develop an understanding regarding nature and methods of classical psychophysics. 3. acquaint with processes of Learning and Memory. 4. acquire understanding regarding Problem Solving and elementary Statistics. 5. conduct experiments related to their theory paper.		
Credits	Theory	Practical	Total
	3	1	4
ContactHours	3 Per week	2 per week/ Per group	5 per week / per group
Max.Marks: 100 **Internal Assessment Marks:30** **EndTermExamMarks: 70**		**Time: 3 Hours (Each theory & practical)**	

PartB-ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 5 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Experimental Psychology: Nature and Historical Development. Experimental Method. Perception: Nature and Characteristics. Perception of Form, Depth and Movement.	14
II	Psychophysics: Nature, Concept of Continuum, and Problems. Methods of Classical Psychophysics: Method of Limits, Constant Stimuli and. Average Error.	14
III	Learning: Definition, Factors Affecting. Theories of Learning: Trial and Error, Insight and Classical Conditioning. Memory: Process and Types, Methods to Study Memory.	14
IV	Thinking: Nature and Types. Problem Solving: Nature and Stages of Problem Solving. Verbal Learning: Nature, Material, Method and Organizational Processes.	14
	Practical 1. Absolute Limen by Method of Constant Stimuli 2. Differential Limen by Method of limits. 3. Muller-Lyre Illusion 4. Bilateral Transfer of Training 5. Maze Learning 6. Experiment on STM/LTM 7. Problem Solving Note: Students will perform at least five practical. The examiner will allot one practical at the time of end term examination for evaluation.	32

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory (20 Marks)** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **05 Marks** • Mid-TermExam: **10 Marks** ➢ **Practical (10 Marks)** • ClassParticipation: **Nil** • Seminar/Demonstration/Viva-voce/Labrecordsetc.: **10 Marks** • Mid-TermExam: **Nil**	**EndTermExamination:** **50 Marks** **20 Marks**
PartC-LearningResources	

RecommendedBooks/e-resources/LMS:

Atkinson, R.L., Atkinson, R.L, et al. (1985) *Introduction to Psychology*. N. Y.: HBJ Publishers.

D' Amato, M.R. (2001) *Experimental Psychology: Methodology, Psychophysics and Learning.* New Delhi: McGraw Hill.

Mishra, B. K. (2016). Psychology: The Study of Human Behaviour. Delhi: PHI

Singh, A.K. (2009) *UchattarSamanayaManovigyan*. Delhi: Moti Lal Banarsidas.

Singh, A. & Singh, U. (1984).*PrayogatamakManovigyan*.Bhiwani: Vedic Prakashan.

Singh, R. &Shyam, R. (2008) *AdhunikSangyanatmakManovigyan.* Panchkula: Haryana SahityaAkadami.

KURUKSHETRA UNIVERSITY KURUKSHETRA
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Undergraduate Programs (Psychology) Syllabus, Semester –III

Session: 2023-24			
PartA-Introduction			
Subject	Psychology		
Semester	III		
NameoftheCourse	**Physiological Psychology**		
CourseCode	B23-PSY-302		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC		
Levelofthecourse(AsperAnnexure-I	200-299		
Pre-requisiteforthecourse(ifany)	-		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. develop an understanding regarding nature and fields of physiological psychology along with is its methods. 2. acquaint themselves with nature of neural activities alongwith CNS. 3. develop insight into peripheral nerves system and effect of hormones on behaviour. 4. understand physiological mechanisms associated with hunger and thirst. 5. conduct experiments related to theory paper.		
Credits	Theory	Practical	Total
	3	1	4
ContactHours	3 Per week	2 per week/ Per group	5 per week / per group
Max.Marks: 100 **Internal Assessment Marks:30** **EndTermExamMarks: 70**	**Time: 3 Hours (Each theory & practical)**		

PartB-ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 5 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Introduction: Nature, Fields, Relation with disciplines of Neuroscience. Methods of Study: Imaging Techniques, Recording Physiological Activity and Brain Lesion.	14
II	Human Nervous system: Cells- Types, Structure and Functions. Neural Conduction and Synaptic Transmission. Central Nervous System: Structure and Functions of Brain and Spinal Cord.	14
III	Peripheral Nervous System: Structure and Functions of Somatic and Autonomic Nervous System. Hormones and Behaviour: Pituitary, Adrenal, Pancreas, Gonads.	14
IV	UNIT-IV Physiological Mechanisms associated with Learning and Memory. Motivation: Physiological Mechanisms of Hunger, and Thirst. Psychophysiology of Sleep: Necessity and Stages of Sleep.	14

	Practical
	   1. Neuropsychological Battery
	   2. PGI-Memory Scale
	   3. Galvanic Skin Response
	   4. Mapping of Retinal Colour Zones
	   5. EMG/EEG
	   6. Sound Localization
	   7. Two hand coordination.
	
	Note: Students will perform at least five practical. The examiner will allot one practical at the time of end term examination for evaluation.
		32

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory (20 Marks)** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **05 Marks** • Mid-TermExam: **10 Marks** ➢ **Practical (10 Marks)** • ClassParticipation: **Nil** • Seminar/Demonstration/Viva-voce/Labrecordsetc.: **10 Marks** • Mid-TermExam: **Nil** •	**EndTermExamination:** 50 Marks 20 Marks
PartC-LearningResources	

RecommendedBooks/e-resources/LMS:

Carlson, N. R. (2008). Foundations of Physiological Psychology. Pearson / Allyn & Bacon: UK

Leukel, F. (1985). Introduction to Physiological Psychology (3rd Ed.). New Delhi: CBS Publishers.

Levinthal, C.F. (1990). Introduction to Physiological Psychology (3rd Ed.). New Delhi: PHI.

Morgan, T.H. and Stellar, A. (1965). Physiological Psychology. New York: McGraw Hill.

Ojha,R.& Bhargav,M.(1994) Sharirik Manovigyan, Har Prakash Bhargav : Agra.

Pinel, J.P.J. (2007). Biopsychology. New Delhi: Pearson.

Singh,R.D.(2020) Sharirik Manovigyan, Vinod Pustak Mandir: Agra

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Undergraduate Programs (Psychology) Syllabus, Semester –III

Session: 2023-24			
PartA-Introduction			
Subject	Psychology		
Semester	III		
NameoftheCourse	**Health and Wellbeing**		
CourseCode	B23-PSY-303		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MDC		
Levelofthecourse(AsperAnnexure-I	200-299		
Pre-requisiteforthecourse(ifany)	-		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. gain understanding regarding the concept of health psychology and related discipline. 2. get acquainted with concept of wellbeing. 3. understand the phenomenon of stress and pain. 4. get acquainted with health promoting behaviours. 5. conduct tests related to health and health related behaviour.		
Credits	Theory	Practical	Total
	2	1	3
ContactHours	2 Per week	2 per week/ Per group	4 per week / per group
Max.Marks: 75 **Internal Assessment Marks:20** **EndTermExamMarks: 55**		**Time: 3 Hours (Each theory & practical)**	

PartB-Contentsofthe course

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions (1 mark each) uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 7 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contac tHours
I	IntroductiontoHealthPsychology:ComponentsofHealth,Relatio nshipof HealthwithPsychology,MindandBody. Goals ofHealth Psychology.	7
II	Well-being: Components of Well-being: Eudemonia and Hedonism, Life Satisfaction and Affect.	7
III	Stress: Causes and Consequences. Copingwith Stress. Illnessand Pain	7
IV	HealthEnhancingBehaviors:Resilience, Hope,Optimism; Exercise,Safety,Nutrition.	7
	Practical 1. Well-being Scale 2. Stress Inventory 3. Resilience Scale 4. General Health Questionnaire 5. Optimism Scale 6. Happiness Scale 7. Type A/ B Personality Inventory Note: Students will perform at least five practical. The examiner will allot one practical at the time of end term examination for evaluation.	32
Suggested Evaluation Methods		
InternalAssessment: ➢ **Theory (15 Marks)** • ClassParticipation: **04 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **04 Marks** • Mid-TermExam: **07 Marks** ➢ **Practical (5 Marks)** • ClassParticipation: **Nil** • Seminar/Demonstration/Viva-voce/Labrecordsetc.: **5 Marks** • Mid-TermExam: **Nil**	**EndTermEx amination:** **35 Marks** **20 Marks**	

PartC-LearningResources

RecommendedBooks/e-resources/LMS:

Feuerstein, M, Elise, R.L. and Kuczmier cigk, A.R. (1986). Health Psychology A Psychological perspective. New York : Plenum Press.

Friedman- Di-mateo (1989). Health Psychology. New York : Prentice Hall.

Prokop, C.K. Breadley, L.A. Burisn, T.G. Anderson K.O. and Fox, J.E. (1991). Health Psychology Clinical Methods and research. New York : Macmillan.

Sarafino, E.P. (2002). Health psychology: Bio Psychosocial interactions (4th Ed.).NY: Wiley.

Schumidt L.R. Schwenkemgger, P. weinment, J. and maes, S. (1990). Theoretical and Applied Aspects of Health Psychology. London : Hardwood/Academic.

Snyder, C.R., &Lopez,S.J.(2007).Positive Psychology :The scientific and practical explorations of human strengths. Thousand Oaks, CA: Sage.

Spaceman, S. and Oskamp, S. (1988). The Social Psychology of Health. New York : Sage Publications.

Taylor, S.E. (2006). Health Psychology (6th Ed.). New York: Tata McGraw Hill.

KURUKSHETRA UNIVERSITY KURUKSHETRA
(Established by the State Legislature Act XII of 1956)
(A⁺ Grade, NAAC Accredited)
Undergraduate Programs (Psychology) Syllabus, Semester –IV

Session: 2023-24			
PartA-Introduction			
Subject	Psychology		
Semester	IV		
NameoftheCourse	**Developmental Psychology**		
CourseCode	B23-PSY-401		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC/MCC		
Levelofthecourse(AsperAnnexure-I	200-299		
Pre-requisiteforthecourse(ifany)	-		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. develop understanding regarding concepts, process, domains and different perspectives of human development. 2. grasp understanding of beginning of human life and birth process. 3. inculcate knowledge regarding nature of development across life Span 4. To understand the transitional processes during adolescence and old age. 5. conduct tests related to their theory paper.		
Credits	Theory	Practical	Total
	3	1	4
ContactHours	3 Per week	2 per week/ Per group	5 per week / per group
Max.Marks: 100 **Internal Assessment Marks:30** **EndTermExamMarks: 70**		**Time: 3 Hours (Each theory & practical)**	

PartB-ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 5 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Human Development: Concept, Principles, Issues, and Determinants. Major Perspectives: Psychodynamic, Behavioural and Contextual.	14
II	Earliest Development: Basic of Genetics, Transmission of Genetics information, Inherited and Genetic Disorders. Prenatal Development: Fertilization, Stages and Threats to Developmentin Prenatal Environment.	14
III	Infancy and Childhood: Physical, Cognitive and Social Development. Adolescence: Physical and Sexual Maturation; Nutrition and Eating disorders.	14
IV	Threats to Adolescent's Well-Being: Aggression, Bullying, Juvenile Delinquency and Obesity. Aging: Concept, Factors: Biological and Psychological. Dementia, Alzheimer.	14
	Practical 1. Family Environment Scale 2. Emotional Maturity Scale 3. Youth Problem Inventory 4. Aggression Questionnaire 5. Mini Mental Status Examination (Test) 6. Impulsiveness scale 7. Case study 8. Note: Students will perform at least five practical. The examiner will allot one practical at the time of end term examination for evaluation.	32

Suggested Evaluation Methods	
InternalAssessment:	**EndTermExamination:**
➢ **Theory (20 Marks)** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **05 Marks** • Mid-TermExam: **10 Marks**	**50 Marks**
➢ **Practical (10 Marks)** • ClassParticipation: **Nil** • Seminar/Demonstration/Viva-voce/Labrecordsetc.: **10 Marks** • Mid-TermExam: **Nil**	**20 Marks**

PartC-LearningResources

RecommendedBooks/e-resources/LMS:

Berk, L.E. (2004).*Development Through the Life Span.* Delhi: Pearson Education.

Hurlock, E.B. (2001) *Development Psychology: A life-span approach*. New Delhi: Tata McGraw Hill.

Lal, J.N., & Srivasstava, A. (2001) *Modern Developmental Psychology*. Agra: Vinod Pustak Bhandar.

Sheffer, D.R. & Katherine, K. (2007).*Developmental Psychology: Childhood And Adolescence* NewYork: Thomson Wadsworth.

Santrock, J.W. (1997)*. Life Span Development* : Dubuque: Brown and Benchmark.

KURUKSHETRA UNIVERSITY KURUKSHETRA
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(A⁺ Grade, NAAC Accredited)
Undergraduate Programs (Psychology) Syllabus, Semester –IV

Session: 2023-24	
PartA-Introduction	
Subject	Psychology
Semester	IV
NameoftheCourse	**Indian Psychology**
CourseCode	B23-PSY-402
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC
Levelofthecourse(AsperAnnexure-I	200-299
Pre-requisiteforthecourse(ifany)	-
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. develop understanding regarding Indian Psychology and related concepts. 2. grasp understanding of concepts of Upnishads and Advaita Vedantam. 3. inculcate knowledge regarding transpersonal psychology in Bhagwat Gita. 4. understand Buddhism, Jainism and yoga. 5. conduct tests related to their theory paper.

Credits	Theory	Practical	Total
	3	1	4
ContactHours	3 Per week	2 per week/ Per group	5 per week / per group

Max.Marks: 100 **Internal Assessment Marks:30** **EndTermExamMarks: 70**	**Time: 3 Hours (Each theory & practical)**

PartB-ContentsoftheCourse	

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 5 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Indian Psychology: Introduction, Fundamental assumptions, Historical Development, Harmony of body and Mind, Eastern and Western Approach to Psychology.	14
II	Concepts of Upnishads: State of Consciousness, Factor related to Personality and Mental Functions. Advaita Vedantam: Function of Mind, Human Personality and Consciousness	14
III	Transpersonal Psychology in Bhagavat Gita. Identity and Existence.Self- knowledge. Karma and Sanyasa, Work,	14
IV	Psychology of Buddhism and Jainism: Factors of Personality, Cognition and Affection. Yoga Psychology: Definition, Theory and Applications, Patanjali Yoga Sutras and Sidhis – Basic Concepts, Yoga Psychology and Samkhya.	14
	Practical 1. Triguna Test of Personality 2. Test of Anasakti and Aasakti 3. Self Concept 4. Self Esteem 5. Self Efficacy 6. Mysore Tridosh Test 7. Any Practical on Yoga Note: Students will perform at least five practical. The examiner will allot one practical at the time of end term examination for evaluation.	32

Suggested Evaluation Methods	
InternalAssessment:	**EndTermExamination:**
➢ **Theory (20 Marks)** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **05 Marks** • Mid-TermExam: **10 Marks**	**50 Marks**
➢ **Practical (10 Marks)** • ClassParticipation: **Nil** • Seminar/Demonstration/Viva-voce/Labrecordsetc.: **10 Marks** • Mid-TermExam: **Nil**	**20 Marks**
PartC-LearningResources	

RecommendedBooks/e-resources/LMS:
Matthijs Cornelissen, R.M., Misra, G., & Varma, S. (2014). Foundations and Applications of IndianPsychology. India : Pearson
Rao, K.R., Paranjpe, A.C., & Dalal, A.K.(2008). Handbook of Indian Psychology. New Delhi: FoundationBook
Safaya, R. (1975). Indian Psychology. New Delhi: MunshiramManoharlal Publishers
Dalal, A.S. (Ed.) (2011). A greater psychology: An introduction to the psychological thought of Sri Aurobindo. New York: Penguin Putnam Inc.
Rao, K.R. &Paranjpe, A.C. (2016). Psychology in the Indian tradition: New Delhi: India: Springer Pvt. Ltd.
Kuppuswamy, B. (1990). Elements of ancient Indian psychology. Delhi: Konark Publishers Pvt. Ltd.

KURUKSHETRA UNIVERSITY KURUKSHETRA
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Undergraduate Programs (Psychology) Syllabus, Semester –IV

Session: 2023-24			
PartA-Introduction			
Subject	Psychology		
Semester	IV		
NameoftheCourse	**Cognitive Psychology**		
CourseCode	B23-PSY-403		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC		
Levelofthecourse(AsperAnnexure-I	200-299		
Pre-requisiteforthecourse(ifany)	-		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. acquaint themselves about history of cognitive psychology, and understand different methods to study cognition. 2. have in-depth understanding of nature and types of attention and different models of selective attention. 3. have familiarity with process of pattern recognition along with reasoning. 4. have acquaintance with nature, structure of language development and problem solving. 5. conduct tests related to their theory paper.		
Credits	Theory	Practical	Total
	3	1	4
ContactHours	3 Per week	2 per week/ Per group	5 per week / per group
Max.Marks: 100 **Internal Assessment Marks:30** **EndTermExamMarks: 70**	**Time: 3 Hours (Each theory & practical)**		

PartB-ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 5 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Cognitive Psychology: Nature, Scope, Historical background and Current Status of Cognitive Psychology. Methods to Study Cognition - Behavioral and Physiological.	14
II	Attention: Nature; Selective Attention and Divided Attention: Nature, Models of Selective Attention – Broadbent and Treisman. Vigilance.	14
III	Pattern Recognition: Nature and Theories- Prototype Matching and Template Matching. Reasoning: Nature and Types – Inductive and Deductive.	14
IV	Language: Nature, Properties, and Structure. Stages of Language Development. Problem Solving: Nature and Classification of Problems, Factors Affecting Problem Solving.	14

	Practical
	  1. Attention (Selective / Focused)
	  2. Problem Solving
	  3. Stroop Effect
	  4. Letter Cancellation
	  5. Trail Making
	  6. Maze Learning
	  7. Tower of Hanoi
	
	Note: Students will perform at least five practical. The examiner will allot one practical at the time of end term examination for evaluation.
		32

Suggested Evaluation Methods	
InternalAssessment:	**EndTermExamination:**
➢ **Theory (20 Marks)** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **05 Marks** • Mid-TermExam: **10 Marks**	**50 Marks**
➢ **Practical (10 Marks)** • ClassParticipation: **Nil** • Seminar/Demonstration/Viva-voce/Labrecordsetc.: **10 Marks** • Mid-TermExam: **Nil**	**20 Marks**
PartC-LearningResources	

RecommendedBooks/e-resources/LMS:

Eysenck, M.W., & Keane, M.P (2000). Cognitive Psychology: A students guide, Psychology Press.
Galotti, K.M.(2000). Cognitive Psychology in and out of the Laboratory. Delhi: Thomson.
Kellogg, R.T. (2012). Fundamentals of Cognitive Psychology. Lab Angles: Sage. Matlin, M.W. (2008), Cognition. New York: Wiley. Solso, R.L. (2001). Cognitive Psychology. Delhi: Pearson Education. Sternberg, R.J. (2007). Cognitive Psychology. Delhi: Thomson.

KURUKSHETRA UNIVERSITY KURUKSHETRA
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Undergraduate Programs (Psychology) Syllabus, Semester –IV

Session: 2023-24	
PartA-Introduction	
Subject	Psychology
Semester	IV
NameoftheCourse	Health Psychology
CourseCode	B23-PSY-404
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	DSE
Levelofthecourse(AsperAnnexure-I	200-299
Pre-requisiteforthecourse(ifany)	-
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. gain understanding regarding the concept of health psychology and related discipline. 2. get acquainted with behavioural risk actors of health. 3. develop insight into health related disorders. 4. understand pain and geriatric health psychology. 5. conduct tests related to health and health related behaviour.

Credits	Theory	Practical	Total
	3	1	4
ContactHours	3 Per week	2 per week/ Per group	5 per week / per group

Max.Marks: 100 **Internal Assessment Marks:30** **EndTermExamMarks: 70**	**Time: 3 Hours (Each theory & practical)**

PartB-ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 5 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Introduction to Health Psychology: Nature and Emergence, Goals and Scope. Relationship with Clinical Psychology and Behavioural Medicine. Models of Health Behaviour: Biomedical and Biopsychosocial.	14
II	Behavioural Risk Factors: Substance Abuse, Smoking, Diet, Sedentary Life Style, Type A Behaviour Personality.	14
III	Health Related Disorders- Coronary Heart Disease, Cancer, Diabetes, HIV and AIDS.	14
IV	Pain- Concept, Causes, Physiology of Pain, Social Factors in Experiencing Pain, Treating Pain. Geriatric Health Psychology-Health Problems Related to Aging - Treatment / Interventions.	14
	Practical 1. Well-being Scale 2. Stress Inventory 3. General Health Questionnaire 4. BMI 5. Optimism Scale 6. Happiness Scale 7. Type A/ B Personality Inventory Note: Students will perform at least five practical. The examiner will allot one practical at the time of end term examination for evaluation.	32

Suggested Evaluation Methods	
InternalAssessment:	**EndTermExamination:**
➢ **Theory (20 Marks)** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **05 Marks** • Mid-TermExam: **10 Marks**	**50 Marks**
➢ **Practical (10 Marks)** • ClassParticipation: **Nil** • Seminar/Demonstration/Viva-voce/Labrecordsetc.: **10 Marks** • Mid-TermExam: **Nil**	**20 Marks**
PartC-LearningResources	

RecommendedBooks/e-resources/LMS:

Cooper, CL, (ed) 1983. Stress Research. Issues for the Eightie. New York: Wiley & sons.

DiMatteo, M.R. and Martin, L.R.(2002). Health psychology. New Delhi: Pearson.

Feuerstein, M, Elise, R.L. and Kuczmier cigk, A.R. (1986). Health Psychology A Psychological perspective. New York : Plenum Press.

Friedman- Di-mateo (1989). Health Psychology. New York : Prentice Hall.

Prokop, C.K. Breadley, L.A. Burisn, T.G. Anderson K.O. and Fox, J.E. (1991). Health Psychology Clinical Methods and research. New York : Macmillan.

Sarafino, E.P. (2002). Health psychology: Bio Psychosocial interactions (4th Ed.).NY: Wiley.

Schumidt L.R. Schwenkemgger, P. weinment, J. and maes, S. (1990). Theoretical and Applied Aspects of Health Psychology. London : Hardwood/Academic.

Snyder, C.R., &Lopez,S.J.(2007).Positive Psychology :The scientific and practical explorations of human strengths. Thousand Oaks, CA: Sage.

Spaceman, S. and Oskamp, S. (1988). The Social Psychology of Health. New York : Sage Publications.

Taylor, S.E. (2006). Health Psychology (6th Ed.). New York: Tata McGraw Hill.

KURUKSHETRA UNIVERSITY KURUKSHETRA
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Undergraduate Programs (Psychology) Syllabus, Semester –IV

Session: 2023-24			
PartA-Introduction			
Subject	Psychology		
Semester	IV		
NameoftheCourse	Abnormal Psychology		
CourseCode	B23-PSY-405		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	DSE		
Levelofthecourse(AsperAnnexure-I	200-299		
Pre-requisiteforthecourse(ifany)	-		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. inculcate understanding regarding abnormality from different perspectives. 2. expose towards different types of assessment and diagnostic classification. 3. develop understanding regarding anxiety disorders and substance abuse. 4. understand the concepts of Mood and psychotic disorders. 5. conduct tests related to theory paper.		
Credits	Theory	Practical	Total
	3	1	4
ContactHours	3 Per week	2 per week/ Per group	5 per week / per group
Max.Marks: 100 **Internal Assessment Marks:30** **EndTermExamMarks: 70**		**Time: 3 Hours (Each theory & practical)**	

	PartB-ContentsoftheCourse	

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 5 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Abnormal Psychology: Nature, Differentiation between Normality and Abnormality. Criteria of Abnormality. Viewpoint to Psychopathology: Biological, Psychodynamic, Behavioural and Cognitive.	14
II	Classification of Psychopathology: Need for Classification, DSM Classification System, DSM-V. Diagnostic Assessment: Interview, Case History and Projective Techniques: Rorschach and Word Association Test.	14
III	Symptom and Etiology of Anxiety Based Disorders: Generalized Anxiety Disorder, Obsessive Compulsive Disorder and Phobic Disorders. Symptom and Etiology of Substance /Drug Abuse: Stimulants and Alcoholism.	14
IV	Symptoms and Etiology of Mood Disorders: Unipolar and Bipolar. Symptoms, Etiology and Types of Schizophrenia.	14
	Practical 1. CAQ. 2. Depression Scale/Inventory 3. Anxiety Scale 4. PGI Memory Scale 5. Rorschach Inkblot Test 6. Case Study 7. Defence Mechanism Inventory (DMI) Note: Students will perform at least five practical. The examiner will allot one practical at the time of end term examination for evaluation.	32

Suggested Evaluation Methods	
InternalAssessment:	**EndTermExamination:**
➢ **Theory (20 Marks)** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **05 Marks** • Mid-TermExam: **10 Marks**	**50 Marks**
➢ **Practical (10 Marks)** • ClassParticipation: **Nil** • Seminar/Demonstration/Viva-voce/Labrecordsetc.: **10 Marks** • Mid-TermExam: **Nil**	**20 Marks**
PartC-LearningResources	

RecommendedBooks/e-resources/LMS:

Anand, V. and Srivastva, R. (2003).ManovikritiVigyan, Delhi: MotiLalBanarsiDas.

Carson, R.C.; Butcher, J.N., et al. (2007). Abnormal Psychology.(13th Ed.) New Delhi: Pearson Education.

Davison, G.C. & Neale, J.M. (1998).Abnormal Psychology (7th Ed.) New York: Willy.

Sarason, I.G. and Sarason, B.R. (2005).Abnormal Psychology: The Problem of MaladaptiveBehaviour (10th Ed.) New Delhi: Pearson Education Inc.

Singh, A.K. (2006). AdhunikAsamanyaManovigyan, Delhi: Moti Lal Banarasi Das.

Srivastava, D.N. (1991) AdhunikAsamnyaManovigyan (6th Ed.) Agra: Sahitya.

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Psychology) Syllabus, Semester –IV

VAC-4

Session: 2023-24	
PartA-Introduction	
Subject	Psychology
Semester	IV
NameoftheCourse	Art of Happiness
CourseCode	B23-VAC-402
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	VAC
Levelofthecourse(AsperAnnexure-I	100-199
Pre-requisiteforthecourse(ifany)	-
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. get awareness regarding nature, sources and factors affecting happiness. 2. understand the role of culture in happiness and relationship happiness and money. 3. develop insight about happiness as a intrinsic value, age relationship with happiness and ways to increase happiness. 4. know about key indicators and index of happiness, and status of happiness in India.

Credits	Theory	Practical	Total
	2	NA	2
ContactHours	2	NA	2

Max.Marks: 50 **Internal Assessment Marks: 15** **EndTermExamMarks: 35**	**Time: 3 Hours**

PartB-ContentsoftheCourse

Instructions for Paper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 07 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	ContactHours
I	Happiness: Definition and Nature. Sources of Happiness, Factors Affecting Happiness.	7
II	Culture and Happiness. Eastern and Western Approaches to Happiness. Relationship between Happiness and Money.	7
III	Happiness as Intrinsic Value. Age and Happiness. Ways to Increase Happiness.	7
IV	Measuring Happiness: Key Indicators. Happiness Index. Happiness in India.	7

Suggested Evaluation Methods

InternalAssessment:
➢ **Theory**
• ClassParticipation: **04 Marks**
• Seminar/presentation/assignment/quiz/classtestetc.: **04 Marks**
• Mid-TermExam: **7 Marks**

EndTermExamination:
50 Marks

PartC-LearningResources

RecommendedBooks/e-resources/LMS:
Seligman, M. (2002). Authentic Happiness: Using the New Positive Psychology to Realize Your Potential for Lasting Fulfillment. New York: Free Press.
Selin, H. and Davey, G. (2012). Happiness Across Cultures. Springer.
H H Lama, D. and Cutler, H. C. (2009). The Art of Happiness: A Handbook of Living (10th Anniversary Edition). New York: Riverhead Books.
Clark, A. E., Fleche, S., Layard, R., Powdthavee, N. and Ward, G. (2019). The Origins of Happiness. NJ: Princeton University Press.
Yew – Kwang Ng (2022). Happiness- Concept, Measurement and Promotion. Springer

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Psychology) Syllabus, Semester –IV

VAC-4

Session: 2023-24			
PartA-Introduction			
Subject	Psychology		
Semester	IV		
NameoftheCourse	Social and Emotional Learning		
CourseCode	B23-VAC-411		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	VAC		
Levelofthecourse(AsperAnnexure-I	100-199		
Pre-requisiteforthecourse(ifany)	-		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. get awareness regarding social and emotional learning alongwith its historical influences and critical areas. 2. understand the role of emotional intelligence in SEL and familiarity with roots of empathy.. 3. develop insight into measurement of SEL alongwith its current challenges. 4. know about evidences in support of SEL and build sustainable framework on the basis of SEL.		
Credits	Theory	Practical	Total
	2	NA	2
ContactHours	2	NA	2
Max.Marks: 50 **Internal Assessment Marks:15** **EndTermExamMarks: 35**	**Time: 3 Hours**		

PartB-ContentsoftheCourse

Instructions for Paper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 07 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	ContactHours
I	Social and Emotional Learning: Nature, Historical Influences and Critical Areas of Competence.	7
II	Role of Emotional Intelligence in Social and Emotional Learning. Emotional Intelligence as Social Art. Roots of Empathy.	7
III	Measurement of Social and Emotional Learning: Tools and Checklists. Current Challenges.	7
IV	Evidences in Support of Social and Emotional Learning, SEL as a Sustainable Framework for success.	7

Suggested Evaluation Methods

InternalAssessment:	EndTermExamination:
➢ **Theory** • ClassParticipation: **04 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **04 Marks** • Mid-TermExam: **7 Marks**	**50 Marks**

PartC-LearningResources

RecommendedBooks/e-resources/LMS:

Black, D. L. (2022). Essentials of Social and Emotional Learning (SEL). NJ: Wiley.

Goleman, D. (2005). Emotional Intelligence. USA: Bantam **.**

KURUKSHETRA UNIVERSITY KURUKSHETRA
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Undergraduate Programs (Psychology) Syllabus, Semester –IV

VAC-4

Session: 2023-24			
PartA–Introduction			
Subject	Psychology		
Semester	IV		
NameoftheCourse	Emotional Intelligence		
CourseCode	B23-VAC-416		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	VAC		
Levelofthecourse(AsperAnnexure-I	100-199		
Pre-requisiteforthecourse(ifany)	-		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. get insight about emotional intelligence's nature, models and building blocks. 2. discover personal competence and techniques of building emotional intelligence. 3. Gain knowledge about social Awareness & Relationship Management. 4. Gain insights into measurement and strategies to develop and enhance emotional intelligence.		
Credits	Theory	Practical	Total
	2	NA	2
ContactHours	2 Per week		2 per week
Max.Marks: 50 **Internal Assessment Marks:15** **EndTermExamMarks: 35**	**Time: 3 Hours**		

PartB-ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 7 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	Contact Hours
I	Emotional Intelligence: Nature and Significance. Models: Ability, Trait and Mixed.	07
II	Personal Competence: Self Awareness: Observing and Recognizing One's own Feelings, Knowing One's Strengths and Areas of Development.	07
III	Relationship Management: Effective communication, Collaboration, Teamwork, and Conflict management.	07
IV	Emotional Intelligence: Strategies to develop and enhance emotional intelligence.	07

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory (15 Marks)** • ClassParticipation: **04 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **04Marks** • Mid-TermExam: **07 Marks**	**EndTermExamination:** **35 Marks**

PartC-LearningResources

RecommendedBooks/e-resources/LMS:
Bar-On, R., & Parker, J.D.A.(Eds.) (2000). The handbook of emotional intelligence. San Francisco, California: Jossey Bros.
Goleman, D. (2005). Emotional Intelligence. New York: Bantam Book.
Singh, Dalip (2001). Emotional Intelligence at Work: A Professional Guide. Sage Publications Pvt. Ltd..
Sternberg, R. J. (Ed.). (2000). Handbook of intelligence. Cambridge University Press.

DEPARTMENT OF PSYCHOLOGY

KURUKSHETRA UNIVERSITY KURUKSHETRA

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

Scheme of Examination for Undergraduate programmes in the Subject of Psychologyas per NEP 2020 (Multiple Entry-Exit, Internships and Choice Based Credit System- Learning Outcome Based) w. e. f. 2023-24 in phased manner.

Semester	Course Type	Course Code	Nomenclature of paper	Credits	Credits		Contact hours	Internal Assessment marks		End term Exam. Marks		Max. Marks	Duration of End Term exam. (Hrs T / P
					Theory (T)	Practical (P)	T+P	T	P	T	P		
1	CC-1 MCC-1	B23-PSY-101	Foundations of Psychology	4	3	1	5	20	10	50	20	100	3/3
	MCC-2	B23-PSY-102	Elementary Statistics	4	3	1	5	20	10	50	20	100	3/3
	CC-M1	B23-PSY-103	Problems of Adolescence	2	2	NA	2	15	-	35	00	50	3
	-MDC 1	B23-PSY-104	Understanding Psychology	3	2	1	4	15	05	35	20	75	3/3
2	CC-2 MCC-3	B23-PSY-201	Social Psychology	4	3	1	5	20	10	50	20	100	3/3
	DSEC-1	B23-PSY-202	Assessment of Personality and Intelligence	4	3	1	5	20	10	50	20	100	3/3

Semester	Course Type	Course Code	Nomenclature of paper	Cre dits	Credits		Contact hours	Internal Assessment Marks		End Term Exam. Marks		Max. Marks	Duration of End Term exam. (Hrs)
					Theory	Practical	T+P	T	P	T	P		T / P
	-MDC 2	B23-PSY-203	Understanding Abnormal Behaviour	3	2	1	4	15	05	35	20	75	3/3
	CC-M2	B23-PSY-204	Stress Management	2	2	NA	2	15	-	35	-	50	3
3	CC-3 MCC-4	B23-PSY-301	Experimental Psychology	4	3	1	5	20	10	50	20	100	3/3
	MCC-5	B23-PSY-302	Physiological Psychology	4	3	1	5	20	10	50	20	100	3/3
	-MDC 3	B23-PSY-303	Health and Wellbeing	3	2	1	4	15	05	35	20	75	3/3
4	CC-4 MCC-6	B23-PSY-401	Developmental Psychology	4	3	1	5	20	10	50	20	20	3/3
	MCC-7	B23-PSY-402	Indian Psychology	4	3	1	5	20	10	50	20	100	3/3
	MCC-8	B23-PSY-403	Cognitive Psychology	4	3	1	5	20	10	50	20	100	3/3
	DSE-1	B23-PSY-404	Health Psychology	4	3	1	5	20	10	50	20	100	3/3
		Or											
		B23-PSY-405	Abnormal Psychology	4	3	1	5	20	10	50	20	100	3/3

Semester	Course Type	Course Code	Nomenclature of paper	Credits	Credits		Contact Hours	Internal Assessment Marks		End Term Exam. Marks		Max. Marks	Duration of End Term exam. (Hrs) T / P
					Theory (T)	Practical (P)	T+P	T	P	T	P		
5	CC-5 MCC-9	B23-PSY-501	Psychological Testing	4	3	1	5	20	10	50	20	100	3/3
	MCC-10	B23-PSY-502	Guidance	4	3	1	5	20	10	50	20	100	3/3
	DSE-2	B23-PSY-503	Psychotherapies	4	3	1	5	20	10	50	20	100	3/3
		Or											
		B23-PSY-504	Organizational Psychology	4	3	1	5	20	10	50	20	100	3/3
	DSE-3	B23-PSY-505	Intelligence	4	3	1	5	20	10	50	20	100	3/3
		Or											
		B23-PSY-506	Clinical Psychology	4	3	1	5	20	10	50	20	100	3/3
6	CC-6 MCC-11	B23-PSY-601	Counselling	4	3	1	5	20	10	50	20	100	3/3
	MCC-12	B23-PSY-602	Personality	4	3	1	5	20	10	50	20	100	3/3
	DSE-4	B23-PSY-603	Organizational Behaviour	4	3	1	5	20	10	50	20	100	3/3
		Or											
		B23-PSY-604	Consumer Psychology	4	3	1	5	20	10	50	20	100	3/3

Semester	Course Type	Course Code	Nomenclature of paper	Cre dits	Credits		Contact Hours	Internal Assessment Marks		End Term Exam. Marks		Max. Marks	Duration of End Term exam. (Hrs) T / P
					Theory (T)	Practical (P)	T+P	T	P	T	P		
	DSE-5	B23-PSY-605	Sports Psychology	4	3	1	5	20	10	50	20	100	3/3
		Or											
		B23-PSY-606	Forensic Psychology	4	3	1	5	20	10	50	20	100	3/3
7	CC-H1	B23-PSY-701	Systems and Theories	4	4	0	4	30	00	70	00	100	3
	CC-H2	B23-PSY-702	Research Methodology	4	4	0	4	30	00	70	00	100	3
	CC-H3	B23-PSY-703	Applied Social Psychology	4	4	0	4	30	00	70	00	100	3
	DSE-6	B23-PSY-704	Understanding Self	4	4	0	4	30	00	70	00	100	3
		Or											
		B23-PSY-705	Personality Development	4	4	0	4	30	00	70	00	100	3
	PC-H1	B23-PSY-706	Practicum	4	0	4	8	00	30	00	70	100	3

Semester	Course Type	Course Code	Nomenclature of paper	Credits	Credits		Contact Hours	Internal Assessment Marks		End Term Exam. Marks		Max. Marks	Duration of End Term exam. (Hrs) T / P
					Theory (T)	Practical (P)	T+P	T	P	T	P		
8	CC-H4	B23-PSY-801	Cognitive Processes	4	4	0	4	30	00	70	00	100	3
	CC-H5	B23-PSY-802	Positive Psychology	4	4	0	4	30	00	70	00	100	3
	CC-H6	B23-PSY-803	Advance Statistics	4	4	0	4	30	00	70	00	100	3
	DSE-7	B23-PSY-804	Child Psychology	4	4	0	4	30	00	70	00	100	3
		Or											
		B23-PSY-805	Educational Psychology	4	4	0	4	30	00	70	00	100	3
	PC-H2	B23-PSY-806	Practicum	4	0	4	8	00	30	00	70	100	3
	Research	B23-PSY-807	Dissertation/Project	12						300		300	

Note: 1. CC of concerned semester will be CC – M (4 credits) for non psychology students.

2. AEC/SEC/VAC/VOC course(s) will be chosen from the pool of courses.

3. Discrepancy, if any, in the schemewill be dealtas per ordinance for UG programs prepared by Kurukshetra University, Kurukshetra.

4. The scheme will be implemented in phased manner with effect from the session 2023-24.

Semester	Course Type	Course Code	Nomenclature of paper	Credits	Credits		Contact hours	Internal Assessment marks		End term Exam. Marks		Max. Marks	Duration of End Term exam. (Hrs T / P
					Theory (T)	Practical (P)	T+P	T	P	T	P		
4	VAC-4	B23-VAC-402	Art of Happiness	2	2	NA	2	15	00	35	00	50	3
	VAC-4	B23-VAC-411	Social and Emotional Learning	2	2	NA	2	15	00	35	00	50	3
	VAC-4	B23-VAC-416	Emotional Intelligence	2	2	NA	2	15	00	35	00	50	3

Department of Public Administration
Kurukshetra University Kurukshetra
(Establishment by the State Legislature Act XII of 1956)
Syllabus of the Courses of Reading and Scheme of Examinations
For the UG Programme (Semester System)
Subject: Public Administration
(According to Revised Curriculum Framework of U.G. Programme under NEP-2020)
To be implemented w.e.f. the Session 2023-24
(In the *Phased Manner*)

Semester	Course Type	Course Code	Name of the Course	Credits	Contact Hours Per-week	Internal Assessment Marks	End Term Exam Marks	Max. Marks	Duration of Exam. (Hrs.)
First Year									
I	CC-1/MCC-1 Public Administration	B23-PAD-101	Elements of Public Administration	4	4	30	70	100	3
	MCC-2 Public Administration	B23-PAD-102	Indian Constitution	4	4	30	70	100	3
	CCM-1 Public Administration	B23-PAD-103	Issues in Public Administration	2	2	15	35	50	3
	MDC-1 Public Administration	B23-PAD-104	Public Administration in India	3	3	25	50	75	3
II	CC-2/MCC-3Public Administration	B23-PAD-201	Basics of Public Administration	4	4	30	70	100	3
	DSEC-1 Public Administration	B23-PAD-202	Urban Local Governance	4	4	30	70	100	3

	CCM-2 Public Administration	B23-PAD-203	Rural Local Governance	2	2	15	35	50	3
	MDC-2 Public Administration	B23-PAD-204	Public Financial Administration	3	3	25	50	75	3
Second Year									
III	CC-3/MCC-4 Public Administration	B23-PAD-301	Central Administration	4	4	30	70	100	3
	MCC-5 Public Administration	B23-PAD-302	Citizen and Administration	4	4	30	70	100	3
	MDC-3 Public Administration	B23-PAD-303	Development Administration	3	3	25	50	75	3
IV	CC-4/MCC-6 Public Administration	B23-PAD-401	State and District Administration	4	4	30	70	100	3
	MCC-7 Public Administration	B23-PAD-402	Administrative Thinkers	4	4	30	70	100	3
	MCC-8 Public Administration	B23-PAD-403	Administrative Theory	4	4	30	70	100	3
	DSE-1 Public Administration	B23-PAD-404	Administrative Ethics & Governance	4	4	30	70	100	3
		OR							
		B23-PAD-405	Disaster Management	4	4	30	70	100	3

Third Year									
V	CC-5/MCC-9 Public Administration	B23-PAD-501	Local Government in India	4	4	30	70	100	3
	MCC-10 Public Administration	B23-PAD-502	Rural Development Administration	4	4	30	70	100	3
	DSE-2 Public Administration	B23-PAD-503	Labour Welfare Administration	4	4	30	70	100	3
		OR							
		B23-PAD-504	Management of NGO's.	4		30	70	100	3
	DSE-3 Public Administration	B23-PAD-505	Social Welfare Administration	4	4	30	70	100	3
		OR							
		B23-PAD-506	Administrative Law	4	4	30	70	100	3
VI	CC-6/MCC-11 Public Administration	B23-PAD-601	Urban Local Government in India, UK, France & USA.	4	4	30	70	100	3
	MCC-12 Public Administration	B23-PAD-602	FinancialAdministration	4	4	30	70	100	3
	DSE-4 Public Administration	B23-PAD-603	Personnel Administration	4	4	30	70	100	3
		OR							
		B23-	Economic Policy	4	4	30	70	100	3

		PAD-604	and Administration						
	DSE-5 Public Administration	B23-PAD-605	Issues in Public Administration	4	4	30	70	100	3
		OR							
		B23-PAD-606	Indian Constitution	4	4	30	70	100	3
Fourth Year									
VII	CC-H1 Public Administration	B23-PAD-701	Social Welfare Administration	4	4	30	70	100	3
	CC-H2 Public Administration	B23-PAD-702	Research Methods in Public Administration	4	4	30	70	100	3
	CC-H3 Public Administration	B23-PAD-703	Introduction to Public Policy	4	4	30	70	100	3
	DSE-6 Public Administration	B23-PAD-704	Indian Constitution	4	4	30	70	100	3
		OR							
		B23-PAD-705	Environmental Policy & Administration	4	4	30	70	100	3
	PC-H1	B23-PAD-706	Governance & Ethics	4	4	30	70	100	3
VIII	CC-H4 Public Administration	B23-PAD-	Public Personnel Administration in	4	4	30	70	100	3

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	801	India, UK, USA & France						
CC-H5 Public Administration	B23-PAD-802	Labour Welfare Administration	4	4	30	70	100	3
CC-H6 Public Administration	B23-PAD-803	Health Policy & Administration	4	4	30	70	100	3
DSE-7 Public Administration	B23-PAD-804	Financial Administration	4	4	30	70	100	3
	OR							
	B23-PAD-805	Issues in Public Administration	4	4	30	70	100	3
PC-H2	B23-PAD-806	Administrative Thinkers	4	4	30	70	100	3
OR								
CC-H4 Public Administration	B23-PAD-801	Public Personnel Administration in India, UK, USA & France	4	4	30	70	100	3
CC-H5 Public Administration	B23-PAD-802	Labour Welfare Administration	4	4	30	70	100	3
	B23-PAD-807	Dissertation	12				300	

Detailed Syllabus, Courses of Reading and Scheme of Examinations:

Session 2023-2024			
Part-A Introduction			
Subject	Public Administration		
Semester	I		
Name of the Course	Elements of Public Administration		
Course Code	B23-PAD-101		
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	CC		
Level of the course (As per Annexure-I)	100-199		
Pre-requisite for the course (if any)	10+2/Sr. Secondary/Equivalent Exam		
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1. Acquaint with the concept the student will be able to awareness about the evolution and growth of the discipline of Public Administration 2. Understand the basic Principles and approaches of Public Administration. 3. Student will acquire theoretical clarity of basic concept and basic principles of Organization. 4. Student will gain knowledge about the forms of Organization – Formal and Informal		
Credits	Theory	Tutorial	Total
	3	1	4
Contact Hours	3	1	4
Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**	**Time:3 hrs**		

Part-B Contents of the Course

The Question paper will consist of Nine Questions. The student shall attempt Five questions in all. Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).

Unit	Topics	Contact Hours
I	**Introduction** Public Administration: Evolution, Meaning, Nature, Scope, Significance and its relations with Political Science, Economics and Law; Public and Private Administration; New Public Administration; and New Public Management	12
II	**Principles of Organisation** Organization: Meaning and Basis. Principles of Organization: Hierarchy, Span of Control, Co-ordination, Supervision and Control, Communication, Decentralization and Delegation	12
III	**Formal Institutions of Government** Forms of Organizations: Formal and Informal, Department, Board, Corporation and Commission and Independent Regulatory	12

	Commission	
IV	**Basic Agencies in Administration** Chief Executive: Meaning, Types and Role. Line, Staff and Auxiliary Agencies. Public Relations: Meaning, Means and Significance.	12
V	Tutorial	12

Suggested Evaluation Methods

Internal Assessment:	End Term Examination: 70
➢ **Theory** Class Participation-05 Seminar/Presentation/Assignment/Quiz/Class Test etc.- 05+05 Mid Term Exam:15	

Part-C Learning Resources

Recommended Books/E-Resources/LMS:

Reference:

- Hoshiar Singh and PardeepSachdeva (2011) Public Administration: Theory and Practice, Pearson Publication, Noida.
- Avasthi, A and Maheshwari, S R (2013) PublicAdministration. Lakshmi NarainAgarwal: Agra
- Basu, Rumki (2008) PublicAdministration: Concepts and Theories. Sterling Publishers: New Delhi
- Bhagwan, Vishnoo; Bhushan, Vidhya and Mohla, Vandana (2010) PublicAdministration. S. Chand: Jalandhar
- Bhambri, C. P. (2010) PublicAdministration Theory and Practice(21stEdition). Educational Publishers: Meerut
- Bhattacharaya, Mohit (2008) New Horizons of PublicAdministration. Jawahar Publishers and Distributors: New Delhi
- Henry, Nicholas(2013). PublicAdministration and Public Affairs (13thEdition). Taylor and Francis: New York
- Medury, Uma (2010) PublicAdministration in the Globalization Era – The New Public Management Perspective. Orient Blackswan: New Delhi
- Sharma, M P and Sadana, B L (2000) PublicAdministration in Theory and Practice. KitabMahal: New Delhi

MCC

Session 2023-2024	
Part-A Introduction	
Subject	Public Administration
Semester	I
Name of the Course	Indian Constitution
Course Code	B23-PAD-102
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	MCC
Level of the course (As per Annexure-I)	100-199
Pre-requisite for the course (if any)	10+2/Sr. Secondary/Equivalent Exam
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1. Knowledge about the evolution, growth, framing, framing and features of Indian Constitution 2. To acquire comprehensive knowledge of Basic Premises and Institutions i.e. Preamble, Fundamental Rights and Fundamental Duties and Directive Principles of State Policy. 3. Understanding the in-built control mechanisms over constitutional bodies in particular and administration in general 4. Awareness about the institutions and mechanism of Indian Constitutional Commissions

Credits	Theory	Tutorial	Total
	3	1	4
Contact Hours	3	1	4

Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**	**Time:3 hrs**

Part-B Contents of the Course

The Question paper will consist of Nine Questions. The student shall attempt Five questions in all. Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).

Unit	Topics	Contact Hours
I	**Introduction** a)　　Framing of Indian Constitution (1947-1950) b)　　Salient Features and Significance c)　　Indian Federation: Features, Provisions and Issues	12
II	**Basic Premises** a)　　Preamble	12

	b)	Fundamental Rights and Fundamental Duties	
	c)	Directive Principles of State Policy	
III	**Institutions And Distinctive Features**		12
	a)	Parliament and State Legislatures	
	b)	Supreme Court and High Courts	
	c)	Emergency Provisions	
	d)	Constitutional Amendment Process	
IV	**Constitutional Commissions**		12
	a)	National Commission for Scheduled Castes	
	b)	National Commission for Scheduled Tribes	
	c)	National Commission for Backward Classes	
	d)	National Commission for Minorities	
V	Tutorial		12
Suggested Evaluation Methods			
Internal Assessment:			**End Term Examination: 70**
➢ **Theory** Class Participation-05 Seminar/Presentation/Assignment/Quiz/Class Test etc.-05 + 05 Mid Term Exam:15			

Part-C Learning Resources
Recommended Books/E-Resources/LMS: **Reference:**   • Indian Administration – Hoshiar Singh &Pankaj Singh ,Pearson's Publication(2012)   • BhartiyaPrashasan (Hindi) – Hoshiar Singh &Pankaj Singh ,Pearson's Publication   • Avasthi&Avasthi (2002), Indian Administration, LaxmiNarain Aggarwal, Agra   • Basu, D.D. (2000), Introduction to the Constitution of India, Wadhwa and Company, New Delhi.   • Fadia and Fadia, Indian Administration (2012), SahityaBhawan Publication, Agra.   • Granville Austin (1999), The Indian Constitution – Corner Stone of a Nation, OUP, New Delhi.   • Maheshwari, S.R. (2001), Indian Administration, Orient Black Swan, Hyderabad.   • Pylee, M.V. (2009), An Introduction to the Constitution of India, Vikas, New Delhi.   • Sathe, S.P. (2002), Judicial Activism in India, New Delhi: Oxford University Press.   • Subash C. Kashyap (1989), Indian Polity: Retrospect and Prospect, Allahabad University Alumni Association, National Public House.   • The Constitution of India, Government of India, 2009.

CCM

Session 2023-2024	
Part-A Introduction	
Subject	Public Administration
Semester	I
Name of the Course	Issues in Public Administration
Course Code	B23-PAD-103
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	CCM
Level of the course (As per Annexure-I)	100-199
Pre-requisite for the course (if any)	10+2/Sr. Secondary/Equivalent Exam
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1. Acquaint with the concept of Student will be able to Parliamentary, Executive and Judicial Control over Administration. 2. Understand the basic principles and Agencies for checking Corruption at Union and State Level. 3. Students will acquire theoretical clarity of basic concepts and Good Governance & Right to Information 4. Student will gain knowledge about the Generalists and Specialist Relationship and Administrative Reforms

Credits	Theory	Tutorial	Total
	2	--	2
Contact Hours	2	--	2

Max. Marks:50 Internal Assessment Marks:15 End Term Exam Marks: 35	Time:3 hrs

Part-B Contents of the Course

The Question paper will consist of Nine Questions. The student shall attempt Five questions in all. Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).

Unit	Topics	Contact Hours
I	**Understanding in Indian Administration** Accountability in Public Administration: Parliamentary, Executive and Judicial Control over Administration. Lok Pal and LokAyukta.	6
II	**Administrative Agencies**	6

	Integrity in Administration: Means and Agencies for checking Corruption at Union and State Level.	
III	**Awareness about the Rights** Emerging Issues: Good Governance, Right to Information. Consumer Protection Act, 2005.	6
IV	**Political and Administrative Integrity** Political and Permanent Executive. Generalists and Specialist Relationship. Administrative Reforms.	6
V	Tutorial	6
Suggested Evaluation Methods		
Internal Assessment:		**End Term Examination: 35**
➢ **Theory** Class Participation-04 Seminar/Presentation/Assignment/Quiz/Class Test etc.-04 Mid Term Exam:07		

Part-C Learning Resources
Recommended Books/E-Resources/LMS: **Reference:**   - Hoshiar Singh &Pankaj Singh: Indian Administration, Pearson, New Delhi.   - S.R. Maheshwari: Indian Administration, Orient Longman.   - K.K. Puri: Indian Administration, Bharat Prakashan, Jallandhar.   - S.S.Khera: District Administration, Asia Publishing House, New Delhi.   A. Avasthi: Central Administration, Tata McGraw Hill, New Delhi.   - Ashok Chandra: Indian Administration, Allen & Unwin, London.

MDC

Session 2023-2024			
Part-A Introduction			
Subject	Public Administration		
Semester	I		
Name of the Course	Public Administration in India		
Course Code	B23-PAD-104		
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	MDC		
Level of the course (As per Annexure-I)	100-199		
Pre-requisite for the course (if any)	10+2/Sr. Secondary/Equivalent Exam		
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1.Knowledge about the evolution and growth of Indian Administration Grasping the role of Union Executive 2.Understanding the in-built control mechanisms over constitutional bodies in particular and administration in general 3.Delineating the constitutional provisions and dynamics of union -state relationships 4.Awareness about the institutions and mechanism in force for citizen-state interface		
Credits	Theory	Tutorial	Total
	2	1	3
Contact Hours	2	1	3
Max. Marks:75 **Internal Assessment Marks:25** **End Term Exam Marks: 50**	**Time:3 hrs**		
Part-B Contents of the Course			
The Question paper will consist of Nine Questions. The student shall attempt Five questions in all. Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).			

Unit	Topics	Contact Hours
I	**Historical Background And Constitutional Context** Evolution Constitutional Context: Parliament, Executive and Judiciary- Structures, functions and work processes Salient Features	9
II	**Union Executive**	9

	President Prime Minister and Council of Ministers – Cabinet Secretariat & Prime Minister Office Central Secretariat	
III	**System Of Government** Federal and Unitary Features in constitutional context Union-States Relations and Trends in Centre-State Relations Inter-States Relations- Issues and Resolution Mechanism	9
IV	**Constitutional, Statutory and Non-Statutory Authorities** Election Commission of India National Human Rights Commission NitiAyog National Development Council	9
V	Tutorial	9
Suggested Evaluation Methods		

Internal Assessment:
 	
➢ **Theory**
    Class Participation-05
    Seminar/Presentation/Assignment/Quiz/Class Test etc.-07
    Mid Term Exam:13
		End Term Examination: 50

Part-C Learning Resources

Recommended Books/E-Resources/LMS:
Reference:

- Indian Administration – Hoshiar Singh &Pankaj Singh ,Pearson's Publication(2012)

- BhartiyaPrashasan (Hindi) – Hoshiar Singh &Pankaj Singh ,Pearson's Publication

- Avasthi and Avasthi (2002) Indian Administration, LaxmiNarain Aggarwal: Agra

- Basu, D.D. (2000) Introduction to the Constitution of India, Wadhwa& Company: New Delhi

- Bhambri, C. P. (1973) Public Administration in India, Delhi, Vikas

- Bhaskar Rao, V.Venkateshwarulu,B.(eds.) (1987) Parliamentary Democracy in India: Trends and Issues, Delhi: Mittal Publications

- Chatterjee, Sibranjan (1997) Restructuring Centre-State Relations: The Sarkaria Commission and Beyond, Minerva Associates: Calcutta

- Government of India (2005) Second Administrative Reform Commission Reports (1-15), Ministry of Personnel, Public Grievances & Pensions, Department of Administrative Reforms and Public Grievances: New Delhi

- Granville, Austin (1999) The Indian Constitution-Cornerstone of Nation, OUP: New Delhi

- Jain R.B.(1976) Contemporary Issues in Indian Administration, Delhi: Vishal

- Kashyap, Subash C. (2010) Indian Constitution: Conflicts and Controversies, Vitasta

- Maheshwari, S.R.(2004) Indian Administration, Orient Blackswan : Delhi

- Sarkar, Jadunath (2009) The Mughal Administration, Six Lectures BiblioLife

CC

Session 2023-2024			
Part-A Introduction			
Subject	Public Administration		
Semester	II		
Name of the Course	Basics of Public Administration		
Course Code	B23-PAD-201		
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	CC		
Level of the course (As per Annexure-I)	200-299		
Pre-requisite for the course (if any)	------------		
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1. Will be equipped with the knowledge and conceptual clarity of Evolution, Importance, International, and Theories of Organization in Public Administration. 2. Knowledge about the Approaches Bureaucratic, General Systems, Decision Making and Personnel Administration. 3. Knowledge of differentBudget: Principles, Preparation and Enactment. 4. Clarity re-administrative systems and their accountability mechanisms of Administrative Law and Delegated Legislation India		
Credits	Theory	Tutorial	Total
	3	1	4
Contact Hours	3	1	4
Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**	**Time:3 hrs**		
Part-B Contents of the Course			
The Question paper will consist of Nine Questions. The student shall attempt Five questions in all. Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).			
Unit	Topics		Contact Hours
I	**Introduction of Theories** Theories of Organization: Scientific Management Theory (F.W.Taylor), Classical (Henry Fayol, Luther Gulick, M.P. Follet, Mooney and Reiley.), Bureaucratic (Max Weber).		12
II	**Personnel Administration**		12

	Personnel Administration: Meaning; Nature and Significance. Elements of personnel Administration: Recruitment; Training; Promotion; and joint Consultative Machinery.	
III	**Budgetary Process** Budget: Principles, Preparation and Enactment of Budget. Financial Control: Parliamentary (Parliament and its committees) and Executive Control.	12
IV	**Administrative Process in Administration** Meaning and Significance of followings: Administrative Law. Administrative Tribunal. Public Policy.	12
V	Tutorial	12

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory** Class Participation-05 Seminar/Presentation/Assignment/Quiz/Class Test etc.-05+05 Mid Term Exam:15	**End Term Examination: 75**

Part-C Learning Resources

Recommended Books/E-Resources/LMS:
Reference:

- Hoshiar Singh and PardeepSachdeva (2011) Public Administration: Theory and Practice, Pearson Publication, Noida.
- Avasthi, A and Maheshwari, S R (2013) PublicAdministration. Lakshmi NarainAgarwal: Agra
- Basu, Rumki (2008) PublicAdministration: Concepts and Theories. Sterling Publishers: New Delhi
- Bhagwan, Vishnoo; Bhushan, Vidhya and Mohla, Vandana (2010) PublicAdministration. S. Chand: Jalandhar
- Bhambri, C. P. (2010) PublicAdministration Theory and Practice(21stEdition). Educational Publishers: Meerut
- Bhattacharaya, Mohit (2008) New Horizons of PublicAdministration. Jawahar Publishers and Distributors: New Delhi
- Henry, Nicholas(2013). PublicAdministration and Public Affairs (13thEdition). Taylor and Francis: New York
- Medury, Uma (2010) PublicAdministration in the Globalization Era – The New Public Management Perspective. Orient Blackswan: New Delhi

- Sharma, M P and Sadana, B L (2000) PublicAdministration in Theory and Practice. KitabMahal: New Delhi

DSEC

Session 2023-2024			
Part-A Introduction			
Subject	Public Administration		
Semester	II		
Name of the Course	Urban Local Governance		
Course Code	B23-PAD-202		
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	DSEC		
Level of the course (As per Annexure-I)	200-299		
Pre-requisite for the course (if any)	------------		
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1 The students would learn about the knowledge of the evolution and growth of urban local bodies in India 2 The students would learn about the composition, role, functions, and resources of urban local bodies 3It would help the students to acquired of the structure and working of urban development programmes 4 Students will get insight about Urban Development Programmes like AMRUT, NUHM etc.; SMART cities.		
Credits	Theory	Tutorial	Total
	3	1	4
Contact Hours	3	1	4
Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**	**Time:3 hrs**		
Part-B Contents of the Course			
The Question paper will consist of Nine Questions. The student shall attempt Five questions in all. Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).			
Unit	**Topics**		**Contact Hours**
I	**Introduction**: Evolution of Local Governance in India. Urbanization: Concept;		12

	Trends; Challenges and Remedies. Features of Urban Local Government in India,	
II	**Organizational Framework for Urban Governance**: 74th Constitutional Amendment Act; Structure, Composition and Functions of Metropolitan Committees, Municipal Corporations, Municipal Councils and Nagar Panchayats; State Finance Commission; State Election Commission	12
III	**Urban Development Programmes and Urban Governance**: Urban Development Programmes like AMRUT, NUHM etc.; SMART cities and other recent trends; Sources of Finance of Urban Local Government.	12
IV	**Issue Areas in Urban Governance:** State-Local relations; Rural-Urban relations;Globalization and Urban governance.	12
V	Tutorial	12

Suggested Evaluation Methods

Internal Assessment:	End Term Examination: 75
➢ **Theory** Class Participation-05 Seminar/Presentation/Assignment/Quiz/Class Test etc.-05+05 Mid Term Exam:15	

Part-C Learning Resources

Recommended Books/E-Resources/LMS:
Reference:

- Urban Local Government in India - Dr. Pankaj Singh, KitabMahal Publisher.(2013)
- Ahluwalia, Isher Judge (2014) Transforming our Cities: Facing up to India's Growing Challenge: Postcards of Change. HarperCollins: New Delhi
- Ahluwalia, Isher Judge; Kanbur, Ravi and Mohanty, P K (2014) Urbanization in India: Challenges, Opportunities and the Way Forward. Sage: New Delhi
- Baud, I S A and Wit, J Dee (Eds.)(2008) New Forms of Urban Governance in India: Shifts, Models, Networks and Contestations. Sage: New Delhi
- Bhattacharya, Mohit (1976) Management of Urban Government in India. Uppal: New Delhi
- Burns, Dany; Hambleton, Robin and Hogget Paul (1994) The Politics of Decentralisation: Revitalising Local Democracy.Macmillan: London
- Chand, Mahesh and Puri, V K (2011) Regional Planning in India. Allied Publishers: New Delhi
- Dasgupta, Biplab; Buch, M N ; and Sivaramakrishanan, K C (Eds.) (1993) Urbanisation in India: Basic Services and People's Participation. Concept Publishing Company: New Delhi
- Ghuman, B S and Mehta, Akshat (2010) Privatisation of Public Services by Urban Local Governments in India: A Case Study of Municipal Council Panchkula, Nagarlok, Vol. XLII, No. 1, Pp. 50-68
- Jha, Gangadhar (2018) Fragile Urban Governance: Evolution, Decline, and Empowerment of

Local Self-Government in India. Routeledge:New York
- Kaur, Jaswinder (2017) Urban Infrastructure Development in India: A Case Study of JNNURM in Ludhiana. New Era Book Agency: Chandigarh
- Mani, N (2016) Smart Cities & Urban Development in India. New Century Publications: New Delhi.

CCM

Session 2023-2024			
Part-A Introduction			
Subject	Public Administration		
Semester	II		
Name of the Course	Rural Local Governance		
Course Code	B23-PAD-203		
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	CCM		
Level of the course (As per Annexure-I)	200-299		
Pre-requisite for the course (if any)	------------		
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1Acquiring the theoretical knowledge and understanding of the evolution and growth of rural local governance with special reference to Panchayati raj institutions 2Gaining insights about composition, role and functions, resourcesofPanchayati raj institutions 3Connecting the role and relationships of rural local democratic decentralized institutions (PRIs) with other related issues and institutions 4 Knowledge of Issues**:**Panchayati Raj Finance; Devolution of powers, functions		
Credits	Theory	Tutorial	Total
	2	--	2
Contact Hours	2	--	2
Max. Marks:50 **Internal Assessment Marks:15** **End Term Exam Marks: 35**	**Time:3 hrs**		

Part-B Contents of the Course		
The Question paper will consist of Nine Questions. The student shall attempt Five questions in all. Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).		
Unit	**Topics**	**Contact Hours**
I	**Introduction**: Evolution and Growth of rural local governance in India focusing on constitutional provisions, community development program and committees and commissions on Panchayati raj constituted by the Government of India.	6
II	**Panchayati Raj Institutions:** 73rd Constitutional Amendment Act, 1992; Gram Sabha – composition, functions and role; Gram Panchayat – composition, functions and role; PanchayatSamiti – composition, functions and role; and ZilaParishad – composition, functions and role	6
III	**Institutional Framework for PRIs**: District Rural Development Agency; District Planning Committee; State Election Commission; State Finance Commission	6
IV	**Issues:** Panchayati Raj Finance; Devolution of powers, functions and Activity Mapping; Panchayati Raj Bureaucracy in Rural Development.	6
V	Tutorial	6
Suggested Evaluation Methods		
Internal Assessment: ➢ **Theory** Class Participation-04 Seminar/Presentation/Assignment/Quiz/Class Test etc.-04 Mid Term Exam:07		**End Term Examination: 35**

Part-C Learning Resources
Recommended Books/E-Resources/LMS:
Reference:

- Pankaj Singh (2018) Rural Local Government In India, KitabMahal Publisher, New Delhi.
- Agarwal, Amba(2005) Fiscal Decentralization: Financing of Panchayati Raj Institutions in India. Serial Publications: New Delhi
- Baluchamy, S (2004) Panchayati Raj Institutions. Mittal Publications: New Delhi
- Bhadouria, B D S and Dubey, V P (1989) Panchayati Raj and Rural Development.Commonwealth Publishers: New Delhi
- Biju, M R (2008) Panchayati Raj System in India: A Symbol of Participatory Democracy and Decentralized Development. Kaniska Publication: New Delhi
- Dharmaraj, Sengmalam (2008) Panchayati Raj System in India.Abhijeet Publications: New Delhi
- Dube, M P and Padalia, Munni (Eds.) (2002) Democratic Decentralization and Panchayati Raj in India.Anamika Publishers: New Delhi
- Hochgesang, Thomas W (1994) Rural Local Self-Government in India. NIRD: Hyderabad
- Jayal, NirajaGopal; Prakash, Amit and Sharma, Pradeep Kumar (2007) Local Governance in India – Decentralisation and Beyond, Oxford University Press:New Delhi
- Khanna, B S (1992) Rural Development in South Asia. Deep and Deep : New Delhi

- Maheshwari, S R (2015) Local Government in India. Lakshmi Narain Agarwal: Agra
- Maheswari, Shriram (2016) Local Government in India, Lakshmi Narain Agarwal: Agra

MDC

Session 2023-2024			
Part-A Introduction			
Subject	Public Administration		
Semester	II		
Name of the Course	Public Financial Administration		
Course Code	B23-PAD-204		
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	MDC		
Level of the course (As per Annexure-I)	200-299		
Pre-requisite for the course (if any)	------------		
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1. The students would be conceptual clarity about features of Indian Administrative systems and other terms covering various aspects ofIndian administration .2 Detailed understanding of the President, Prime Minister & Council of Ministers & Central Secretariat and Cabinet Secretariat. 3Critical understanding the issues of Organisation and Role of Ministries 4 Knowledge about the civil service in Indian administration		
Credits	Theory	Tutorial	Total
	2	1	3
Contact Hours	2	1	3
Max. Marks:75 **Internal Assessment Marks:25** **End Term Exam Marks: 50**	**Time:3 hrs**		
Part-B Contents of the Course			
The Question paper will consist of Nine Questions. The student shall attempt Five questions in all.			

Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).

Unit	Topics	Contact Hours
I	Financial administration. Budget: Concept of Budget, Budgetary Process – Formulation, Enactment and Execution, Performance Budgeting, Zero Based Budgeting.	9
II	Fiscal Federalism in India. Objectives of the Fiscal Policy; Interdependence of Fiscal Policy and Monetary Policies. Centre-State Financial Relations in India. Characteristics of Good Tax System.	9
III	Development Financial Institutions: IFCI, IDBI, SFC; Working Capital: Concept, Component, Importance. Factors Affecting Working Capital Requirement. Financial Control Agencies: Parliamentary Financial Control.	9
IV	Finance Ministry: Organisation and Working. Role of Comptroller & Auditor-General (CAG). Reserve Bank of India: Organisation and Functions, Monetary Policy and Instruments of Credit Control.	9
V	Tutorial	9

Suggested Evaluation Methods

Internal Assessment:	End Term Examination: 50
➢ **Theory** Class Participation-05 Seminar/Presentation/Assignment/Quiz/Class Test etc.-07 Mid Term Exam:13	

Part-C Learning Resources

Recommended Books/E-Resources/LMS:
Reference:

- A Sarapa,: Public Finance in India, Kanishka Publishers Distributors, New Delhi, 2004.
- Manjusha Sharma &O.P.Bohra, BhartiyaLokVittaPrashasan, Ravi Books, Delhi 2005
- B.P. Tyagi: Public Finance, Meerut, Jai Prakash Nath 1997.
- G.S.Lal: Financial Administration in India, New Delhi, HPJ Kapoor, 1987.
- MJK Thavaraj: Financial Administration in India, Delhhi: Sultan Chand & Sons, 1996.
- Andley, Sundharam: Public Finance, Agra: Rattan PrakashanMandir, 1979.
- RuddarDutt&K.P.Sundharam: Indian Economy, New Delhi, S. Chand & Co. Pvt. Ltd. 1997
- M.Y.Khan and P.K.Jain: Finance Management, New Delhi, Tata McGraw Hill 1982.
- R.N. Srivastava: Management of Financial Institutions, Bombay, Himalaya Publishing House, 1988.
- C.P.Bhambhri: Public Administration in India, Bombay: Vikas Publishing House, 1973.
- S.L.Goel, Public Financial Administration, New Delhi, Deep & Deep Publications, 2004.
- Dutt and Sundharam: Indian Economy, Delhi: S.Chand& Co.2004.

CC

Session 2023-2024			
Part-A Introduction			
Subject	Public Administration		
Semester	III		
Name of the Course	Central Administration		
Course Code	B23-PAD-301		
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	CC		
Level of the course (As per Annexure-I)	200-299		
Pre-requisite for the course (if any)	------------		
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1. To understand the role and main features of Indian Administration. 2. To know the constitutional framework and important position in Central Administration 3. To understand the organisation of various ministries and commissions. 4. To know the recruitment system of All India Services and Central Services		
Credits	Theory	Tutorial	Total
	3	1	4
Contact Hours	3	1	4
Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**	**Time:3 hrs**		
Part-B Contents of the Course			

The Question paper will consist of Nine Questions. The student shall attempt Five questions in all. Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).

Unit	Topics	Contact Hours
I	British Legacies over Indian Administration. Features of Indian Administration. Role of IndianAdministration in Socio-Economic Development. Fundamental Rights and Duties.	12
II	President: Election, Impeachment, Powers and Position. Prime Minister & Council of Ministers:Appointment, Powers and Role. Central Secretariat and Cabinet Secretariat: Organisation, Roleand Functions.	12
III	Ministry of Home Affairs: Organisation and Role, Ministry of Finance: Organisation andFunctions, Finance Commission and Comptroller & Auditor General.	12
IV	Civil Service in India: Role and Significance. Union Public Service Commission: Composition andFunctions. Recruitment and Training of All India and Central Services.	12
V	Tutorial	12

Suggested Evaluation Methods

Internal Assessment:	End Term Examination: 70
➢ **Theory** Class Participation-05 Seminar/Presentation/Assignment/Quiz/Class Test etc.-05+05 Mid Term Exam:15	

Part-C Learning Resources

Recommended Books/E-Resources/LMS:
Reference:

- Indian Administration – Hoshiar Singh &Pankaj Singh ,Pearson's Publication(2012)

- BhartiyaPrashasan (Hindi) – Hoshiar Singh &Pankaj Singh ,Pearson's Publication

- Avasthi A. 1980. Central Administration: Tata Mcgraw Hill: New Delhi.

- Chanda Ashok: 1967. Indian Administration: Allen and Unwin: London.

- Jain, R. B., 1976. Contemporary Issues in Indian Administration, Vishal Publications: New Delhi.

- Johari, J.C., 1977. Indian Government and Politics : Vishal Publications: Delhi.

- Khera, S.S. 1975. The Central Executive. Orient Longman: New Delhi.

- Maheshwari, S.R., 2007. Indian Administration (English & Hindi). Orient Longman: New Delhi.

- Misra B.B., 1970. The Administrative History of India; Oxford University Press: London.

- Muttalib, M.A. 1967. Union Public Service Commission, I.I.P.A.: New Delhi.

- Puri, K.K., 1985, Indian Administration, Bharat Prakashan, Jalandhar.

- Prasad, Bishwanath 1968. The Indian Administrative Service; S. Chand & Company: Delhi.

- Singh Hoshiar and Singh Mohinder, 1989. Public Administration in India: Theory and

- Practice; Sterling Publishers Private Ltd., New Delhi.

- Subramaniam, Malathi, 1987, Management of Public Administration, Deputy Publications:Delhi.

- Subramaniam, V. 1971. Social Backgrouond of India's Administrators, Publication Division,

- Government of India: New Delhi.

MCC

Session 2023-2024			
Part-A Introduction			
Subject	Public Administration		
Semester	III		
Name of the Course	Citizen and Administration		
Course Code	B23-PAD-302		
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	MCC		
Level of the course (As per Annexure-I)	200-299		
Pre-requisite for the course (if any)	------------		
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1. WILL be equipped with the knowledge and conceptual clarity of Concept of Citizen Centric Administration 2. Knowledge about the Approaches of Citizens' Charters: Evolution, Features and Applications in India 3. Knowledge of differentDecentralisation Process in Administration&Development Institutions. 4. Clarity re-administrative systems and their accountability mechanisms and Working ofNational Grievances Machinery in India.		
Credits	Theory	Tutorial	Total
	3	1	4
Contact Hours	3	1	4
Max. Marks:100	**Time:3 hrs**		

Internal Assessment Marks:30	
End Term Exam Marks: 70	

Part-B Contents of the Course		
The Question paper will consist of Nine Questions. The student shall attempt Five questions in all. Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).		

Unit	Topics	Contact Hours
I	**Introduction** Concept of Citizen Centric Administration: Evolution, Concept, Features and Significance. Functions of Government: Regulatory functions, Service providing functions and Developmental functions.	12
II	**Citizens' Charters: Evolution, Features and Applications** Citizens' Charters: Evolution, Features and Applications. Citizens' Participation in Administration: Concept, Agencies, Significance and Limitations	12
III	**Decentralisation Process in Administration** Decentralisation and Delegation: Concept and Benefits. Grievance Redressal Mechanism: Grievance-Meaning and Agencies for Redressal of Grievances at centre and state levels	12
IV	**National Grievances Machinery** Consumer Protection: Consumer Protection Act and Working of the Consumer Courts in India. National Consumer Disputes Redressal Commission	12
V	Tutorial	12

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory** Class Participation-05 Seminar/Presentation/Assignment/Quiz/Class Test etc.- 05+05 Mid Term Exam:15	**End Term Examination: 70**

Part-C Learning Resources
Recommended Books/E-Resources/LMS: **Reference:**   • A Sarapa,: Public Finance in India, Kanishka Publishers Distributors, New Delhi, 2004.   • Hoshiar Singh and PardeepSachdeva (2011) Public Administration: Theory and Practice, Pearson Publication, Noida.   • B.P. Tyagi: Public Finance, Meerut, Jai Prakash Nath 1997.

- G.S.Lal: Financial Administration in India, New Delhi, HPJ Kapoor, 1987.
- MJK Thavaraj: Financial Administration in India, Delhhi: Sultan Chand & Sons, 1996.
- Andley, Sundharam: Public Finance, Agra: Rattan PrakashanMandir, 1979
- RuddarDutt&K.P.Sundharam: Indian Economy, New Delhi, S. Chand & Co. Pvt. Ltd. 1997.Y.Khan and P.K.Jain: Finance Management, New Delhi, Tata McGraw Hill 1982.R.N. Srivastava: Management of Financial Institutions, Bombay, Himalaya Publishing House, 1988.
- C.P.Bhambhri: Public Administration in India, Bombay: Vikas Publishing House, 1973.
- S.L.Goel, Public Financial Administration, New Delhi, Deep & Deep Publications, 2004.
- Dutt and Sundharam: Indian Economy, Delhi: S.Chand& Co.2004.

MDC

Session 2023-2024	
Part-A Introduction	
Subject	Public Administration
Semester	III
Name of the Course	Development Administration
Course Code	B23-PAD-303
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	MDC
Level of the course (As per Annexure-I)	200-299
Pre-requisite for the course (if any)	------------
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1. Knowledge of the evolution and growth of Development and Modernization. Problems and Prospects 2. Understanding about the Social Development: Concept, Features, Objectives, Obstacles and Problems. Status of Development Administration 3. Understanding of the Citizens and Development Administration. Development Administration and Administrative Capability 4. Gaining insights about Development Planning: Meaning, Types, Need; Machinery for Development Planning
Credits	Theory	Tutorial	Total
	2	1	3

Contact Hours	2	1	3
Max. Marks:75 **Internal Assessment Marks:25** **End Term Exam Marks: 50**	**Time:3 hrs**		

Part-B Contents of the Course

The Question paper will consist of Nine Questions. The student shall attempt Five questions in all. Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).

Unit	Topics	Contact Hours
I	**Introduction** Development Administration: Concept, Nature, Scope, Features and Significance. Objectives of Development Administration. Administrative ability for development and administration, Administrative ability for development organization and development management.	9
II	**Ecology of Development Administration** Development Administration and Non-Development Administration Dichotomy. Ecology of Development Administration. Administrative Development: Concept, Need, Problems and Sources. Relations between Administrative Development and Development Administration.	9
III	**Administrative Capability** Administrative Organisation for Development at Centre, State and Local levels. Bureaucracy and Development Administration; Citizens and Development Administration. Development Administration and Administrative Capability, NGOs and Development Administration.	9
IV	**Process of Development Planning** Development Planning: Meaning, Types, Need; Machinery for Development Planning; Process of Development Planning: Formulation and Implementation and Evaluation. Project Formulation, Implementation and Evaluation.	9
V	Tutorial	9

Suggested Evaluation Methods

Internal Assessment:	End Term Examination: 50
➢ **Theory** Class Participation-05 Seminar/Presentation/Assignment/Quiz/Class Test etc.- 07	

Mid Term Exam:13	

Part-C Learning Resources

Recommended Books/E-Resources/LMS:

Reference:

- Preeta Joshi: VikashPrashashan, Jaipur, RBSA, Swai Man Singh, Highway, Chaura Rasta 2nd Ed. 1991.

- R.K. Sapru, Development Administraiton, Sterling Publishers Pvt. Ltd, New Delhi, 2003.

- S.P. Verma and S.K.Sharma (ed.): Development Administration, New Delhi, IIPA.

- C.N.Bhalerao (ed.): Administration, Politics and Development in India, Bombay, LalPani Publishing House, 1972.

- S.K. Chatterjee Development Administration in India, Surjeet Publications, Delhi, 2005

- R. Braibhanti and J.S.Spengler: Administration and Economic Development in India, Duke Univ. Press.

- UNO: Development Administration: Current Approaches and Trends in Public Administration for National Development, New York, UNI 1975.

- S.K.Sharma (ed.), Dynamics of Development (Two volumes), New Delhi: Concept Publishing House.

- Fred W. Riggs (ed.), Frontiers of Development Administration, Durham: N.C. Duke University Press, 1970.

- Irwing, Swndlow (ed.): Development Administration: Concepts and Problems, Syracause: NY Syracuse University Press, 1963,

- Joseph, La Palombara (ed.): Bureaucracy and Political Development, Princeton: NJ Princeton University Press, 1963.

- Gabriel Almond and G.B. Well: Comparative Politics: A Developmental Approach, Oxford & IBH Pub. Co. New Delhi, 1976.

CC

Session 2023-2024			
Part-A Introduction			
Subject	Public Administration		
Semester	IV		
Name of the Course	State and District Administration		
Course Code	B23-PAD-401		
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	CC		
Level of the course (As per Annexure-I)	200-299		
Pre-requisite for the course (if any)	------------		
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: After the completion of this course, the learner will be able : 1. To understand the evolution and growth of the State Machinery and structural evolution 2. To know the organisation of state government and its various departments 3. To understand the role of District administration in development 4. To comprehend the working of Municipal and Rural Local bodies		
Credits	Theory	Tutorial	Total
	3	1	4
Contact Hours	3	1	4
Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**	**Time:3 hrs**		
Part-B Contents of the Course			
The Question paper will consist of Nine Questions. The student shall attempt Five questions in all.			

Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).

Unit	Topics	Contact Hours
I	Constitution Frame work of States in India, Governor: Appointment Powers & Functions. Chief Minister: Powers, Role and Position. Council of Ministers and State Legislature. Organisation and Structure of State Administration.	12
II	State Secretariat and Directorate: Organisation and Functions. Chief Secretary: Role and Positionin State Administration. State Planning Department and Board. Divisional Commissioner: Powers,Functions and Position.	12
III	District Administration: Evolution, Features and Functions. District Collector: Evolution,Appointment. Functions and Position.	12
IV	Police Administration at District Level: Organisation and Functions. Role and Functions ofSuperintendent of Police. Other Functionaries and Sub-District Level: Sub-Divisional Magistrate,Block Development and Panchayat Officer, Tehsildar.	12
V	Tutorial	12

Suggested Evaluation Methods

Internal Assessment:	End Term Examination: 70
➢ **Theory** Class Participation-05 Seminar/Presentation/Assignment/Quiz/Class Test etc.- 05+05 Mid Term Exam:15	

Part-C Learning Resources

Recommended Books/E-Resources/LMS:
Reference:

- Avasthi A. 1980. Central Administration: Tata McGraw Hill: New Delhi.

- Basu, D. D. 1988. Introduction to the Constitution of India; Prentice Hall: New Delhi.

- Indian Administration – Hoshiar Singh &Pankaj Singh ,Pearson's Publication(2012)

- BhartiyaPrashasan (Hindi) – Hoshiar Singh &Pankaj Singh ,Pearson's Publication

- Dayal, Ishwar, MathurKuldeep and Battacharya M, 1976. District Administration: McMillan: Delhi.

- Jain, R.B. 1980. District Administration: Indian Institute of Public Administration.

- Khera, S.S., 1974. District Administration in India: Asia Publishing House: New York.

- Misra, S.C., 1972. Police Administration in India: National Police Academy: Mount Abu.
- Maheshwari, Shriram. 1979. State Government in India; The Macmillan Company of India limited: Delhi.
- Pandey, LalluBehari, 1984. The State Executives; Amar Prakashan: Delhi
- Puri, K.K. 1985, Local Government in India, Bharat Prakashan, Jalandhar.
- Pylee, M.V. 1967. India's Constitution; Asia Publishing House: Bombay.
- Reddy, Ram. G. and Seshadri K. 1972. Police in a developing society: Osmania University:
- Hyderabad.
- Sharma, P.D. 1971. Indian Police – A Developmental Approach: Research: Delhi.

MCC

Session 2023-2024	
Part-A Introduction	
Subject	Public Administration
Semester	IV
Name of the Course	Administrative Thinkers
Course Code	B23-PAD-402
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	MCC
Level of the course (As per Annexure-I)	200-299
Pre-requisite for the course (if any)	------------
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1. An understanding about the philosophy of ethics with special Administrative Ecology and Behaviourlism : Structural – Functional Approach, Theory of Prismatic Society and Development Models. 2. Understanding the basic concepts such as Motivational Concept Theories – I and II. 3. Knowledge of different Organizational Behavior: Rationale, Change: Concept Process, Resistance to Change and Rationale . 4. Clarity re-administrative systems and Administrative

	Ecology and Behaviorism		

Credits	Theory	Tutorial	Total
	3	1	4
Contact Hours	3	1	4

Max. Marks:100	**Time:3 hrs**
Internal Assessment Marks:30	
End Term Exam Marks: 70	

Part-B Contents of the Course

The Question paper will consist of Nine Questions. The student shall attempt Five questions in all. Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).

Unit	Topics	Contact Hours
I	**Administrative Ecology and Behaviorism**	12
	a) Ecology of Public Administration	
	b) Structural – Functional Approach	
	c) Theory of Prismatic Society	
	d) Development Models	
	e) Herbert Simon. Behaviouralism and Decision Making	
II	**People in Organization: Motivational Concept Theories – I**	12
	a) Abraham Maslow: Needs Hierarchy	
	b) Victor Vroom: Expectancy Theory of Motivation	
	c) Douglas McGregor: Theory X and Theory Y	
III	**People in Organization: Motivational Concept Theories - II**	12
	a) Frederick Herzberg: Hygiene and Motivation Factors	
	b) Chris Argyris: Integrating the Individual and the Organization	
	c) RensisLikert: Systems Management	

IV	**Organizational Behavior:**	12
	a) Organizational Behavior: Concept and Rationale	
	b) Organizational Change: Concept Process, Resistance to Change	
	c) Organizational Effectiveness: Concept and Approaches	
	d) Organizational Development: Concept and Rationale	
V	Tutorial	12

Suggested Evaluation Methods	
Internal Assessment:	**End Term Examination: 70**
➢ **Theory** Class Participation-05 Seminar/Presentation/Assignment/Quiz/Class Test etc.- 05+05 Mid Term Exam:15	

Part-C Learning Resources

Recommended Books/E-Resources/LMS:
Reference:

- Argyris, Chris (1957), Personality and Organization, Harper, New York

- Donald Menzel et.al (eds) (2011). The State of Public Administration: Issues, Challenges and Opportunity. M. E. Sharpe.

- Drucker, Peter (2012), Management Challenges for the 21st Century, Harper business. Fox, Richard C (2005), Critical Social Theory in Public Administration, PHI, New Delhi George Frederickson (2008),The Public Administration Primer,Westview Press.

- Herbert A. Simon (1965), Administrative Behavior: A Study of Decision-making Process in Administrative Organizations, Free Press, New York.

- JanetV. Denhardt and Robert B. Denhard (2007),The New Public Service, Serving, Not Steering, M.E.Sharpe, New York

- Likert, Rensis (1976), New Patterns of Management, McGraw-Hill, New York

- Luthans, Fred, (2005) Organizational Behaviour, McGraw- Hill, New York

- Maslow, Abraham (1954), Motivation and Personality, Harper & Row. NY

- McGregor, Douglas(1960),The Human Side of Enterprise, McGraw- Hill, New York

- Miller, H and Fox.CJ (2007), Post Modern Public Administration, ME Sharp, New York

- Ostrom, Elinor (2003), Governing the Commons-The Evolution of Institutions for collective Action, Cambridge

- Ostrom,Vincent (1973) The Intellectual Crisis in American Public Administration. University of Alabama Press: Alabama.

- Prasad, Ravindra D (et al) eds. Administrative Thinkers (2013), Sterling Publishers, New Delhi

- Vroom, Victor H (1964),Work Motivation, John Wiely and Sons, New York

- Waldo, Dwight (1968),The Study of Public Administration, Random house, New York

- Warren Bemiis (2005), Reinventing Leadership: Strategies to Empower the Organization, HarperBusiness, NY

MCC

Session 2023-2024	
Part-A Introduction	
Subject	Public Administration
Semester	IV
Name of the Course	Administrative Theory
Course Code	B23-PAD-403
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	MCC
Level of the course (As per	200-299

Annexure-I)	
Pre-requisite for the course (if any)	------------
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1. Awareness about the evolution and growth of the discipline of PublicAdministration. 2.Learning of basic principles and Challenges ofGlobalization and Public Administration. 3. Understanding the Learning of basic principles and approaches of PublicAdministration. 4. Theoretical clarity of basic concepts and dynamics (both ecological and others) relating to Public organizations.

Credits	Theory	Tutorial	Total
	3	1	4
Contact Hours	3	1	4

Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**	**Time:3 hrs**

Part-B Contents of the Course

The Question paper will consist of Nine Questions. The student shall attempt Five questions in all. Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).

Unit	Topics	Contact Hours
I	**Introduction** Meaning, Nature, Scope and Significance of Public Administration, Public and Private Administration: Its Role in Developed and Developing Societies. Evolution of Public Administration as an independent discipline; New Public Administration; and New Public Management Perspective.	12
II	**Principles of Organisation** Theories of Organisation: Concept of Organisation, Formal and Informal Organisation, Scientific Management Theory, Bureaucratic Theory, Principles of Organisation: Hierarchy, Span of Control, Unity of Command, Authority and Responsibility, Centralization and Decentralization, Delegation, Supervision, Coordination.	12
III	**Administrative Control** Structure of Organisation: Chief Executive – Role and Functions, Line, Staff and Auxiliary Agencies, Departments, Corporations, Companies,	12

	Boards and Commissions, Headquarters and Field Relationship.	
IV	**Mechanism of Public Administration** Accountability and Control – Concept of Accountability and Control, Legislative, Executive and Judicial Control over Administration, Transparency in Administration, Citizens and Administration. Public Policy, Formulation, Implementation and Evaluation.	12
V	Tutorial	12

Suggested Evaluation Methods

Internal Assessment:	End Term Examination: 70
➢ **Theory** Class Participation-05 Seminar/Presentation/Assignment/Quiz/Class Test etc.- 05+05 Mid Term Exam:15	

Part-C Learning Resources

Recommended Books/E-Resources/LMS:
Reference:
- Hoshiar Singh and PardeepSachdeva (2011) Public Administration: Theory and Practice, Pearson Publication, Noida.
- Avasthi and Maheshwari: Public Administration, LaxmiNarain Aggarwal, Agra, 1988.
- M.P. Sharma and B.L.Sadana: Public Administration in Theory and Practice, KitabMahal, Allahabad, 1988.
- J.D. Straussman: Public Administration, Holt, Rinehart and Winslow, New York, 1985.
- Mohit Bhattacharya: Public Administration, Calcutta: World Press (2nd Ed.) 1991.
- A.R. Tyagi, Public Administration – Principles and Practices, Delhi Atma Ram & Sons (6thed.) 1992.
- S.L.Goel: Public Administration (Theory & Practice), New Delhi: Deep & Deep Publications 2003

DSE

Session 2023-2024	
Part-A Introduction	
Subject	Public Administration
Semester	IV
Name of the Course	Administrative Ethics & Governance
Course Code	B23-PAD-404

Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	DSE	
Level of the course (As per Annexure-I)	200-299	
Pre-requisite for the course (if any)	------------	
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1. The students with a deep understanding of various concepts ofEt various ethical issues. 2. This coursewillalsohelp inaccountabilityanddevelopingamongthe probity in public life and problem solving approach. 3. Students will be able to EthicsandHumanInterface:Essence,Deter 4. Understanding of the Law,Rule, RegulationsandConscienceasSo	
Credits	Theory	Tutorial
	3	1
Contact Hours	3	1
Max. Marks:100 Internal Assessment Marks:30 End Term Exam Marks: 70	Time:3 hrs	

Part-B Contents of the Course

The Question paper will consist of Nine Questions. The student shall attempt Five questions in all. Question n
unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).

Unit	Topics
I	**Introduction- EthicsandHumanInterface** 1. EthicsandHumanInterface:Essence,DeterminantsandConsequencesofEthicsin-HumanAc 2. Dimensionsofethics;Morality, valuesandEthics. 3. Ethics –inPrivateandPublicrelationships. 4. RoleofFamilySocietyandEducationalInstitutionsinInculcatingValues.
II	**EthicalandMoralValues ingovernance** 1. EthicsinPublicLife:CivilServiceNeutrality,ImpartialityandAnonymity. 2. EmotionalIntelligence-Concepts,andtheirUtilitiesandApplicationinAdministrationandgo 3. StrengtheningofEthicalandMoralValues ingovernance; 4. ConcernsandDilemmasrelatedtoEthicsinGovernment Institutions.
III	**EthicalandMoralValues ingovernance** 1. Civilservicevalues andethicsinPublicAdministration:Statusandproblems. 2. EthicalconcernsandDilemmasinGovernment andPrivateInstitutions; 3. Law,Rule, RegulationsandConscienceasSourcesofEthicalguidance; 4. AccountabilityandEthicalgovernance.

IV	**InformationSharingandTransparencyingovernment**
	1. ProbityinGovernance:ConceptofPublicService,PhilosophicalBasisofgovernanceandProb
	2. InformationSharingandTransparencyingovernment, RighttoInformation.
	3. CodeEthics,Codesofconduct.
V	Tutorial

Suggested Evaluation Methods

Internal Assessment:

➢ **Theory**
Class Participation-05
Seminar/Presentation/Assignment/Quiz/Class Test etc.- 05+05
Mid Term Exam:15

Part-C Learning Resources

Recommended Books/E-Resources/LMS:

Reference:

- Bhattacharya,Mohit(2007)LokPrashasanKeNayeAyam.NewDelhi:JawaharPublishersandDistributors.

- Fox,W.(2009)aTheoryofGeneral Ethics–HumanRelationships,NatureandtheBuiltEnvironment.NewDelhi:PH

- Gandhi,Mahatma(2009)HindSwaraj. Delhi:Rajpal&SonsGhere..

- Ghere,R.K.&Frederickson,H.G.(Eds.)(2007)ethicsinPublicManagement.NewDelhi:PHILearning.

- Lillie, William(1948)IntroductiontoEthics.Methuen: London.

- Rangrajan,L.N.(ed.)(1987).Thearthashashtra.NewDelhi:PenguinBooks.

- VivekNanda(3rdVol.)CompleteworksofSwamiVivekanandaKolkata:AdvaityaAsharam.http://www.advaitaash

- Bhargva,R.(2006)PoliticsandEthics ofIndianConstitution.NewDelhi:OUP.

- Chaturvedi,T.N.(eds.)(1996)Ethics inPubliclife.NewDelhiIIPA.

- Hooja,R.(2008)Corruption,Ethicsandaccountabilityessaysbyanadministrator.NewDelhiIIPA.

- Sawshilya, A. (2012)Ethicsandgovernance.NewDelhi:PearsonEducation.

- Sheeran, P.J.(2006)EthicsinPublicAdministration –APhilosophicalapproach.Jaipur:Rawat.

DSE

Session 2023-2024	
Part-A Introduction	
Subject	Public Administration
Semester	IV
Name of the Course	Disaster Management
Course Code	B23-PAD-405
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	DSE
Level of the course (As per Annexure-I)	200-299
Pre-requisite for the course (if any)	------------
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1. Students will be equipped with the knowledge and conceptual clarity of Classifications and Functioning of Disaster Management. 2. Knowledge about the Basic Principles and Elements of Disaster Mitigation. 3. Knowledge of differentDisaster Prevention and Preparedness. 4. Clarity re-administrative systems and Rehabilitation and Reconstruction, Strategies for Effective Disaster Management.

Credits	Theory	Tutorial	Total
	3	1	4
Contact Hours	3	1	4

Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**	**Time:3 hrs**

Part-B Contents of the Course

The Question paper will consist of Nine Questions. The student shall attempt Five questions in all. Question no. 1 is compulsory and attempt one question from each unit. The compulsory Question have seven Multiple Choice Questions carrying equal marks (2 marks).

Unit	Topics	Contact Hours
I	**Introduction** Meaning and Classifications of Disasters, Functioning of Disaster Management Organisation, Methodology to cope with Disaster in India, Disaster Management Cycle, Disaster Management- Recent Trends, Impact of Natural Disasters on Environment and Development.	12

II	**Basic Principles and Elements of Disaster Mitigation** Disaster Mitigation, Basic Principles and Elements of Disaster Mitigation, Flood mitigation Practices in India, Action Plan for Earthquake Disaster Mitigation, Cost-Benefit Consideration of Mitigation, Resource Analysis and Mobilisation.	12
III	**Disaster Prevention and Preparedness** Disaster Prevention and Preparedness, Vulnerability Analysis and Risk Assessment, Role of Community in Disaster Management, Communication Systems and Protocol, Legislation/ Existing Laws.Disaster Awareness, Role of Disaster Managers, Role of NGOs, Training of Disaster Managers, Use of Formal Education System, Emerging Issues and Lessons for Future.	12
IV	**Rehabilitation and Strategies for Disaster Management** Rehabilitation and Reconstruction, Strategies for Effective Disaster Management, Skill Training-search, Rescue and Evacuation, Distribution of Relief Material, Emergency Operation Centers, Damage Assessment, Temporary Shelters and Warehousing Stock Pilling.	12
V	Tutorial	12

Suggested Evaluation Methods	

Internal Assessment:
 ➢ **Theory**
    Class Participation-05
    Seminar/Presentation/Assignment/Quiz/Class Test etc.- 05+05
    Mid Term Exam:15
	End Term Examination: 70

Part-C Learning Resources

Recommended Books/E-Resources/LMS:

Reference:

- V.K. Sharma: Disaster Management, New Delhi: New United Process, A-26 Narain INDL Area Phase-II, 1995.
- David Alexander: Natural Disaster, London: UCL Press, 1993.
- KathakaliBagchi S: Drought Prone India: Problems and Prospects: New Delhi: Agricale, 1991.
- Melvin A Benarde: Race against Famine Orient Longmans, Bombay, 1972.
- GopalBhargana: Environmental Challenges and Ecological Disaster- Global Prospective, New Delhi, Mittal Pub., 1992.
- V.V Borkar: Impact of drought on Rural Life, New Delhi: Popular Prakashan, 1975.
- W. Nick Carter: Disaster Management: A Disaster Managers Handbook, Manila Asian Development Bank, 1995.

DEPARTMENT OF ENGLISH
KURUKSHETRA UNIVERSITY
KURUKSHETRA
(Established by the State Legislature Act XII of 1956)
(A+ Grade, NAAC Accredited)

Scheme of Examination and Syllabus for
Undergraduate Programme

Subject: English

Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance with NEP-2020w.e.f. 2023-24 (in phased manner)

DEPARTMENT OF ENGLISH, KURUKSHETRA UNIVERSITY, KURUKSHETRA
Scheme of Examination for Undergraduate Programme

Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance with NEP-2020 w.e.f. 2023-24 (in phased manner), Subject: English

Remarks	Course Type	Course Code	Nomenclature of Course	Credits	Theory + Tutorial	Cont. Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
			SEMESTER-1							
Scheme A & C	CC-1 MCC-1 4 credits	B23-ENG-101	Introduction to Short Story and Basic Grammar	4	3+1	4	30	70	100	3 hrs.
Scheme C only	MCC-2 4 credits	B23-ENG-102	British Poetry and Drama: 14th to 17th Century	4	3+1	4	30	70	100	3 hrs.
Scheme A	CC-M1 2 credits	B23-ENG-103	Literature and Language I	2	2+0	2	15	35	50	3 hrs.
Scheme A & C	MDC-1 3 credits	B23-ENG-104	Introduction to Short Story and Basic Grammar	3	2+1	3	25	50	75	3 hrs.
			SEMESTER-2							
Scheme A & C	CC-2 MCC-3 4 credits	B23-ENG-201	Introduction to Prose and Basic Comprehension	4	3+1	4	30	70	100	3 hrs.
Scheme C only	DSEC-1 4 credits	B23-ENG-202	Literature and Society: Exploring Social Issues through Literature	4	3+1	4	30	70	100	3 hrs.
Scheme A only	CC-M2 2 credits	B23-ENG-203	Literature and Language II	2	2+0	2	15	35	50	3 hrs.
Scheme A & C	MDC-2 3 credits	B23-ENG-204	Introduction to Prose and Basic Comprehension	3	2+1	3	25	50	75	3 hrs.

Remarks	Course Type	Course Code	Nomenclature of Course	Credits	Theory + Tutorial	Cont. Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
			SEMESTER-3							
Scheme A, B & C	CC-3 MCC-4 4 credits	B23-ENG-301	Introduction to Poetry and Phonetics	4	3+1	4	30	70	100	3 hrs.
Scheme B & C	MCC-5 4 credits	B23-ENG-302	British Poetry and Drama: 17th and 18th Century	4	3+1	4	30	70	100	3 hrs.
Scheme A, B & C	MDC-3 3 credits	B23-ENG-303	Introduction to Poetry and Phonetics	3	2+1	3	25	50	75	3 hrs.
			SEMESTER-4							
Remarks	Course Type	Cour se	Nomenclature of	Credits	Theory +	Cont. Hours/	Internal marks	External Marks	Total	Exam

Remarks	Course Type	Code	Course	Credits	Tutorial	Week			Marks	Duration
Scheme A, B & C	CC-4 MCC-6 4 credits	B23-ENG-401	Introduction to Drama and Intermediate Grammar	4	3+1	4	30	70	100	3 hrs.
Scheme B & C	MCC-7 4 credits	B23-ENG-402	Indian Writing in English	4	3+1	4	30	70	100	3 hrs.
Scheme B & C	MCC-8 4 credits	B23-ENG-403	British Romantic Literature	4	3+1	4	30	70	100	3 hrs.
Scheme B & C	DSE-1 4 credits Select one option	B23-ENG-404	American Literature	4	3+1	4	30	70	100	3 hrs.
		B23-ENG-405	Colonial and Postcolonial Literature	4	3+1	4	30	70	100	3 hrs.

SEMESTER-5										
Remarks	Course Type	Course Code	Nomenclature of Course	Credits	Theory + Tutorial	Cont. Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
Scheme A, B & C	CC-5 MCC-9 4 credits	B23-ENG-501	Introduction to Short Novel and Advanced Grammar	4	3+1	4	30	70	100	3 hrs.
Scheme B & C	MCC-10 4 credits	B23-ENG-502	British Literature: The 19th Century	4	3+1	4	30	70	100	3 hrs.
Scheme B & C	DSE-2 4 credits Select one Option	B23-ENG-503	Indian Classical Literature	4	3+1	4	30	70	100	3 hrs.
		B23-ENG-504	African Literature	4	3+1	4	30	70	100	3 hrs.
Scheme B & C	DSE-3 4 credits Select one Option	B23-ENG-505	European Classical Literature	4	3+1	4	30	70	100	3 hrs.
		B23-ENG-506	Partition Literature	4	3+1	4	30	70	100	3 hrs.

SEMESTER-6										
Remarks	Course Type	Course Code	Nomenclature of Course	Credits	Theory + Tutorial	Cont. Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
Scheme A, B & C	CC-6 MCC-11 4 credits	B23-ENG-601	Introduction to Life Writing and Advanced Composition	4	3+1	4	30	70	100	3 hrs.
Scheme B & C	MCC-12 4 credits	B23-ENG-602	British Literature: The 20th century	4	3+1	4	30	70	100	3 hrs.
Scheme B & C	DSE-4 4 credits Select one Option	B23-ENG-603	Dalit Literature	4	3+1	4	30	70	100	3 hrs.
		B23-ENG-604	Indigenous Literature	4	3+1	4	30	70	100	3 hrs.

Scheme B & C	DSE-5 4 credits Select one Option	B23-ENG-605	Literatures of Diaspora	4	**3+1**	4	30	70	100	3 hrs.
		B23-ENG-606	Popular Literature	4	**3+1**	4	30	70	100	3 hrs.

SEMESTER-7 (FOR HONOURS/HONOURS WITH RESEARCH IN ENGLISH)										
	Course Type	**Course Code**	**Nomenclature of Course**	**Credits**	**Theory + Tutorial**	**Cont. Hours/ Week**	**Internal marks**	**External Marks**	**Total Marks**	**Exam Duration**
Remarks for Honours in English/Honours with Research in English (For Scheme B & C)	**CC-H1 4 credits**	B23-ENG-701	History of English Literature from the Medieval to the Romantic Age	4	**3+1**	4	30	70	100	3 hrs.
	CC-H2 4 credits	B23-ENG-702	Literature in English 1550-1660	4	**3+1**	4	30	70	100	3 hrs.
	CC-H3 4 credits	B23-ENG-703	Literature in English 1660-1798	4	**3+1**	4	30	70	100	3 hrs.
	DSE-H1 4 credits Select one Option	B23-ENG-704	Australian Literature	4	**3+1**	4	30	70	100	3 hrs.
		B23-ENG-705	Canadian Literature	4	**3+1**	4	30	70	100	3 hrs.
	PC-H1 4 credits	B23-ENG-706	Practicum Based on B23-ENG-701 TO 704/705/706	4	**3+1**	4	30	70	100	6 hrs.

SEMESTER-8 (FOR HONOURS IN ENGLISH)										
	Course Type	**Course Code**	**Nomenclature of Course**	**Credits**	**Theory + Tutorial**	**Cont. Hours/ Week**	**Internal marks**	**External Marks**	**Total Marks**	**Exam Duration**
Remarks for Honours in English/Honours with Research in English (For Scheme B & C)	**CC-H4 4 credits**	B23-ENG-801	History of English Literature from the Victorian to the Present Age	4	**3+1**	4	30	70	100	3 hrs.
	CC-H5 4 credits	B23-ENG-802	Literature in English 1798-2014	4	**3+1**	4	30	70	100	3 hrs.
	CC-H6 4 credits	B23-ENG-803	Literature in English 2014-the Present	4	**3+1**	4	30	70	100	3 hrs.
	DSE-H2 4 credits Select one option	B23-ENG-804	Literary Criticism and Theory	4	**3+1**	4	30	70	100	3 hrs.
		B23-ENG-805	Indian Aesthetics, Criticism and Literary Theory	4	**3+1**	4	30	70	100	3 hrs.
	PC-H2 4 credits	B23-ENG-806	Practicum Based on B23-ENG-801 TO 804/805/806	4	**3+1**	4	30	70	100	6 hrs.

OR SEMESTER-8 (FOR HONOURS WITH RESEARCH IN ENGLISH)										
Remarks	**Course Type**	**Course Code**	**Nomenclature of Course**	**Credits**	**Theory + Tutorial**	**Cont. Hours/ Week**	**Internal marks**	**External Marks**	**Total Marks**	**Exam Duration**

Honours with Research in English (For Scheme B & C)	CC-H4 4 credits	B23-ENG-801	History of English Literature from the Victorian to the Present Age	4	3+1	4	30	70	100	3 hrs.
	CC-H5 4 credits	B23-ENG-802	Literature in English 1798-2014	4	3+1	4	30	70	100	3 hrs.
	Project/Dissertation 12 credits	B23-ENG-807	Project/Dissertation	12		-	-	-	-	-

English

Semester-I

Nomenclature of the Course: **Introduction to Short-Story and Basic Grammar**

Course Code: **B23-ENG-101**

Course Type: **CC-1/MCC-1**

Level of the Course: **100-199**

Credits: 4 (Theory 3, Tutorial 1)

Total Marks: 100
End Term Exam Marks: 70
Internal Assessment: 30
Exam Time: 3 Hrs.

Workload: 4 Hours (3 hours theory and 1 hour tutorial. Tutorial group size will be of 30 students)

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-ENG-101.1 The students will comprehend different forms and techniques of short fiction.

B23-ENG-101.2 The students will be able to understand tenses.

B23-ENG-101.3 The students will understand parts of speech, voice and narration.

B23-ENG-101.4 The students will progress to understand basics of grammar.

Unit-I The following short stories are prescribed:

1. Leo Tolstoy:	"God Sees the Truth, But Waits"
2. Oscar Wilde:	"The Model Millionaire"
3. R.K. Narayan:	"The Blind Dog"
4. Bhisham Sahni:	"The Boy with a Catapult"
5. Munshi Prem Chand:	"The Child"
6. Mulk Raj Anand:	"The Gold Watch"

Unit-II The following short stories are prescribed:

1. Anita Desai:	"Games at Twilight"
2. Shashi Deshpande:	"The Beloved Charioteer"
3. Saadat Hasan Manto:	"The Dog of Tithwal"

4. Agatha Christie: "Wasp's Nest"

5. Zora Neale Hurston: "Sweat"

6. Nadine Gordimer "Once upon a Time"

Unit-IIIGrammar

1. Tenses and Usage

2. Parts of Speech: Noun, Pronouns, Adjective, Verbs, Adverb, Conjunction,

Interjection, Preposition

Unit-IVGrammar

1. Voice

2. Narration

Prescribed Text: To be edited by UG Board of Studies.

1. F.T. Wood. *A Remedial English Grammar for Foreign Students*, Macmillan.
2. Raymond Murphy. *English Grammar in Use*, OUP.

Note: (To be printed in the question paper)

1. The students are required to attempt five questions in all.
2. Question No.1 is compulsory.
3. Attempt one question from each of the 4 Units.
4. All questions carry equal marks.

Note for Paper Setters:

1. The paper-setter will set 9 questions in all.
2. Question No. 1 will consist of 10 short questions based on all the four Units. Out of 10 short questions, the students will be required to attempt any seven, selecting at least one short question from each unit. Every short-answer type question will be of 2 marks each.
3. Question No 2 with 4 parts will be on explanation with reference to the context based on Unit I. Students will be required to attempt any two.
4. Question No 3 with internal choice will be essay type questions based on Unit II.
5. Question No 4 will be based on Unit III. It will have 16 items covering all the topics in the Unit. The students will be required to attempt any 14 items.
6. Question No 5 will be based on Unit IV. It will have 16 items covering all the topics in the Unit. The students will be required to attempt any 14 items.

Evaluation of Internal Assessment

Internal Assessment will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/	
	Quiz/Class Test etc.	10 Marks
iii.	Mid-Term Exam	15 Marks
	Total	30 Marks

English

Semester-I

Nomenclature of the Course: **British Poetry and Drama: 14th to 17th Century**

Course Code: **B23-ENG-102**

Course Type: **MCC-2**

Level of the Course: **100-199**

Credits: 4 (Theory 3, Tutorial 1)   Max. Marks: 100

Internal Assessment Marks: 30

End Term Exam Marks: 70

Time: 3 Hours

Workload: 4 Hours (3 hours theory and 1 hour tutorial. Tutorial group size will be of 30 students)

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-ENG-102.1 The students will be introduced to great English Poets.

B23-ENG-102.2 The students will understand the impact of Renaissance on literature.

B23-ENG-102.3 The students will be acquainted with Shakespearean tragedy.

B23-ENG-102.4 The students will be able to understand and appreciate Romantic comedy.

Unit-I   Geoffrey Chaucer: *Prologue to the Canterbury Tales*(Lines 1-269)

Unit-II   Christopher Marlowe: *Doctor Faustus*

Unit-III   William Shakespeare: *King Lear*

Unit-IV   William Shakespeare: Sonnets 18, 29, 116, 130

Note: (To be printed in the question paper)
1.   The students are required to attempt five questions in all.
2.   Question No.1 is compulsory.
3.   Attempt one question from each of the 4 Units.
4.   All questions carry equal marks.

Note for Paper-Setters:
1.   The paper-setter will set 9 questions in all.

2. Besides question No.1, which is compulsory, a candidate shall attempt 4 questions selecting one question each from the four units, attempting five questions in all.

3. 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.

Evaluation of Internal Assessment

Internal Assessment will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/	
	Quiz/Class Test etc.	10 Marks
iii.	Mid-Term Exam	15 Marks
	Total	30 Marks

Semester-I

Nomenclature of the Course: **Literature and Language-I**

Course Code: **B23-ENG-103**

Course Type**: CC-M-1**

Level of the Course: **100-199**

Credits: 2 (Theory 2)   Max. Marks: 50

End Term Exam Marks: 35

 Internal Assessment Marks: 15

                                                              Exam Time: 3 hrs.

Workload:Theory 2 hours

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-ENG-103.1 The students will be able to understand various hues of prose writings.

B23-ENG-103.2 They will be able to understand different kinds of poetry.

B23-ENG-103.3 Students will be able to understand basics of English grammar.

B23-ENG-103.4 Students will be able to understand antonyms and synonyms in English.

Unit I: Prose

- R. K. Narayan: 'Toasted English'
- Charles Lamb: 'Dream Children: A Reverie'
- Francis Bacon: 'Of Studies'
- A. P. J. Abdul Kalam: 'Introduction' to *Wings of Fire*

Unit ll: Poetry

- Rabindranath Tagore: "Leave this Chanting"
- Rudyard Kipling: "If"
- William Wordsworth: "The World is too Much with Us"
- Karan Singh: "Adventurer"

Unit III: Grammar

- Tenses

- Article

Unit IV: Grammar

- Subject — Verb Agreement
- Preposition

Suggested Readings:

1. F.T. Wood. *A Remedial English Grammar for Foreign Students*, Macmillan.
2. Raymond Murphy. *English Grammar in Use*, OUP.

Note for Paper Setters:

1. The paper-setter will set 9 questions in all. Question No. 1 will be compulsory. Students will be required to attempt remaining 4 questions selecting at least question from each Unit. All questions will carry equal marks.

2. Question number one will consist of 10 short questions based on all the four Units. Out of 10 short questions, the students will be required to attempt any seven, selecting at least one short question from each Unit. Every short-answer type question will be of 1 mark each.

3. Question No 2 and 3 will be essay type questions based on Unit I.

4. Question No 4 and 5 will be explanation with reference to the context type questions based on Unit II.

5. Question No 6 will be based on Unit III. It will have 10 items covering all the topics in the Unit. The students will be required to attempt any 7 items.

6. Question No 7 will be based on Unit IV. It will have 10 items covering all the topics in the Unit. The students will be required to attempt any 7 items.

Evaluation of Internal Assessment

Internal Assessment (Theory) will be based on the following components.

i.	Class Participation	4 Marks
ii.	Seminar/Presentation/Assignments/ Quiz/Class Test etc.	4 Marks
iii.	Mid-Term Exam	7 Marks
	Total	15 Marks

English

Semester-I

Nomenclature of the Course: **Introduction to Short Story and Basic Grammar**

Course Code: **B23-ENG-104**

Course Type: **MDC-1**

Level of the Course:**100-199**

Credits: 3 (Theory 2, Tutorial 1)   Total Marks: 75

End Term Exam Marks: 50

Internal Assessment Marks: 25

Exam Time: 3 Hrs.

Workload: 3 Hours (2 hours theory and 1 hour tutorial; Tutorial group size will be of 30 students)

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-ENG-104.1 The students will progress to understand intermediate of grammar.

B23-ENG-104.2 The students will be able to understand tenses.

B23-ENG-104.3 The students will be able to understand parts of speech, voice and narration.

B23-ENG-104.4 Comprehend different forms and techniques of short fiction.

Contents of the Course:

Unit-I The following short stories are prescribed:

1. Leo Tolstoy:	"God Sees the Truth, But Waits"
2. Anton Chekhov:	"Grief"
3. R.K. Narayan:	"The Blind Dog"
4. Bhisham Sahni:	"The Boy with a Catapult"

Unit-II The following short stories are prescribed:

1. Anita Desai:	"Games at Twilight"
2. Shashi Deshpande:	"The Beloved Charioteer"
3. Saadat Hasan Manto:	"The Dog of Tithwal"

4. Nadine Gordimer   "Once upon a Time"

Unit-III   Grammar

1. Parts of Speech: Noun, Pronouns, Adjective, Verbs, Adverb, Conjunction,

Interjection, Preposition

Unit-IV   Grammar

1. Tenses and Usage

Prescribed Text: To be edited by UG Board of Studies.
1. F.T. Wood. *A Remedial English Grammar for Foreign Students*, Macmillan.
2. Raymond Murphy. *English Grammar in Use*, OUP.

Note: (To be printed in the question paper)
1.   The students are required to attempt five questions in all.
2.   Question No.1 is compulsory.
3.   Attempt one question from each of the 4 Units.
4.   All questions carry equal marks.

Note for Paper Setters:

1.   The paper-setter will set 9 questions in all.
2.   Question No. 1 will consist of 8 short questions based on all the four Units. Out of 8 short questions, the students will be required to attempt any 5, selecting at least one short question from each unit. Every short-answer type question will be of 2 marks each.
3.   Question No 2 with 4 parts will be on explanation with reference to the context based on Unit I. Students will be required to attempt any two.
4.   Question No 3 with internal choice will be essay type questions based on Unit II.
5.   Question No 4 will be based on Unit III. It will have 14 items covering all the topics in the Unit. The students will be required to attempt any 10 items.
6.   Question No 5 will be based on Unit IV. It will have 14 items covering all the topics in the Unit. The students will be required to attempt any 10 items.

Evaluation of Internal Assessment (Theory)

Internal Assessment (Theory) will be based on the following components.

iv.	Class Participation	5 Marks
v.	Seminar/Presentation/Assignments/	
	Quiz/Class Test etc.	7 Marks
vi.	Mid-Term Exam	13 Marks
	Total	25 Marks

English

Semester-II

Nomenclature of the Course: **Introduction to Prose and Composition**

Course Code: **B23-ENG-201**

Course Type: **CC-2/MCC-3**

Level of the Course: **100-199**

Credits: 4 (Theory 3, Tutorial 1)   Total Marks: 100

End Term Exam Marks: 70

Internal Assessment Marks: 30

Exam Time: 3 Hrs.

Workload: 4 Hours (3 hours theory and 1 hour tutorial; Tutorial group size will be of 30 students)

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-ENG-201.1 The students will be able to understand various components of prose.

B23-ENG-201.2 Perusal of essays will enrich their knowledge of different prose styles.

B23-ENG-201.3 The students will be able to write paragraphs, essays, letters, and précis.

B23-ENG-201.4 The students will be able to write speeches and resume.

Contents of the Course:

Unit-I   The following essays are prescribed

1. Francis Bacon   :   "Of Studies"

2. Charles Lamb :   "Dream Children: A Reverie"

3. E. M. Forster :   "Tolerance"

4. Louis Fischer :   "Gandhi and the Western World"

5. Nirad C. Chaudhuri: "Public Transport in London and Delhi"

Unit-II   The following essays are prescribed

1. R.K. Narayan   :   "My Educational Outlook"

2. C. V. Raman   :   "Water: The Elixir of Life"

3. A.P.J. Abdul Kalam: "Great Books Born out of Great Minds"

4. Joseph Addison :   "Female Orators"

5. S. Radhakrishnan   :   "The Gandhian Outlook"

Unit-III   Composition

    1. Letter Writing: Formal and Informal Letters

    2. E-mail Writing, Notice Writing

    3. Application Writing

Unit-IV   Composition

    1. Resume Writing

    2. Précis

    3. Developing a story based on a specific prompt or idea

Prescribed Text: To be edited by UG Board of Studies.

Note: (To be printed in the question paper)
1.   The students are required to attempt five questions in all.
2.   Question No.1 is compulsory.
3.   Attempt one question from each of the 4 Units.
4.   All questions carry equal marks.

Note for Paper Setters:

1.   The paper-setter will set 9 questions in all.
2.   Question number one will consist of 10 short questions based on all the four Units. Out of 10 short questions, the students will be required to attempt any seven, selecting at least one short question from each Unit. Every short-answer type question will be of 2 marks each.
3.   Question No 2 and 3 will be essay type questions based on Unit I.
4.   Question No 4 and 5 will be essay type questions based on Unit II.
5.   Question No 6 and 7 will be based on Unit III.
6.   Question No 8 and 9 will be based on Unit IV.

Evaluation of Internal Assessment

Internal Assessment will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/	
	Quiz/Class Test etc.	10 Marks
iii.	Mid-Term Exam	15 Marks
	Total	30 Marks

Semester-II

Nomenclature of the Course: **Literature and Society: Exploring Social Issues through Literature**

Course Code: **B23-ENG-202**

Course Type: **DSEC-1**

Level of the Course: **100-199**

Credits: 4 (Theory 3, Tutorial 1)   Max. Marks: 100
                                                                              Internal Assessment Marks: 30
                                                                              End Term Exam Marks: 70
                                                                              Exam Time: 3 Hours

Workload: 4 Hours (3 hours theory and 1 hour tutorial; Tutorial group size will be of 30 students)

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

BH-ENG-202.1 The students will learn various types of social inequality as depicted in literature.

BH-ENG-202.2 They will learn various types of gender inequality as depicted in literature.

BH-ENG-202.3 They will be able to understand the political context of literature.

BH-ENG-202.4 They will understand various cultural context of literature.

Contents of the Course:

Unit-I:Literature and Social Inequality

        F.Scott Fitzgerald: *The Great Gatsby*

Unit-II: Gender and Identity in Literature

        Virginia Woolf: *A Room of One's Own*

Unit-III: Literature and Political Contexts

        Arthur Miller: *The Crucible*

Unit-IV: Literature and Cultural Perspectives

        Langston Hughes: "I, Too", "The Weary Blues", "Harlem", "Mother to Son"

                "The Negro Speaks of Rivers","A Dream Deferred"

Note: (To be printed in the question paper)
        1.   The students are required to attempt five questions in all.

2.   Question No.1 is compulsory.
3.   Attempt one question from each of the 4 Units.
4.   All questions carry equal marks.

Note for Paper-Setters:
1.   The paper-setter will set 9 questions in all.
2.   Besides question No.1, which is compulsory, a candidate shall attempt 4 questions selecting one question each from the four units, attempting five questions in all.
3.   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.

Evaluation of Internal Assessment

Internal Assessment will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/	
	Quiz/Class Test etc.	10 Marks
iii.	Mid-Term Exam	15 Marks
	Total	30 Marks

Semester-II

Nomenclature of the Course: **Language and Literature-II**

Course Code: **B23-ENG-203**

Course Type: **CC-M-2**

Level of the Course: **100-199**

Credits: 2 (Theory 2)   Total Marks: 50

End Term Exam Marks: 35

Internal Assessment Marks: 15

ExamTime: 3 hrs.

Workload: Theory 2 hours

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-ENG-203.1 The students will understand the significance of literary essays.

B23-ENG-203.2 They will be able to appreciate literariness embedded into the text.

B23-ENG-203.3 They will understand rich Indian culture through short stories.

B23-ENG-203.4 They will be able to understand in intricacies of grammar.

Contents of the Course:

Unit-I: Essays

- J C Hill: "Good Manners"
- Joseph Addison: "On the Whims of Lottery Adventures"
- M. K. Gandhi: "Playing the English Gentleman"
- Pico Iyer: "Why We Travel"

Unit-II: Short Stories

- Rudyard Kipling: "The King and the Tree Goddess"
- Shashi Deshpande: "The Beloved Charioteer"
- Anita Desai: "Pigeons at Daybreak"
- Munshi Premchand: "The Child"

Unit- III: Composition

        a) Paragraph Writing

        b) Letter Writing: Letter to the Editor

Unit IV: **Grammar**

        a) Pair of words

        b) Voice

        c) Narration

Prescribed Text: To be edited by UG Board of Studies.
1. Raymond Murphy. *English Grammar in Use*, OUP.

Note for Paper Setters:

1. The paper-setter will set 9 questions in all. Question No. 1 will be compulsory. Students will be required to attempt remaining 4 questions selecting at least one question from each Unit. All questions will carry equal marks.

2. Question No. 1 will consist of 10 short questions based on all the four Units. Out of 10 short questions, the students will be required to attempt any seven, selecting at least one short question from each Unit. Every short-answer type question will be of 1 mark each.

3. Question No 2 and 3 will be essay type questions based on Unit I.

4. Question No 4 and 5 will be explanation with reference to context type questions based on Unit II.

5. Question No 6 and 7 will be based on Unit III. The students will be required to attempt any one.

6. Question No 8 will be based on Unit IV. It will have 14 items covering all the topics in a Unit. The students will be required to attempt any 10 items.

Evaluation of Internal Assessment

Internal Assessment (Theory) will be based on the following components.

i.	Class Participation	4 Marks
ii.	Seminar/Presentation/Assignments/ Quiz/Class Test etc.	4 Marks
iii.	Mid-Term Exam	7 Marks
	Total	15 Marks

ENGLISH

SEMESTER-II

Nomenclature of the Course: **Introduction to Prose and Composition**

Course Code: **B23-ENG-204**

Course Type: **MDC-2**

Level of the Course: **100-199**

Credits-3 (Theory 2, Tutorial 1)   Total Marks: 75

End Term Exam Marks: 50

Internal Assessment: 25

Exam Time: 3 Hrs.

Workload: 3 Hours (2 hours theory and 1 hour tutorial; Tutorial group size will be of 30 students)

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-ENG-204.1 The students will be able to understand various components of prose.

B23-ENG-204.2 They will enrich their knowledge of different prose styles.

B23-ENG-204.3 The students will be able to write paragraphs, essays, and précis.

B23-ENG-204.4 The students will be able to write speeches and resume.

Contents of the Course:

Unit-I   The following essays are prescribed

1. Francis Bacon   :   "Of Studies"
2. Charles Lamb :   "Dream Children: A Reverie"
3. E. M. Forster   :   "Tolerance"

Unit-II   The following essays are prescribed

4. R.K. Narayan :   "My Educational Outlook
5. Nirmal Verma :   "Language and National Identity"
6. A.P.J. Abdul Kalam: "Great Books Born out of Great Minds"

Unit-III   Composition

1. Letter Writing: Formal and Informal

2. E-mail Writing, Application Writing

Unit-IV   Composition

4. Resume Writing

5. Précis

Prescribed Text: To be edited by UG Board of Studies.

Note: (To be printed in the question paper)
1.   The students are required to attempt five questions in all.
2.   Question No.1 is compulsory.
3.   Attempt one question from each of the 4 Units.
4.   All questions carry equal marks.

Note for Paper Setters:

1.   The paper-setter will set 9 questions in all.
2.   Question number one will consist of 8 short questions based on all the four Units. Out of 8 short questions, the students will be required to attempt any 5, selecting at least one short question from each Unit. Every short-answer type question will be of 2 marks each.
3.   Question No 2 and 3 will be essay type questions based on Unit I.
4.   Question No 4 and 5 will be essay type questions based on Unit II.
5.   Question No 6 and 7 will be based on Unit III.
6.   Question No 8 and 9 will be based on Unit IV.

Evaluation of Internal Assessment (Theory)

Internal Assessment (Theory) will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/	
	Quiz/Class Test etc.	7 Marks
iii.	Mid-Term Exam	13 Marks
	Total	25 Marks

English

Semester-III

Nomenclature of the Course: **Introduction to Poetry and Phonetics**

Course Code: **B23-ENG-301**

Course Type: **CC-3/MCC-4**

Level of the Course: **200-299**

Credits: 4 (Theory 3, Tutorial 1)

Total Marks: 100
End Term Exam Marks: 70
Internal Assessment Marks: 30
Exam Time: 3 Hrs.

Workload: 4 Hours (3 hours theory and 1 hour tutorial; Tutorial group size will be of 30 students)

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-ENG-301.1 The students will be able to understand various components of poetry

B23-ENG-301.2 Perusal of poetry will enrich their knowledge of sub-genres of poetry

B23-ENG-301.3 The students will understand speech sounds in English language

B23-ENG-301.4 The students will be able to write phonemic transcription and word stress

Contents of the Course:

Unit-I The following poems are prescribed:

1. Toru Dutt :   "Sita"
2. H.L.V. Derozio: :   "To India—My Native Land"
3. William Shakespeare: "My Mother's Eyes are Nothing Like the Sun"
4. Rabindranath Tagore: "Where the Mind is Without Fear"
5. Sarojini Naidu :   "Song of a Dream"
6. Nissim Ezekiel :   "Night of the Scorpion"

Unit-II The following poems are prescribed:

1. John Milton :   "On His Blindness"
2. William Wordsworth: "The Solitary Reaper"
3. Robert Browning: "My Last Duchess"
4. W. B. Yeats :   "When You are Old"

5. Philip Larkin: "An Arundel Tomb"

6. Robert Frost: "The Road Not Taken"

Unit-III Phonetics

1. Organs of Speech

2. Description of Speech Sounds: Vowels and Consonants

(*For Blind Students: Business Letter)

Unit-IV Phonetics

1. Transcription of Words

2. Word Stress

(*For Blind Students: Essay in 500 words)

Prescribed Text: To be edited by UG Board of Studies.
1. J. Sethi and P.V. Dhamija. *A Course in Phonetics and Spoken English*. PHI, 1999.
2. T. Balasubramanian. *A Textbook of English Phonetics for Indian Students*, MacMillan India.

Note: (To be printed in the question paper)

1.   The students are required to attempt five questions in all.
2.   Question No.1 is compulsory.
3.   Attempt one question from each of the 4 Units.
4.   All questions carry equal marks.

Note for Paper Setters:

1.   The paper-setter will set 9 questions in all. Question No. 1 will be compulsory. Students will be required to attempt 4 questions selecting at least not question from each Unit. All questions will carry equal marks.
2.   Question number one will consist of 10 short questions based on all the four Units. Out of 10 short questions, the students will be required to attempt any seven, selecting at least one short question from each Unit. Every short-answer type question will be of 2 marks each.
3.   Question No 2 with internal choice will be essay type question based on Unit I.
4.   Question No 3 with 4 parts will be explanation with reference to the context type questions based on Unit II. Students will be required to attempt any two.
5.   Question No 5 and 6 will be based on Unit III.
6.   Question No 7 and 8 will be based on Unit IV.

Evaluation of Internal Assessment

Internal Assessment will be based on the following components.

i.   Class Participation   5 Marks
ii.   Seminar/Presentation/Assignments/

	Quiz/Class Test etc.	10 Marks
iii.	Mid-Term Exam	15 Marks
	Total	30 Marks

English

Semester-III

Nomenclature of the Course: **British Poetry and Drama: 17th and 18th Centuries**

Course Code: **B23-ENG-302**

Course Type: **MCC-5**

Level of the Course: **200-299**

Credits: 4 (Theory 3, Tutorial 1)   Max. Marks: 100

Internal Assessment Marks: 30

End Term Exam Marks: 70

Exam Time: 3 Hours

Workload: 4 Hours (3 hours theory and 1 hour tutorial; Tutorial group size will be of 30 students)

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-ENG-302.1 The students will able to learn about the various aspects of satire.
B23-ENG-302.2 They will be familiarized with the decline of British drama in 17th century.
B23-ENG-302.3 They will understand the background of Christianity.
B23-ENG-302.4 They will be familiarized with the first British woman writer.

Contents of the Course:

Unit-I: John Milton: *Paradise Lost*- Book 1

Unit-II   John Webster: *The Duchess of Malfi*

Unit-III: Aphra Behn: *The Rover*

Unit-IV   Alexander Pope: *The Rape of the Lock*

Note: (To be printed in the question paper)
   1.   The students are required to attempt five questions in all.
   2.   Question No.1 is compulsory.
   3.   Attempt one question from each of the 4 Units.
4.   All questions carry equal marks.
Note for Paper-Setters:

   1. The paper-setter will set 9 questions in all.
   2. Besides question No.1, which is compulsory, a candidate shall attempt 4 questions selecting one question each from the four units, attempting five questions in all.

3. 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.

Evaluation of Internal Assessment

Internal Assessment will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/ Quiz/Class Test etc.	10 Marks
iii.	Mid-Term Exam	15 Marks
	Total	30 Marks

SEMESTER-III

Nomenclature of the Course: **Introduction to Poetry and Phonetics**

Course Code: **B23-ENG-303**

Course Type: **MDC-3**

Level of the Course:**100-199**

Credits-3 (Theory 2, Tutorial 1)   Total Marks: 75

End Term Exam Marks: 50

Internal Assessment Marks: 25

Time: 3 Hrs.

Workload: 3 Hours (2 hours theory and 1 hour tutorial; Tutorial group size will be of 30 students)

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-ENG-303.1 The students will be able to understand various components of poetry

B23-ENG-303.2 Perusal of poetry will enrich their knowledge of sub-genres of poetry

B23-ENG-303.3 The students will understand speech sounds in English language

B23-ENG-303.4 The students will be able to write phonemic transcription and word stress

Contents of the Course:

Unit-I   The following poems are prescribed:

1. Toru Dutt   : "Sita"
2. Rabindranath Tagore   : "Where the Mind is Without Fear"
3. Sarojini Naidu   : "The Bangle Sellers"
4. Nissim Ezekiel   :   "Night of the Scorpion"

Unit-II   The following poems are prescribed:

1. John Milton :   "On His Blindless"
2. William Wordsworth: "The Solitary Reaper"
3. Robert Browning   : "My Last Duchess"
4. W. B. Yeats :   "When You are Old"

Unit-III   Phonetics

1. Organs of Speech

2. Speech Sounds: Vowels and Consonants

(*For Blind Students: Business Letter)

Unit-IV   Phonetics

1. Transcription of Words

2. Word Stress

(*For Blind Students: Essay in 500 words)

Prescribed Text: To be edited by UG Board of Studies.
1. J. Sethi and P.V. Dhamija. *A Course in Phonetics and Spoken English*. PHI, 1999.
2. T. Balasubramanian. *A Textbook of English Phonetics for Indian Students*, MacMillan India.

Note: (To be printed in the question paper)

1.   The students are required to attempt five questions in all.
2.   Question No.1 is compulsory.
3.   Attempt one question from each of the 4 Units.
4.   All questions carry equal marks.

Note for Paper Setters:

1.   The paper-setter will set 9 questions in all. Question No. 1 will be compulsory. Students will be required to attempt 4 questions selecting at least not question from each Unit. All questions will carry equal marks.
2.   Question number one will consist of 8 short questions based on all the four Units. Out of 8 short questions, the students will be required to attempt any 5, selecting at least one short question from each Unit. Every short-answer type question will be of 2 marks each.
3.   Question No 2 with internal choice will be essay type question based on Unit I.
4.   Question No 3 with 4 parts will be explanation with reference to the context type questions based on Unit II. Students will be required to attempt any two parts.
5.   Question No 5 and 6 will be based on Unit III.
6.   Question No 7 and 8 will be based on Unit IV.

Evaluation of Internal Assessment (Theory)

Internal Assessment (Theory) will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/ Quiz/Class Test etc.	7 Marks
iii.	Mid-Term Exam	13 Marks
	Total	25 Marks

Semester-IV

Nomenclature of the Course: **Introduction to Drama and Intermediate Grammar**

Course Code: **B23-ENG-401**

Course Type: **CC-4/MCC-6**

Level of the Course: **300-399**

Credits: 4 (Theory 3, Tutorial 1)   Total Marks: 100

End Term Exam Marks: 70

Internal Assessment Marks: 30

Exam Time: 3 Hrs.

Workload:4 Hours (3 hours theory and 1 hour tutorial; Tutorial group size will be of 30 students)

Course Learning Outcomes:

B23-ENG-401.1 The students will be able to understand various components of drama.

B23-ENG-401.2 They will have knowledge of different dramatic styles.

B23-ENG-401.3 The students will be able to write paragraphs, essays, letters, and précis.

B23-ENG-401.4 The students will be able to write speeches and resume.

Contents of the Course:

Unit-I   Following One-Act Plays are prescribed

      1. Fritz Karinthy   :   "Refund"

      2. Anton Chekov   :   "A Marriage Proposal"

      3. Rupert Brooke   :   "Lithuania"

Unit-II   Following One-Act Plays are prescribed

      1. Bhasa   :   "The Envoy"

      2. J.B. Priestley   :   "Mother's Day"

      3. Jeoffrey Trease   :   "After the Tempest"

Unit-III   **Grammar**

    1. Punctuation

    2. Articles and Determiners

Unit-IV   **Grammar**

1. Non-finites

2. Tag Questions

Prescribed Text: To be edited by UG Board of Studies.
1. F.T. Wood. *A Remedial English Grammar for Foreign Students*, Macmillan.
2. Raymond Murphy. *English Grammar in Use*, OUP.

Note**:** (To be printed in the question paper)
1.   The students are required to attempt five questions in all.
2.   Question No.1 is compulsory.
3.   Attempt one question from each of the 4 Units.
4.   All questions carry equal marks.

Note for Paper Setters:

1.   The paper-setter will set 9 questions in all. Question No. 1 will be compulsory. Students will be required to attempt 4 questions selecting at least not question from each Unit. All questions will carry equal marks.
2.   Question No. 1 will consist of 10 short questions based on all the four Units. Out of 10 short questions, the students will be required to attempt any seven, selecting at least one short question from each Unit. Every short-answer type question will be of 2 marks each.
3.   Question No 2 with internal choice will be essay type question based on Unit I.
4.   Question No. 3 with 4 parts will be explanation with reference to the context type questions based on Unit II. Students will be required to attempt any two.
5.   Question No 4 with 16 items will be based on Unit III. The students will be required to attempt any 14 of the given items.
6.   Question No 5 with 16 items will be based on Unit IV. The students will be required to attempt any 14 of the given items.

Evaluation of Internal Assessment

Internal Assessment will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/	
	Quiz/Class Test etc.	10 Marks
iii.	Mid-Term Exam	15 Marks

English

Semester-IV

Nomenclature of the Course: **Indian Writing in English**

Course Code: **B23-ENG-402**

Course Type: **MCC-7**

Level of the Course: **200-299**

Credits: 4 (Theory 3, Tutorial 1)   Max. Marks: 100

Internal Assessment Marks: 30

End Term Exam Marks: 70

ExamTime: 3 Hours

Workload:4 Hours (3 hours theory and 1 hour tutorial; Tutorial group size will be of 30 students)

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-ENG 402.1 The students will be introduced to renowned writers of India.
B23-ENG 402.2 They will understand the context of Colonial and Post-Colonial India.
B23-ENG 402.3 They will be able to appreciate the rich literary tradition of writing in India.
B23-ENG 402.4 They will get to know the importance of Humanism in literature.

Contents of the Course:

Unit-I   R.K. Narayan: *The Guide*

Unit-II   Anita Desai: *Fire on the Mountain*

Unit-III   Nissim Ezekiel: "Enterprise", "The Night of the Scorpion", "The Patriot"

"Poet, Lover, Birdwatcher", "The Professor", "Philosophy"

Unit-IV   Vijay Tendulkar: *Ghashiram Kotwal*

Note: (To be printed in the question paper)
1.   The students are required to attempt five questions in all.
2.   Question No.1 is compulsory.
3.   Attempt one question from each of the 4 Units.
4.   All questions carry equal marks.

Note for Paper-Setters:

1. Paper-setter will set 9 questions in all.
2. Besides question No.1, which is compulsory, a candidate shall attempt 4 questions selecting one question each from the four units, attempting five questions in all.
3. 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.

Evaluation of Internal Assessment

Internal Assessment will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/ Quiz/Class Test etc.	10 Marks
iii.	Mid-Term Exam	15 Marks
	Total	30 Marks

English

Semester-IV

Nomenclature of the Course: **British Romantic Literature**

Course Code: **B23-ENG-403**

Course Type: M**CC-8**

Level of the Course: **200-299**

Credits: 4 (Theory 3, Tutorial 1)   Max. Marks: 100

Internal Assessment: 30

End Term Exam Marks: 70

Exam Time: 3 Hours

Workload:4 Hours (3 hours theory and 1 hour tutorial. Tutorial group size will be of 30 students)

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-ENG-403.1 The students will be familiarized with romantic literature.
B23-ENG-403.2 They will be familiarized with the various themes of romantic literature.
B23-ENG-403.3 They will be able to learn the scientific temperament of 19ᵗʰ Century.
B23-ENG-403.4 They will understand the effect of Industrial revolution.

Contents of the Course:

Unit-I: William Blake: "The Lamb", "The Chimney Sweeper" (from *The Songs of Innocence* and *The Songs of Experience*) "The Tyger" (The Songs of Experience) "Introduction" to The Songs of Innocence

Unit-II   William Wordsworth: "Tintern Abbey", "Nutting", "The Tables Turned",

"Daffodils","The Solitary Reaper"

Unit-III: John Keats: "Ode to a Nightingale", "To Autumn", "When I Have Fears I May Cease to Be", "La Belle Dame sans Merci"

Unit-IV   Mary Shelley*: Frankenstein*

Note: (To be printed in the question paper)
        1.   The students are required to attempt five questions in all.

2.   Question No.1 is compulsory.
3.   Attempt one question from each of the 4 Units.
4.   All questions carry equal marks.

Note for Paper-Setters:
1.   The paper-setter will set 9 questions in all.
2.   Besides question No.1, which is compulsory, a candidate shall attempt 4 questions selecting one question each from the four units, attempting five questions in all.
3.   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.

Evaluation of Internal Assessment

Internal Assessment will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/	
	Quiz/Class Test etc.	10 Marks
iii.	Mid-Term Exam	15 Marks
	Total	30 Marks

English

Semester-IV

Nomenclature of the Course: **American Literature**

Course Code: **B23-ENG-404**

Course Type: **DSE-1**

Level of the Course: **200-299**

Credits: 4 (Theory 3, Tutorial 1)   Max. Marks: 100
                                                Internal Assessment Marks: 30
                                                    End Term Exam Marks: 70
                                                        Exam Time: 3 Hours

Workload: 4 Hours (3 hours theory and 1 hour tutorial; Tutorial group size will be of 30 students)

Course Learning Outcomes:
After the successful completion of the course, the student will be able to:

B23-ENG-404.1 The students will be familiarized with history and culture of America.
B23-ENG-404.2 They will be able to understand social structure of American society.
B23-ENG-404.3 They will be able to understand American concept of Liberty and equality.
B23-ENG-404.4 They will be able to learn various developments in American literature.

Contents of the Course:
Unit-I: Tennessee Williams: *The Glass Menagerie*

Unit-II   R.W. Emerson: "The American Scholar", "Self-Reliance", "The Over-Soul"

Unit-III: Walt Whitman: "O Captain My Captain," "One's Self I Sing",
                                         "Passage to India","A Noiseless Patient Spider", "I Hear
                                         America Singing", "A Clear Midnight"
Unit-IV   Robert Frost: "The Road Not Taken", "Stopping by Woods on a
                                         Snowy Evening", "Birches", "Mending Wall", "Fire
                                         and Ice", "Design"

Note: (To be printed in the question paper)
    1.   The students are required to attempt five questions in all.
    2.   Question No.1 is compulsory.
    3.   Attempt one question from each of the 4 Units.
    4.   All questions carry equal marks.

Note for Paper-Setters:
    1. The paper-setter will set 9 questions in all.

2. Besides question No.1, which is compulsory, a candidate shall attempt 4 questions selecting one question each from the four units, attempting five questions in all.

3. 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.

Evaluation of Internal Assessment

Internal Assessment will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/	
	Quiz/Class Test etc.	10 Marks
iii.	Mid-Term Exam	15 Marks
	Total	30 Marks

English

Semester-IV

Nomenclature of the Course: **Colonial and Postcolonial Literature**

Course Code: **B23-ENG-405**

Course Type: **DSE-1**

Level of the Course: **300-399**

Credits: 4 (Theory 3, Tutorial 1)   Max. Marks: 100

Internal Assessment Marks: 30

End Term Exam Marks: 70

Exam Time: 3 Hours

Workload:4 Hours (3 hours theory and 1 hour tutorial; Tutorial group size will be of 30 students)

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-ENG-405.1The students will have knowledge of concepts relating to Postcolonialism.
B23-ENG-405.2 They will learn different theories of culture and nationalism.
B23-ENG-405.3 They will think critically about colonialism and its history.
B23-ENG-405.4 They will understand gender and race in the context of Postcolonial societies.

Contents of the Course:

Unit-I:	Chinua Achebe:	*Things Fall Apart*
Unit-II	Joseph Conrad:	*Heart of Darkness*
Unit-III:	Girish Karnad*:*	*Nagamandala*
Unit-IV	Rudyard Kipling:	*Kim*

Note: (To be printed in the question paper)
1.   The students are required to attempt five questions in all.
2.   Question No.1 is compulsory.
3.   Attempt one question from each of the 4 Units.
4.   All questions carry equal marks.

Note for Paper-Setters:
1.   The paper-setter will set 9 questions in all.

2. Besides question No.1, which is compulsory, a candidate shall attempt 4 questions selecting one question each from the four units, attempting five questions in all.

3. 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.

Evaluation of Internal Assessment

Internal Assessment will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/ Quiz/Class Test etc.	10 Marks
iii.	Mid-Term Exam	15 Marks
	Total	30 Marks

DEPARTMENT OF ENGLISH
KURUKSHETRA UNIVERSITY
KURUKSHETRA
(Established by the State Legislature Act XII of 1956)
(A+ Grade, NAAC Accredited)

Scheme of Examination and Syllabus for
Undergraduate Programme

AECs, SECs and VOCs

Subject: English

Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance with NEP-2020w.e.f. 2023-24 (in phased manner)

DEPARTMENT OF ENGLISH, KURUKSHETRA UNIVERSITY, KURUKSHETRA
Scheme of Examination for Undergraduate Programme
Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance with NEP-2020
w.e.f. 2023-24 (in phased manner), Subject: English (AECs, SECs & VOCs)

Seme ster	Course Type	Course Code	Nomenclature of Course	Credits	Contact Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
I	AEC-1	B23-AEC-111	English Language and Communication Skills: Level 1	2	2	15	35	50	3 hrs.
II	AEC-2	B23-AEC-211	English Language and Communication Skills: Level 2	2	2	15	35	50	3 hrs.
III	AEC-3	B23-AEC-311	English Language and Communication Skills: Level 3	2	2	15	35	50	3 hrs.
IV	AEC-4	B23-AEC-411	English Language and Communication Skills: Level 4	2	2	15	35	50	3 hrs.
	SEC-2	B23-SEC-207	Soft Skills	3	3	25	50	75	3 hrs.
	SEC-2	B23-SEC-216	Creative Writing	3	3	25	50	75	3 hrs.
	SEC-3	B23-SEC-310	Communication in Professional Life	3	3	25	50	75	3 hrs.
	SEC-3	B23-SEC-311	Report Writing	3	3	25	50	75	3 hrs.
	SEC-4	B23-SEC-402	Manuscript Writing	3	3	25	50	75	3 hrs.
	VOC-2	B23-VOC-225	International English Language Proficiency Development	4	4	30	70	100	3 hrs.

English

Semester-I

Nomenclature of the Course: **English Language and Communication Skills: Level 1**

Course Code: **B23-AEC-111**

Course Type: **AEC-1**

Level of the Course: **100-199**

Credits: 2 (Theory 2)

Total Marks: 50

End Term Exam Marks: 35

Internal Assessment Marks: 15

Exam Time: 3 Hrs.

Workload: Theory 2 hours

Course Learning Outcomes:

After the successful completion of the course the student will be able to:

E101.1. The students will learn various types of verbal and non-verbal communication.

E101.2. They will understand the importance of interpersonal communication on workplaces and different ways of behaviour and communication.

E101.3. They will comprehend the importance of listening skills and its types.

E101.4. They will be introduced to parts of speech and their role in language learning.

Contents of the Course:

Unit I: Theory and Types of Communication

Verbal and Non-Verbal Communication

Unit II: Workplace and Interpersonal Communication

Introducing Oneself, Introducing Others, Making Requests,

Offering Help, Congratulating, Making Enquiries and Seeking

Permission

Unit III: Importance of Listening Skills and their types

Barriers to Effective Listening and how to overcome them

Note-taking Techniques to capture the main ideas

Unit IV: Parts of Speech

Suggested Readings:

Hargie, Owen. *The Handbook of Communication Skills*. Routledge, 2006.

Knapp, Mark L., et al. *Nonverbal Communication in Human Interaction*. Cengage
  Learning, 2013.

West, Richard, and Lynn H. Turner. *Understanding Interpersonal Communication: Making
  Choices in Changing Times*. Cengage Learning, 2010.

Instructions to the Paper Setters:

1. Question No 1 will be compulsory and have 7 questions based on all the four Units and the students will be required to write answers in 30 words.

2. Question No 2 and 3 will be set on Unit-I covering the entire Unit. Students will be required to attempt any one.

3. Question No 4 and 5 will be set on Unit-II covering the entire Unit. Students will be required to attempt any one.

4. Question No 6 and 7 will be set on Unit-III covering the entire Unit. Students will be required to attempt any one.

5. Question No. 8 and 9 will be based on Unit-IV having 7 parts each covering the entire Unit. Students will be required to attempt any one of these questions.

Evaluation of Internal Assessment

Internal Assessment (Theory) will be based on the following components.

i.	Class Participation	4 Marks
ii.	Seminar/Presentation/Assignments/	
	Quiz/Class Test etc.	4 Marks
iii.	Mid-Term Exam	7 Marks
	Total	15 Marks

English

Semester-II

Nomenclature of the Course: **English Language and Communication Skills: Level 2**

Course Code: **B23-AEC-211**

Course Type: **AEC-2**

Level of the Course: **100-199**

Credits: 2 (Theory 2)

Total Marks: 50

End Term Exam Marks: 35

Internal Assessment Marks: 15

Exam Time: 3 Hrs.

Workload: Theory 2 hours

Course Learning Outcomes

After the successful completion of the course, the student will be able to:

E201.1. The students will be introduced to the phonetics and syllables in English.

E201.2. They will learn various components of speaking skills and their use in communication.

E201.3. They will learn the practical use of punctuation and capitalization.

E201.4. They will have the comprehensive knowledge of tenses.

Contents of the Course:

Unit I: Sounds in English Language

Phonetic symbols and their understanding through a dictionary (Oxford Advanced Learner's Dictionary)

Transcribing one and two syllable words in English

(*For Blind Students: Develop a story from the given prompt or idea)

Unit II: Developing Fluency in Speaking Skills

Speech Making: Expository Speech, Argumentative Speech

Dialogues, Role Plays and Group Discussions

Unit III: Proper use of Punctuation and Capitalization

Unit IV: Introduction to Tenses

Suggested Readings:

Fraleigh, Douglas M., and Joseph S. Tuman. *Speak Up: An Illustrated Guide to Public Speaking*. Macmillan, 2011.

Lucas, Stephen. *The Art of Public Speaking*. McGraw-Hill, 2008.

Murphy, Raymond. *English Grammar in Use with Answers*. Cambridge UP, 2002.

Instructions to the Paper Setters:

1. Question No 1 will be compulsory and will have 7 parts based on all the four Units and the students will be required to attempt all the 7.

2. Question No 2 and 3 will be set on Unit-I covering the entire Unit. Students will be required to attempt any one.

3. Question No 4 and 5 will be set on Unit-II covering the entire Unit. Students will be required to attempt any one.

4. Question No 6 and 7 will be set on Unit-III covering the entire Unit. Students will be required to attempt any one.

5. Question No. 8 and 9 will be based on Unit-IV having 7 parts each covering the entire Unit. Students will be required to attempt any one of these

Evaluation of Internal Assessment

Internal Assessment (Theory) will be based on the following components.

i.	Class Participation	4 Marks
ii.	Seminar/Presentation/Assignments/ Quiz/Class Test etc.	4 Marks
iii.	Mid-Term Exam	7 Marks
	Total	15 Marks

Semester-III

Nomenclature of the Course: **English Language and Communication Skills: Level 3**

Course Code: **B23-AEC-311**

Course Type: **AEC-3**

Level of the Course**: 200-299**

Credits: 2 (Theory 2)

Total Marks: 50

End Term Exam Marks: 35

Internal Assessment Marks: 15

Time: 3 Hrs.

Workload: Theory 2 hours

Course Learning Outcomes

After the successful completion of the course, the student will be able to:

E301.1. The students will understand the importance of close reading and comprehension

E301.2. They will learn the practical use of interview and presentation skills.

E301.3. They will enhance their vocabulary for better communication.

E301.4. They will be introduced to the correct use of articles and other parts of speech.

Content of the Course:

Unit I: Cloze Reading and Comprehension

Summarizing and Paraphrasing

Unit II: Interview Skills, Seminar Skills, Presentation Skills

Data Interpretation – Bar Graph, Pie Chart, Tree Diagram

Unit III: Vocabulary: Homonyms, Homophones, Pair of words

Rearranging jumbled sentences

Unit IV: Common errors in the use of English

(Noun, Pronoun and Articles)

Suggested Readings:

Bienvenu, Sherron. *The Presentation Skills Workshop: Helping People Create and Deliver Great Presentations*. Amacom Books, 2006.

Brians, Paul. *Common Errors in English Usage*. Franklin, Beedle & Associates, 2003.

McNamara, Danielle S. *Reading Comprehension Strategies: Theories, Interventions, and Technologies*. Psychology P, 2007.

Instructions to the Paper Setters:

1.   Question No 1 will be compulsory and will have 7 parts based on all the four Units and the students will be required to attempt all the 7.

2.   Question No 2 and 3 will be set on Unit-I covering the entire Unit. Students will be required to attempt any one.

3.   Question No 4 and 5 will be set on Unit-II covering the entire Unit. Students will be required to attempt any one.

4.   Question No 6 and 7 will be set on Unit-III covering the entire Unit. Students will be required to attempt any one.

5.   Question No. 8 and 9 will be based on Unit-IV having 7 parts each covering the entire Unit. Students will be required to attempt any one of these

Evaluation of Internal Assessment

Internal Assessment (Theory) will be based on the following components.

i.	Class Participation	4 Marks
ii.	Seminar/Presentation/Assignments/ Quiz/Class Test etc.	4 Marks
iii.	Mid-Term Exam	7 Marks
	Total	15 Marks

English

Semester-IV

Nomenclature of the Course: **English Language and Communication Skills: Level 4**

Course Code: **B23-AEC-411**

Course Type: **AEC-4**

Level of the Course: **200-299**

Credits: 2 (Theory 2)   Total Marks: 50

End Term Exam Marks: 35

Internal Assessment Marks: 15

Exam Time: 3 Hrs.

Workload: Theory 2 hours

Course Learning Outcomes

After the successful completion of the course, the student will be able to:

E401.1. The students will enhance their vocabulary by learning formation of words.

E401.2. They will learn the various types of sentences.

E401.3. They will comprehend the public speaking techniques and art of oratory.

E401.4. They will learn practical use of coherence in writing and contextual
         vocabulary

Contents of the Course:

Unit I: Vocabulary Building

        Word formation and understating word roots, prefixes, and suffixes

Unit II: Types of Sentences and Transformation of Sentences

Unit III: Public Speech, Persuasion Techniques

        Various Aspects of Conversation: Starting a Conversation/Controlling a Conversation

Unit IV: Coherence and Unity in a Paragraph, Transition Words and Phrases

        Learning Contextual Vocabulary through Reading a Passage or Literary Text

Suggested Readings:

Lewis, Norman. *Word Power Made Easy: The Complete Handbook for Building a Superior
        Vocabulary*. Anchor, 2014.

Nida, Eugene A. *Morphology: The Descriptive Analysis of Words*. University of Michigan
        Press, 1965.

Tortora, Christina. *Understanding Sentence Structure: An Introduction to English Syntax*. John Wiley & Sons, 2018.

Instructions to the Paper Setters:

1.   Question No 1 will be compulsory and will have 7 parts based on all the four Units and the students will be required to attempt all the 7.

2.   Question No 2 and 3 will be set on Unit-I covering the entire Unit. Students will be required to attempt any one.

3.   Question No 4 and 5 will be set on Unit-II covering the entire Unit. Students will be required to attempt any one.

4.   Question No 6 and 7 will be set on Unit-III covering the entire Unit. Students will be required to attempt any one.

5.   Question No. 8 and 9 will be based on Unit-IV. Students will be required to attempt any one of these.

Evaluation of Internal Assessment

Internal Assessment (Theory) will be based on the following components.

i.	Class Participation	4 Marks
ii.	Seminar/Presentation/Assignments/ Quiz/Class Test etc.	4 Marks
iii.	Mid-Term Exam	7 Marks
	Total	15 Marks

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English

Semester II

Nomenclature of the Course: **Soft Skills**

Course Code: **B23-SEC-207**

Course Type: **SEC-2**

Level of the Course: **100-199**

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Credits: 3 (2 Theory, 1 Tutorial)

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Total Marks: 75

Internal Assessment Marks: 25

End Term Exam Marks: 50

Exam Time: 3 hours

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Workload: Theory 3 hours

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

207.1 The students will understand various aspects of soft skills.

207.2 The students will improve presentation skills.

207.3 The students will learn various techniques of self-management.

207.4 The students will learn the basics of professional correspondence

Contents of the Course:

Unit- I

Introduction to Soft Skills

Time and Stress Management Skills

Emotional Intelligence Skills

Life Skills

Presentation on Soft Skills

Unit II

Communication Skills

Presentation Skills

Voice Modulation

Pitch and Tempo for Effective Presentation

Unit-III

Self-Management and Personality Development: Motivation, Positive Attitude and Confidence Building Techniques; Personal Grooming and Hygiene: Defining Strengths, Formal and Informal Presentation of Self

Situational Conversations

Unit-IV

Proposal Writing

Public Speech

Group Discussion

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34(325)

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Instruction for Paper Setter:

Q. 1 This question based on all the 4 Units will have 8 short questions. Students will be required to attempt any 5 in about 30 words each covering.   5*2=10

Q:2   This question with internal choice shall be based on unit I. The student shall attempt one question out of two.   10

Q. 3. This question with internal choice shall be based on unit II. The student shall attempt one question out of two.   10

Q. 4 This question with internal choice shall be based on unit III. The student shall attempt one question out of two.   10

Q:5 This question with internal choice shall be based on unit IV. The student shall attempt one question out of two.   10

Evaluation of Internal Assessment

Internal assessment will be based on the following components:

(i)	Class participation	5 marks
(ii)	Assignments- Presentations	7 marks
(iii)	Mid Term:	13 marks
	Total Marks	25 marks

English
Semester II
Nomenclature of the Course: **Creative Writing**
Course Code: **B23-SEC-216**
Course Type: **SEC-2**
Level of the Course: **100-199**

Credits: 3 (2 Theory, 1 Tutorial)

Total Marks: 75
Internal Assessment Marks: 25
End Term Exam Marks: 50
Time: 3 hours

Workload: Theory 3 hours

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

216.1 The students will understand the art, craft and various aspects of creative   writing.

216.2 They will be acquainted with the basic skills required for a creative writer

216.3 They will be able to explain the differences in writing for various literary and social media contexts.

216.4 The creative and critical faculties of the students will be honed.

Contents of the Course:

Unit I

Introduction and Significance of Creative Writing
Creative Writing Process
Genres of Creative Writing: poetry, fiction, non-fiction, and drama.

Unit II

Plot, Setting, Character, Dialogue, Point of View
Literary Devices: Image, Simile, Metaphor, Symbol, Hyperbole, Personification

Unit-III

Fiction: short story, novella and novel
Biography, Memoir and Autobiography
Travelogues and Diaries

Unit-IV

Web Content Writing and Blog Writing
Script Writing
Journalistic Writing

Suggested Readings:

Abrams, M.H. *Glossary of Literary Terms*. Boston: Wadsworth Publishing Company, 2005.

Bell, James Scott. *How to Write Dazzling Dialogue*. Compendium Press, 2014.

Bell, Julia and Magrs, Paul. *The Creative Writing Course-Book*. London: Macmillan, 2001.

Clark, Roy Peter. *Writing Tools*.US: Brown and Company, 2008.

Dev, Anjana Neira, Anuradha Marwah and Swati Pal. *Creative Writing: A Beginner's Manual*. Pearson India, 2008.

Earnshaw, Steven (Ed). *The Handbook of Creative Writing*. Edinburgh UP, 2007.

Gardner, John. *The Art of Fiction*. Vintage, 1991.

King, Stephen. *On Writing: A Memoir of the Craft*. Hodder and Stoughton, 2000.

Scheme of Examination:

Note: All questions are compulsory.

Q. 1   This question will be compulsory and have 8 short questions based on all the four Units. Students will be required to attempt any 5 in about 30 words each.   5*2=10

Q:2   This question with internal choice shall be based on unit I. The students shall attempt one question out of the two.   10

Q. 3.   This question with internal choice shall be based on unit II. The students shall attempt one question out of the two.   10

Q. 4   This question with internal choice shall be based on unit III. The students shall attempt one question.   10

Q:5   This question with internal choice shall be based on unit IV. The students shall attempt one question out of the two.   10

Evaluation of Internal Assessment

Internal assessment will be based on the following components:

(iv)	Class participation	5 marks
(v)	Assignments- Presentations	7 marks
(vi)	Mid Term:	13 marks
	Total Marks	25 marks

English
Semester II
Nomenclature of the Course: **Communication in Professional Life**
Course Code: **B23-SEC-310**
Course Type: **SEC-3**
Level of the Course: **100-199**

Credits: 3 (2 Theory, 1 Tutorial)

Total Marks: 75
Internal Assessment Marks: 25
End Term Exam Marks: 50
Exam Time: 3 hrs.

Workload: Theory 3 hours

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

310.1 The students will be able to communicate effectively in English in professional contexts.
310.2 They will be able to frame different kinds of sentences.
310.3 They will learn professional communication skills.
310.4 They will learn the basics of grammar and composition.

Contents of the Course:

Unit I
- Communication: Importance and its Purpose
- Strategies For Effective Communication
- Essentials of Good Communication
- Significance of Body Language in Communication

Unit II
- Noun Clauses, Adverb Clauses, Relative Clauses
- Sentence and its types

Unit III
- Group Discussion
- Job Interviews
- Resume Writing
- Effective Business Meetings: Preparing Agenda, Summarizing key ideas and information

Unit IV
- Formal E-mail Writing
- Notice Writing
- Press Release (Business Related)

- Business Reports

Suggested Readings:

John Eastwood. *Oxford Guide to English Grammar*. (Oxford University Press, 1994).

Martin Hewings. *Advanced Grammar in Use*. (Cambridge University press, 1999)

Raymond Murphy. *English Grammar in Use (with CD- Rom)*. Cambridge University Press.

Scot Ober. *Contemporary Business Communication*. Cengage Learning

RC Bhatia. *Business Communication*. Ane Books Pvt. Ltd., New Delhi.

R.C. Sharma and Krishna Mohan. *Business Communication and Report Writing*. Tata

    McGraw-Hill Publishing Company Ltd., 2006.

Scheme of Examination:

Note: All questions are compulsory having equal marks.

Q. 1   This question will be compulsory having 8 short answers type questions having 2 from each section. Students will be required to attempt any 5 in about 30 words each.

        5x 2=10

Q:2   This question will have 4 parts based on Unit I. The student shall attempt 2 parts out of given 4.   2x5=10

Q. 3.   There will be 15 grammatical items based on Unit II. The student shall attempt any 10 items.   10

Q. 4   This question with internal choice shall be based on Unit III. The student shall attempt one question out of two.   10

Q:5   This question with internal choice shall be based on unit IV. The student shall attempt one question out of given two.   10

Evaluation of Internal Assessment

Internal assessment will be based on the following components:

(vii)	Class participation	5 marks
(viii)	Assignments/Presentations	5 marks
(ix)	Mid Term Exam:	15 marks
	Total Marks	25 marks

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English

Semester III

Nomenclature of the Course: **Report Writing**

Course Code: **B23-SEC-311**

Course Type: **SEC-3**

Level of the Course: **100-199**

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Credits: 3 (Theory 2, Tutorial 1)   Total Marks: 75
<div align="right">

Internal Assessment: 25
End Term Exam Marks: 50
Exam Time: 3 hours

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Workload:Theory 2 hours

Course Learning Outcomes:
After the successful completion of the course, the student will be able to:

311.1 The students will understand various aspects of report writing.
311.2 They will improve their effective report writing skills.
311.3 They will learn planning and structure of report writing.
311.4 They will learn the formatting of reports.

Contents of the Course:
Unit I

Introduction to Technical Writing: Technical Report

Planning and Structure of Report: Word Choice, Tone, Drafting and Coherence of main ideas,

Types of Report: Formal and Informal

Unit II

Writing and Revising the Draft, the Editing Process

Writing Styles and Techniques

Writing Effective Reports

Unit III

Formatting the Reports: Title Page, Headers and Footers, Using Tables and Graphics

Visual Aids and Presentation Skills

Unit IV

Importance of Effective Language in Report Writing

Presenting one's organization

Executive Summary

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34(331)

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Suggested Readings

Janet Owens. *Report Writing*. DSC: London, 2011.

Mort, S. *Professional Report Writing*. Taylor & Francis, 2017.

Sharma, S., Raman, M. *Technical Communication: Principles and Practice*. India: Oxford University Press, 2015.

Note: All questions are compulsory.

Q. 1 This question will be compulsory based on all the 4 Units having 8 short questions. Students will be   required to attempt any 5 in about 30 words each covering.   10

Q:2   This question with internal choice shall be based on unit I. The student shall attempt one question out of two.   10

Q. 3. This question with internal choice shall be based on unit II. The student shall attempt one question out of two.   10

Q. 4 This question with internal choice shall be based on unit III. The student shall attempt one question out of two.   10

Q:5 This question with internal choice shall be based on unit IV. The student shall attempt one question out of two.   10

Evaluation of Internal Assessment

Internal assessment will be based on the following components:

(i)	Class participation	5 marks
(ii)	Assignments- Presentations	7 marks
(iii)	Mid Term:	13 marks
	Total Marks	25 marks

English
Nomenclature of the Course: **Manuscript Writing**
Course Code: **B23-SEC-402**
Course Type: **SEC-4**
Level of the Course: **100-199**

Credits: 3 (2 Theory, 1 Tutorial)

Total Marks: 75
Internal Assessment Marks: 25
End Term Exam Marks: 50
Exam Time: 3 hours

Workload: Theory 3 hours

Course Learning Outcomes:
After the successful completion of the course, the student will be able to:

402.1 The students will understand various aspects of manuscript writing.
402.2 They will learn about the details of writing process.
402.3 They will know techniques of manuscript writing.
402.4 They will be introduced to introduce to the mechanics of citing and referencing sources.

Contents of the Course:

Unit- I

    Manuscript Writing: Definition, Purpose and Significance
    Types of Manuscripts: Original Article, Case Studies, Reflective Essays, Review Articles, Brief Reports

Unit-II
    Understanding the Writing Process: Pre-writing, drafting, revising, editing, and proofreading.
    Ethical Considerations in Manuscript Writing: Understanding plagiarism and academic integrity, properly attributing sources and avoiding plagiarism

Unit-III

    Principles of Effective Writing: Clarity, coherence, conciseness, and precision.
    Writing Techniques: Developing a strong thesis statement, using evidence and supporting argument
    Revision and Editing: Techniques for revising and improving clarity and coherence
    Proofreading: Symbols for Proofreading

Unit-IV

    Drafting and Revising: outlining and drafting a literary manuscript, techniques for revision, editing and improving clarity

Final Manuscript and Presentation: preparing the final version of the manuscript, presenting the key arguments in a concise manner

Suggested Readings:

Wayne C. Booth et. al. *The Craft of Research*. University of Chicago Press.

William Strunk Jr. and E.B. White. *The Elements of Style.* Independently Published, 2019.

James D. Lester, *Writing Research Papers: A Complete Guide.* Pearson, 2015.

MLA Handbook for Writers of Research Papers by The Modern Language Association of

America

Scheme of Examination:

Note: All questions are compulsory.

Q. 1 This question will be compulsory based on all the 4 Units having 8 short questions. Students will be required to attempt any 5 in about 30 words each.   10

Q. 2 This question with internal choice shall be based on unit I. The student shall attempt one question out of two.   10

Q. 3. This question with internal choice shall be based on unit II. The student shall attempt one question out of two.   10

Q. 4 This question with internal choice shall be based on unit III. The student shall attempt one question out of two.   10

Q:5 This question with internal choice shall be based on unit IV. The student shall attempt one question out of two.   10

Evaluation of Internal Assessment

Internal assessment will be based on the following components:

(i)	Class participation	5 marks
(ii)	Assignments- Presentations	7 marks
(iii)	Mid Term:	13 marks
	Total	25 marks

English

Nomenclature of the Course: **International English Language Proficiency Development**

Course Code: **B23-VOC-225**
Course Type: **VOC-2**
Level of the Course: **100-199**

Credits: 4 (3 Theory, 1 Tutorial)

Total Marks: 100
Internal Assessment Marks: 30
End Term Exam Marks: 70
Time: 3 hours

Workload: Theory 3 hours, tutorial 1 hour; Tutorial group size will be of 30 students

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-VOC-225.1 Demonstrate a proficient level of understanding and usage of English in various international contexts.

B23-VOC-225.2 Communicate effectively and confidently in English, both orally and in written form.

B23-VOC-225.3 Understand and interpret complex English texts suitable for advanced academic or professional purposes.

B23-VOC-225.4 Apply appropriate language strategies to participate in diverse interpersonal exchanges and public communications.

Contents of the Course:

Unit I: Advanced Grammar and Vocabulary (20 Marks)

Review of English grammar: Verb tenses, modals, conditionals, direct and indirect speech, active and passive voice

Unit II: Reading and Writing Skills (20 Marks)

Reading strategies: Advanced comprehension passages developing practices of skimming, scanning and critical reading of academic and professional texts

Writing skills: Paragraph writing, dialogue writing, email writing

Unit III: Listening and Speaking Skills (15 Marks)

Advanced listening comprehension: Understanding main ideas and details in lectures, presentations, discussions, and conversations

Speaking skills: Presenting ideas clearly and coherently, participating in discussions and debates, giving presentations

Unit IV: Intercultural Competence and Introduction to Cultural Nuances (15 Marks)

Basic Etiquettes in English-Speaking Cultures: Greetings, introductions, expressions of gratitude, politeness

Conversational English: Simple conversation starters, common phrases and sentences used in daily life, understanding the use of small talk in English-speaking cultures

Suggested Readings:

Swan, M. *Practical English Usage*. Oxford University Press, 2016.

Wood, F.T. *A Remedial English Grammar for Foreign Students*, Macmillan.

Murphy, R. *English Grammar in Use*. Cambridge University Press, 2019.

Hedge, T. *Writing*. Oxford University Press, 2019

Hughes, R. *English in Speech and Writing*. Routledge, 2018.

Note for Paper-setters:

1. The paper will consist of 4 Units and one compulsory question. Students will be required to attempt one question from each Unit besides Question No. 1. which will be compulsory.
2. Question No. 1 will be compulsory and consist of 10 short answer type questions of 2 marks each based on all the four Units. Students will be required to attempt any 7.
3. Unit I will have one question having two parts of 7 marks each based on the two given topics. There will be no internal choice.
4. Unit II will have one question having two parts of 7 marks each based on the two given topics. First part of the question will consist of an advanced comprehension passage (without internal choice) followed by *five* questions of 2 marks each. Second part of the question will be set on any *two* of the given topics (with internal choice).
5. Unit III will have one question in three parts on any two of the given topics of 7 marks each. Students will be required to attempt any two of the given parts.
6. Unit IV will have one question in three parts on any two of the given topics of 7 marks each. Students will be required to attempt any two of the given parts.

Evaluation of Internal Assessment

Internal Assessment (Theory) will be based on the following components.

iv.	Class Participation	5 Marks
v.	Seminar/Presentation/Assignments/ Quiz/Class Test etc.	10 Marks
vi.	Mid-Term Exam	15 Marks
	Total	30 Marks

DEPARTMENT OF ENGLISH
KURUKSHETRA UNIVERSITY
KURUKSHETRA
(Established by the State Legislature Act XII of 1956)
(A+ Grade, NAAC Accredited)

Scheme of Examination and Syllabus for
Undergraduate Programme

Scheme : A
Subject: Functional English

Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance with NEP-2020w.e.f. 2023-24 (in phased manner)

DEPARTMENT OF ENGLISH

KURUKSHETRA UNIVERSITY, KURUKSHETRA

Scheme of Examination for Undergraduate Programme (Multidisciplinary)
Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance with NEP-2020
w.e.f. 2023-24 (in phased manner)

Subject: Functional English

Seme ster	Course Type	Course Code	Nomenclature of Course	Credits	Contact Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
I	CC-1	B23-EFE-101	Phonetics and Remedial Grammar-I	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	2 hrs.
II	CC-2	B23-EFE-201	Phonetics and Remedial Grammar-II	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	2 hrs.
III	CC-3	B23-EFE-301	Communicative and Writing Skills-I	4	4	30	70	100	3 hrs.
IV	CC-4	B23-EFE-401	Communicative and Writing Skills-II	4	4	30	70	100	3 hrs.
V	CC-5	B23-EFE-501	Business Communication-I	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	2 hrs.
VI	CC-6	B23-EFE-601	Business Communication-II	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	2 hrs.

FUNCTIONAL ENGLISH

SEMESTER-I

Nomenclature of the Course: **Phonetics and Remedial Grammar-I**

Course Code: **B23-EFE-101**

Course Type: **CC-1**

Level of the Corse: **100-199**

Credits: 4 (3 Theory and 1 Practical)
Max. Marks: 100
End Term Exam Marks: 50
Internal Assessment Theory: 20
Practical:20
Practical Internal: 10
Time: 3 Hours

Workload: Theory 3 hours and Practical 1 hour per group of 20 students

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-ENG -FE-101.1 The students will understand the meaning of Linguistics and Phonetics.

B23-EFE-101.2 They will be familiarized with speech mechanism and sounds of English.

B23-EFE-101.3 They will understand the R. P. Sound system.

B23-EFE-101.4 They will able to rectify grammatical errors in speech and writing.

2Contents of the Course:

Unit I: Definition and Scope of Linguistics

Difference between Phonetics and Phonology

The Speech Mechanism

Unit II: Basic Concepts: Phoneme, Allophone, Vowel, Consonant, Consonant Cluster and Syllable

Description of the British R.P. Speech Sounds: Vowels and Consonants.

Unit III: Articles; Parts of Speech; Nouns; Singular and Plural; Verbs: Linking Verbs, Transitive & Intransitive Verbs; Agreement of Verbs and Subject

Unit IV: Tenses & their Use; Tag questions; Transformation; Confusion of Adjectives and Adverbs; Adverbial use of No, Not and None

Practical: Oral Exam/Viva   20 Marks

Intensive drilling in Phonetic Skills and Grammar

Instructions to the Paper Setter:

1. There will be five questions in all. Question No. 1 will be compulsory. Students will be required to attempt remaining 4 questions selecting at least one from each Unit. All questions will carry equal marks.

2. Question No. 1 will have 5 parts and students will be required to attempt all the five.

3. Question No 2 and 3 with internal choice will be based on Unit I.

4. Question No 4 and 5 with internal choice will be based on to Unit II.

5. Question No 6 will be based on Unit-III. It will have 14 parts evenly based on items prescribed in the Unit. Students will be required to attempt any 10.

6. Question No 7 will be based on Unit-IV. It will have 14 parts evenly based on items prescribed in the Unit. Students will be required to attempt any 10.

Evaluation of Internal Assessment (Theory)

Internal Assessment (Theory) will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/ Quiz/Class Test	5 Marks
iii.	Mid-Term Exam	10 Marks

Evaluation of Internal Assessment (Practical)

Internal Assessment (Practical) will be based on the following components.

i.	Class Participation	4 Marks
ii.	Mid-Term Exam	6 Marks

Suggested Readings:

Balasubramanian, T. *A Textbook of English Phonetics for Indian Students*. Macmillan, 1981.

Gimson, A. C. *An Introduction to the Pronunciation of English*. Hodder Arnold, 1980.

Wood, Frederick T. *A Remedial English Grammar for Foreign Students: Answers to exercises*. Trinity, 1966.

FUNCTIONAL ENGLISH

SEMESTER-II

Nomenclature of the Course: **Phonetics and Remedial Grammar-II**

Course Code: **B23-EFE-201**

Course Type: **CC-2**

Level of the Corse: **100-199**

Credits: 4 (3 Theory and 1 Practical)   Max. Marks: 100

End Term Exam Marks: 50

Internal Assessment Theory: 20

Practical:20

Practical Internal: 10

Time: 3 Hours

Workload: Theory 3 hours and Practical 1 hour per group of 20 students

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-EFE 201.1   The students will understand the meaning of Linguistics and Phonetics.

B23-EFE-201.2 They will be familiarized with speech mechanism and sounds of English.

B23-EFE-201.3 They will understand the R. P. Sound system.

B23-EFE-201.4 They will able to eradicate grammatical errors in speech and writing.

Contents of the Course:

Unit I: Word-Accent; Accent and Rhythm in Connected Speech

Intonation: Tune I & II (with reference to short and simple sentences only)

Unit II: Phonemic Transcription Simple Words in Common Use in IPA symbols (as used in Oxford Advanced Learner's Dictionary

Unit III: Difficulties with Comparatives and Superlatives; Contusion of Participles Active and Passive Voice; The Prop. Word On; Prepositions; Redundant Pronouns and Preposition.

Unit IV: The Use of Correlatives; Use of Who, Whom, Much, Many, Still & Yet, So That, So As, Make and Do; Errors in the use of individual words; the courtesy words: Please Thank you; Dates and time; Greetings and Salutations; Intensive practice exercises in all the above topics.

Suggested Readings:

Brians, Paul. *Common Errors in English Usage*. Franklin, Beedle & Associates, 2003.

Hancock, Mark. *English Pronunciation in Use Intermediate with Answers, Audio CDs (4) and CD-ROM*. Cambridge UP, 2012.

Murphy, Raymond. *English Grammar in Use with Answers*. Cambridge UP, 2002.

Swan, Michael. *Practical English Usage: Hardback*. 3rd ed., Oxford UP, 2005.

Trim, John. *English Pronunciation Illustrated Cassettes (2)*. Cambridge UP, 1984.

Wells, J. C. *English Intonation PB and Audio CD: An Introduction*. Cambridge UP, 2006.

Practical: Oral Exam/Viva

Intensive drilling in phonetic skills and Grammar   (20 Marks)

Instructions to the Paper Setter:

1. There will be five questions in all. Question No. 1 will be compulsory. Students will be required to attempt remaining 4 questions selecting at least one from each Unit. All questions will carry equal marks.

2. Question No. 1 will be compulsory having 5 parts based on all the four Units.

3. Question No 2 with internal choice will be based on Unit-I.

3. Question No. 3, 4 and 5 will be based on Unit-II, III and IV. Every question will have 14 parts evenly based on items prescribed in each Unit. Students will be required to attempt any 10 parts in each question.

Evaluation of Internal Assessment (Theory)

Internal Assessment (Theory) will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/ Quiz/Class Test etc.	5 Marks
iii.	Mid-Term Exam	10 Marks

Evaluation of Internal Assessment (Practical)

Internal Assessment (Practical) will be based on the following components.

i.	Class Participation	4 Marks
ii.	Mid-Term Exam	6 Marks

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FUNCTIONAL ENGLISH

SEMESTER-III

Nomenclature of the Course: **Communicative and Writing Skills-I**

Course Code: **B23-EFE-301**

Course Type: **CC-3**

Level of the Corse: **200-299**

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	Max. Marks: 100
Credits: 4 (3 Theory and 1 Tutorial)	End Semester Exam marks: 70
	Internal Assessment Theory: 30
	Exam Time: 3 hours

Workload: Theory 3 hours and Tutorial 1 hour per group of 30 students

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-EFE-301.1   The students will find and rectify various types of errors in written English

B23-EFE-301.2 They will be able to enrich their vocabulary and use it in different contexts.

B23-EFE-301.3 They will be able to communicate in writing in the business context

B23-EFE-301.4 They will able to edit text written in English.

Contents of the Course:

Unit I: Spotting the errors pertaining to nouns, pronouns, adjectives and adverbs, subject verb concord; Lexis: Idioms and phrases, words often confused, one-word substitution, foreign words (A selected list)

Unit II: Vocabulary development through synonyms, antonyms, formation of words with affixes; Developing writing skills: Writing small paragraphs on general and current issues, events and slogan writing

Unit III: Technical Writing; Drafting memo and circular; e-mail writing; Resume writing Press Report Writing; Writing Notices, Agendas, Minutes; Note taking

Unit IV: Editing Skills: Use of capital letters, punctuation, parentheses, square brackets, ellipsis, apostrophe, and quotation marks

Instructions to the Paper Setter:

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1. There will be five questions in all. All questions will carry equal marks.

2. Question No. 1 shall be compulsory having 14 parts based on all the four Units. Students will be required to attempt all the 14.

3. Question No. 2 will be based on Unit-I having 18 parts. Students will be required to attempt any 14.

4. Question No. 3 will be based on Unit II having Part A and B. Part A will have 10 questions based on Vocabulary and students will be required to attempt any 7. Part B will be based on writing skills having 7 marks.

5. Question No 4 with internal choice will be based on Unit-III.

6. Question No. 5 shall be based on Unit-IV having 18 parts. Students will be required to attempt any 14.

Suggested Readings:

Lewis, Norman. *Word Power Made Easy: The Complete Handbook for Building a Superior Vocabulary*. Anchor, 2014.

Murphy, Herta A., et al. *Effective Business Communications*. McGraw-Hill Ryerson, 1990.

Murphy, Raymond. *English Grammar in Use with Answers*. Cambridge UP, 2002.

Strunk, William. *The Elements of Style: The Original Edition*. Courier Corporation, 2012.

Truss, Lynne. *Eats, Shoots & Leaves: The Zero Tolerance Approach to Punctuation*. Profile Books(GB), 2003.

Evaluation of Internal Assessment (Theory)

Internal Assessment (Theory) will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/ Quiz/Class Test etc.	10 Marks
iii.	Mid-Term Exam	15 Marks

FUNCTIONAL ENGLISH

SEMESTER-IV

Nomenclature of the Course: **Communicative and Writing Skills-II**

Course Code: **B23-EFE-401**

Course Type: **CC-4**

Level of the Course: **200-299**

Max. Marks: 100

Credits: 4 (3 Theory and 1 Tutorial)   Internal Assessment Marks: 30

End Semester Exam Marks: 70

Exam Time: 3 Hours

Workload: Theory 3 hours and Practical 1 hour per group of 20 students

Course Learning Outcomes:

After the successful completion of the course, the student will be able to:

B23-EFE-401.1 The students will be understand meaning and context of communication

B23-EFE-401.2 They will be able to understand and use para-language

B23-EFE-401.3 They will understand use of English in the context of IT and media

B23-EFE-401.4 They will able to use greetings and courtesies in different situations

Contents of the Course:

Unit-I: Nature and objectives of communication; Process of communication; Principles of effective communication; Barriers to communication: Wrong choice of medium, physical barriers, semantic barriers, socio-psychological barriers

Unit- II: Body language, appearance, voice, facial expression, posture, and gestures; Functions of non-verbal communication.

Unit-III: Basic understanding of role of information technology and media: Newspapers, radio, television, computers, internet and multimedia.

Unit-IV: Greetings; Receiving and seeing people off; Making complaints; Making an appointment; Buying at shops; Placing orders; Offering apologies; Consulting a Doctor; Making enquiries

Instructions to the Paper Setter:

1. There will be five questions in all. Question No.1 will be compulsory. Students will be required to attempt remaining 4 questions selecting at least one from each Unit. All questions will carry equal marks.

2. Question No 1 will be compulsory having 7 parts based on all the four Units.

3. Question No 2, 3, 4, and 5 with internal choice will be based on Units I-IV.

Suggested Readings:

Adler, Ronald B., et al. *Understanding Human Communication*. Oxford UP, USA, 2019.

Floyd, K. *Interpersonal communication: The whole story (2nd ed.)*. McGraw-Hill Education, 2019

Guffey, M. E., & Loewy, D. *Essentials of business communication* (11th ed.). Cengage Learning, 2017

Knapp, Mark L., et al. *Nonverbal Communication in Human Interaction*. Cengage Learning, 2013.

Murphy, Herta A., et al. *Effective Business Communications*. McGraw-Hill Ryerson, 1990.

Pease, Allan, and Barbara Pease. *The Definitive Book of Body Language*. Orion, 2017.

Evaluation of Internal Assessment (Theory)

Internal Assessment (Theory) will be based on the following components.

i.	Class Participation	5 Marks
ii.	Seminar/Presentation/Assignments/ Quiz/Class Test etc.	10 Marks
iii.	Mid-Term Exam	15 Marks

DEPARTMENT OF SOCIOLOGY
KURUKSHETRA UNIVERSITY, KURUKSHETRA
(Established by the state Legislature Act –XII of 1956)
"A+" Grade, NAAC Accredited
Structure, Syllabus of the courses of reading and Scheme of Examination
For Undergraduate Programmes
Subject: Sociology
Semester (I-IV)
(According to the Curriculum Framework of UG Programmes under NEP-2020)
To be implemented w.e.f the session 2023-24
(in*phased manner*)

I. Complete Scheme of UG courses (Sociology)

Sem.	Course Type	Paper Code	Name of Course	Credits	Contact hrs.	Internal Assessment Marks	End Term Exam Marks	Max. Marks	Duration of Exam (Hrs.)
First Year									
I	CC-1 MCC-1 Sociology	B23-SOC-101	Introduction to Sociology	4	4	30	70	100	3 Hrs
	MCC-2 Sociology	B23-SOC-102	Rural Sociology	4	4	30	70	100	3 Hrs
	CC-M1 Sociology	B23-SOC-103	Basic Concepts of Sociology	2	2	15	35	50	3 Hrs
	MDC-1 Sociology	B23-SOC-104	Principles of Sociology	3	3	25	50	75	3 Hrs
II	CC-2 MCC-3 Sociology	B23-SOC-201	Foundation of Sociological Thought	4	4	30	70	100	3 Hrs
	DSEC-1 Sociology	B23-SOC-202	Gender & Society	4	4	30	70	100	3 Hrs
	CC-M2 Sociology	B23-SOC-203	Indian Social System	2	2	15	35	50	3 Hrs
	MDC-2 Sociology	B23-SOC-204	Indian Society & Culture	3	3	25	50	75	3 Hrs
Second Year									
III	CC-3 MCC-4 Sociology	B23-SOC-301	Indian Society	4	4	30	70	100	3 Hrs
	MCC-5 Sociology	B23-SOC-302	Urban Sociology	4	4	30	70	100	3 Hrs
	MDC-3 Sociology	B23-SOC-303	Social Problems in India	3	3	25	50	75	3 Hrs
IV	CC-4 MCC-6 Sociology	B23-SOC-401	Research Methodology	4	4	30	70	100	3 Hrs
	MCC-7 Sociology	B23-SOC-402	Perspectives on Indian Society	4	4	30	70	100	3 Hrs
	MCC-8 Sociology	B23-SOC-403	Marriage, Family & Kinship	4	4	30	70	100	3 Hrs
		B23-SOC-404	Social Change & Social Movements in India	4	4	30	70	100	3 Hrs
			Or						
	DSE-1 Sociology	B23-SOC-405	Social Change and Development	4	4	30	70	100	3 Hrs
Third Year									
V	CC-5 MCC-9 Sociology	B23-SOC-501	Modern Sociological Thought-I	4	4	30	70	100	3 Hrs
	MCC-10 Sociology	B23-SOC-502	Social Psychology	4	4	30	70	100	3 Hrs
	DSE-2 Sociology	B23-SOC-503	Sociology of Law	4	4	30	70	100	3 Hrs
			Or						
		B23-C-504	Sociology of Deviance & Crime	4	4	30	70	100	3 Hrs

	DSE-3 Sociology	B23-SOC-505	Social Stratification	4	4	30	70	100	3 Hrs
					Or				
		B23-SOC-506	Media & Society	4	4	30	70	100	3 Hrs
VI	CC-6 MCC-11 Sociology	B23-SOC-601	Modern Sociological Thought-II	4	4	30	70	100	3 Hrs
	MCC-12 Sociology	B23-SOC-602	Sociology of Marginalized Communities	4	4	30	70	100	3 Hrs
	DSE-4 Sociology	B23-SOC-603	Industrial Sociology	4	4	30	70	100	3 Hrs
					Or				
		B23-SOC-604	Sociology of Rural Development	4	4	30	70	100	3 Hrs
	DSE-5 Sociology	B23-SOC-605	Social Anthropology	4	4	30	70	100	3 Hrs
					Or				
		B23-SOC-606	Sociology of Tribal Society	4	4	30	70	100	3 Hrs

Fourth Year

VII	CC-H1 Sociology	B23-SOC-701	Feminist Sociological Approach	4	4	30	70	100	3 Hrs
	CC-H2 Sociology	B23-SOC-702	Qualitative Research Methods	4	4	30	70	100	3 Hrs
	CC-H3 Sociology	B23-SOC-703	Social Issues in India	4	4	30	70	100	3 Hrs
	DSE-6 Sociology	B23-SOC-704	Political Sociology	4	4	30	70	100	3 Hrs
					Or				
		B23-SOC-705	Environment & Society	4	4	30	70	100	3 Hrs
	PC-H1 Sociology	B23-SOC-706	Sociology of Organization	4	4	30	70	100	3 Hrs
VIII	CC-H4 Sociology	B23-SOC-801	Research & Publication Ethics	4	4	30	70	100	3 Hrs
	CC-H5 Sociology	B23-SOC-802	Quantitative Research Methods	4	4	30	70	100	3 Hrs
	CC-H6 Sociology	B23-SOC-803	Globalisation & Society	4	4	30	70	100	3 Hrs
	DSE-7 Sociology	B23-SOC-804	Sociology of Education	4	4	30	70	100	3 Hrs
					Or				
		B23-SOC-805	Sociology of Sports	4	4	30	70	100	3 Hrs
	PC-H2 Sociology	B23-SOC-806	Comparative Sociology	4	4	30	70	100	3 Hrs
	Research	B23-SOC-807	Dissertation/Project Report	12	--	--	300	300	--

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Sociology) Syllabus, Semester –I

CC-1/MCC-1

Session: 2023-24

PartA-Introduction	
Subject	Sociology
Semester	I
NameoftheCourse	Introduction to Sociology
CourseCode	B23-SOC-101
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC/ MCC
Levelofthecourse(AsperAnnexure-I	100-199
Pre-requisiteforthecourse(ifany)	Sr. Secondary/10+2 Examination or Equivalent Examination
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Understand the nature, scope& development of sociology; relationship with other Social Sciences. 2. Learn about the basic concepts of Sociology 3. Acquire conceptual clarification regarding culture, socialisation & social control. 4. Gain knowledge about the process of social change and allied concepts.

Credits	Theory	Tutorial	Total
	3	1	4
ContactHours	3 Per week	1 per week/ Per group	4 per week / per group

Max.Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**	**Time: 3 Hours**

PartB – ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 14 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	ContactHours
I	**Introduction to Sociology**: Meaning, Nature and Scope; Development of Sociology, Relationship of Sociology with History, Psychology and Economics.	12
II	**Basic concepts**: Society, Community, Institution, Association, Groups: Primary and Secondary; Reference Group, Social Structure, Status and Role.	12
III	**Culture and Society**: Culture and its types, Socialisation – Stages and Agencies; Social Control: Forms and Agencies, Religion - Meaning, forms, functions and dysfunctions; Concept of Religiosity.	12
IV	**Social Change:**Meaning and Types of Change, Factors of Social Change; Forms of Social Change: Evolution, Progress, Growth, Development, Revolution; Barriers to Social Change.	12
	Tutorials	12

Suggested Evaluation Methods

InternalAssessment:	EndTermExamination:
➢ **Theory: 30 Marks** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **5+5 Marks** • Mid-TermExam: **15 Marks**	**70 Marks**

PartC-LearningResources

RecommendedBooks/e-resources/LMS:

Bottomore, T.B. (1972), *Sociology: A Guide to Problems and literature*. Bombay: George
Allen and Unwin (India).
Harlambos, M. (1998), *Sociology: Themes and Perspectives*. New Delhi: Oxford University Press.
Jayaram, N. (1988),*Introductory Sociology*. Madras: Macmillan India.
Johnson, Harry M. (1995), *Sociology: A Systematic Introduction*. New Delhi: Allied Publishers.
Kingsley, Davis. (1981), *Human Society*, New Delhi: Surjeet Publications.
Gisbert. P. (2016), *Fundamentals of Sociology*, New Delhi, Orient Black Swan,
Nagla, Bhupender Kumar &Sheobahal Singh (2019), *Introducing Sociology*, Jaipur, Rawat Publication
Yadav, Ram Ganesh (2014), *SamajshastraParichay,* New Delhi, Oriental Black Swan
Sachdeva, Bhushan (2012), *Fundamentals of Sociology*, Delhi: Pearson.
Sachdeva, Bhushan (2012),*Samajshastra*, Delhi: Pearson.

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Sociology) Syllabus, Semester –I

MCC-2

Session: 2023-24			
PartA-Introduction			
Subject	Sociology		
Semester	I		
NameoftheCourse	Rural Sociology		
CourseCode	B23-SOC-102		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC		
Levelofthecourse(AsperAnnexure-I	100-199		
Pre-requisiteforthecourse(ifany)	Sr. Secondary/10+2 Examination or Equivalent Examination		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Understand the introductory concepts about the rural society 2. Acquainted with rural social structure. 3. Get understanding of rural economy and trends of change in rural society. 4. Understand rural political structure &status of women in rural Haryana.		
Credits	Theory	Tutorial	Total
	3	1	4
ContactHours	3 Per week	1 per week/ Per group	4 per week / per group
Max.Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**	**Time: 3 Hours**		
PartB-ContentsoftheCourse			
InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 14 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.			

Unit	Topics	ContactHours
I	Introduction to Rural Society: Importance of the study of rural society; Village Community, Rural Family, Rural-Urban Differences.	12
II	Rural Social Structure: Caste and Class in Rural Society; Inter-Caste Relations; Jajmani System and its changing pattern, Agrarian Class Structure.	12
III	Agrarian Economy: Green Revolution and its Impact; Migrant Labour; Agrarian crisis in Haryana; Role of Women in Rural Economy.	12
IV	Rural Political Structure:KhapPanchayat in Haryana; Panchayati Raj Institutions; Status of Women in Rural Haryana.	12
	Tutorials	12
Suggested Evaluation Methods		

InternalAssessment:	EndTermExamination:
➢ **Theory: 30 Marks**	
• ClassParticipation: **05 Marks**	**70 Marks**
• Seminar/presentation/assignment/quiz/classtestetc.: **5+5 Marks**	
• Mid-TermExam: **15 Marks**	

PartC – LearningResources

RecommendedBooks/e-resources/LMS:

Beteille, A. (1974*), Studies in Agrarian Social Structure*, Delhi: Oxford University Press.

Desai, A.R. (1969), *Rural Sociology in India*, Bombay: Popular Prakashan.

Desai, A.R. (2012), *BhartiyaGraminSamajshastra*, Jaipur, Rawat Publication

Dube, S.C.(1955*), Indian Village*, London: Routledge and Kegan Paul.

Doshi, S.L. and P.C. Jain (1999), *Rural Sociology*, Jaipur: Rawat Publication.

Jodhka, S.S. (1995), *Debt, Dependence and Agrarian Change*, Jaipur:Rawat Publication.

Sharma, K.L. (1997), *Rural Society in India*, Jaipur:Rawat Publication.

Yadav, Ram. Ganesh (2014), *Gramin-NagriyaSamajshastra*, New Delhi, Oriental Black Swan.

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Sociology) Syllabus, Semester –I

CC-M1

Session: 2023-24			
PartA-Introduction			
Subject	Sociology		
Semester	I		
NameoftheCourse	Basic Concepts of Sociology		
CourseCode	B23-SOC-103		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-M		
Levelofthecourse(AsperAnnexure-I	100-199		
Pre-requisiteforthecourse(ifany)	Sr. Secondary/10+2 Examination or Equivalent Examination		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Understand nature, scope, significance and origin of the sociology. 2. Make sense of basic concepts of sociology. 3. Know about different social processes. 4. Learn about various social institutions.		
Credits	Theory	Tutorial	Total
	2		2
ContactHours	2 Per week		2 per week / per group
Max.Marks: 50 **Internal Assessment Marks: 15** **EndTermExamMarks: 35**	**Time: 3 Hours**		

PartB – ContentsoftheCourse
InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 7 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	ContactHours
I	**Sociology:** Nature, Scope and Significance; Development of Sociology as a discipline in General, and in India	8
II	Society, Group, Community, Association, Social System, Social Structure; Status and Role; Socialization; Culture	8
III	Co-operation, Accommodation, Assimilation; Competition, Conflict; Social Stratification and Social Mobility	8
IV	Marriage, Family, Kinship, Economy, Polity, Religion.	8
Suggested Evaluation Methods		

InternalAssessment:	EndTermExamination:
➢ **Theory: 15 Marks** • ClassParticipation: **4 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **4 Marks** • Mid-TermExam: **7Marks**	**35 Marks**

PartC – LearningResources

RecommendedBooks/e-resources/LMS:

Abrahm,F.   : History of Sociological Thought, OUP, New Delhi

Aron,Raymond   : Main Currents in Sociological Thought (Vol. I & II), Penguin; 1965/67

Bottomore,T.B.   : Sociology: A Guide to Problems and Literature, George Allen and Unwin, Delhi; 1972

Davis,Kingsley   : Human Society, Surjeet Publication, New Delhi; 1981.

Fox,R.   : Kinship and Marriage; Cambridge University Press, 1963

GiddensAnthony   : Sociology, Oxford University Press; 1989.

Ginsberg,M.   : Sociology, Surjeet Publication, New Delhi; 1979
H.Page

Haralambos   : Sociology: Themes and Perspectives, Bell and Hyman, London; 1985

Inkeles,A.   : What is Sociology, Prentice hall, New Delhi; 1987

Johnson, H.M.   : Sociology: A Systematic Introduction, Allied Publishers, New Delhi; 1995

Kapadia,K.M.   : Marriage and Family in India, Oxford University Press, Bombay; 1980

MacIver, R. M. and   : Society –An Introductory Analysis, Macmillan, New Delhi; 1974.

Nisbet   : The Sociological Tradition, Heinemann Education. Books Ltd.

Parsons, T.   : The Social System, Amerind Pub. Company; 1951

Smelser,J.   : Sociology, Prentice Hall, New Delhi.

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Sociology) Syllabus, Semester –I

MDC-1

Session: 2023-24			
PartA-Introduction			
Subject	Sociology		
Semester	I		
NameoftheCourse	Principles of Sociology		
CourseCode	B23-SOC-104		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MDC		
Levelofthecourse(AsperAnnexure-I	100-199		
Pre-requisiteforthecourse(ifany)	Sr. Secondary/10+2 Examination or Equivalent Examination		
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1 Understand the Sociological imagination and socialization process 2 Know about culture and social change. 3 Get insight about social structure and system of stratification 4 Identify social groups and classes.		
Credits	Theory	Tutorial	Total
	2	1	3
ContactHours	2 Per week	1 per week/ Per group	3 per week / per group
Max.Marks: 75 **Internal Assessment Marks:25** **End Term Exam Marks: 50**	**Time: 3 Hours**		

PartB – ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 5 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	ContactHours
I	The Sociological Imagination; Theory and Methods in Sociology; Understanding Socialization; Agents of Socialization; Normality, Deviance and Social Control;	9
II	Introduction to Culture; The Components of Culture; Cultural Diversity; Social Movements and Social Change;	9
III	Components of Social Structure; Understanding Social Interaction; Systems of Stratification; Gender and Social Inequality;	9
IV	Types of Social Groups; Groups and Social Control; Formal Organizations; The Functions of Class; Class and Conflict	9
	Tutorials	9

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory: 25 Marks** • ClassParticipation: **5 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **7 Marks** • Mid-TermExam: **13 Marks**	**EndTermExamination:** **50 Marks**
PartC – LearningResources	

RecommendedBooks/e-resources/LMS:

Abrahm,F.	: History of Sociological Thought, OUP, New Delhi
Aron,Raymond	: Main Currents in Sociological Thought (Vol. I & II), Penguin; 1965/67
Bottomore,T.B.	: Sociology: A Guide to Problems and Literature, George Allen and Unwin, Delhi; 1972
Davis,Kingsley	: Human Society, Surjeet Publication, New Delhi; 1981.
Fox,R.	: Kinship and Marriage; Cambridge University Press, 1963
GiddensAnthony	: Sociology, Oxford University Press; 1989.
Ginsberg,M. H.Page	: Sociology, Surjeet Publication, New Delhi; 1979
Haralambos	: Sociology: Themes and Perspectives, Bell and Hyman, London; 1985
Inkeles,A.	: What is Sociology, Prentice hall, New Delhi; 1987
Johnson, H.M.	: Sociology: A Systematic Introduction, Allied Publishers, New Delhi; 1995
Kapadia,K.M.	: Marriage and Family in India, Oxford University Press, Bombay; 1980
MacIver, R. M. and	: Society –An Introductory Analysis, Macmillan, New Delhi; 1974.
Nisbet	: The Sociological Tradition, Heinemann Education. Books Ltd.
Parsons, T.	: The Social System, Amerind Pub. Company; 1951
Smelser,J.	: Sociology, Prentice Hall, New Delhi.

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Sociology) Syllabus, Semester –II

CC-2/MCC-3

Session: 2023-24			
PartA-Introduction			
Subject	Sociology		
Semester	II		
NameoftheCourse	**Foundation of Sociological Thought**		
CourseCode	B23-SOC-201		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC MCC		
Levelofthecourse(AsperAnnexure-I	100-199		
Pre-requisiteforthecourse(ifany)			
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Learn about various aspects and role of positivism in sociology as a discipline. 2. Know about the functionalist perspective in sociology in the opinion of its pioneers. 3. To understand conflict perspective to study social phenomenon. 4. Acquire insight into interpretative understanding of society.		
Credits	Theory	Tutorial	Total
	3	1	4
ContactHours	3 Per week	1 per week/ Per group	4 per week / per group
Max.Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**	**Time: 3 Hours**		
PartB-ContentsoftheCourse			
InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 14 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.			

Unit	Topics	ContactHours
I	**Positivism:** Comte's Law of Three Stages; Durkheim: Social Fact; Karl Popper: Post-Positivism	12
II	**Functionalism**: Radcliffe Brown's Structural Functional Approach; Merton's Social Structure; Parson's Social System	12
III	**Conflict:** Marx's Class; Coser's Approach of Social Conflict' Dahrendorf's Class and Class Conflict in Industrial Society	12
IV	**Interactionism**: Weber's theory of Social Action; Herbert Blumer's Rational Interpretation; Erving Goffman: Dramaturgy	12
	Tutorials	12

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory: 30 Marks** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **10 Marks** • Mid-TermExam: **15 Marks**	**EndTermExamination:** **70 Marks**
PartC – LearningResources	

RecommendedBooks/e-resources/LMS:

Aron, Raymond (1967), *Main Currents in Sociological Thought*, London: Weidenfield and Nicholson, Vol.I and Vol.II.

Doshi, S.L and P.C. Jain (2001), *ParmukhSmajshastriyaVicharak: Kamte se Mertontak,* Jaipur, Rawat Publication

Hussain, Mujatba (2010), *SamajshastriyaVichar*, New Delhi, Oriental Blackswan

Jayapalan, N. (2001), *Sociological Theory*, New Delhi: Atlantic Publishers.

Judge, Paramjit Singh (2012), *Foundations of Classical Sociological Theory: Functionalism, Conflict and Action,* Delhi: Pearson.

Kundu, Abhijit (2010), *Sociological Theory*, New Delhi: Orient Black-swan.

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Sociology) Syllabus, Semester –II

DSEC-1

Session: 2023-24			
PartA-Introduction			
Subject	Sociology		
Semester	II		
NameoftheCourse	Gender & Society		
CourseCode	B23-SOC-202		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	DSEC		
Levelofthecourse(AsperAnnexure-I	100-199		
Pre-requisiteforthecourse(ifany)			
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Understand the basic concepts of gender sensitization. 2. Enable students to understand the conceptual aspects of patriarchy and construction of gender. 3. Get an insight about legislative aspects of women's rights and laws. 4. Get understanding about positive and negative aspects of media in the context of gender.		
Credits	Theory	Tutorial	Total
	3	1	4
ContactHours	3 Per week	1 per week/ Per group	4 per week / per group
Max.Marks: 100 **Internal Assessment Marks: 30** **EndTermExamMarks: 70**	**Time: 3 Hours**		
PartB – Contents of the Course			
InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 14 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.			

Unit	Topics	ContactHours
I	**Understanding Concepts:** Sex and Gender; Masculinity and Feminity; Patriarchy and Matriarchy.	12
II	**Construction Gender:** Patriarchy as Ideology and Practice; Biology vs. Gender; Public vs. Private; Role of family in the formation of gender identity.	12
III	**Women's Rights and Law**: Dowry Prohibition Act; Divorce Act; Domestic Violence Act; Rape; Property Right Act.	12
IV	**Women and Media:** Projection of women through media- Positive and Negative aspects; Impact of Media on Women; Commodification of Women.	12
	Tutorials	12

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory: 30 Marks** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **5+5 Marks** • Mid-TermExam: **15 Marks**	**EndTermExamination:** **70 Marks**
PartC – LearningResources	

RecommendedBooks/e-resources/LMS:
Desai, Neera and M. Krishnaraj (1987), Women and Society in India. Delhi: Ajanta.
Geetha, V. (2002), Gender. Calcutta: Stree
Menon, Nivedita (ed.) (2001), Gender and Politics in India. Oxford University Press: New Delhi.
Sharma, Ursula. (1983), Women, Work and Property in North-West India. London: Tavistock
Oakley, Ann. (1972), Sex, Gender and Society. New York: Harper and Row.
Sharma, G.L (2015),SamajikMudde, New Delhi, Rawat Publications.
AryaSahhna, Menon, N. & Other (2001),NeriwadiRajnity*: SangharshEvamMudde*, Hindi
MadhyamikkaryanvyaNideshalya: Delhi University.

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Sociology) Syllabus, Semester –II

CC-M2

Session: 2023-24			
PartA-Introduction			
Subject	Sociology		
Semester	II		
NameoftheCourse	Indian Social System		
CourseCode	B23-SOC-203		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-M		
Levelofthecourse(AsperAnnexure-I	100-199		
Pre-requisiteforthecourse(ifany)			
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Familiarized with varioussocio-cultural dimensions of Indian society. 2. Enhance knowledge of the students about the structural inequalities in Indian society. 3. Acquainted with important familial issues. 4. Have understanding of contemporary social issues as well as their remedial		
Credits	Theory	Tutorial	Total
	2		2
ContactHours	2 Per week		2 per week
Max.Marks: 50 **Internal Assessment Marks: 15** **EndTermExamMarks: 35**	**Time: 3 Hours**		
PartB – ContentsoftheCourse			
InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 7 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.			

Unit	Topics	ContactHours
I	Evolution of Indian Society and its Social Structure; Unity and Diversity in Indian Society; Multi-Ethnic; Multi-Religious; Cultural and Lingual	8
II	Inequality of Caste, Class and Gender; Backward Castes, Weaker Sections and Dalits.	8
III	Family Violence, Dowry, Divorce, Problems of the Aged and Children	8
IV	Poverty: Indicators, Causes & Alleviation Programmes, Unemployment, Development and Displacement	8

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory: 15 Marks** • ClassParticipation: **4 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **4 Marks** • Mid-TermExam: **7 Marks**	**EndTermExamination:** **35 Marks**

PartC – LearningResources

RecommendedBooks/e-resources/LMS:

Beteille, Andre (1974), Social Inequality, New Delhi: OUP
Dube, S.C. (1991), Indian Society, New Delhi: National Book Trust.
Desai Neera&MathayeeKrishnaraj (1997), Women and Society in India, Ajanta Bombay
Desai, Neera and UshaThakkar (2001), Women in Indian Society, National Book Trust, India
Ahuja, Ram (1997), Societyin India: Concept, Theories and Recent Trends, Jaipur: Rawat Publication.
Sharma K.L. (ed.) (1994), Caste and Class, Jaipur, Rawat Publication
Sharma, K.L (2011), Indian Social Structure and Change, Rawat Publications
Sharma, G.L (2015), SamajikMudde,Rawat Publication

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Sociology) Syllabus, Semester –II

MDC-2

Session: 2023-24			
PartA-Introduction			
Subject	Sociology		
Semester	II		
NameoftheCourse	Indian Society & Culture		
CourseCode	B23-SOC-204		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MDC		
Levelofthecourse(AsperAnnexure-I	100-199		
Pre-requisiteforthecourse(ifany)			
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1 Know the historical moorings of Indian society with the continuity and contradiction through the centuries. 2 Understand about different forms of social stratification in Indian society. 3 Be familiar with the basis of social movements and protests. 4 Be acquainted with various social institutions of Indian society and changes in its.		
Credits	Theory	Tutorial	Total
	2	1	3
ContactHours	2 Per week	1 per week/ Per group	3 per week / per group
Max.Marks: 75 **Internal Assessment Marks: 25** **EndTermExamMarks: 50**	**Time: 3 Hours**		
PartB – ContentsoftheCourse			

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	ContactHours
I	Historical Background: Traditional Hindu Social Organization – Purushartha, Samaskara, Theory of Karma; Diversity and Unity in India; Impact of Islam and Christianity.	9
II	Social Stratification: Caste -- Features, functions and changes; Caste and Mobility; Class - Agrarian and Industrial Classes; Scheduled Tribes – Distribution & Economy	9
III	Social Movements & Protests: Movements Based on Caste, Ethnicity, Ideology, Gender, Disability, Religion and Region; Reservation and politics; Role of Caste in IndianPolitics; Political Factions & Pressure Groups.	9
IV	Family, Marriage and Kinship: Joint Family – Structure, Function and Changing Pattern; Marriage – Types, Marriage in different ethnic groups; Contemporary changes Kinship System – Usage, Regional Variations	9
	Tutorials	9

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory: 25 Marks** • ClassParticipation: **5 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **7 Marks** • Mid-TermExam: **13 Marks**	**EndTermExamination:** **50 Marks**

PartC-LearningResources

RecommendedBooks/e-resources/LMS:

Dube, S.C.: Indian Society, National Book Trust, New Delhi; 1986

Dumont, L. : Homo Hierarchicus: The Caste System and Its Implications;Universityof Chicago Press, 1981

Ghurye,G.S.   : Caste and Role in India, Popular Parkashan, Bombay; 1969

IrawatiKarve   : Family, Kinship and Marriage in India, New Delhi. OUP

Kapadia,K.M   .   : Marriage and Family in India,OxfordUniversity Press, Bombay; 1960

Mandelbaum,D.G. : Society in India, Popular Parkashan, Bombay; 1972

Majumdar&Madan : An Introduction to Social Anthropology, AsiaPublicationHouse, Bombay; 1966

Prabhu,P.H.   : Hindu Social Organization, Popular Parkashan, Bombay; 1963

Rao, M.S.A   : Social Movements in India,Manohar; New Delhi;(1979)

Rao, M.S.A.   : Social Movements and Social Transformation, Macmillan, Delhi; (1979),

Sharma, K.L.   : Essays on Social Stratification, Rawat Publication, Jaipur; 1980

Singh, K.S.   : Tribal Movements in India,Manohar, New Delhi; (1982),

Singh,Yogendra.   : Modernization of Indian Tradition, Thomson press, Faridabad; 1973

Singh,Yogendra.   : Social Stratification and change in India,Manoharpublications,New Delhi; 1979

Singer&Cohn   : Structure and Change in Indian Society, Aldine PublishingCo.Chicago; 1968

Srinivas,M.N.   : India Social Structure, Hindustan Publishing Corp. New Delhi; 1980

Srinivas&Shah   : Hinduism in International EncyclopediaofSocialScience,Meerut; 1970

Srinivas,M.N.   : Caste in Modern India and other Essays, Asian Publishing House, Bombay;1966

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Sociology) Syllabus, Semester –III

CC-3/MCC-4

Session: 2023-24			
PartA-Introduction			
Subject	Sociology		
Semester	III		
NameoftheCourse	Indian Society		
CourseCode	B23-SOC-301		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC MCC		
Levelofthecourse(AsperAnnexure-I	200-299		
Pre-requisiteforthecourse(ifany)			
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1 Understand the historical moorings of Indian society with the continuity and contradiction through the centuries. 2 Know about demographic profile in Indian society. 3 Understand the basic of social institution of Indian Society. 4 Familiarize with rural and urban social system of Indian society and changes in its.		
Credits	Theory	Tutorial	Total
	3	1	4
ContactHours	3 Per week	1 per week/ Per group	4 per week / per group
Max.Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**	**Time: 3 Hours**		
PartB – ContentsoftheCourse			
InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 14 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.			

Unit	Topics	ContactHours
I	The Textual and the Field Views of Indian Society; Interface between the past and the Present; Basic Features of Traditional Indian Social System; Unity and Diversity in Indian Society	12
II	Demographic Profile of India in terms of Growth, Age, Sex, Religion, Language, Occupation and Scheduled Castes and Scheduled Tribes; Tribal Communities in India: Geographical Distribution, Assimilation, Integration and Assertion; Religions in India	12
III	Marriage in India: Tribal, Hindu, Muslim, Christian and Trends of Change; Family in India: Household, Joint Family, Nuclear family and Trends of Change; Kinship in India: Patriarchy, Matriarchy, Lineage & Descent and Types of Kinship Systems in India; Caste System: Features, Aspects of Change.	12
IV	Indian Villages: Social Structure and Features; Indian Cities: Social Structure, Features and Types; Rural Urban Interaction; Social Classes in India: Agrarian-Rural and Industrial-urban; Exclusion versus Inclusion: Backward classes, Dalits, Minorities, and Women	12
	Tutorials	12

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory: 30 Marks** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **5+5 Marks** • Mid-TermExam: **15 Marks**	**EndTermExamination:** **70 Marks**

PartC – LearningResources

RecommendedBooks/e-resources/LMS:

Dube, S.C.: Indian Society, National Book Trust, New Delhi; 1986

Dumont, L. : Homo Hierarchicus: The Caste System and Its Implications;Universityof Chicago Press, 1981

Ghurye,G.S.   : Caste and Role in India, Popular Parkashan, Bombay; 1969

IrawatiKarve   : Family, Kinship and Marriage in India, New Delhi. OUP

Kapadia,K.M   .   : Marriage and Family in India,OxfordUniversity Press, Bombay; 1960

Mandelbaum,D.G. : Society in India, Popular Parkashan, Bombay; 1972

Majumdar&Madan : An Introduction to Social Anthropology, AsiaPublicationHouse, Bombay; 1966

Prabhu,P.H.   : Hindu Social Organization, Popular Parkashan, Bombay; 1963

Rao, M.S.A   : Social Movements in India,Manohar; New Delhi;(1979)

Rao, M.S.A.   : Social Movements and Social Transformation, Macmillan, Delhi; (1979),

Sharma, K.L.   : Essays on Social Stratification, Rawat Publication, Jaipur; 1980

Singh, K.S.   : Tribal Movements in India,Manohar, New Delhi; (1982),

Singh,Yogendra.   : Modernization of Indian Tradition, Thomson press, Faridabad; 1973

Singh,Yogendra.   : Social Stratification and change in India,Manoharpublications,New Delhi; 1979

Singer&Cohn   : Structure and Change in Indian Society, Aldine PublishingCo.Chicago; 1968

Srinivas,M.N.   : India Social Structure, Hindustan Publishing Corp. New Delhi; 1980

Srinivas&Shah   : Hinduism in International EncyclopediaofSocialScience,Meerut; 1970

Srinivas,M.N.   : Caste in Modern India and other Essays, Asian Publishing House, Bombay;1966

MCC-5

Session: 2023-24	
PartA-Introduction	
Subject	Sociology
Semester	III
NameoftheCourse	Urban Sociology
CourseCode	B23-SOC-302
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC
Levelofthecourse(AsperAnnexure-I	200-299
Pre-requisiteforthecourse(ifany)	
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Gain understanding about different sociological perspectives applied to understand urban society. 2. Know about different theories of urbanism. 3. Identify distinguished characteristics of urban community and also be able to differentiate between urban and rural societies. 4. Become aware off urban social problems and will know about urban planning in India.

Credits	Theory	Tutorial	Total
	3	1	4
ContactHours	3 Per week	1 per week/ Per group	4 per week / per group

Max.Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**	**Time: 3 Hours**

PartB – ContentsoftheCourse
InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 14 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	ContactHours
I	Concepts: Urbanism, Urbanity and Urbanization, Types of Cities-Towns, Cities and Megacities. Classical Sociological Perspective: Emile Durkheim, Karl Marx, Max Weber and Tonnies.	12
II	Urbanism& Urbanization: Simmel–Metropolis and Mental Life; Louis Wirth – Urbanism; Manuel Castells – Sex and City; Pace of Urbanization, Over-urbanization and De-Urbanization.	12
III	Urban Community: Spatial Dimension–Robert E. Park, Burgess. Urban Society vis-à-vis Rural Society; Rural-Urban Convergence; Middle Class & Gated Communities; Industry, Service and Business, Significance of Cities.	12
IV	Urban Problems and Planning in India: Urban Polity, Urban Movements and Violence; Forms and Sources of Urban Stress; National Urban Renewal Mission; Neighbourhood, Slums and Ethnic Enclaves; Cyber Crime	12
	Tutorials	12

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory: 30 Marks** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **5+5 Marks** • Mid-TermExam: **15 Marks**	**EndTermExamination:** **70 Marks**

PartC – LearningResources

RecommendedBooks/e-resources/LMS:

Abrahamson	: Urban Sociology, Prentice Hall, Englewood; 1976
AlfreddeSouza	: The Indian City; Poverty, ecology and urban development, Manohar, Delhi; 1979
AshisBoss	: Studies in India's Urbanisation; 1901-1971, 1979
CollingWorth,Jb	: Problems of Urban Society VOL. 2, George and Unwin Ltd.; 1972
D.A. Schulz	
D.J.Bogue	: University of Chicago Press; (ed.), 1964 Fulcher J. & Scott John: Sociology, Oxford University Press, 2003
Desai A.Rand	: Slums and Urbanisation, Popular Prakashan, Bombay; (ed), 1970
M.S.A. Rao	: Urban Sociology in India; (ed.), 1974
M.S.Gore	: Urbanisation and Family Change, Bombay Popular Prakashan, 1968
N.Jayapalan	: Urbanization in India in Contribution to Indian Sociology, Sage Pub.2003
PickwanceCG	: Urban Sociology; Critical Essays, Methuen; (Ed.) 1976
Pillai S D&Harry Gold: The Sociology of Urban Life, Prentice Hall; 1982	
QuinnJA	: Urban Sociology, S Chand & Co., New Delhi; 1955
RajS.Gandhi	: Urban Sociology in India, InternationalJournalContemporary Sociology, Vol.18, Nos. & 4; 1981
RamChandran,R.	: Urbanisation and Urban System in India, OUP, Delhi, 1991
Saberwal,S.	: The Mobile Men: Limits to Social Mobility in Urban Punjab, Vikas Delhi; (ed.), 1976
Saberwal,S.	: Process and Institution in Urban India; (ed.),1978
SaundersPeter	: Social Theory and Urban Question, Hutchinson; 1981
T.K.Oommen	: The Rural Urban Continuum Re-examined in the Indian Context, SociologiaRuralis, Vol.7 No.1.1967
W. W.Burgess&	: Contributions to UrbanSociology, University of Chicago Press, 1964.
WilsonR.A.and	: Urban Sociology, Prentice Hall, Englewood ;(1978)

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Sociology) Syllabus, Semester –III

MDC-3

Session: 2023-24			
PartA-Introduction			
Subject	Sociology		
Semester	III		
NameoftheCourse	Social problems in India		
CourseCode	B23-SOC-303		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MDC		
Levelofthecourse(AsperAnnexure-I	200-299		
Pre-requisiteforthecourse(ifany)			
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Learn about basic concepts of social problems. 2. Acquainted with different familial issues of the Indian society. 3. Learn about developmental issues of the society. 4. Learn about contemporary issues related with social problems.		
Credits	Theory	Tutorial	Total
	2	1	3
ContactHours	2 Per week	1 per week/ Per group	3 per week / per group
Max.Marks: 75 **Internal Assessment Marks: 25** **EndTermExamMarks: 50**	**Time: 3 Hours**		
PartB – ContentsoftheCourse			

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 5 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	ContactHours
I	Understanding Social Problems: Deviance; Social Disorganization; Anomie; Alienation; Suicide, Crime	9
II	Familial Issues: Domestic Violence; Dowry, Inter-Caste Marriage; Problem of the Aged; Divorce.	9
III	Developmental Issues: Hygiene and Sanitation; Life style Disease; Housing; Uneven Development; Corruption, Unemployment	9
IV	Contemporary Issues: Cyber Crime; HIV AIDS; Drug Addiction; Mental Illness; Pandemics.	9

Tutorials	9

<table>
<tr><td colspan="2" align="center">Suggested Evaluation Methods</td></tr>
<tr>
<td>
InternalAssessment:
➢   Theory: 25 Marks
•   ClassParticipation: 5 Marks
•   Seminar/presentation/assignment/quiz/classtestetc.: 7 Marks
•   Mid-TermExam: 13 Marks
</td>
<td>
EndTermExamination:

50 Marks
</td>
</tr>
</table>

PartC – LearningResources

RecommendedBooks/e-resources/LMS:
Ahuja, Ram (2000), SocialProblems in India, New Delhi: Rawat Publications.
Ahuja, Ram (2000), Bharat meinSamajikSamsayen, Jaipur, Rawat Publications
Desai, Neera&UshaThakkar (2007), Women in Indian Society, Delhi: National Book Trust, India.
Gill, S.S. (1998),The Pathology of Corruption, New Delhi: Harper Collin Publishers.
Madan, G.R. (1991), Indian Social Problems, New Delhi: Allied Publisher, Vol. I.
Memoria, C.B (1981),Social Problem and Social Disorganization in India, Allahbad, KitabMahal
Rajaura, Suresh Chander (2000), Samkaleen Bharat keSamajikSamsayen, Jaipur, Rajasthan Hindi GranthAkadami
 Sharma G.L(2015),SamjikMudde, Delhi: Rawat Publication

Undergraduate Programs (Sociology) Syllabus, Semester –IV

CC-4/MCC-6

Session: 2023-24

PartA-Introduction

Subject	Sociology
Semester	IV
NameoftheCourse	Research Methodology
CourseCode	B23-SOC-401
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC MCC
Levelofthecourse(AsperAnnexure-I	200-299
Pre-requisiteforthecourse(ifany)	
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Know about the basic understanding of social research and scientific methods. 2. Know about research design and sampling processes. 3. Explain various methods and techniques of data collection. 4. Acquire a skill in data analysis process in details.

Credits	Theory	Tutorial	Total
	3	1	4
ContactHours	3 Per week	1 per week/ Per group	4 per week / per group

Max.Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**	**Time: 3 Hours**

PartB – ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 14 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	ContactHours
I	**Social Research**: Meaning, Steps & Types; Fact&Theory; Concept &Variable; Scientific Method; Social Survey.	12
II	Research Design: Types and Usage Sampling: Types & Significance; Sample Size	12
III	**Sources of Data:** Primary, Secondary Tools of Data Collection: Interview, Questionnaire and Schedule	12
IV	**Data Analysis**: Editing, Coding, Classification and Tabulation. **Graphic Presentation:** Bar Diagram; Histogram; Pie Chart; Polygon.	12
	Tutorials	12

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory: 30 Marks** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **5+5 Marks** • Mid-TermExam: **15 Marks**	**EndTermExamination:** **70 Marks**
PartC – LearningResources	

RecommendedBooks/e-resources/LMS:
Ahuja, Ram (2001), *Research Methods*, New Delhi: Rawat Publication.
Ahuja, Ram (2003), *SamajikServekshanavmAnusandhan*, Jaipur, Rawat Publication
Goode,W.J.andP.K.Hatt(1952), *MethodsinSocialResearch*,NewYork:McGrawInternational.
Srivastava, Prakash G.N. (1994), *Advances Research Methodology*, Delhi: Radha Publication.
Thakur, Devender (2003),*ResearchMethodologyinSocialScience*,Delhi:DeepandDeepPublication.
Young, P.V.(1988),*Scientific Social Survey and Research,* New Delhi Prentice Hall.
Kumar, Ranjit (2006), *Research Methodology*, Australia: Pearson Education
Mahajan, DharamveeraurKamleshMahajan (2019) *SamajikAnusandhankaPranhaliVigyan,* Delhi: Vivek Publication.

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Sociology) Syllabus, Semester –IV

MCC-7

Session: 2023-24			
PartA-Introduction			
Subject	Sociology		
Semester	IV		
NameoftheCourse	Perspectives on Indian Society		
CourseCode	B23-SOC-402		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC		
Levelofthecourse(AsperAnnexure-I	200-299		
Pre-requisiteforthecourse(ifany)			
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Get an insight about text view and Indological approach to understand Indian social system. 2. Be acquainted with the structural-functional view to interpret Indian society and culture. 3. Get a critical learning through Marxian perspective to analyse Indian social structure. 4. Acquire understanding of subaltern perspective in terms of analyzing Indian social system.		
Credits	Theory	Tutorial	Total
	3	1	4
ContactHours	3 Per week	1 per week/ Per group	4 per week / per group
Max.Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**	**Time: 3 Hours**		
PartB – ContentsoftheCourse			
InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 14 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.			

Unit	Topics	ContactHours
I	Text View/Indological Approach : G.S. Ghurye, Louis Dumont	12
II	Structural-FunctionalView: M.N. Srinivas, S.C. Dube	12
III	MarxianPerspective: D.P. Mukerjee, A.R. Desai	12
IV	SubalternPerspective: B.R. Ambedkar, David Hardiman	12
	Tutorials	12

Suggested Evaluation Methods	
InternalAssessment: ➢ **Theory: 30 Marks** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **5+5 Marks** • Mid-TermExam: **15 Marks**	**EndTermExamination:** **70 Marks**

PartC – LearningResources

RecommendedBooks/e-resources/LMS:

Atal,Yogesh	: Indian Sociology from Where to Where Rawat Publication, New Delhi; 2003
Ambedkar,B.R.	: The Untouchable Who Were They and Why They Became Untouchable,AmritBook, Delhi: (1949),
Desai,A.R.	: Rural Sociology in India, Popular Prakashan, Bombay; 1996
Desai,A.R.	: Rural India in Transition, Popular Prakashan, Bombay; 1979
Dube,S.C.	: Indian Village, Routledge, London;1967
Dhanagre, D.N.	: Themes and Perspective in Indian Sociology, Rawat Publication, Jaipur; 1993
Dumont, Louis	: Homo Hierarchicus: The caste System and its Implications, Vikas Pub., New Delhi; 1970
Ghurye,G.S.	: Caste and Race in India Popular Prakashan, Bombay;1969
Hardiman, D.	: Feeding the Bania: Peasants and Usurers in Western India, Oxford University Press; 1996
Hardiman, D.	: The Coming of the Devi: Adivasi Assertion in Western India, Oxford University Press;1987
Marriot, M.	: India Through Hindu categories, Sage Publication, New Delhi;1990
Mendalbaum, G.	: Society in India: (Vol.I& II), Popular Prakashan, Bombay.
Momin,A.R.	:TheLegacyofG.S. Ghurye:ACentennialFestschrift, Popular Parkashan, Bombay; 1996
Mukerjee,D.P.	: Indian Culture: A Sociological Study,Roopa&Sons,Delhi
Oommen,T.K.& Mukerjee,P.N.	: Indian Sociology: Reflections andIntrospections,PopularParkashan, Bombay;1986
Singh,Y.	: Modernization of Indian Tradition, Thomson press, Faridabad;1973
Singh,Y.	: Indian Sociology: Social Conditioning and Emerging Concerns, Vistaar Pub., Delhi; 1986
Srinivas,M.N.	: India's Village, Asia Publishing House, Bombay; 1960
Surinder S. Jodhka	: Village Society, Orient Black Swan, Delhi,2012(ed.)

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Sociology) Syllabus, Semester –IV

MCC-8

Session: 2023-24			
PartA-Introduction			
Subject	Sociology		
Semester	IV		
NameoftheCourse	Marriage, Family & Kinship		
CourseCode	B23-SOC-403		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC		
Levelofthecourse(AsperAnnexure-I	200-299		
Pre-requisiteforthecourse(ifany)			
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Learn the characteristics, functions and types of marriage and family relationship. 2. Get a sense of different forms of discrepancies in family and marriage institution. 3. Get expertise in Family and Marriage counseling. 4. Gain sufficient knowledge about counseling approaches and paradigms.		
Credits	Theory	Tutorial	Total
	3	1	4
ContactHours	3 Per week	1 per week/ Per group	4 per week / per group
Max.Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**	**Time: 3 Hours**		
PartB – ContentsoftheCourse			

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 14 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	ContactHours
I	Family: Meaning, Types, Characteristics and Functions; Family and household; Family structure and composition; Structural Changes in family; Family and gender issues.	12
II	Marriage: Types, Marriage in different ethnic groups; Contemporary changes Rules of Marriage: Endogamy, exogamy, prescriptive and preferential marriage, monogamy, polygamy, levirate and sororate, hypogamy and hypergamy. Marriage transactions: dowry and bride wealth; Challenges to marriage as an institution.	12
III	Kinship: Basic concepts, Usage, Incest, affiliation, Consanguinity, affinity, clan, lineage, kindred kinship and Descent; Unilineal, double and cognatic descent Complimentary affiliation Kinship terminology; The genealogical method Kinship organization in India: regional variations	12
IV	Contemporary Issues in Marriage, Family and Kinship: Inter-caste and Inter-Racial marriages; live-in-relationships, Family System; Functional, Critical, Feminist and Postmodern Narratives, Changing Care and Support System; Power and Discrimination in the Family; Broken Homes, Family Tension.	12

Tutorials	12

<div align="center">Suggested Evaluation Methods</div>

InternalAssessment:	EndTermExamination:
➢ **Theory: 30 Marks** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **5+5 Marks** • Mid-TermExam: **15 Marks**	**70 Marks**

<div align="center">PartC – LearningResources</div>

RecommendedBooks/e-resources/LMS:

Ahmed,I.   : Family, Kinship and marriage among Muslims in India, Manohar Pub., Delhi,1976.
Ahuja,Ram   : Indian Social System, Rawat Publications, Jaipur, 1984
Ahuja,Ram   : Social Problems, Rawat Publication, Jaipur;2006.
andCarolJacklin.
Burgess, E.W. &   : Predicting success or failure in marriage, Prentice Hall, NY, 1939.
L. S. Cottrell, Jr.
Cheston (Ed)   : Counselor: Education and Supervision, Vol. 391, June 2000
De,Beauvoir, Simon: The Second Sex, Vintage, New York;(1957).
Goode William J.   : The Family, Prentice Hall of India, New Delhi, 1989
Harlambos,M.   : Sociology: Themes and perspectives, OPU New Delhi;(1998).
JohnMcleod   :   An Introduction to Counselling, (IIIrd Ed), Open University Press, 2004
Kapadia   : Marriage and Family in India, Oxford Press, Delhi1988
Maccoby, Eleaner   : The Psychology of Sex Differences, Stanford: Stanford University Press;1975
Patel,Tulsi   :*Bharat Mein Parivar: Sanrachnaevmvyavhar*, Rawat,Jaipur,2011.
Prabhu,P.H.   : Hindu Social Organisation, Popular Prakashan,Bombay-2000
RaoS.N.   Counselling Psychology, McGraw-Hill NewDelhi-2001
Rasheed N.   : Family Therapy (Models and Techniques) 2011, Sage Publication, London
Richard S. Sharf   : Theories of Psychology and Counselling (Concepts and Cases), 6th Edition, 2012, Cengage Learning, Australia
Shah, A.M   : The household dimensions of the family in India: university of California press, 1974.
Sharon E.   : "Counselor Preparation: A New Paradigm for Teaching Counselling Theory and Practice" in
Uberoi,Patricia   : Family, kinship and marriage in India (Ed.), Oxford University Press New Delhi, 1993.
Whiston, S.C.   : Principles and Applications of Assessment of Counselling (2nd Ed.) Cengage Learning 2009

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Sociology) Syllabus, Semester –IV

DSE-1

Session: 2023-24			
PartA-Introduction			
Subject	Sociology		
Semester	IV		
NameoftheCourse	Social Change & Social Movement in India		
CourseCode	B23-SOC-404		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	DSE		
Levelofthecourse(AsperAnnexure-I	200-299		
Pre-requisiteforthecourse(ifany)			
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Get an understanding of the meaning, dimension and types of social change. 2. Get familiarized with forces of change in contemporary Indian society. 3. Gain knowledge of concepts, elements, classification and the theories of social movements. 4. Get an exposure to Social Movement & Protests in India.		
Credits	Theory	Tutorial	Total
	3	1	4
ContactHours	3 Per week	1 per week/ Per group	4 per week / per group
Max.Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**	**Time: 3 Hours**		
PartB – ContentsoftheCourse			
InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 14 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.			

Unit	Topics	ContactHours
I	Social Change: Meaning, Dimensions, Types; Endogenic and Exogenic factors	12
II	Contemporary Indian Social Changes: Modernization, Westernization, Sanskritization, Secularization, Globalization	12
III	Social Movements: Concept, Elements, Classification and Theories; Ecological Movements.	12

IV	Social Movements and Protests in India: Reform movements; Tribal and Peasants Movements; Movements based on Caste, &Region; Reservation and Politics	12
	Tutorials	12

Suggested Evaluation Methods

InternalAssessment: ➢ **Theory: 30 Marks** • ClassParticipation: **05 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **5+5 Marks** • Mid-TermExam: **15 Marks**	**EndTermExamination:** **70 Marks**

PartC – LearningResources

RecommendedBooks/e-resources/LMS:
Albrow, Martin &:   Globalisation, Knowledge and Society, Sage: London; (Ed.),(1990),
Elizabeth King
Banks,J.A:.   The Sociology of Social Movements: Macmillan, London; (1972)
Desai,A.R. Ed.:   Peasant Struggles in India: Oxford University Press, Bombay;(1979),
Dhanagare,D.N.   Peasant Movements in Indian 1920-1950:O.U.P,Delhi;(1983),
HarlambosandHolborn   Sociology: Themes and Perspectives 5th Edition, Harper Collins Pub. London ;(2000),
Nash,J.(ed.)   Social Movements: an anthropological reader, Blackwell Publishing, Oxford ; (2005),
Oomen,T.K.   Protest and Change: Studies in Social Movements: Sage Publication, Delhi; (1990),
Rao, M.S.A.   Social Movements in India: Manohar; New Delhi ;(1979)
Rao, M.S.A.   Social Movements and Social Transformation: Macmillan, Delhi; (1979),
Singh,K.S.   Tribal Movements in India: Manohar, New Delhi; (1982),
Oommen,T.K.,   Charisma, Stability and Change: An Analysis ofBhoodanGrandan Movement: Thomas Press, New De
                (1972),
Shah,Ghanshyam,   Protest Movements in two Indian States.: Ajanta, New Delhi;(1977)
Shah,Ghanshyam,   Social Movements in India; a review of the Literature: Sage, Delhi;(1990),
Shah,Nandita,   The Issues at Stake : Theory and Practice in the Contemporary women's movements in
India, Kali for Women, New Delhi ;(1992),
Shiva,Vandana,   Ecology and the Politics of Survival : Sage, New Delhi;(1991),
AtalYogesh: *BhartiyaSamaj: NirantaraurParivartan*, New Delhi, Pearson Publication (2016),
Singh, Sheobahal: *Sociology of Development*, Jaipur: Rawat Publications(2010),
Sharma, S.L. :   (*Development: Socio-Cultural Dimensions*, Jaipur: Rawat Publications(1986),
Verma, Manish K: *Globalization and Environment: Discourse, Policies and Practices*, Jaipur: Rawat Publications
(2015).

KURUKSHETRA UNIVERSITY
Undergraduate Programs (Sociology) Syllabus, Semester –IV

DSE-1

Session: 2023-24			
PartA-Introduction			
Subject	Sociology		
Semester	IV		
NameoftheCourse	Social Change and Development		
CourseCode	B23-SOC-405		
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	DSE		
Levelofthecourse(AsperAnnexure-I	200-299		
Pre-requisiteforthecourse(ifany)			
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Familiarized with the concepts, characteristics, sources, forms and forces of social change. 2. Know about theories and patterns of social change. 3. Able to interpret the concepts of development and underdevelopment. 4. Understand the different theories development and underdevelopment.		
Credits	Theory	Tutorial	Total
	3	1	4
ContactHours	3 Per week	1 per week/ Per group	4 per week / per group
Max.Marks: 100 **Internal Assessment Marks: 30** **End Term Exam Marks: 70**	**Time: 3 Hours**		
PartB – ContentsoftheCourse			
InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 10 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.			

Unit	Topics	ContactHours
I	Social Change: Concept and Characteristics; Sources, Forms and Forces; Resistance to Change.	12
II	Theories and Patterns of Change: Linear, Cyclical, Fluctuatory; Unpatterned Change; Conflict, Historical, and Cultural Lag Theory	12
III	Development and Underdevelopment: Concepts, characteristics; Varieties of Development– Human Development; Social Development, Economic Development; Sustainable Development	12

IV	Theories of Development and Underdevelopment: Modernization, Dependency and the World System; Globalization and Liberalization; Barriers and Breakdowns in Development	12
	Tutorials	12

Suggested Evaluation Methods

InternalAssessment: ➢ **Theory: 30 Marks** ● ClassParticipation: **05 Marks** ● Seminar/presentation/assignment/quiz/classtestetc.: **5+5 Marks** ● Mid-TermExam: **15 Marks**	EndTermExamination: **70 Marks**

PartC – LearningResources

RecommendedBooks/e-resources/LMS:

Appadurai,Arjun. : Modernity at Large Cultural Dimensions of Globalization, OU P, New Delhi; 1997

Bernd,Hamns& : Sustainable Development and Future of Cities, Intermediate Technology Publication
PandurangK.MutagiUNESCO;   1998

Desai,A.R. : India's Path of Development: A Marxist Approach, Popular Parkashan Bombay; 1985(Chapter2).

Dube,S.C. : Modernization and Development: The Search for Alternative Paradigm, VistaarPublication, New Delhi;(1988),

Dube,S.C. : *VikasKaSamajshastra*, VaniParkashan, New Delhi; (2000),

Harrison,D. : The Sociology of Modernization and Development, New Delhi: Sage; 1989.

Magdoff,Harry : Imperialism and Globalization, Cornerstone Publications, Kharagpur; (2002),

Moor,Wilbertand : Social Change, Prentice-Hall (India) New Delhi;(1967),
Robert Cook

Sharma,SL : "Criteria of Social Development", Journal of Social Action. Jan-Mar, (1980)

N.Long : An Introduction to the Sociology of Rural Development, TavistockPublications; London; (1977),

Sharma,SL : Development: Socio-Cultural Dimensions, Rawat, Jaipur: (1986),

Srinivas, M.N. : Social Change in Modern India, University of Berkley, Berkley;(1966),Symposium on Implications of Globalization. 1995.Sociological Bulletin. Vol.44. (Articles by Mathew, Panini &Pathy). 1966.

UNDP. Sustainable Development, New York: OUP;(1995)

WorldBank. : World Development Report,NewYork;(1995)

Kiely, Ray and Phil : Globalization and the Third World, Routledge, London, (eds). (1998),
Marfleet

WallersteinImmanue : The Modern World System, OUP, New York,(1974),

World Commission : Our Common Future, (BrundtlandReport).OUP, New Delhi;(1987),
on Environment and
Development

DEPARTMENT OF SOCIOLOGY
KURUKSHETRA UNIVERSITY, KURUKSHETRA
(Established by the state Legislature Act –XII of 1956)
"A+" Grade, NAAC Accredited
Structure, Syllabus of the courses of reading and Scheme of Examination
For Value Added Course
(According to the Curriculum Framework of UG Programmes under NEP-2020)
To be implemented w.e.f the session 2023-24
(in*phased manner*)

II. Complete Scheme of UG (VAC) Courses (Sociology) :

Sem.	Course Type	Paper Code	Name of Course	Credits	Contact hrs.	Internal Assessment Marks	End Term Exam Marks	Max. Marks	Duration of Exam (Hrs.)
			Second Year						
IV	VAC - 4	B23 – VAC-409	Science and Society	2	2	15	35	50	3

VAC-4

Session: 2023-24	
PartA-Introduction	
Subject	Sociology
Semester	IV
NameoftheCourse	Science and Society
CourseCode	B23-VAC-409
CourseType:(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	VAC
Levelofthecourse(AsperAnnexure-I	200-299
Pre-requisiteforthecourse(ifany)	
CourseLearningOutcomes(CLO):	After completing this course, the learner will be able to: 1. Make sense of conceptual issues in the study of sociology of science. 2. Understand the relationship between science and Society. 3. Understand the issues relating to science, technology and society in theGlobalization contexts. 4. Be aware of the issues relating to science, technology and society in India.

Credits	Theory	Tutorial	Total
	2		2
ContactHours	2 Per week		2 per week / per group

Max.Marks: 50 **Internal Assessment Marks: 15** **EndTermExamMarks: 35**	**Time: 3 Hours**

PartB – ContentsoftheCourse

InstructionsforPaper-Setter: The question paper will consist of NINE questions out of which the candidate would be required to attempt FIVE questions. The first question will be compulsory and will have 7 short answer questions uniformly spread over entire syllabus. The remaining EIGHT questions will be set taking TWO questions from each of the four units. Each question will carry 7 marks. The candidate would be required to attempt ONE question from each unit in addition to compulsory question.

Unit	Topics	ContactHours
I	Sociology of Science – its Scope and importance; the Nature of Science; Pure vs. AppliedScience; Relationship between Science and Technology; Science as a Social System.	8
II	Ethos of Science; Scientific Temper; Ethics and Professionalism in Scientific Research; Social Aspects of Rise and Development of Science; Political Economy of Science & Technology;	8
III	Problems & Prospects of Interrelationship between Industry and Universities; Impact of Globalization and liberalization on Indian Science and Technology;	8
IV	History of Modern Science in India – Colonial and Post-independence; Social background of Indian Scientists and Technologists; Social Organization of Science in India; Impact and Role of Science & Technology in Society; Knowledge as Power.	8
Suggested Evaluation Methods		

InternalAssessment: ➢ **Theory:15 Marks** • ClassParticipation: **4 Marks** • Seminar/presentation/assignment/quiz/classtestetc.: **4 Marks** • Mid-TermExam: **7Marks**	EndTermExamination: **35 Marks**

PartC-LearningResources

RecommendedBooks/e-resources/LMS:
Barber, Bernard. 1952. Science and the Social Order, New York: Free Press.
Gaillard, J. 1991. Scientists in the Third World, Lexington: Kentucky University Press.
Gaillard, J., V.V.Krishna and R.Waast (Eds.). 1997. Scientific Communities in the Developing World, New Delhi: Sage.
Chaubey, Kamala (Ed.). 1974. Science Policy and National Development, New Delhi: Macmillan.
Krishna, V.V. 1993. S.S.Bhatnagar on Science, Technology, and Development, New Delhi: Wiley Eastern. 48
Kornhauser, William. 1962. Scientists in Industry, Berkley: University of California Press.
Mallik, S. C. 1971. Management and Organization of Indian Universities, Simla: Indian Institute of Advanced Study.
Rahman, A. 1972. Trimurti: Science, Technology and Society – A Collection of Essays, New Delhi: People's Publishing House. Storer,
Norman W. 1966. The Social System of Science, New York: Holt Rinehart and Winston.
Gilpin, Robert, and Christopher Wright (Eds.). 1964. Scientists and National Policy- making, New York: Columbia University Press. Kumar, Nagesh and N.S.Siddharthan. 1997. Technology, Market Structure and Internationalization: Issues and Policies for Developing Countries, London: Routlege and The United Nations University.
MacLeod, Roy and Deepak Kumar. 1995. Technology and the Raj: Western Technology and Technical Transfers to India, 1700-1947, New Delhi: Sage.
Merton, Robert K. 1968. Social Theory and Social Structure, enlarged edition, New York: The Free Press.
Norman W. 1964. "Basic versus Applied Research: The Conflict between Means and Ends in Science", Indian Sociological Bulletin, 2 (1), Pp.34-42.
Uberoi, J. P. S. 1978. Science and Culture, New Delhi: Oxford University Press.
Vishvanathan, S. 1974. Organizing for Science, New Delhi: Oxford University Press.

KURUKSHETRA UNIVERSITY KURUKSHETRA

Scheme of Examination and Syllabus for Under-Graduate Programme (Single Major) Subject: Geology

Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance to NEP-2020 w.e.f. 2023-24 (in phased manner)

(First Year)

Course Type	Course Code	Nomenclature of Paper	Credits	Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
		SEMESTER-1						
CC-1/ MCC-1 @4 credit	B23-GGY-101	Physical Geology (T)	3	3	20	50	70	3 hrs.
		Physical Geology (P)	1	2	10	20	30	3 hrs.
MCC-2 @4 credit	B23-GGY-102	Geomorphology (T)	3	3	20	50	70	3 hrs.
		Geomorphology (P)	1	2	10	20	30	3 hrs.
CC-M1 @2 credit	B23-GGY-103	Fundamentals of Geology	2	2	15	35	50	3 hrs.
MDC-1 @3 credits	B23-GGY-104	An Introduction to Geology (T)	2	2	15	35	50	3 hrs.
		An Introduction to Geology (P)	1	2	5	20	25	3 hrs.
		SEMESTER-2						
CC-2/ MCC-3 @4 credit	B23-GGY-201	Petrology and Mineralogy (T)	3	3	20	50	70	3 hrs.
		Petrology and Mineralogy (P)	1	2	10	20	30	3 hrs.
DSEC-1 @4 credit	B23-GGY-202	Field Geology (T)	3	3	20	50	70	3 hrs.
		Field Geology (P)	1	2	10	20	30	3 hrs.
CC-M2 @2 credit	B23-GGY-203	Geoscience and Society	2	2	15	35	50	3 hrs.
MDC-2 @3 credits	B23-GGY-204	Rocks and Minerals (T)	2	2	15	35	50	3 hrs.
		Rocks and Minerals (P)	1	2	5	20	25	3 hrs.

(Second Year)

Course Type	Course Code	Nomenclature of Paper	Credits	Hours / Week	Internal marks	External Marks	Total Marks	Exam Duration
		SEMESTER-3						
CC-3/ MCC-4/ CC-M3 @4 credit	B23-GGY-301	Palaeontology and Stratigraphy (T)	3	3	20	50	70	3 hrs.
		Palaeontology and Stratigraphy (P)	1	2	10	20	30	3 hrs.
MCC-5 @4 credit	B23-GGY-302	Geochemistry (T)	3	3	20	50	70	3 hrs.
		Geochemistry (P)	1	2	10	20	30	3 hrs.
MDC-3 @3 credits	B23-GGY-303	Earth Resources (T)	2	2	15	35	50	3 hrs.
		Earth Resources (P)	1	2	5	20	25	3 hrs.
		SEMESTER-4						
CC-4/ MCC-6 @4 credit	B23-GGY-401	Structural Geology and Engineering Geology (T)	3	3	20	50	70	3 hrs.
		Structural Geology and Engineering Geology (P)	1	2	10	20	30	3 hrs.
MCC-7 @4 credit	B23-GGY-402	Igneous and Metamorphic Petrology (T)	3	3	20	50	70	3 hrs.
		Igneous and Metamorphic Petrology (P)	1	2	10	20	30	3 hrs.
MCC-8 @4 credit	B23-GGY-403	Sedimentology (T)	3	3	20	50	70	3 hrs.
		Sedimentology (P)	1	2	10	20	30	3 hrs.
DSE-1 @4 credit	B23-GGY-404	Mineral Exploration (T)	3	3	20	50	70	3 hrs.
		Mineral Exploration (P)	1	2	10	20	30	3 hrs.
		Or						
	B23-GGY-405	Mineral Resources (T)	3	3	20	50	70	3 hrs.
		Mineral Resources (P)	1	2	10	20	30	3 hrs.

Course Type	Course Code	Nomenclature of Paper	Credits	Hours / Week	Internal marks	External Marks	Total Marks	Exam Duration
		SEMESTER-5						
CC-5/ MCC-9 @4 credit	B23-GGY-501	GIS and Remote Sensing (T)	3	3	20	50	70	3 hrs.
		GIS and Remote Sensing (P)	1	2	10	20	30	3 hrs.
MCC-10 @4 credit	B23-GGY-502	Exploration and Surveying (T)	3	3	20	50	70	3 hrs.
		Exploration and Surveying (P)	1	2	10	20	30	3 hrs.
DSE-2 @4 credit	B23-GGY-503	Natural Hazards (T)	3	3	20	50	70	3 hrs.
		Natural Hazards (P)	1	2	10	20	30	3 hrs.
		Or						
	B23-GGY-504	Environmental Geology (T)	3	3	20	50	70	3 hrs.
		Environmental Geology (P)	1	2	10	20	30	3 hrs.
DSE-3 @4 credit	B23-GGY-505	Disaster Management (T)	3	3	20	50	70	3 hrs.
		Disaster Management (P)	1	2	10	20	30	3 hrs.
		Or						
	B23-GGY-506	Groundwater Management (T)	3	3	20	50	70	3 hrs.
		Groundwater Management (P)	1	2	10	20	30	3 hrs.
		SEMESTER-6						
CC-6/ MCC-11/ CC-M6 @4 credit	B23-GGY-601	Hydrogeology (T)	3	3	20	50	70	3 hrs.
		Hydrogeology (P)	1	2	10	20	30	3 hrs.
MCC-12 @4 credit	B23-GGY-602	Economic and Mining Geology (T)	3	3	20	50	70	3 hrs.
		Economic and Mining Geology (P)	1	2	10	20	30	3 hrs.
DSE-4 @4 credit	B23-GGY-603	Oceanography (T)	3	3	20	50	70	3 hrs.
		Oceanography (P)	1	2	10	20	30	3 hrs.
		Or						
	B23-GGY-604	Industrial Geology-I (T)	3	3	20	50	70	3 hrs.
		Industrial Geology-I (P)	1	2	10	20	30	3 hrs.
DSE-5 @4 credit	B23-GGY-605	Climatology (T)	3	3	20	50	70	3 hrs.
		Climatology (P)	1	2	10	20	30	3 hrs.
		Or						
	B23-GGY-606	Crystallography and Mineral Optics (T)	3	3	20	50	70	3 hrs.
		Crystallography and Mineral Optics (P)	1	2	10	20	30	3 hrs.

(Fourth Year)

Course Type	Course Code	Nomenclature of Paper	Credits	Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
SEMESTER-7 (FOR HONOURS/HONOURS WITH RESEARCH IN MAJOR SUBJECT)								
CC-H1 @4 credit	B23-GGY-701	Advanced Geochemistry	4	4	30	70	100	3 hrs.
CC-H2 @4 credit	B23-GGY-702	Advanced Mining Geology	4	4	30	70	100	3 hrs.
CC-H3 @4 credit	B23-GGY-703	Geology and climate change	4	4	30	70	100	3 hrs.
DSE-H1 @4 credit	B23-GGY-704	Medical Geology	4	4	30	70	100	3 hrs.
		Or						
	B23-GGY-705	Petroleum Geology	4	4	30	70	100	3 hrs.
PC-H1 @4 credit	B23-GGY-706	Physical Survey based Report-I	4	8	30	70	100	3 hrs.
SEMESTER-8 (FOR HONOURS/ HONOURS WITH RESEARCH IN MAJOR SUBJECT								
CC-H4 @4 credit	B23-GGY-801	Geological Survey/Mapping	4	4	30	70	100	3 hrs.
CC-H5 @4 credit	B23-GGY-802	Research Methodology	4	4	30	70	100	3 hrs.
CC-H6 @4 credit	B23-GGY-803	Industrial Geology- II	4	4	30	70	100	3 hrs.
DSE-H2 @4 credit	B23-GGY-804	Himalayan Geology	4	4	30	70	100	3 hrs.
		Or						
	B23-GGY-805	Geology of India	4	4	30	70	100	3 hrs.
PC-H2 @4 credit	B23-GGY-806	Physical Survey based Report-II	4	8	30	70	100	3 hrs.
Or								
CC-H4 @4 credit	B23-GGY-801	Geological Survey/Mapping	4	4	30	70	100	3 hrs.
CC-H5 @4 credit	B23-GGY-802	Research Methodology	4	4	30	70	100	3 hrs.
Project/ Dissertation @12 credit	B23-GGY-807	Research Work	12	-	-	-	300	3 hrs.

Part A - Introduction	
Subject	Geology
Semester	I
Name of the Course	Physical Geology
Course Code	B23-GGY-101
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-1/MCC-1
Level of the course (As per Annexure-I)	100-199
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Understand Geology and Its relation to mankind. 2. Understand Earth Interior. 3. Learn about the Lithospheric Plates of Earth. 4. Learn about formation of Volcanoes and Earthquakes. _____ 5*. Understand the topography and physiography of an area.

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) Internal Assessment Marks: 30 (20 Th.+ 10 Pr.) End Term Exam Marks: 70 (50 Th.+ 20 Pr.)	Exam Time: 03 Hrs.

Part B- Contents of the Course	

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Introduction to various branches of Earth Science, General characteristics and origin of the Universe, Solar System and its planets, Meteorites and Asteroids, Earth in the Solar System: origin,	11

	size, shape, mass, density, rotational and revolution parameters and its age.	
II	Interior of Earth: Formation of core, mantle, crust, hydrosphere, atmosphere and biosphere, Convection in Earth's core and production of its magnetic field, Mechanical layering of the Earth.	11
III	Plate Tectonics: Concept of plate tectonics, sea-floor spreading and continental drift, Geodynamic elements of Earth: Mid Oceanic Ridges, trenches, transform faults and island arcs.	12
IV	Continents, mountains and rift valleys, Earthquake and Earthquake belts, Volcanoes: types, products and their distribution.	11
V*	Detailed study of topographic sheets, preparation of physiographic description of an area, study of Seismic Zones in India.	30

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: **05 marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 marks** • Mid-Term Exam: **10 marks**	**50**
➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks** • Mid-Term Exam: **NIL**	**20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Principles of Physical Geology- A. Holmes
- Plate Tectonics and Crustal Evolution- K.C. Condie
- Aspects of Tectonics- K.S. Valdiya
- Essentials of The Earth Science- K. Kelvin

Session: 2023-24

Part A - Introduction

Subject	Geology
Semester	I
Name of the Course	Geomorphology
Course Code	B23-GGY-102
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC-2
Level of the course (As per Annexure-I)	100-199
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Understand the surface geological processes. 2. Understand their effect on mankind and environment. 3. Know various geomorphological processes. 4. Enhance knowledge about changes on the Earth's surface. _____ 5*. Understand geomorphological models and soil profile

Credits		Theory	Practical	Total
		3	1	4
Contact Hours		45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) **Internal Assessment Marks: 30 (20 Th.+ 10 Pr.)** **End Term Exam Marks: 70 (50 Th.+ 20 Pr.)**	**Exam Time: 03 Hrs.**

Part B- Contents of the Course

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Basic concepts of Geomorphology, Fundamentals of Erosion, Weathering and its types: physical, chemical and biological.	11
II	Soil profile and Soil formation, Mass wasting: types and causes, Drainage patterns and causes of its formations.	11

III	Processes of Transportation, Erosional and Depositional features of Fluvial, Arid and Glacial geomorphic cycles.	12
IV	Cycle concept in Geomorphology, Peneplanation and its types, Uplift and Rejuvenation, Paleosols and alluvial fans in neo-tectonic interpretation.	11
V*	Study of major geomorphic features and their relationships with outcrops through physiographic models, Study of soil profile of any specific area.	30

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: **05 marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 marks** • Mid-Term Exam: **10 marks**	**50**
➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks** • Mid-Term Exam: **NIL**	**20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Principles of Physical Geology- A. Holmes
- Principles of Geomorphology- W.D. Thornbury
- Geomorphology- V.K. Sharma
- Essentials of The Earth Science- Kelvin

Session: 2023-24		
Part A - Introduction		
Subject	Geology	
Semester	I	
Name of the Course	Fundamentals of Geology	
Course Code	B23-GGY-103	
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-M1	
Level of the course (As per Annexure-I)	100-199	
Pre-requisite for the course (if any)	N.A.	
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Understand Geology and its branches. 2. Understand the Earth and Solar system. 3. Learn about Geological Time Scale and Physiography of India. 4. Learn ecological spheres and their relationship with Earth's surface.	

Credits	Theory	Total
	2	2
Contact Hours	30	30

Max. Marks: 50 Internal Assessment Marks: 15 End Term Exam Marks: 35	Exam Time: 3 Hrs.

Part B- Contents of the Course	

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Geology as an interdisciplinary science, Branches of Geology and their basic understanding, Development of Geology: catastrophism, The birth of modern Geology.	7

II	Earth's place in the Solar System, physical features of the Earth, other basic features (mass, shape, size, density, etc.) of Earth. Interior of Earth.	8
III	Geological Time Scale, Physiographic and Geological sub-divisions of India, Basic concepts and Application of GIS and GPS.	7
IV	Physical and chemical properties of Earth's spheres: hydrosphere, atmosphere and biosphere, Distribution of land and water on Earth's surface.	8

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory** • Class Participation: **02 marks** • Seminar/presentation/assignment/quiz/class test etc.: **03 marks** • Mid-Term Exam: **10 marks**	**End Term Examination: 35**

Part C-Learning Resources
Recommended Books/e-resources/LMS: • Understanding the Earth, Press, F. and Siever, R., W.H. Freeman & Co. • An Introduction to Physical Geology, Tarbuck, Lutgens, Tasa, Eleventh Edition, Pearson Publication. • Principles of Physical Geology- A. Holmes

Session: 2023-24

Part A - Introduction

Subject	Geology
Semester	I
Name of the Course	An Introduction to Geology
Course Code	B23-GGY-104
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MDC-1
Level of the course (As per Annexure-I)	100-199
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Understand Geology and its branches. 2. Understand the Earth and Solar system. 3. Learn about Geological time scale and Physiography of India. 4. Learn ecological spheres and their relationship with Earth's surface. _____ 5*. Get Knowledge about interior of Earth through Models.

Credits		Theory	Practical	Total
		2	1	3
Contact Hours		30	30	60

Max. Marks: 75 (50 Th.+ 25 Pr.) Internal Assessment Marks: 20 (15 Th.+ 05 Pr.) End Term Exam Marks: 55 (35 Th.+ 20 Pr.)	Exam Time: 3 Hrs.

Part B- Contents of the Course

Instructions for Paper- Setter Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours

I	Geology as a Multidisciplinary science, Branches of Geology and their basic understanding, Development of Geology: catastrophism, The birth of modern Geology.	7
II	Earth's place in the Solar System, physical features of the Earth, other basic features (mass, shape, size, density, etc.) of Earth. Interior of Earth.	8
III	Geological Time Scale, Physiographic and Geological sub-divisions of India, Basic concepts and Application of GIS and GPS.	7
IV	Physical and chemical properties of Earth's spheres: hydrosphere, atmosphere and biosphere, Distribution of land and water on Earth's surface.	8
V*	Physiographic models of India, Models of Interior of Earth, Preparation of Maps of Geological subdivisions of India.	30

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: **02 marks** • Seminar/presentation/assignment/quiz/class test etc.: **03 marks** • Mid-Term Exam: **10 marks** ➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **05 marks** • Mid-Term Exam: **NIL**	**End Term Examination:** **35** **20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Principles of Physical Geology- A. Holmes
- Understanding the Earth, Press, F. and Siever, R., W.H. Freeman & Co.
- An Introduction to Physical Geology, Tarbuck, Lutgens, Tasa, Eleventh Edition, Pearson Publication.

	Session: 2023-24
	Part A - Introduction
Subject	Geology
Semester	II
Name of the Course	Petrology and Mineralogy
Course Code	B23-GGY-201
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-2/MCC-3
Level of the course (As per Annexure-I)	100-199
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Acquire knowledge about structural bonding and classification of the minerals. 2. Understand physical, chemical, and optical properties of silica group of minerals and mafic minerals. 3. Learn about Rocks, their types, composition and uses. 4. Get elementary idea of Magma and its composition, differentiation and Physical properties. 5*. Understand the physical properties of Minerals and Rocks.

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) **Internal Assessment Marks: 30 (20 Th.+ 10 Pr.)** **End Term Exam Marks: 70 (50 Th.+ 20 Pr.)**	**Exam Time: 03 Hrs.**

Part B- Contents of the Course

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Mineral: definition; Types of bonding, Isomorphism, Polymorphism, Pseudomorphism, Classification of minerals, Physical and Chemical properties of minerals.	11

II	Optical properties of minerals, Study of physical, chemical and optical properties of Quartz (Amethyst, Rosy quartz, Rutilated quartz, Chalcedony and Agate), Amphibole (Hornblende, Tremolite and Actinolite), Pyroxene (Augite and Diopside) and Feldspar (K-Feldspar, Albite, Anorthite, Orthoclase and Anorthoclase) group of minerals.	11
III	Rocks: Definition, Types of rocks, Igneous Rocks, Sedimentary Rocks, Metamorphic Rocks, Rock Cycle, uses associated with different Rock types, Introduction to Extraterrestrial Rocks.	12
IV	Composition and types of magma, Physical properties of magma: temperature, viscosity and density, Magmatic differentiation and assimilation, Bowen reaction series.	11
V*	Study of physical properties of minerals in hand specimen: Olivine, Garnet, Kyanite, Staurolite, Tourmaline, Augite, Actinolite, Tremolite, Hornblende, Talc, Muscovite, Biotite, Orthoclase, Plagioclase, Microcline and Quartz varieties (Chert, Flint, Chalcedony, Agate, Jasper, Amethyst, Rose quartz, Smoky quartz, Rock crystal). Study of Igneous rocks (Granite, Pegmatite, Microgranite, Dolerite, Granodiorite and Dolerite porphyry), Metamorphic rocks (Hornblende schist, Fuschite quartzite, Hematite jasper quartzite) and Sedimentary rocks (Shale, Limestone, Sandstone) in hand specimen.	30

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: **05 marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 marks** • Mid-Term Exam: **10 marks** ➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks** • Mid-Term Exam: **NIL**	**End Term Examination:** **50** **20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Petrology, Igneous, Sedimentary, Metamorphic- Ehlers Ernest G. and Blatt, Harvey.
- A Text Book of Geology- P. K. Mukherjee.
- Engineering and General Geology- Parbin Singh.
- The Principles of Petrology- G. W. Tyrell**.**

Session: 2023-24	
Part A - Introduction	
Subject	Geology
Semester	II
Name of the Course	Field Geology
Course Code	B23-GGY-202
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	DSEC-1
Level of the course (As per Annexure-I)	100-199
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Learn the basic idea of field equipment. 2. Get elementary Idea about field work. 3. Study types of out crops present in the field. 4. Learn about drawing of a geological section. 5*. Learn about how to interpret field data.

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) **Internal Assessment Marks: 30 (20 Th.+ 10 Pr.)** **End Term Exam Marks: 70 (50 Th.+ 20 Pr.)**	**Exam Time: 03 Hrs.**

Part B- Contents of the Course	

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Field equipment and their uses: Topographic maps, Contour Maps, compass, Hammer, Altimeter, Measuring Tape, Field notebook.	11

II	Methods of field work: Preliminary survey, geological mapping, sample collection, laboratory work, writing a report.	11
III	Field outcrop patterns and geologic structures: Horizontal ground, undulating ground, Horizontal beds, inclined beds, Vertical beds.	12
IV	Drawing the geological cross sections: contour lines, structural attitude of data, Thickness of each formation, determination of Dip and Strike.	11
V*	Measuring Dip and Strike, Preparation of Geological Map of a given area. Collection of lithological data	30

Suggested Evaluation Methods	

Internal Assessment: ➢ **Theory** • Class Participation: **05 marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 marks** • Mid-Term Exam: **10 marks** ➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks** • Mid-Term Exam: **NIL**	**End Term Examination:** **50** **20**

Part C-Learning Resources	

Recommended Books/e-resources/LMS:
- A Guide to Field Geology- N.W. Gokhale.
- Field Geology-F.H. Lahee.
- Guide to Field Geology- S.M. Mathur.
- Manual of Field Geology- Robert R. Compton.

	Session: 2023-24	
	Part A - Introduction	
Subject	Geology	
Semester	II	
Name of the Course	Geoscience and Society	
Course Code	B23-GGY-203	
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-M2	
Level of the course (As per Annexure-I)	100-199	
Pre-requisite for the course (if any)	N.A.	
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Acquire Knowledge of the origin of Earth. 2. Understand Plate Tectonics and different type of plates of Earth. 3. Learn about Engineering Geology. 4. Learn about earth's resources and its significance.	

Credits	Theory	Total
	2	2
Contact Hours	30	30

Max. Marks: 50 Internal Assessment Marks: 15 End Term Exam Marks: 35	Exam Time: 3 Hrs.

Part B- Contents of the Course
Instructions for Paper- Setter Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Origin and structure of Earth, Origin and evolution of life through Earth history, Elementary idea of rocks, their types, rock cycle, minerals and gemstones.	7

II	Elementary idea of various Earth processes, continental drift and plate tectonics, Orogenic and epeirogenic movements.	8
III	Elementary idea of geological considerations in site evaluation of engineering, construction, mining and other geological works.	7
IV	Environmental changes through the Earth history, Significance of Earth resources to mankind and society, Hydrological cycle and water budget of an Earth.	8

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: **02 marks** • Seminar/presentation/assignment/quiz/class test etc.: **03 marks** • Mid-Term Exam: **10 marks**	**End Term Examination: 35**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Understanding the Earth, Press, F. and Siever, R., W.H. Freeman & Co.
- Palaeontology, Jain, P.C. and Anantharaman, M.S., Vishal Publishing Co.
- An Introduction to Physical Geology, Eleventh Edition, Tarbuck, Lutgens and Tasa, Pearson Publication.
- Principles of Engineering Geology and Geotechnics, Krynine/Judd., Jain Book Agency.
- Ground water Hydrology, Todd David K., PHI Learning.

<table>
<tr><td colspan="4" align="center">Session: 2023-24</td></tr>
<tr><td colspan="4" align="center">Part A - Introduction</td></tr>
<tr><td colspan="2">Subject</td><td colspan="2">Geology</td></tr>
<tr><td colspan="2">Semester</td><td colspan="2">II</td></tr>
<tr><td colspan="2">Name of the Course</td><td colspan="2">Rocks and Minerals</td></tr>
<tr><td colspan="2">Course Code</td><td colspan="2">B23-GGY-204</td></tr>
<tr><td colspan="2">Course Type:
(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="2">MDC-2</td></tr>
<tr><td colspan="2">Level of the course (As per Annexure-I)</td><td colspan="2">100-199</td></tr>
<tr><td colspan="2">Pre-requisite for the course (if any)</td><td colspan="2">N.A.</td></tr>
<tr><td colspan="2">Course Learning Outcomes (CLO):</td><td colspan="2">After completing this course, the learner will be able to:
1. Acquire knowledge about structural bonding and classification of the minerals.
2. Understand physical, chemical, and optical properties of silica group of minerals and mafic minerals.
3. Learn about Rocks, their types, composition and uses.
4. Get elementary idea about Magma and its composition, differentiation and Physical properties.
_____
5*. Understand the physical properties of Minerals and Rocks</td></tr>
<tr><td colspan="2" rowspan="2">Credits</td><td>Theory</td><td>Practical</td><td>Total</td></tr>
</table>

Credits	Theory	Practical	Total
	2	1	3
Contact Hours	30	30	60

<table>
<tr><td>Max. Marks: 75 (50 Th.+ 25 Pr.)
Internal Assessment Marks: 20 (15 Th.+ 05 Pr.)
End Term Exam Marks: 55 (35 Th.+ 20 Pr.)</td><td>Exam Time: 3 Hrs.</td></tr>
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<table>
<tr><td colspan="2" align="center">Part B- Contents of the Course</td></tr>
<tr><td colspan="2" align="center">Instructions for Paper- Setter
Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.</td></tr>
</table>

Unit	Topics	Contact Hours

I	Mineral: definition, Isomorphism, Polymorphism, Pseudomorphism, Uses of minerals, Classification of minerals. Physical and Chemical properties of minerals, Gem variety of minerals.	7	
II	Physical and Chemical properties of Quartz (Amethyst, Rosy quartz, Rutilated quartz, Chalcedony and Agate) and Feldspar (K- Feldspar, Albite, Anorthite, Orthoclase and Anorthoclase) group of minerals.	8	
III	Rocks: Definition, Classification of Rocks and Types of rocks, Igneous Rocks, Sedimentary Rocks, Metamorphic Rocks. Rock Cycle.	7	
IV	Composition and types of magma, Physical properties of magma: temperature, viscosity and density, Magmatic differentiation, Bowen reaction series.	8	
V*	Study of physical properties of minerals in hand specimen: Olivine, Garnet, Kyanite, Staurolite, Tourmaline, Augite, Actinolite, Tremolite, Hornblende, Talc, Muscovite, Biotite, Orthoclase, Plagioclase, Microcline and Quartz varieties (Chert, Flint, Chalcedony, Agate, Jasper, Amethyst, Rose quartz, Smoky quartz, Rock crystal). Study of Igneous rocks (Granite, Pegmatite, Microgranite, Dolerite, Granodiorite and Dolerite porphyry), Metamorphic rocks (Hornblende schist, Fuschite quartzite, Hematite jasper quartzite) and Sedimentary rocks (Shale, Limestone, Sandstone) in hand specimen.	30	

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: **02 marks** • Seminar/presentation/assignment/quiz/class test etc.: **03 marks** • Mid-Term Exam: **10 marks** ➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **05 marks** • Mid-Term Exam: **NIL**	**End Term Examination:** **35** **20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
 • Petrology, Igneous, Sedimentary, Metamorphic- Ehlers Ernest G. and Blatt, Harvey.
 • A Text Book of Geology- P. K. Mukherjee.
 • Engineering and General Geology- Parbin Singh.
 • The Principles of Petrology- G. W. Tyrell**.**

Session: 2023-24	
Part A - Introduction	
Subject	Geology
Semester	III
Name of the Course	Palaeontology and Stratigraphy
Course Code	B23-GGY-301
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-3/MCC-4/CC-M3
Level of the course (As per Annexure-I)	200-299
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Learn about fossils and evolutionary history of life. 2. Learn about morphology and classification of major vertebrate and invertebrate fossil species. 3. Learn about basic principles of stratigraphy and Geological Time Scale and unconformable contacts in detail. 4. Learn various branches of stratigraphy with special emphasis on sequence stratigraphy and basic concepts of correlation. 5*. Learn to study fossils and about stratigraphy of India.

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) **Internal Assessment Marks: 30 (20 Th.+ 10 Pr.)** **End Term Exam Marks: 70 (50 Th.+ 20 Pr.)**	**Exam Time: 03 Hrs.**

Part B- Contents of the Course	

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours

I	Fundamentals: definition, objectives and scope, nature of fossil record and their uses, types of fossil and their mode of preservation, evolution of life through ages.	11
II	Invertebrate paleontology: morphology, classification, evolutionary trends, geological history and geographical distribution of brachiopods, gastropods, cephalopods and trilobite.	11
III	Define stratigraphy: scope of stratigraphy, principles of stratigraphy, Unconformity: angular unconformity, disconformity, paraconformity, and nonconformity, Stratigraphic units: classification and nomenclature of units (lithostratigraphy, biostratigraphy, chrono-stratigraphy and geochronology).	12
IV	Precambrian Stratigraphy: Dharwar, Cuddapah and Vindhyans, Paleozoic Stratigraphy of India with emphasis on Gondwana Sequence, Deccan Traps.	11
V*	Practical & exercises on stratigraphy, Megascopic study of important invertebrate, vertebrate and plant fossils.	30

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: **05 marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 marks** • Mid-Term Exam: **10 marks** ➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks** • Mid-Term Exam: **NIL**	**End Term Examination:** **50** **20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- An Introduction to the Study of Fossil Plants, Walton, J., Adam & Charles Black.
- Paleontology Invertebrate, Woods, H., CBS Publications.
- Principles of Stratigraphy, Lemon, R.L., Merrill Publishing.
- Fundamentals of Historical Geology and Stratigraphy of India, Boggs, S., Jr. Wiley.

Part A - Introduction	
Subject	Geology
Semester	III
Name of the Course	Geochemistry
Course Code	B23-GGY-302
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC-5
Level of the course (As per Annexure-I)	200-299
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Acquire the idea about elemental composition in different spheres of Earth. 2. Know the application of ionic variability, trace and isotropic concentration in Geology. 3. Learn about geochemical cycles and dating methods. 4. Learn about stable isotopes. _____ 5*. To represent geochemical data graphically and to do interpretation.

Credits		Theory	Practical	Total
		3	1	4
Contact Hours		45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) **Internal Assessment Marks: 30 (20 Th.+ 10 Pr.)** **End Term Exam Marks: 70 (50 Th.+ 20 Pr.)**	**Exam Time: 03 Hrs.**

Part B- Contents of the Course	

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Chemical composition and characteristics of Atmosphere, Lithosphere and Hydrosphere, Goldschmidt's classification of	11

	elements, Application of Thermodynamics in Geology.	
II	Principles of ionic substitution in minerals, Physio-chemical factors in sedimentation, Applications of trace elements in Geology and REE patterns;	11
III	Geochemical cycles, Nitrogen Cycle, Oxygen Cycle, Carbon Cycle, Principles of U-Pb, Rb-Sr, K-Ar, C-14 methods in dating.	12
IV	Significance of stable isotope Geochemistry in Geology, Isotope fractionation in nature, Stable Isotopes of oxygen, carbon and hydrogen and their determination.	11
V*	To study the geochemical data in tabular form. To draw and interpret the Harker variation diagram. To draw O^{16} and O^{18} diagram from already present data.	30
Suggested Evaluation Methods		

Internal Assessment: ➢ **Theory** • Class Participation: **05 marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 marks** • Mid-Term Exam: **10 marks** ➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks** • Mid-Term Exam: **NIL**	**End Term Examination:** **50** **20**
Part C-Learning Resources	

Recommended Books/e-resources/LMS:
 • Introduction to Geochemistry, Mason, B. and Moore, C.B., 1991, Wiley Eastern.
 • Introduction to Geochemistry, Krauskopf, K.B., 1967, McGraw Hill.
 • Principles of Isotope Geochemistry, Faure, G., 1986, John Wiley.
 • Geochemistry, Brownlow, A.H. Prentice-Hall.
 • Geochemical Thermodynamics, Nordstrom, D.K. and Munoz, J.L, Blackwell.

<table>
<tr><td colspan="4" align="center">**Session: 2023-24**</td></tr>
<tr><td colspan="4" align="center">**Part A - Introduction**</td></tr>
<tr><td colspan="2">Subject</td><td colspan="2">Geology</td></tr>
<tr><td colspan="2">Semester</td><td colspan="2">III</td></tr>
<tr><td colspan="2">Name of the Course</td><td colspan="2">Earth Resources</td></tr>
<tr><td colspan="2">Course Code</td><td colspan="2">B23-GGY-303</td></tr>
<tr><td colspan="2">Course Type:
(CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="2">MDC-3</td></tr>
<tr><td colspan="2">Level of the course (As per Annexure-I)</td><td colspan="2">200-299</td></tr>
<tr><td colspan="2">Pre-requisite for the course (if any)</td><td colspan="2">N.A.</td></tr>
<tr><td colspan="2">Course Learning Outcomes (CLO):</td><td colspan="2">After completing this course, the learner will be able to:
1. Learn about the energy scenario, production, demand and consumption of important mineral resources in India.
2. Learn about origin, types, physical and chemical properties of coal.
3. Know about origin, migration and entrapment of petroleum.
4. Learn concepts of nuclear energy.

5*. Learn about Coal, Petroleum and Nuclear deposits of India.</td></tr>
<tr><td colspan="2">Credits</td><td>Theory</td><td>Practical</td><td>Total</td></tr>
</table>

		Theory	Practical	Total
Credits		2	1	3
Contact Hours		30	30	60

Max. Marks: 75 (50 Th.+ 25 Pr.) **Internal Assessment Marks: 20 (15 Th.+ 05 Pr.)** **End Term Exam Marks: 55 (35 Th.+ 20 Pr.)**	**Exam Time: 3 Hrs.**

Part B- Contents of the Course

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours

I	A brief overview of energy mineral resources of India, sources of renewable and non-renewable energy, Importance of sustainable energy resources in the development of the country.	7
II	Coal: definition, types, coalification process, rank of coal, properties of coal: moisture, ash content, volatile matter.	8
III	Source rock, Reservoir rock, traps, migration of oil and gas, characteristics of Reservoir Rocks and Cap Rock, major oil and gas fields of India.	7
IV	Radioactivity and nuclear energy, important atomic minerals, their mode of occurrence and association, U and Th deposits of India, Peaceful uses of nuclear energy, nuclear environmental hazards.	8
V*	Distribution of coal, petroleum, uranium and thorium deposits of India.	30

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory** • Class Participation: **02 marks** • Seminar/presentation/assignment/quiz/class test etc.: **03 marks** • Mid-Term Exam: **10 marks** ➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **05 marks** • Mid-Term Exam: **NIL**	**End Term Examination:** **35** **20**

Part C-Learning Resources
Recommended Books/e-resources/LMS: • Economic Mineral Deposits, Bateman, A.M., Chapman and Hall. • Ore Deposits of India, Gokhale and Rao, Thomson Press, Delhi. • India's Mineral Resources, Krishnaswami S., Oxford & IBH. • A Handbook of minerals, Crystals, Rocks and Ores, Parmod, A.O., New India Publishing Agency – 2009. • Economic Geology – Economic Mineral Deposits of India,, Prasad, U., CBS Publishers Ltd.

Session: 2023-24	
Part A - Introduction	
Subject	Geology
Semester	IV
Name of the Course	Structural Geology and Engineering Geology
Course Code	B23-GGY-401
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-4/MCC-6
Level of the course (As per Annexure-I)	200-299
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Understand about basics of structural geology. 2. Understand about the processes of folding, faulting and jointing of the strata and their identification in the field. 3. Get knowledge of engineering properties of rock and their use as construction material. 4. Know about various engineering structures, their site selection, evaluation and impact of natural hazards on engineering structures 5*.Learn about data analysis of Fold, Fault and RMR

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) Internal Assessment Marks: 30 (20 Th.+ 10 Pr.) End Term Exam Marks: 70 (50 Th.+ 20 Pr.)	Exam Time: 03 Hrs.

Part B- Contents of the Course	

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours

I	Elements of Structural Geology: Attitude of beds, Strike and Dip, Deformation of rocks - Force, Stress, Strain and Rupture, Folds: their morphology, genetic and geometric classification, recognition of folds on maps and in the field.	11
II	Faults, their geometric and genetic classification, recognition of faults on maps and in the field, Joints and their classification and recognition in field.	11
III	Introduction to Engineering Geology, Engineering properties of rocks, rocks as building and construction materials and basis of their selection and use, Rock mass rating.	12
IV	Engineering structures: dams, tunnels, buildings, highways and bridges, Techniques for selection and evaluation of sites for various engineering structures.	11
V*	Study of diagnostic morphological characters of faults and fold in hand specimen, Study of Geological/ Structural maps and cross-sections, Numerical exercise on structural problems, Numerical based on stress/strain and RMR.	30

Suggested Evaluation Methods

	End Term Examination:
Internal Assessment: ➢ **Theory** • Class Participation: **05 marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 marks** • Mid-Term Exam: **10 marks**	**50**
➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks** • Mid-Term Exam: **NIL**	**20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Structural Geology -M.P. Billing.
- Foundation of Structural Geology -R.G. Park.
- Principles of Structural Geology -G.M. Mevin.
- Theory of Structural Geology- N.W. Gokhale.
- Engineering Geology- Krynine and Judd.
- Engineering Geology- Blyth.
- Soil Mechanics- T.W. Lambe and R. Whitman.

Session: 2023-24	
Part A - Introduction	
Subject	Geology
Semester	IV
Name of the Course	Igneous and Metamorphic Petrology
Course Code	B23-GGY-402
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC-7
Level of the course (As per Annexure-I)	200-299
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Get elementary idea about Magma and its composition, differentiation and Physical properties. 2. Learn about Phase rules, component systems and various igneous rocks. 3. Understand about formation of various igneous rocks. 4. Get elementary idea of metamorphism and metamorphic rocks 5*. Learn about Igneous and Metamorphic rock samples.

Credits		Theory	Practical	Total
		3	1	4
Contact Hours		45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) Internal Assessment Marks: 30 (20 Th.+ 10 Pr.) End Term Exam Marks: 70 (50 Th.+ 20 Pr.)	Exam Time: 03 Hrs.

Part B- Contents of the Course	

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours

I	Composition and types of magma, Physical properties of magma: temperature, viscosity and density, magmatic differentiation and assimilation, Bowen reaction series.	11
II	Phase diagram and their uses in igneous and metamorphic petrology, Phase rule, one component system; two component systems: Congruent melting and Incongruent melting, Solid solution, Basics of ternary systems.	11
III	Igneous Rocks: common Igneous minerals, method of emplacement of igneous rocks, classification and texture of igneous rocks, Physical, petrographical and chemical properties of igneous rocks: Granite, Rhyolite, Pegmatite, Syenite, Diorite, Basalt and Dolerite.	12
IV	Metamorphism: definition, scope, agents and types, Concept of grade, zone and facies of metamorphism, Structure and texture of metamorphic rocks, metamorphic differentiation.	11
V*	Microscopic and Megascopic study of Igneous and Metamorphic Rock samples.	30

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: **05 marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 marks** • Mid-Term Exam: **10 marks**	**50**
➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks** • Mid-Term Exam: **NIL**	**20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Principles of Petrology- G.W. Tyrrell.
- Petrology- Ehlers and Blatt.
- Petrology of Igneous and Metamorphic Rocks- Best.
- Igneous and Metamorphic Petrology- Turner and Verhoogen.
- Petrology of Igneous Rocks- Hatch, Wells and Wells.
- Petrology of Igneous and Metamorphic Rocks of India- Chatterjee.
- Petrography Williams- Turner and Gilbert.
- The Studies of Rocks in Thin Section- Moor House.

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Session: 2023-24	
Part A - Introduction	
Subject	Geology
Semester	IV
Name of the Course	Sedimentology
Course Code	B23-GGY-403
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC-8
Level of the course (As per Annexure-I)	200-299
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Understand the concept of sedimentation, origin of sedimentary rocks and their grain size relations. 2. Understand the properties of sedimentary rocks, their structures and various types of sands. 3. Learn types of sedimentary rocks, their classification and significance. 4. Understand Heavy minerals and their role in various research aspects. 5*. Know about sedimentary rocks and sedimentary grains.

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) Internal Assessment Marks: 30 (20 Th.+ 10 Pr.) End Term Exam Marks: 70 (50 Th.+ 20 Pr.)	Exam Time: 03 Hrs.

Part B- Contents of the Course	

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours

I	Origin of sediments and sedimentary rocks, concept of size of sediments, descriptive size terms, size classification: shape and roundness of sediment grains; packing of grains.	11
II	Porosity, permeability, oolites, sperulites, Bedding and its significance, Sedimentary Structures: primary, secondary and organic. Shoestring sands, wedge shaped sands, sheet sands, sedimentary dykes and sills, reefs and mud mounds.	11
III	Gravels, Conglomerates: their classification and significance, Sandstones: their mineralogy and classification into arenites, wackes and mudstones. Matrix: its types; greensands, placer sands.	12
IV	Shales, marls and limestones, Heavy minerals: definition, methods of separation and their significance, provenance of sediments, lithification and diagenesis of sediments.	11
V*	Microscopic and Megascopic study of Sedimentary Rock samples. Grain Size Analysis.	30

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: **05 marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 marks** • Mid-Term Exam: **10 marks** ➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks** • Mid-Term Exam: **NIL**	**End Term Examination:** **50** **20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Sedimentary Rocks - F.J. Pettijohn.
- Petrology of Sedimentary Rocks- J. T. Greensmith.
- Sedimentary Rocks - Prothero and Schwab.
- Sedimentology and Stratigraphy - Gary Nichols.
- Principles of Sedimentology and Stratigraphy - Sam Boggs.
- Sedimentology – McLane.

	Session: 2023-24
	Part A - Introduction
Subject	Geology
Semester	IV
Name of the Course	Mineral Exploration
Course Code	B23-GGY-404
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	DSE-1
Level of the course (As per Annexure-I)	200-299
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Understand mineral exploration and applications of geological mapping in it. 2. Acquire basic concepts of geological and geochemical prospecting. 3. Know the role of geophysical methods and logging tools in mineral exploration. 4. Understand numerical approach to mineral exploration and various methods of ore reserve estimation as well as application of various software in mineral exploration. 5*. Learn about Reserve Estimation of minerals.

Credits		Theory	Practical	Total
		3	1	4
Contact Hours		45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) Internal Assessment Marks: 30 (20 Th.+ 10 Pr.) End Term Exam Marks: 70 (50 Th.+ 20 Pr.)	Exam Time: 03 Hrs.

| **Part B- Contents of the Course** ||

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours

I	Introduction: basic definitions, historical development, overview of various stages of mineral exploration: activities, data and tools.	11
II	Basic concepts of geological prospecting: geological indicators, lithological and structural controls of mineralization, geobotanical observations, Basic concepts of geochemical prospecting: planning, Soil Sampling analysis and interpretation.	11
III	Different techniques in mineral exploration: drilling, sampling, core logging, geological plans and sections, Overview of geophysical methods useful in mineral prospecting: gravity method, electromagnetic method.	12
IV	Principles of Reserve Estimation: density and bulk density, factors affecting reliability of reserve estimation, reserve estimation based on geometrical models (square, rectangular, triangular and polygon blocks).	11
V*	Regional exploration data analysis and ore reserve estimation, Exercises related to trenching, pitting and drilling data.	30

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: **05 marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 marks** • Mid-Term Exam: **10 marks**	**50**
➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks** • Mid-Term Exam: **NIL**	**20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Introduction to Mineral Exploration, Moon, C.J., Whateley, M.K.G. and Evans, A.M., Blackwell Science, 2nd Ed.
- Mineral Exploration: Recent Strategies, Rajendran, S., Srinivasamoothy, K. and Aravindan S., New India Pub.
- Mineral Prospecting and Exploration, T.C Bagchi, Kalyani Publication.
- Modelling and Geochemical Exploration of Mineral Deposits, Talapatra, A.K., Capital Publishing.

Session: 2023-24	
Part A - Introduction	
Subject	Geology
Semester	IV
Name of the Course	Mineral Resources
Course Code	B23-GGY-405
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	DSE-1
Level of the course (As per Annexure-I)	200-299
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Know about the energy scenario, production, demand and consumption of important mineral resources in India. 2. Learn about origin, types, physical and chemical properties of coal. 3. Know about origin, migration and entrapment of petroleum. 4. Get the concepts of nuclear energy and nuclear energy. _____ 5*. Learn about Coal, Petroleum and Nuclear deposits of India.

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) Internal Assessment Marks: 30 (20 Th.+ 10 Pr.) End Term Exam Marks: 70 (50 Th.+ 20 Pr.)	Exam Time: 03 Hrs.

Part B- Contents of the Course	

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours

I	A brief overview of energy mineral resources of India, sources of renewable and non-renewable energy, Importance of sustainable energy resources in the development of the country.	11
II	Coal: definition, types, coalification process, rank of coal, properties of coal: moisture, ash content, volatile matter.	11
III	Source rock, Reservoir rock, traps, migration of oil and gas, characteristics of Reservoir rocks and Cap rock, major oil and gas fields of India.	12
IV	Radioactivity and nuclear energy, important atomic minerals, their mode of occurrence and association, U and Th deposits of India. Peaceful uses of nuclear energy, nuclear environmental hazards.	11
V*	Distribution of coal, petroleum, uranium and thorium deposits of India.	30

<table>
<tr><td colspan="2" align="center">Suggested Evaluation Methods</td></tr>
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Internal Assessment:
➢ **Theory**
   • Class Participation: **05 marks**
   • Seminar/presentation/assignment/quiz/class test etc.: **05 marks**
   • Mid-Term Exam: **10 marks**

➢ **Practicum**
   • Class Participation: **NIL**
   • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks**
   • Mid-Term Exam: **NIL**

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End Term Examination:

50

20

</td>
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<tr><td colspan="2" align="center">Part C-Learning Resources</td></tr>
<tr><td colspan="2">

Recommended Books/e-resources/LMS:
   • Economic Mineral Deposits, Bateman, A.M., Chapman and Hall.
   • Ore Deposits of India, Gokhale and Rao, Thomson Press, Delhi.
   • India's Mineral Resources, Krishnaswami S., Oxford & IBH.
   • A Handbook of Minerals, Crystals, Rocks and Ores, Parmod, A.O., New India Publishing Agency – 2009.
   • Economic Geology – Economic Mineral Deposits of India,, Prasad, U., CBS Publishers Ltd. Thermodynamics, Nordstrom, D.K. and Munoz, J.L, Blackwell.

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KURUKSHETRA UNIVERSITY KURUKSHETRA

Scheme of Examination and Syllabus for

Under-Graduate Programme (Multidisciplinary)

Subject: Geology

Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance to NEP-2020 w.e.f. 2023-24 (in phased manner)

(First Year)

Course Type	Course Code	Nomenclature of Paper	Credits	Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
SEMESTER-1								
CC-1 @4 credit	B23-GGY-101	Physical Geology (T)	3	3	20	50	70	3 hrs.
		Physical Geology (P)	1	2	10	20	30	3 hrs.
CC-M1 @2 credit	B23-GGY-103	Fundamentals of Geology	2	2	15	35	50	3 hrs.
MDC-1 @3 credits	B23-GGY-104	An Introduction to Geology (T)	2	2	15	35	50	3 hrs.
		An Introduction to Geology (P)	1	2	5	20	25	3 hrs.
SEMESTER-2								
CC-2 @4 credit	B23-GGY-201	Petrology and Mineralogy (T)	3	3	20	50	70	3 hrs.
		Petrology and Mineralogy (P)	1	2	10	20	30	3 hrs.
CC-M2 @2 credit	B23-GGY-203	Geoscience and Society	2	2	15	35	50	3 hrs.
MDC-2 @3 credits	B23-GGY-204	Rocks and Minerals (T)	2	2	15	35	50	3 hrs.
		Rocks and Minerals (P)	1	2	5	20	25	3 hrs.

(Second Year)

Course Type	Course Code	Nomenclature of Paper	Credits	Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
SEMESTER-3								
CC-3/ CC-M3 @4 credit	B23-GGY-301	Palaeontology and Stratigraphy (T)	3	3	20	50	70	3 hrs.
		Palaeontology and Stratigraphy (P)	1	2	10	20	30	3 hrs.
MDC-3 @3 credits	B23-GGY-303	Earth Resources (T)	2	2	15	35	50	3 hrs.
		Earth Resources (P)	1	2	5	20	25	3 hrs.
SEMESTER-4								
CC-4 @4 credit	B23-GGY-401	Structural Geology and Engineering Geology (T)	3	3	20	50	70	3 hrs.
		Structural Geology and Engineering Geology (P)	1	2	10	20	30	3 hrs.

(Third Year)

Course Type	Course Code	Nomenclature of Paper	Credits	Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
SEMESTER-5								
CC-5 @4 credit	B23-GGY-501	GIS and Remote Sensing (T)	3	3	20	50	70	3 hrs.
		GIS and Remote Sensing (P)	1	2	10	20	30	3 hrs.
SEMESTER-6								
CC-6/ CC-M6 @4 credit	B23-GGY-601	Hydrogeology (T)	3	3	20	50	70	3 hrs.
		Hydrogeology (P)	1	2	10	20	30	3 hrs.

Session: 2023-24	

Part A - Introduction	
Subject	Geology
Semester	I
Name of the Course	Physical Geology
Course Code	B23-GGY-101
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-1
Level of the course (As per Annexure-I)	100-199
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Understand Geology and Its relation to mankind. 2. Understand Earth Interior. 3. Learn about the Lithospheric Plates of Earth. 4. Learn about formation of Volcanoes and Earthquakes. 5*. Understand the topography and physiography of an area.

Credits		Theory	Practical	Total
		3	1	4
Contact Hours		45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) **Internal Assessment Marks: 30 (20 Th.+ 10 Pr.)** **End Term Exam Marks: 70 (50 Th.+ 20 Pr.)**	**Exam Time: 03 Hrs.**

Part B- Contents of the Course

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Introduction to various branches of Earth Science, General characteristics and origin of the Universe, Solar System and its planets, Meteorites and Asteroids, Earth in the Solar System: origin, size, shape, mass, density, rotational and revolution parameters and its age.	11
II	Interior of Earth: Formation of core, mantle, crust, hydrosphere, atmosphere and biosphere, Convection in Earth's core and production of its magnetic field, Mechanical layering of the Earth.	11

III	Plate Tectonics: Concept of plate tectonics, sea-floor spreading and continental drift, Geodynamic elements of Earth: Mid Oceanic Ridges, trenches, transform faults and island arcs.	12
IV	Continents, mountains and rift valleys, Earthquake and Earthquake belts, Volcanoes: types, products and their distribution.	11
V*	Detailed study of topographic sheets, preparation of physiographic description of an area, study of Seismic Zones in India.	30

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: **05 marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 marks** • Mid-Term Exam: **10 marks**	**50**
➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks** • Mid-Term Exam: **NIL**	**20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Principles of Physical Geology- A. Holmes
- Plate Tectonics and Crustal Evolution- K.C. Condie
- Aspects of Tectonics- K.S. Valdiya
- Essentials of The Earth Science- K. Kelvin

Session: 2023-24	
Part A - Introduction	
Subject	Geology
Semester	I
Name of the Course	Fundamentals of Geology
Course Code	B23-GGY-103
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-M1
Level of the course (As per Annexure-I)	100-199
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Understand Geology and its branches. 2. Understand the Earth and Solar system. 3. Learn about Geological Time Scale and Physiography of India. 4. Learn ecological spheres and their relationship with Earth's surface.

Credits		Theory	Total
		2	2
Contact Hours		30	30

Max. Marks: 50 Internal Assessment Marks: 15 End Term Exam Marks: 35	Exam Time: 3 Hrs.

Part B- Contents of the Course	

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Geology as an interdisciplinary science, Branches of Geology and their basic understanding, Development of Geology: catastrophism, The birth of modern Geology.	7
II	Earth's place in the Solar System, physical features of the Earth, other basic features (mass, shape, size, density, etc.) of Earth. Interior of Earth.	8

III	Geological Time Scale, Physiographic and Geological sub-divisions of India, Basic concepts and Application of GIS and GPS.	7
IV	Physical and chemical properties of Earth's spheres: hydrosphere, atmosphere and biosphere, Distribution of land and water on Earth's surface.	8

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: **02 marks** • Seminar/presentation/assignment/quiz/class test etc.: **03 marks** • Mid-Term Exam: **10 marks**	**End Term Examination: 35**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
• Understanding the Earth, Press, F. and Siever, R., W.H. Freeman & Co.
• An Introduction to Physical Geology, Tarbuck, Lutgens, Tasa, Eleventh Edition, Pearson Publication.
• Principles of Physical Geology- A. Holmes

Session: 2023-24	
Part A - Introduction	
Subject	Geology
Semester	I
Name of the Course	An Introduction to Geology
Course Code	B23-GGY-104
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MDC-1
Level of the course (As per Annexure-I)	100-199
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Understand Geology and its branches. 2. Understand the Earth and Solar system. 3. Learn about Geological time scale and Physiography of India. 4. Learn ecological spheres and their relationship with Earth's surface. _____ 5*. Get Knowledge about interior of Earth through Models.

Credits		Theory	Practical	Total
		2	1	3
Contact Hours		30	30	60

Max. Marks: 75 (50 Th.+ 25 Pr.) **Internal Assessment Marks: 20 (15 Th.+ 05 Pr.)** **End Term Exam Marks: 55 (35 Th.+ 20 Pr.)**	**Exam Time: 3 Hrs.**

Part B- Contents of the Course	

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Geology as a Multidisciplinary science, Branches of Geology and their basic understanding, Development of Geology: catastrophism, The birth of modern Geology.	7
II	Earth's place in the Solar System, physical features of the Earth, other basic features (mass, shape, size, density, etc.) of Earth. Interior of Earth.	8

III	Geological Time Scale, Physiographic and Geological sub-divisions of India, Basic concepts and Application of GIS and GPS.	7
IV	Physical and chemical properties of Earth's spheres: hydrosphere, atmosphere and biosphere, Distribution of land and water on Earth's surface.	8
V*	Physiographic models of India, Models of Interior of Earth, Preparation of Maps of Geological subdivisions of India.	30

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory** • Class Participation: **02 marks** • Seminar/presentation/assignment/quiz/class test etc.: **03 marks** • Mid-Term Exam: **10 marks** ➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **05 marks** • Mid-Term Exam: **NIL**	**End Term Examination:** **35** **20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
 • Principles of Physical Geology- A. Holmes
 • Understanding the Earth, Press, F. and Siever, R., W.H. Freeman & Co.
 • An Introduction to Physical Geology, Tarbuck, Lutgens, Tasa, Eleventh Edition, Pearson Publication.

Session: 2023-24	
Part A - Introduction	
Subject	Geology
Semester	II
Name of the Course	Petrology and Mineralogy
Course Code	B23-GGY-201
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-2
Level of the course (As per Annexure-I)	100-199
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Acquire knowledge about structural bonding and classification of the minerals. 2. Understand physical, chemical, and optical properties of silica group of minerals and mafic minerals. 3. Learn about Rocks, their types, composition and uses. 4. Get elementary idea of Magma and its composition, differentiation and Physical properties. _____ 5*. Understand the physical properties of Minerals and Rocks.

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) **Internal Assessment Marks: 30 (20 Th.+ 10 Pr.)** **End Term Exam Marks: 70 (50 Th.+ 20 Pr.)**	**Exam Time: 03 Hrs.**

Part B- Contents of the Course	

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Mineral: definition; Types of bonding, Isomorphism, Polymorphism, Pseudomorphism, Classification of minerals, Physical and Chemical properties of minerals.	11
II	Optical properties of minerals, Study of physical, chemical and optical properties of Quartz (Amethyst, Rosy quartz, Rutilated quartz,	11

	Chalcedony and Agate), Amphibole (Hornblende, Tremolite and Actinolite), Pyroxene (Augite and Diopside) and Feldspar (K-Feldspar, Albite, Anorthite, Orthoclase and Anorthoclase) group of minerals.	
III	Rocks: Definition, Types of rocks, Igneous Rocks, Sedimentary Rocks, Metamorphic Rocks, Rock Cycle, uses associated with different Rock types, Introduction to Extraterrestrial Rocks.	12
IV	Composition and types of magma, Physical properties of magma: temperature, viscosity and density, Magmatic differentiation and assimilation, Bowen reaction series.	11
V*	Study of physical properties of minerals in hand specimen: Olivine, Garnet, Kyanite, Staurolite, Tourmaline, Augite, Actinolite, Tremolite, Hornblende, Talc, Muscovite, Biotite, Orthoclase, Plagioclase, Microcline and Quartz varieties (Chert, Flint, Chalcedony, Agate, Jasper, Amethyst, Rose quartz, Smoky quartz, Rock crystal). Study of Igneous rocks (Granite, Pegmatite, Microgranite, Dolerite, Granodiorite and Dolerite porphyry), Metamorphic rocks (Hornblende schist, Fuschite quartzite, Hematite jasper quartzite) and Sedimentary rocks (Shale, Limestone, Sandstone) in hand specimen.	30

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: **05 marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 marks** • Mid-Term Exam: **10 marks**	**50**
➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks** • Mid-Term Exam: **NIL**	**20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Petrology, Igneous, Sedimentary, Metamorphic- Ehlers Ernest G. and Blatt, Harvey.
- A Text Book of Geology- P. K. Mukherjee.
- Engineering and General Geology- Parbin Singh.
- The Principles of Petrology- G. W. Tyrell.

Part A - Introduction	
Subject	Geology
Semester	II
Name of the Course	Geoscience and Society
Course Code	B23-GGY-203
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-M2
Level of the course (As per Annexure-I)	100-199
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Acquire Knowledge of the origin of Earth. 2. Understand Plate Tectonics and different type of plates of Earth. 3. Learn about Engineering Geology. 4. Learn about earth's resources and its significance.

Credits	Theory	Total
	2	2
Contact Hours	30	30

Max. Marks: 50 **Internal Assessment Marks: 15** **End Term Exam Marks: 35**	**Exam Time: 3 Hrs.**

Part B- Contents of the Course

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Origin and structure of Earth, Origin and evolution of life through Earth history, Elementary idea of rocks, their types, rock cycle, minerals and gemstones.	7
II	Elementary idea of various Earth processes, continental drift and plate tectonics, Orogenic and epeirogenic movements.	8
III	Elementary idea of geological considerations in site evaluation of engineering, construction, mining and other geological works.	7

IV	Environmental changes through the Earth history, Significance of Earth resources to mankind and society, Hydrological cycle and water budget of an Earth.	8

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory** • Class Participation: **02 marks** • Seminar/presentation/assignment/quiz/class test etc.: **03 marks** • Mid-Term Exam: **10 marks**	**End Term Examination: 35**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Understanding the Earth, Press, F. and Siever, R., W.H. Freeman & Co.
- Palaeontology, Jain, P.C. and Anantharaman, M.S., Vishal Publishing Co.
- An Introduction to Physical Geology, Eleventh Edition, Tarbuck, Lutgens and Tasa, Pearson Publication.
- Principles of Engineering Geology and Geotechnics, Krynine/Judd., Jain Book Agency.
- Ground water Hydrology, Todd David K., PHI Learning.

<table>
<tr><td colspan="4" align="center">**Session: 2023-24**</td></tr>
<tr><td colspan="4" align="center">**Part A - Introduction**</td></tr>
<tr><td colspan="2">Subject</td><td colspan="2">Geology</td></tr>
<tr><td colspan="2">Semester</td><td colspan="2">II</td></tr>
<tr><td colspan="2">Name of the Course</td><td colspan="2">Rocks and Minerals</td></tr>
<tr><td colspan="2">Course Code</td><td colspan="2">B23-GGY-204</td></tr>
<tr><td colspan="2">Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="2">MDC-2</td></tr>
<tr><td colspan="2">Level of the course (As per Annexure-I)</td><td colspan="2">100-199</td></tr>
<tr><td colspan="2">Pre-requisite for the course (if any)</td><td colspan="2">N.A.</td></tr>
<tr><td colspan="2">Course Learning Outcomes (CLO):</td><td colspan="2">After completing this course, the learner will be able to:
1. Acquire knowledge about structural bonding and classification of the minerals.
2. Understand physical, chemical, and optical properties of silica group of minerals and mafic minerals.
3. Learn about Rocks, their types, composition and uses.
4. Get elementary idea about Magma and its composition, differentiation and Physical properties.

_____
5*. Understand the physical properties of Minerals and Rocks</td></tr>
<tr><td rowspan="2" colspan="2">Credits</td><td align="center">Theory</td><td align="center">Practical</td><td align="center">Total</td></tr>
</table>

	Theory	Practical	Total
Credits	2	1	3
Contact Hours	30	30	60

Max. Marks: 75 (50 Th.+ 25 Pr.)
Internal Assessment Marks: 20 (15 Th.+ 05 Pr.)
End Term Exam Marks: 55 (35 Th.+ 20 Pr.)

Exam Time: 3 Hrs.

Part B- Contents of the Course

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Mineral: definition, Isomorphism, Polymorphism, Pseudomorphism, Uses of minerals, Classification of minerals. Physical and Chemical properties of minerals, Gem variety of minerals.	7
II	Physical and Chemical properties of Quartz (Amethyst, Rosy quartz, Rutilated quartz, Chalcedony and Agate) and Feldspar (K- Feldspar,	8

	Albite, Anorthite, Orthoclase and Anorthoclase) group of minerals.		
III	Rocks: Definition, Classification of Rocks and Types of rocks, Igneous Rocks, Sedimentary Rocks, Metamorphic Rocks. Rock Cycle.	7	
IV	Composition and types of magma, Physical properties of magma: temperature, viscosity and density, Magmatic differentiation, Bowen reaction series.	8	
V*	Study of physical properties of minerals in hand specimen: Olivine, Garnet, Kyanite, Staurolite, Tourmaline, Augite, Actinolite, Tremolite, Hornblende, Talc, Muscovite, Biotite, Orthoclase, Plagioclase, Microcline and Quartz varieties (Chert, Flint, Chalcedony, Agate, Jasper, Amethyst, Rose quartz, Smoky quartz, Rock crystal). Study of Igneous rocks (Granite, Pegmatite, Microgranite, Dolerite, Granodiorite and Dolerite porphyry), Metamorphic rocks (Hornblende schist, Fuschite quartzite, Hematite jasper quartzite) and Sedimentary rocks (Shale, Limestone, Sandstone) in hand specimen.	30	

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: **02 marks** • Seminar/presentation/assignment/quiz/class test etc.: **03 marks** • Mid-Term Exam: **10 marks**	**35**
➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **05 marks** • Mid-Term Exam: **NIL**	**20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Petrology, Igneous, Sedimentary, Metamorphic- Ehlers Ernest G. and Blatt, Harvey.
- A Text Book of Geology- P. K. Mukherjee.
- Engineering and General Geology- Parbin Singh.
- The Principles of Petrology- G. W. Tyrell**.**

Session: 2023-24	
Part A - Introduction	
Subject	Geology
Semester	III
Name of the Course	Palaeontology and Stratigraphy
Course Code	B23-GGY-301
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-3/CC-M3
Level of the course (As per Annexure-I)	200-299
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Learn about fossils and evolutionary history of life. 2. Learn about morphology and classification of major vertebrate and invertebrate fossil species. 3. Learn about basic principles of stratigraphy and Geological Time Scale and unconformable contacts in detail. 4. Learn various branches of stratigraphy with special emphasis on sequence stratigraphy and basic concepts of correlation. 5*. Learn to study fossils and about stratigraphy of India.

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) Internal Assessment Marks: 30 (20 Th.+ 10 Pr.) End Term Exam Marks: 70 (50 Th.+ 20 Pr.)	Exam Time: 03 Hrs.

Part B- Contents of the Course	

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Fundamentals: definition, objectives and scope, nature of fossil record and their uses, types of fossil and their mode of preservation, evolution of life through ages.	11

II	Invertebrate paleontology: morphology, classification, evolutionary trends, geological history and geographical distribution of brachiopods, gastropods, cephalopods and trilobite.	11
III	Define stratigraphy: scope of stratigraphy, principles of stratigraphy, Unconformity: angular unconformity, disconformity, paraconformity, and nonconformity, Stratigraphic units: classification and nomenclature of units (lithostratigraphy, biostratigraphy, chrono-stratigraphy and geochronology).	12
IV	Precambrian Stratigraphy: Dharwar, Cuddapah and Vindhyans, Paleozoic Stratigraphy of India with emphasis on Gondwana Sequence, Deccan Traps.	11
V*	Practical & exercises on stratigraphy, Megascopic study of important invertebrate, vertebrate and plant fossils.	30

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory** • Class Participation: **05 marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 marks** • Mid-Term Exam: **10 marks** ➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks** • Mid-Term Exam: **NIL**	**End Term Examination:** **50** **20**

Part C-Learning Resources
Recommended Books/e-resources/LMS: • An Introduction to the Study of Fossil Plants, Walton, J., Adam & Charles Black. • Paleontology Invertebrate, Woods, H., CBS Publications. • Principles of Stratigraphy, Lemon, R.L., Merrill Publishing. • Fundamentals of Historical Geology and Stratigraphy of India, Boggs, S., Jr. Wiley.

Session: 2023-24	
Part A - Introduction	
Subject	Geology
Semester	III
Name of the Course	Earth Resources
Course Code	B23-GGY-303
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MDC-3
Level of the course (As per Annexure-I)	200-299
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Learn about the energy scenario, production, demand and consumption of important mineral resources in India. 2. Learn about origin, types, physical and chemical properties of coal. 3. Know about origin, migration and entrapment of petroleum. 4. Learn concepts of nuclear energy. _____ 5*. Learn about Coal, Petroleum and Nuclear deposits of India.

Credits		Theory	Practical	Total
		2	1	3
Contact Hours		30	30	60

Max. Marks: 75 (50 Th.+ 25 Pr.) **Internal Assessment Marks: 20 (15 Th.+ 05 Pr.)** **End Term Exam Marks: 55 (35 Th.+ 20 Pr.)**	**Exam Time: 3 Hrs.**

Part B- Contents of the Course

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	A brief overview of energy mineral resources of India, sources of renewable and non-renewable energy, Importance of sustainable energy resources in the development of the country.	7

II	Coal: definition, types, coalification process, rank of coal, properties of coal: moisture, ash content, volatile matter.	8
III	Source rock, Reservoir rock, traps, migration of oil and gas, characteristics of Reservoir Rocks and Cap Rock, major oil and gas fields of India.	7
IV	Radioactivity and nuclear energy, important atomic minerals, their mode of occurrence and association, U and Th deposits of India, Peaceful uses of nuclear energy, nuclear environmental hazards.	8
V*	Distribution of coal, petroleum,uranium and thorium deposits of India.	30

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: **02 marks** • Seminar/presentation/assignment/quiz/class test etc.: **03 marks** • Mid-Term Exam: **10 marks** ➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **05 marks** • Mid-Term Exam: **NIL**	**End Term Examination:** **35** **20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Economic Mineral Deposits, Bateman, A.M., Chapman and Hall.
- Ore Deposits of India, Gokhale and Rao, Thomson Press, Delhi.
- India's Mineral Resources, Krishnaswami S., Oxford & IBH.
- A Handbook of Minerals, Crystals, Rocks and Ores, Parmod, A.O., New India Publishing Agency – 2009.
- Economic Geology – Economic Mineral Deposits of India,, Prasad, U., CBS Publishers Ltd.

Session: 2023-24

Part A - Introduction

Subject	Geology
Semester	IV
Name of the Course	Structural Geology and Engineering Geology
Course Code	B23-GGY-401
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-4
Level of the course (As per Annexure-I)	200-299
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Understand about basics of structural geology. 2. Understand about the processes of folding, faulting and jointing of the strata and their identification in the field. 3. Get knowledge of engineering properties of rock and their use as construction material. 4. Know about various engineering structures, their site selection, evaluation and impact of natural hazards on engineering structures 5*.Learn about data analysis of Fold, Fault and RMR

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	45	30	75

Max. Marks: 100 (70 Th.+ 30 Pr.) Internal Assessment Marks: 30 (20 Th.+ 10 Pr.) End Term Exam Marks: 70 (50 Th.+ 20 Pr.)	Exam Time: 03 Hrs.

Part B- Contents of the Course

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01) question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Elements of Structural Geology: Attitude of beds, Strike and Dip, Deformation of rocks - Force, Stress, Strain and Rupture, Folds: their morphology, genetic and geometric classification, recognition of folds on maps and in the field.	11

II	Faults, their geometric and genetic classification, recognition of faults on maps and in the field, Joints and their classification and recognition in field.	11
III	Introduction to Engineering Geology, Engineering properties of rocks, rocks as building and construction materials and basis of their selection and use, Rock mass rating.	12
IV	Engineering structures: dams, tunnels, buildings, highways and bridges, Techniques for selection and evaluation of sites for various engineering structures.	11
V*	Study of diagnostic morphological characters of faults and fold in hand specimen, Study of Geological/ Structural maps and cross-sections, Numerical exercise on structural problems, Numerical based on stress/strain and RMR.	30

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: **05 marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 marks** • Mid-Term Exam: **10 marks** ➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 marks** • Mid-Term Exam: **NIL**	**End Term Examination:** **50** **20**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
- Structural Geology -M.P. Billing.
- Foundation of Structural Geology -R.G. Park.
- Principles of Structural Geology -G.M. Mevin.
- Theory of Structural Geology- N.W. Gokhale.
- Engineering Geology- Krynine and Judd.
- Engineering Geology- Blyth.
- Soil Mechanics- T.W. Lambe and R. Whitman.

KURUKSHETRA UNIVERSITY KURUKSHETRA

Scheme of Examination and Syllabus for

Vocational Course: Soil and Water Testing

Course Type: VOC-3

Course Code: B23-VOC-317

Subject: Geology

Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance to NEP-2020 w.e.f. 2023-24 (in phased manner)

Scheme of Examination

Course Type	Course Code	Nomenclature of Paper	Credits	Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
VOC-3 @4 credits	B23-VOC-317	Soil and Water Testing (T)	2	2	15	35	50	3 hrs.
		Soil and Water Testing (P)	2	4	15	35	50	3 hrs.

Syllabus for Examination

Session: 2023-24	
Part A - Introduction	
Subject	Geology
Semester	III
Name of the Course	Soil and Water Testing
Course Code	B23-VOC-317
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/ PC/AEC/VAC)	VOC-3
Level of the course (As per Annexure-I)	200-299
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: 1. Learn about basic concept of soil and water. 2. Understand about types of soil and aquifers. 3. Learn the analysis of soil samples. 4. Learn about water analysis. _____ 5*. Learn about soil and water testing.

Credits	Theory	Practical	Total
	2	2	4
Contact Hours	30	60	90

Max. Marks: 100 (50 Th.+ 50 Pr.) **Internal Assessment Marks: 30 (15 Th.+ 15 Pr.)** **End Term Exam Marks: 70 (35 Th.+ 35 Pr.)**	**Exam Time: 03 Hrs.**
Part B- Contents of the Course	

Instructions for Paper- Setter

Question No. 1 is compulsory and comprising short answer type questions spread over the entire syllabus, to be answered in 15-20 words. In addition to Question No. 1, there will be eight (08) questions, two (02) from each unit. A candidate has to answer four (04) questions, selecting at least one (01)

question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	Definition of Soil, Concept of Lithosphere, Soil components: Air, Water, Inorganic and Organic solids, Water and its quality parameters and drinking standard: Physical, Chemical and Biological quality of drinking water.	07
II	Formation of Soil, Types of soils, Soil profile and classification, Types of Aquifer: Aquitard, Aquiclude, Aquifer, Aquifuge, Hydrological Cycle, Zones of Groundwater.	08
III	Soil sample collection and processing purpose of soil testing and analysis, selection of field, method of soil sample collection, Methods of soil sample processing, precaution during soil collection and processing.	07
IV	Water analysis, Water composition analysis, hardness testing, Ph salinity, turbidity, TDS, conductivity testing, Minerals, BOD, COD.	08
V*	Determination of properties of Soil by Casagrande Apparatus, determination of TDS, conductivity, pH, turbidity, temperature, salinity.	60

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory** • Class Participation: **03 marks** • Seminar/presentation/assignment/quiz/class test etc.: **02 marks** • Mid-Term Exam: **10 marks** ➢ **Practicum** • Class Participation: **NIL** • Seminar/Demonstration/Viva-voce/Lab records etc.: **15 marks** • Mid-Term Exam: **NIL**	**End Term Examination:** **35** **35**

Part C-Learning Resources
Recommended Books/e-resources/LMS: • Hydrology – Principles, analysis and Design by H.M. Raghunath. • Pollution and Bioremediation by P. C. Trivedi. • Soil sampling, Preparation and analysis by Marcell Decker. • Microbiology by Micheal J. Pelczar, E.C.S Chand, Noel R. Krieg.

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

Scheme of Examination and Syllabus for

Under-Graduate Programme

Subject: <u>Statistics</u>

Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance to NEP-2020 w.e.f. 2023-24 (in phased manner)

KURUKSHETRA UNIVERSITY, KURUKSHETRA

(Established by the State Legislature Act XII of 1956)

('A+' Grade, NAAC Accredited

Scheme of Examination for Under-Graduate Programme
Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance to NEP-2020
w.e.f. 2023-24 (in phased manner)

Subject: Statistics

(First Year)

Remarks	Course Type	Course Code	Nomenclature of Paper	Credits	Contact Hours/ Week	Internal marks	End Term Marks	Total Marks	Duration of Exam
SEMESTER-I									
Scheme A & C	CC-1/ MCC-1 (4 credit)	B23-STA-101	Descriptive Statistics	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme C only	MCC-2 (4 credit)	B23-STA-102	Statistical Methods	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme A,B & D	CC-M1 (2 credit)	B23- STA -103	Introduction to Statistics	1	1	10	20	30	3 hrs.
			Practical	1	2	5	15	20	3 hrs.
Scheme A,B,C & D	MDC-1 (3 credits)	B23- STA -104	Business Statistics	2	2	15	35	50	3 hrs.
			Practical	1	2	5	20	25	3 hrs.
SEMESTER-II									
Scheme A & C	CC-2/ MCC-3 (4 credit)	B23- STA -201	Probability Theory and Distributions	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme C only	DSEC-1 (4 credit)	B23- STA -202	Numerical Analysis	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme A,B & D	CC-M2 (2 credit)	B23- STA -203	Introduction to Operations Research	1	1	10	20	30	3 hrs.
			Practical	1	2	5	15	20	3 hrs.
Scheme A,B,C & D	MDC-2 (3 credit)	B23- STA -204	Vital and Official Statistics	2	2	15	35	50	3 hrs.
			Practical	1	2	5	20	25	3 hrs.
Internship of 4 credits of 4-6 weeks duration after IInd Semester									

(Second Year)

Remarks	Course Type	Course Code	Nomenclature of Paper	Credits	Contact Hours/ Week	Internal marks	End Term Marks	Total Marks	Duration of Exam
			SEMESTER-III						
Scheme A,B & C	CC-3/ MCC-4 (4 credit)	B23- STA - 301	Applied Statistics	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme B and C	MCC-5 (4 credit)	B23- STA - 302	Advanced Probability	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme A,B,C & D	MDC-3 (3 credit)	B23- STA - 303	Industrial Statistics	2	2	15	35	50	3 hrs.
			Practical	1	2	5	20	25	3 hrs.
			SEMESTER-IV						
Scheme A, B & C	CC-4 MCC-6 (4 credit)	B23- STA - 401	Statistical Inference	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme B & C	MCC-7 (4 credit)	B23- STA - 402	Linear Algebra	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme B & C	MCC-8 (4 credit)	B23- STA - 403	Linear Programming	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme B & C	DSE-1 (4 credit) Select one option	B23- STA - 404 OR B23- STA - 405	Demography	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
			Statistical Methods in Epidemiology	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Internship of 4 credits of 4-6 weeks duration after 4th Semester (if not done after second semester)									

(Third Year)

Remarks	Course Type	Course Code	Nomenclature of Paper	Credits	Contact Hours/ Week	Internal marks	End Term Marks	Total Marks	Duration of Exam
			SEMESTER-V						
Scheme A, B & C	**CC-5 MCC-9 (4 credit)**	B23- STA - 501	Sample Surveys	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme B & C	**MCC-10 (4 credit)**	B23- STA - 502	Statistical Quality Control and Official Statistics	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme B & C	**DSE-2 (4 credit)** Select one option	B23- STA - 503 OR B23- STA - 504	Operations Research	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
			Statistical Simulation	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme B & C	**DSE-3 (4 credit)** Select one option	B23- STA - 505 OR B23- STA - 506	Linear Models	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
			Actuarial Statistics	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
			SEMESTER-VI						
Scheme A, B & C	**CC-6 MCC-11 (4 credit)**	B23- STA - 601	Design of Experiments	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme B & C	**MCC-12 (4 credit)**	B23- STA - 602	Advanced Statistical Inference	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme B & C	**DSE-4 (4 credit)** Select one option	B23- STA - 603 OR B23- STA - 604	Non-parametric Inference	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
			Bayesian Inference	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Scheme B & C	**DSE-5 (4 credit)** Select one option	B23- STA - 605 OR B23- STA - 606	Statistical Data Analysis using Statistical Softwares	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
			Data Analysis using Python	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.

(Fourth Year)

Remarks	Course Type	Course Code	Nomenclature of Paper	Credits	Contact Hours/ Week	Internal marks	End Term Marks	Total Marks	Duration of Exam
SEMESTER-VII (FOR HONOURS/HONOURS WITH RESEARCH IN STATISTICS)									
Same for Honours/ Honours with Research	**CC-H1 (4 credit)**	B23- STA -701	Multivariate Analysis	4	4	30	70	100	3 hrs.
	CC-H2 (4 credit)	B23- STA -702	Stochastic Processes	4	4	30	70	100	3 hrs.
	CC-H3 4 credit	B23- STA -703	Advanced Sampling Techniques and Design of Experiments	4	4	30	70	100	3 hrs.
	DSE-6 (4 credit) Select one	B23- STA -704 OR	Optimization Techniques	4	4	30	70	100	3 hrs.
		B23- STA -705	Biostatistics	4	4	30	70	100	3 hrs.
	PC-H1 (4 credit)	B23- STA -706	Practicum Course (Based on B23-STA-701 to B23-STA 704/ B23-STA 705)	4	8	30	70	100	3 hrs.
SEMESTER-VIII (FOR HONOURS IN STATISTICS)									
For Honours in Statistics	**CC-H4 (4 credit)**	B23- STA -801	Reliability Theory	4	4	30	70	100	3 hrs.
	CC-H5 (4 credit)	B23- STA -802	Queueing Theory	4	4	30	70	100	3 hrs.
	CC-H6 (4 credit)	B23- STA -803	Econometrics	4	4	30	70	100	3 hrs.
	DSE-7 (4 credit) Select one option	B23- STA -804 OR	R and its applications in Statistics	4	4	30	70	100	3 hrs.
		B23- STA -805	Information Theory						
	PC-H2 (4 credit)	B23- STA -806	Practicum Course (Based on B23-STA-801 to B23-STA 804/ B23-STA 805)	4	8	30	70	100	3 hrs.
SEMESTER-VIII (FOR HONOURS WITH RESEARCH IN STATISTICS)									
Honours with Research in Statistics	**CC-H4 (4 credit)**	B23- STA -801	Reliability Theory	4	4	30	70	100	3 hrs.
	CC-H5 (4 credit)	B23- STA -802	Queueing Theory	4	4	30	70	100	3 hrs.
	Project/Dissertation (12 credit)	B23- STA -807	Project/Dissertation	12	-	-	-	-	-

LIST OF VOC COURSES

Remarks	Course Type	Course Code	Nomenclature of Paper	Credits	Contact Hours/ Week	Internal marks	End Term Marks	Total Marks	Duration of Exam
Semester -III	VOC-I	B23- VOC - 121	Working with SPSS	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.
Semester -IV	VOC-II	B23- VOC - 121	Data Handling	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	3 hrs.

<table>
<tr><td colspan="3" align="center">Session: 2023-24</td></tr>
<tr><td colspan="3" align="center">Part A - Introduction</td></tr>
<tr><td>Subject</td><td colspan="2">Statistics</td></tr>
<tr><td>Semester</td><td colspan="2">First</td></tr>
<tr><td>Name of the Course</td><td colspan="2">Descriptive Statistics</td></tr>
<tr><td>Course Code</td><td colspan="2">B23-STA-101</td></tr>
<tr><td>Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="2">CC-1
MCC-1</td></tr>
<tr><td>Level of the course</td><td colspan="2">100-199</td></tr>
<tr><td>Pre-requisite for the course (if any)</td><td colspan="2">Mathematics as a Subject at 4.0 Level (Class XII)</td></tr>
<tr><td>Course Learning Outcomes (CLO):</td><td colspan="2">After completing this course, the learner will demonstrate knowledge of:
1. Tabular and graphical representation of data based on variables.
2. Measures of central tendency and measures of Dispersion.
3. Skewness and Kurtosis, Moments and their use in studying various characteristics of data. Theory of attributes: conditions for the consistency and criteria for the independence of data for attributes.
4. Correlation and regression, its properties and its implementation in real life problems.</td></tr>
<tr><td>CLO 5 is related to the practical components of the course</td><td colspan="2">5. Problems based on graphically representation of data, determination of Measures of Central Tendency, Measures of Dispersion, Correlation coefficient and Regression lines.</td></tr>
<tr><td>Credits</td><td>Theory</td><td>Practical</td></tr>
</table>

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5

Max. Marks: 100 Internal Assessment Marks: 30 End Term Exam Marks: 70	Time: 3 Hours

<div align="center">Part B- Contents of the Course</div>

<div align="center"><u>Instructions for Paper- Setter</u></div>

There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All

the questions will carry equal marks except the compulsory question.

Unit	Topics	Contact Hours
I	**Introduction of Statistics**: Origin, development, definition, scope, uses and limitations. **Types of Data**: Qualitative and quantitative data, nominal and ordinal data, time series data, discrete and continuous data, frequency and non-frequency data, Primary and Secondary data. **Presentation of Data**: Frequency distribution and cumulative frequency distribution, diagrammatic and graphical presentation of data, construction of bar, pie diagrams, histograms, frequency polygon, frequency curve and Ogives.	12
II	**Measures of Central Tendency and Location**: Arithmetic mean, median, mode, geometric mean, harmonic mean; partition values-quartiles, Deciles, percentiles and their graphical location along with their properties, applications, merits and demerits. **Measures of Dispersion**: Concept of dispersion, characteristics for an ideal measure of dispersion. Absolute and relative measures based on: range, inter quartile range, quartile deviation, coefficient of quartile deviation, Mean deviation, coefficient of mean deviation, variance, standard deviation (σ), coefficient of variation and properties of these measures, variance of the combined series.	11
III	**Moments:** Moments about mean and about any point and derivation of their relationships, effect of change of origin and scale on moments, Sheppard's correction for moments (without derivation), Pearson's β and γ coefficients. **Skewness and Kurtosis:** Coefficients of Skewness and Kurtosis with their interpretations. **Theory of Attributes**: Symbolic notations, dichotomy of data, class frequencies, order of class frequencies, consistency of data, independence and association of attributes, Yule's coefficient of association and coefficient of colligation and their relationship.	11
IV	**Correlation**: Concept and types of correlation, methods of finding correlation - scatter diagram, Karl Pearson's Coefficient of correlation (r), its properties, Rank correlation along with its merits and demerits, limits of rank correlation coefficient, tied or repeated ranks. (without derivation). **Linear Regression**: Principle of least squares, fitting of straight line, Two lines of regression, regression coefficients, properties of regression coefficients.	11

	Practicum	
	1. To construct frequency distributions using exclusive and inclusive methods 2. Representation of data using Bar and pie diagrams 3. Representation of data using Histogram, Frequency Polygon, Frequency Curve and Ogives. 4. To compute various measures of central tendency and dispersion. 5. To obtain first four moments for the given grouped frequency distribution. 6. To obtain various coefficients of Skewness and Kurtosis. 7. To discuss the association of attributes for a 2x2 contingency table using Yule's coefficient of association and colligation. 8. To compute Karl Pearson's coefficient of correlation for given bivariate frequency distribution. 9. To find Spearman's rank correlation coefficient for given data. 10. To fit the straight line for the given data on pairs of observations.	30

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory (20 marks)** • Class Participation: 05 marks • Seminar/presentation/assignment/quiz/class test etc.:05 marks • Mid-Term Exam: 10 marks ➢ **Practicum (10 marks)** • Class Participation: Nil • Seminar/Demonstration/Viva-voce/Lab records etc.:10 marks • Mid-Term Exam:　Nil	**End Term Examination:** ➢ **Theory:** 50 marks ➢ **Practicum:** 20 marks

Part C-Learning Resources

S. No.	Title of Book	Name of Author	Publisher
1.	Fundamental of Statistics Vol.I	Goon A.M., Gupta M.K., Dasgupta B.	World Press, Calcutta (2016)
2.	Statistics: principles And methods	Johnson R., Bhattacharyya G K	Wiley Publishers (2019)
3.	Basic Statistics	Aggarwal B.L.	New Age, International (2009)
4.	Fundamental of Mathematical Statistics	Gupta S.C.& kapoor V.K.	Sultan Chand & Sons (2020)
5.	Programmed Statistics	Aggarwal B.L.	New Age International (2017)

<table>
<tr><td colspan="3" align="center">**Session: 2023-24**</td></tr>
<tr><td colspan="3" align="center">**Part A - Introduction**</td></tr>
<tr><td>Subject</td><td colspan="2">Statistics</td></tr>
<tr><td>Semester</td><td colspan="2">First</td></tr>
<tr><td>Name of the Course</td><td colspan="2">**Statistical Methods**</td></tr>
<tr><td>Course Code</td><td colspan="2">B23-STA-102</td></tr>
<tr><td>Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="2">MCC-2</td></tr>
<tr><td>Level of the course</td><td colspan="2">100-199</td></tr>
<tr><td>Pre-requisite for the course (if any)</td><td colspan="2">Mathematics as a Subject at 4.0 Level (Class XII)</td></tr>
<tr><td>Course Learning Outcomes (CLO):</td><td colspan="2">After completing this course, the learner will demonstrate knowledge of:
1. Fundamental concepts of index number.
2. Weighted aggregative methods and Criteria of Good Index Number
3. Principle of least square, curve fitting of different curves.
4. Multivariate Regression analysis, its properties and multiple correlations.</td></tr>
<tr><td>CLO 5 is related to the practical components of the course</td><td colspan="2">5. Ability to deal with the problems based on Index Number, Regression analysis and Multivariate Data.</td></tr>
<tr><td>Credits</td><td>Theory</td><td>Practical</td><td>Total</td></tr>
</table>

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5

Max. Marks: 100 Internal Assessment Marks: 30 End Term Exam Marks: 70	Time: 3 Hours

<div align="center">

Part B- Contents of the Course

Instructions for Paper- Setter
</div>

There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.

Unit	Topics	Contact Hours
I	**Index Number:** Definition, problems involved in the construction of index numbers, calculation of index numbers - simple aggregate method, weighted aggregates method, simple average of price relatives, weighted average of price relatives, link relatives, chain indices, value index numbers, price and quantity index numbers, Interpretation, uses and limitations of index numbers.	12
II	**Weighted aggregative methods:** Laspeyre's, Paasche's, Drobish-Bowley Price Index Number, Marshall-Edgeworth, Walsch and Fisher's 'ideal' index numbers, Kelly's Price Index or Fixed Weight Method. **Criteria of Good Index Number**: Unit test, Time reversal test, factor reversal test, circular test. Errors in measurements of Index number. Base shifting of index numbers.	11
III	**Curve Fitting and Regression analysis**: Principle of least squares, second degree parabola, power curves of the type $Y=aX^b$, exponential curves of the types $Y=ab^X$ and $Y=ae^{bX}$. Angle between two regression lines, standard error of estimate obtained from regression line, correlation coefficient between observed and estimated values.	11
IV	**Multivariate Data**: Plane of regression, properties of residuals, variance of the residual. Multiple and partial correlation for three variables: coefficient of multiple correlation and its properties, coefficient of partial correlation and its properties, multiple correlation in terms of total and partial correlations and coefficient of determination.	11
	Practicum	
	1. To calculate price and quantity index numbers using the formulae given by Laspeyre, and Paasche. 2. To calculate price and quantity index numbers using the formulae given by Marshall- Edgeworth and Fisher. 3. To test the criteria of good index numbers. 4. Find Index number when base is shifted. 5. To fit the second degree curve for the given data. 6. To fit the curve of the type $Y=aX^b$ for the given data on pairs of observations. 7. To fit the exponential curve for the given data. 8. To obtain the regression lines for given data. 9. To compute partial and multiple correlation coefficients for the given tri-variate data. 10. To obtain plain of regression for the given tri - variate data.	30

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory (20 marks)** • Class Participation: 05 marks • Seminar/presentation/assignment/quiz/class test etc.:05 marks • Mid-Term Exam: 10 marks ➢ **Practicum (10 marks)** • Class Participation: Nil • Seminar/Demonstration/Viva-voce/Lab records etc.:10 marks • Mid-Term Exam: Nil	**End Term Examination:** ➢ **Theory**: 50 marks ➢ **Practicum**: 20 marks

Part C-Learning Resources

S. No.	Title of Book	Name of Author	Publisher
1.	Introduction to Theory of Statistics	Mood A.M., Graybill F.A. & Boes D.C.	McGraw Hill (1974)
2.	Fundamentals of Applied Statistics	Gupta S.C.& Kapoor V.K.	Sultan Chand & Sons (2020)
3.	Introduction to Mathematical Statistics	Kapoor & Sexena.	S.Chand (2010)
4.	Statistical Methods	Snedecor G.W. & Cochran W.G.	Iowa State Uni. Press (1989)
5.	Fundamentals of Mathematical Statistics	Gupta S.C.& Kapoor V.K.	Sultan Chand & Sons (2020)

<table>
<tr><td colspan="5" align="center">**Session: 2023-24**</td></tr>
<tr><td colspan="5" align="center">**Part A - Introduction**</td></tr>
<tr><td colspan="2">Subject</td><td colspan="3">Statistics</td></tr>
<tr><td colspan="2">Semester</td><td colspan="3">First</td></tr>
<tr><td colspan="2">Name of the Course</td><td colspan="3">**Introduction to Statistics**</td></tr>
<tr><td colspan="2">Course Code</td><td colspan="3">B23-STA-103</td></tr>
<tr><td colspan="2">Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="3">CC-M1</td></tr>
<tr><td colspan="2">Level of the course</td><td colspan="3">100-199</td></tr>
<tr><td colspan="2">Pre-requisite for the course (if any)</td><td colspan="3">NA</td></tr>
<tr><td colspan="2">Course Learning Outcomes (CLO):</td><td colspan="3">After completing this course, the learner will demonstrate knowledge of:
1. Tabular and graphical representation of data based on variables.
2. Measures of central tendency, measures of Dispersion
3. Moments and their use in studying various characteristics of data, Skewness and Kurtosis.
4. Correlation and regression, its properties and its implementation in real life problems.</td></tr>
<tr><td colspan="2">CLO 5 is related to the practical components of the course</td><td colspan="3">5. Problems based on graphically representation of data, determination of Measures of Central Tendency, Measures of Dispersion, Correlation coefficient and Regression lines.</td></tr>
<tr><td colspan="2">Credits</td><td align="center">Theory</td><td align="center">Practical</td><td align="center">Total</td></tr>
<tr><td colspan="2"></td><td align="center">1</td><td align="center">1</td><td align="center">2</td></tr>
<tr><td colspan="2">Contact Hours</td><td align="center">1</td><td align="center">2</td><td align="center">3</td></tr>
<tr><td colspan="3">Max. Marks: 50
Internal Assessment Marks: 15
End Term Exam Marks: 35</td><td colspan="2">Time: 3 Hours</td></tr>
<tr><td colspan="5" align="center">**Part B- Contents of the Course**</td></tr>
<tr><td colspan="5" align="center">**Instructions for Paper- Setter**
There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.</td></tr>
</table>

Unit	Topics	Contact Hours
I	**Introduction of Statistics**: Origin, development, definition, scope, uses and limitations. **Presentation of Data**: Qualitative and quantitative data, Frequency distribution and cumulative frequency distribution, diagrammatic and graphical presentation of data, construction of bar, pie diagrams, histograms, frequency polygon, frequency curve and ogives.	4
II	**Measures of Central Tendency**: Arithmetic mean, median, mode, along with their properties, applications, merits and demerits. **Measures of Dispersion**: Concept of dispersion, characteristics for an ideal measure of dispersion. range, inter quartile range, quartile deviation, Mean deviation, variance, standard deviation (σ), coefficient of variation.	4
III	**Moments:** Moments about mean and about any point (without derivation), Pearson's β and γ coefficients. **Skewness and Kurtosis:** Coefficients of Skewness and Kurtosis with their interpretations.	4
IV	**Correlation and regression**: Concept of correlation and regression, Karl Pearson's Coefficient of correlation, Principle of least squares, two lines of regression.	3
	Practicum	
	1. To construct frequency distributions using exclusive and inclusive methods 2. Representation of data using Bar and pie diagrams 3. Representation of data using Histogram, Frequency Polygon, Frequency Curve and Ogives. 4. To compute various measures of central tendency and dispersion. 5. To obtain first four moments for the given grouped frequency distribution. 6. To obtain various coefficients of Skewness and kurtosis. 7. To compute Karl Pearson's coefficient of correlation for given bivariate frequency distribution. 8. To fit the straight line for the given data on pairs of observations.	30

Suggested Evaluation Methods		

Internal Assessment:	End Term Examination:
➢ **Theory (10 marks)** • Class Participation: 4 marks • Seminar/presentation/assignment/quiz/class test etc. Nil • Mid-Term Exam: 6 marks ➢ **Practicum (05 marks)** • Class Participation: Nil • Seminar/Demonstration/Viva-voce/Lab records etc.:05 marks • Mid-Term Exam: Nil	**End Term Examination:** ➢ **Theory**: 20marks ➢ **Practicum**: 15 marks

Part C-Learning Resources

S. No.	Title of Book	Name of Author	Publisher
1.	Fundamental of Statistics Vol.I	Goon A.M., Gupta M.K., Dasgupta B.	World Press, Calcutta (2016)
2.	Statistics: principles and methods	Johnson R., Bhattacharyya G K	Wiley Publishers (2019)
3.	Basic Statistics	Aggarwal B.L.	New Age, International (2009)
4.	Fundamentals of Mathematical Statistics	Gupta S.C.& Kapoor V.K.	Sultan Chand & Sons (2020)
5.	Programmed Statistics	Aggarwal B.L.	New Age International (2017)

<table>
<tr><td colspan="4" align="center">**Session: 2023-24**</td></tr>
<tr><td colspan="4" align="center">**Part A - Introduction**</td></tr>
<tr><td colspan="2">Subject</td><td colspan="2">Statistics</td></tr>
<tr><td colspan="2">Semester</td><td colspan="2">First</td></tr>
<tr><td colspan="2">Name of the Course</td><td colspan="2">**Business Statistics**</td></tr>
<tr><td colspan="2">Course Code</td><td colspan="2">B23-STA-104</td></tr>
<tr><td colspan="2">Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="2">MDC</td></tr>
<tr><td colspan="2">Level of the course</td><td colspan="2">100-199</td></tr>
<tr><td colspan="2">Pre-requisite for the course (if any)</td><td colspan="2">NA</td></tr>
<tr><td colspan="2">Course Learning Outcomes (CLO):</td><td colspan="2">After completing this course, the learner will demonstrate knowledge of:
1. The fundamental concepts of Index Numbers. Construction of price, quantity and value Index numbers.
2. Different weighted aggregated methods
3. Criteria of good index number
4. The fundamental concepts of Demand Analysis.</td></tr>
<tr><td colspan="2">CLO 5 is related to the practical components of the course</td><td colspan="2">5. To measure price and quantity index number using various index formulae. To check an index number is good or not, and to find equilibrium price, quantity exchanged and elasticity of demand.</td></tr>
<tr><td>Credits</td><td align="center">Theory</td><td align="center">Practical</td><td align="center">Total</td></tr>
<tr><td></td><td align="center">2</td><td align="center">1</td><td align="center">3</td></tr>
<tr><td>Contact Hours</td><td align="center">2</td><td align="center">2</td><td align="center">4</td></tr>
<tr><td colspan="2">Max. Marks: 75
Internal Assessment Marks: 20
End Term Exam Marks: 55</td><td colspan="2">Time: 3 Hours</td></tr>
<tr><td colspan="4" align="center">**Part B- Contents of the Course**</td></tr>
<tr><td colspan="4" align="center">**Instructions for Paper- Setter**
There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.</td></tr>
</table>

Unit	Topics	Contact Hours
I	**Index Number**: Definition, Characteristics of index numbers, types of index numbers, methods to construct price, quantity and value index numbers. problems involved in the construction of index numbers, methods of constructing index numbers.	09
II	**Weighted aggregative method:** Laspeyre's, Paasche's, Drobish-Bowley Price Index Number, Marshall-Edgeworth, Walsch and Fisher's 'ideal' index numbers, Kelly's Price Index or Fixed Weight Method.	07
III	**Criteria of Good Index Number**: Unit test, Time reversal test, factor reversal test, Circular test, errors in measurements of index numbers, Interpretation, uses and limitations of index numbers.	07
IV	**Demand Analysis**: Introduction to Demand and Supply, Laws of demand and supply, Equilibrium Price, Giffen's paradox, price elasticity of demand along with their interpretations.	07
	Practicum	
	1. To calculate price index numbers using the formulae given by Laspeyre, and Paasche. 2. To calculate price index numbers using the formulae given by Marshall- Edgeworth and Fisher. 3. To compute quantity index number using Laspeyre, Paasche and Fisher index numbers. 4. To test the criteria of good index numbers. 5. To verify Fisher's index satisfying time reversal test 6. To verify Fisher's index satisfying factor reversal test 7. Find the equilibrium price and quantity exchanged from demand and supply curves. 8. To find elasticity of demand for a given demand function.	30
	Suggested Evaluation Methods	

Internal Assessment:	End Term Examination:
➢ **Theory (15 marks)** • Class Participation: 04 marks • Seminar/presentation/assignment/quiz/class test etc.:04 marks • Mid-Term Exam: 07 marks ➢ **Practicum (05 marks)** • Class Participation: Nil • Seminar/Demonstration/Viva-voce/Lab records etc.:05 marks • Mid-Term Exam: Nil	**End Term Examination:** ➢ **Theory**: 35 marks ➢ **Practicum**: 20 marks

Part C-Learning Resources			
<u>S. No.</u>	<u>Title of Book</u>	<u>Name of Author</u>	<u>Publisher</u>
1.	Introduction to Mathematical Statistics	Kapoor & Sexena.	S.Chand (2010)
2.	Statistical Methods	Snedecor G.W. & Cochran W.G.	Iowa State Uni. Press (1989)
3.	Fundamentals of Applied Statistics	Gupta S.C.& Kapoor V.K.	Sultan Chand & Sons (2020)
4.	Fundamental of Statistics Vol.II	Goon A.M., Gupta M.K., Dasgupta B.	World Press, Calcutta (2016)

Session: 2023-24	
Part A - Introduction	
Subject	Statistics
Semester	Second
Name of the Course	**Probability Theory and Distributions**
Course Code	B23- STA -201
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-2 MCC-3
Level of the course	100-199
Pre-requisite for the course (if any)	Mathematics as a Subject at 4.0 Level (Class XII)
Course Learning Outcomes (CLO):	After completing this course, the learner will demonstrate knowledge of: 1. Solve probabilistic problems using fundamental concepts of Probability. 2. Random variables and its probability functions, joint, marginal and conditional probability distribution. 3. Expectation for the random variables with their distributions and properties. Moment generating function, cumulant generating function and characteristic function. 4. Standard probability distributions and their properties.
CLO 5 is related to the practical components of the course	5. Solve problems based on Probability, p.m.f, p.d.f, probability distributions and fitting of standard distributions.

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5

Max. Marks: 100 Internal Assessment Marks: 30 End Term Exam Marks: 70	Time: 3 Hours
Part B- Contents of the Course	

Instructions for Paper- Setter

There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.

Unit	Topics	Contact Hours
I	**Concepts in Probability:** Random experiment, trial, sample point, sample space, operation of events, exhaustive, equally likely, mutually exclusive and independent events; Definition of probability-classical, statistical and axiomatic approach. Conditional probability. Addition and Multiplication laws of probability and their extension to n events. Baye's theorem and its applications.	12
II	**Random Variable and Probability Functions:** Definition of random variable, discrete and continuous random variable, probability function, probability mass function and probability density functions, distribution function and its properties.	11
III	**Mathematical Expectation and Generating Functions**: Expectation of single random variables and its properties. Moments and moment generating function, and characteristic function. Uniqueness theorem (without proof) along with application.	11
IV	**Standard probability distributions**: Uniform, Binomial, Poisson, Geometric, Normal and Exponential distributions along with their properties and limiting/approximation cases.	11
	Practicum	
	1. Problem based on probability. 2. Problems based on Bayes' theorem. 3. Problems based on probability mass function. 4. Problems based on probability density function. 5. Application problems based on binomial distribution. 6. Fitting of binomial distributions. 7. Application problems based on Poisson distribution. 8. Fitting of Poisson distributions. 9. Problems based on area property of Normal distribution. 10. Fitting of Normal and Exponential distributions.	30

Suggested Evaluation Methods	

Internal Assessment:
 	
➢ **Theory (20 marks)**
   • Class Participation: 05
   • Seminar/presentation/assignment/quiz/class test etc.:05
   • Mid-Term Exam: 10
 	
➢ **Practicum (10 marks)**
   • Class Participation: Nil
   • Seminar/Demonstration/Viva-voce/Lab records etc.:10
   • Mid-Term Exam: Nil
	End Term Examination:
	➢ **Theory**: 50 marks
	
	➢ **Practicum**: 20 marks

Part C-Learning Resources

S. No.	Title of Book	Name of Author	Publisher
1.	Fundamentals of Mathematical Statistics	Gupta S.C.& Kapoor V.K.	Sultan Chand & Sons (2014)
2.	Elementary Probability	David S.	Oxford Press (2003)
3.	Introduction to Mathematical Statistics	Hoel P.G.	Asia Pub. House (2018)
4.	New Mathematical Statistics	Bansi Lal& Arora S.	Satya Prakashan (1989)
5.	Introduction to Mathematical Statistics	Kapoor & Sexena.	S.Chand (1960)

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<table>
<tr><td colspan="4" align="center">**Session: 2023-24**</td></tr>
<tr><td colspan="4" align="center">**Part A - Introduction**</td></tr>
<tr><td colspan="2">Subject</td><td colspan="2">Statistics</td></tr>
<tr><td colspan="2">Semester</td><td colspan="2">Second</td></tr>
<tr><td colspan="2">Name of the Course</td><td colspan="2">Numerical Analysis</td></tr>
<tr><td colspan="2">Course Code</td><td colspan="2">B23- STA -202</td></tr>
<tr><td colspan="2">Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="2">DSEC-1</td></tr>
<tr><td colspan="2">Level of the course</td><td colspan="2">100-199</td></tr>
<tr><td colspan="2">Pre-requisite for the course (if any)</td><td colspan="2">Mathematics as a Subject at 4.0 Level (Class XII)</td></tr>
<tr><td colspan="2">Course Learning Outcomes (CLO):</td><td colspan="2">After completing this course, the learner will demonstrate knowledge of:
1. Solution of Equations and Linear System of Algebraic equations
2. Exercise Interpolation and Approximation
3. Numerically differentiation and Integration
4. Initial Value Problems For Ordinary Differential Equations.</td></tr>
<tr><td colspan="2">CLO 5 is related to the practical components of the course</td><td colspan="2">5. Roots of the equations using various methods, solving the system of equations, Interpolation, Extrapolations, Numerical differentiation and integration and solve the initial value problem.</td></tr>
<tr><td>Credits</td><td align="center">Theory</td><td align="center">Practical</td><td align="center">Total</td></tr>
<tr><td></td><td align="center">3</td><td align="center">1</td><td align="center">4</td></tr>
<tr><td>Contact Hours</td><td align="center">3</td><td align="center">2</td><td align="center">5</td></tr>
<tr><td colspan="2">Max. Marks: 100
Internal Assessment Marks: 30
End Term Exam Marks: 70</td><td colspan="2">Time: 3 Hours</td></tr>
<tr><td colspan="4" align="center">**Part B- Contents of the Course**</td></tr>
<tr><td colspan="4" align="center">**Instructions for Paper- Setter**

There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.</td></tr>
</table>

Unit	Topics	Contact Hours
I	**Solution of Equations**: introduction of algebraic and transcendental equations, Bisection Method, Method of false position, Newton-Raphson method. **Linear System of Algebraic equations**: Direct methods – Gauss elimination method, Gauss Jordan method. Iterative method – Gauss-Jacobi iteration method, Gauss Seidel Iteration method.	12
II	**Interpolation and Approximation**: Concept of interpolation and extrapolation, difference operators, relation between operators, Lagrange interpolation, Newton divided difference, Newton's Forward Difference Interpolation, Newton's Backward Difference Interpolation.	11
III	**Numerical differentiation**: Introduction, differentiation Using Newton's Forward, Backward and Divided Difference along with their applications. (without derivations) **Numerical integration**: Integration Rules Based on Trapezoidal rule, Simpson's $1/3^{rd}$ and $3/8^{th}$ formulae.	11
IV	**Initial Value Problems For Ordinary Differential Equations**: Introduction of ordinary differential equations, difference between initial value and boundary value problems, Picard's method, Euler method, Taylor Series method and Runge-Kutta Methods.	11
	Practicum	

	1. Find the roots of the equation using Bisection Method, Method of false position, and Newton-Raphson method.
	2. Solve the system of equations using Gauss-Jacobi iteration method, Gauss Seidel Iteration method.
	3. To interpolate the required value for the given data using Newton' s
	4. Forward interpolation formula for equal intervals
	5. Backward interpolation formula for equal intervals.
	6. To interpolate the required value for the given data of using
	    i. Newton's divided difference formula
	    ii. Lagrange's interpolation formula.
	7. Find the derivative using Newton's Forward, Backward and Divided Difference.
	8. To evaluate the integral of the type $\int_a^b f(x)\,dx$ using
	9. Trapezoidal rule,
	10. Simpson' s one-third rule
	11. Simpson's three- eight rule
	12. Solve the initial value problem using Picard's method, Euler method, Taylor Series method.
		30

Suggested Evaluation Methods	

Internal Assessment:
 	
➢ **Theory (20 marks)**
   • Class Participation: 05 marks
   • Seminar/presentation/assignment/quiz/class test etc.:05 marks
   • Mid-Term Exam: 10 marks
 	
➢ **Practicum (10 marks)**
   • Class Participation: Nil
   • Seminar/Demonstration/Viva-voce/Lab records etc.:10 marks
   • Mid-Term Exam: Nil
	End Term Examination:
	➢ **Theory**: 50 marks
	
	➢ **Practicum**: 20 marks

Part C-Learning Resources			
S. No.	**Title of Book**	**Name of Author**	**Publisher**
1.	Introductory Methods of Numerical Analysis	Sastry S.S.	Prentice Hall (2012)
2.	Computer Based Numerical Algorithms	Krishnamurthy E.V. & Sen S.K.	Affiliated East West Press (2009)
3.	Computer Oriented Numerical Methods	Rajaraman V.	Prentice Hall (2019)
4.	Numerical Methods	Jain M.K., Iyengar S.R.K. & Jain R.K.	New Age (2010) International publishers

Part A - Introduction

Subject	Statistics
Semester	Second
Name of the Course	**Introduction to Operations Research**
Course Code	B23-STA-203
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	**CC-M2**
Level of the course	100-199
Pre-requisite for the course (if any)	NA
Course Learning Outcomes (CLO):	After completing this course, the learner will demonstrate knowledge of: 6. Fundamental concepts of Operational Research Techniques 7. Linear Programming Problems and their formulations. 8. Graphical procedure and simplex method, to solve for artificial variables using Big-M & Two-Phase methods. 9. How to minimize cost for any balanced transportation problem using different methods.
CLO 5 is related to the practical components of the course	10. Formulation of LPP, solution of LPP by using Simplex, Big-M and Two Phase methods. Basic feasible solution of Transportation Problem.

Credits	Theory	Practical	Total
	1	1	2
Contact Hours	1	2	3

Max. Marks: 50 Internal Assessment Marks: 15 End Term Exam Marks: 35	Time: 3 Hours

Part B- Contents of the Course

Instructions for Paper- Setter

There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.

Unit	Topics	Contact Hours
I	**Introduction**: Objective of O.R., nature and definitions of O.R., Scope of O.R., Meaning and necessity of O.R. models, classification of O.R. models, Advantages & disadvantages of O.R. models. Steps in model formulation, principles of modeling. Characteristics of a good model.	4
II	**Linear programming problem** (**LPP**): Definition, objective function, constraints, concept of initial basic feasible solution, graphical solution of L.P.P., limitations of graphical method, Simplex method to solve L.P.P. and computation procedure for Simplex method.	4
III	**Artificial variable techniques**: Introduction of artificial variables, Big-M method or M-technique, Two-phase method (only numericals).	4
IV	**Transportation Problem (T.P.):** Basic feasible solution. Different methods to find initial feasible solution: North-West corner rule, Row minima method, column minima method, Matrix minima method (Least cost entry method), Vogel's Approximation method (or Unit cost penalty method).	3
	Practicum	
	9. Mathematical formulation of L.P.P and solving the problem using graphical Method. 10. Solve the problem using Simplex technique. 11. Solving the LPP problems using Big M method. 12. Solving the LPP problems using Two-Phase method. 13. Identifying Special cases by Graphical and Simplex method and interpretation of a. Degenerate solution b. Unbounded solution c. Alternate solution d. Infeasible solution 14. Allocation problem using Transportation model. 15. To find the basic solutions of transportation problem using various methods.	30

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory (10 marks)** • Class Participation: 4 marks • Seminar/presentation/assignment/quiz/class test etc.: Nil • Mid-Term Exam: 6 marks ➢ **Practicum (05 marks)** • Class Participation: Nil • Seminar/Demonstration/Viva-voce/Lab records etc.:05 marks • Mid-Term Exam: Nil	**End Term Examination:** ➢ **Theory**: 20marks ➢ **Practicum**: 15marks

Part C-Learning Resources			
<u>S. No.</u>	<u>Title of Book</u>	<u>Name of Author</u>	<u>Publisher</u>
1.	Linear Programming	Hadley G.	Narosa (2002)
2.	Operations Research: An Introduction	Taha H.A.	Macmillan Pub. Co. (2019)
3.	Operations Research	Goel B.S. & Mittal S.K.	Pragati Prakashan (2014)
4.	Operations Research	Sharma S.D.	KedarNath& Co.(2017)
5.	Operations Research	Sharma J.K.	Macmillan Pub. (2017)

<table>
<tr><td colspan="4" align="center">**Session: 2023-24**</td></tr>
<tr><td colspan="4" align="center">**Part A - Introduction**</td></tr>
<tr><td colspan="2">Subject</td><td colspan="2">Statistics</td></tr>
<tr><td colspan="2">Semester</td><td colspan="2">Second</td></tr>
<tr><td colspan="2">Name of the Course</td><td colspan="2">Vital and Official Statistics</td></tr>
<tr><td colspan="2">Course Code</td><td colspan="2">B23-STA-204</td></tr>
<tr><td colspan="2">Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="2">MDC</td></tr>
<tr><td colspan="2">Level of the course</td><td colspan="2">100-199</td></tr>
<tr><td colspan="2">Pre-requisite for the course (if any)</td><td colspan="2">NA</td></tr>
<tr><td colspan="2">Course Learning Outcomes (CLO):</td><td colspan="2">After completing this course, the learner will demonstrate knowledge of:
6. Learn concept of Vital statistics and Indian Official Statistics.
7. Measure different Mortality rates useful to improve the public health.
8. Measure different Fertility rates for efficient and better planning.
9. Measure Population growth for predicting, managing, monitoring the growth of population.</td></tr>
<tr><td colspan="2">CLO 5 is related to the practical components of the course</td><td colspan="2">10. Measures of crude death rates, specific death rates, infant mortality rate and standardized death rates. Measures of Crude Birth rate, General Fertility rate, total fertility rate, gross reproduction rate and net reproduction rate along with interpretation.</td></tr>
<tr><td>Credits</td><td align="center">Theory</td><td align="center">Practical</td><td align="center">Total</td></tr>
<tr><td></td><td align="center">2</td><td align="center">1</td><td align="center">3</td></tr>
<tr><td>Contact Hours</td><td align="center">2</td><td align="center">2</td><td align="center">4</td></tr>
<tr><td colspan="2">Max. Marks: 75
Internal Assessment Marks: 20
End Term Exam Marks: 55</td><td colspan="2">Time: 3 Hours</td></tr>
<tr><td colspan="4" align="center">**Part B- Contents of the Course**</td></tr>
<tr><td colspan="4" align="center">**Instructions for Paper- Setter**
There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the</td></tr>
</table>

Unit	Topics	Contact Hours
	questions will carry equal marks except the compulsory question.	
I	**Vital Statistics**: Introduction and uses of vital statistics, Methods of obtaining vital statistics, Sources of demographic data-census, register, adhoc survey, hospital records, measurement of population, rate and ratio of vital events. **Indian official statistics:** Introduction. Indian statistical system. Statistical offices at the centre. Statistical offices in the states. Population statistics. Agricultural statistics. Industrial statistics. Trade statistics. Statistics of labour and employment. Statistics of transport and communication. Financial and banking statistics.	08
II	**Measurement of mortality**: crude death rate, specific death rate, infant mortality rate, standardized death rates (direct and indirect methods) along with their merits and demerits.	08
III	**Measurement of fertility** - crude birth rate, general fertility rate, specific fertility rate, Age specific fertility rate, total fertility rate along with their merits and demerits.	07
IV	**Measurement of population growth**: crude rate of natural increase, Pearle's vital index, gross reproduction rate, net reproduction rate with applications.	07
	Practicum	
	1. To calculate the crude death rates 2. To measure specific death rates of given data. 3. To find the infant mortality rate and standardized death rates of the population using Direct Method. 4. To measure the standardized death rates using Indirect Method regarding one of the population as standard population. 5. To calculate the Crude Birth rate, General Fertility rate. 6. To measure the total fertility rate for the given data. 7. To measure the population growth using vital index, gross reproduction rate and net reproduction rate.	30

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory (15 marks)** • Class Participation: 04 marks • Seminar/presentation/assignment/quiz/class test etc.: 04 marks • Mid-Term Exam: 07 marks ➢ **Practicum (05 marks)** • Class Participation: Nil • Seminar/Demonstration/Viva-voce/Lab records etc.: 05 marks • Mid-Term Exam: Nil	**End Term Examination:** ➢ **Theory**: 35 marks ➢ **Practicum**: 20 marks

Part C-Learning Resources			
<u>S. No.</u>	<u>**Title of Book**</u>	<u>**Name of author**</u>	<u>**Publisher**</u>
1.	Fundamentals of Applied Statistics	Gupta, S.C.& Kapoor, V.K.	Sultan Chand & Sons (2020)
2.	Fundamental of Statistics Vol. II	Goon, A.M., Gupta, M.K., Dasgupta, B.	World Press, Calcutta (2016)
3.	Programmed Statistics	Aggarwal B.L.	New Age International (2017)
4.	Applied General Statistics	Croxton, F.E., Cowden, D.J. & Kelin S.	Prentice Hall (1968)
5.	Indian Official Statistical Systems	Saluja, M.R.	Statistical Pub. Society (1972)

<table>
<tr><td colspan="4" align="center">**Session: 2023-24**</td></tr>
<tr><td colspan="4" align="center">**Part A - Introduction**</td></tr>
<tr><td colspan="2">Subject</td><td colspan="2">Statistics</td></tr>
<tr><td colspan="2">Semester</td><td colspan="2">Third</td></tr>
<tr><td colspan="2">Name of the Course</td><td colspan="2">**Applied Statistics**</td></tr>
<tr><td colspan="2">Course Code</td><td colspan="2">B23-STA-301</td></tr>
<tr><td colspan="2">Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="2">CC-3
MCC-4</td></tr>
<tr><td colspan="2">Level of the course</td><td colspan="2">200-299</td></tr>
<tr><td colspan="2">Pre-requisite for the course (if any)</td><td colspan="2">Mathematics as a Subject at 4.0 Level (Class XII)</td></tr>
<tr><td colspan="2">Course Learning Outcomes (CLO):</td><td colspan="2">After completing this course, the learner will demonstrate the knowledge of:
1. Basic concepts of time series data, components of time series data, behavior and identification of the variation due to different components in the data, determination of trend.
2. Measurement of trend using different methods.
3. Seasonal fluctuations via various techniques and De-seasonalisation of data.
4. The Demand analysis, laws of demand and supply along with their price elasticity.</td></tr>
<tr><td colspan="2">CLO 5 is related to the practical components of the course</td><td colspan="2">5. Problems based on finding the trend using different methods, fitting the curve, obtaining the seasonal indices, and finding the equilibrium price and quantity exchanged.</td></tr>
<tr><td>Credits</td><td align="center">Theory</td><td align="center">Practical</td><td align="center">Total</td></tr>
<tr><td></td><td align="center">3</td><td align="center">1</td><td align="center">4</td></tr>
<tr><td>Contact Hours</td><td align="center">3</td><td align="center">2</td><td align="center">5</td></tr>
<tr><td colspan="2">Max. Marks: 100
Internal Assessment Marks: 30
End Term Exam Marks: 70</td><td colspan="2">Time: 3 Hours</td></tr>
<tr><td colspan="4" align="center">**Part B- Contents of the Course**</td></tr>
<tr><td colspan="4" align="center">**Instructions for Paper- Setter**
There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.</td></tr>
</table>

Unit	Topics	Contact Hours
I	**Time Series Analysis**: Definition, components of time series-trend, seasonal variations, cyclic variations, irregular component. Analysis of Time series - additive, multiplicative models, and mixed models. Uses of time series. **Determination of trend**: graphic (free hand curve fitting) method, semi-averages method, moving average method along with graphical representation and applications.	12
II	**Measurement of trend**: Method of curve fitting by principle of least squares: fitting of straight line, second degree parabolic trend, exponential curve, second degree curve fitted to logarithms, Growth curves: modified exponential, Grompertz curve along with their fittings.	11
III	**Analysis of Seasonal fluctuations,** construction of seasonal indices using method of simple averages, ratio to trend method and ratio to moving average method, Link relative method. De-seasonalisation of data.	11
IV	**Demand Analysis**: Introduction to Demand and Supply, Laws of demand and supply, Equilibrium Price, Giffen's paradox, price elasticity of demand, Price elasticity of supply along with their interpretations.	11
	Practicum	
	1. To find the trend using free hand curve fitting method. 2. To fit the trend line using method of semi averages. 3. To compute the trends using curve fitting method for given data. 4. Fitting of second degree parabolic trend for given data. 5. To fit the exponential curve by method of selected points. 6. To find the trend by moving average method. 7. To obtain seasonal variation indices using method of simple averages. 8. To obtain seasonal variation indices using ratio to trend and ratio to moving average method. 9. To obtain seasonal variation indices using link relative methods. 10. Find the equilibrium price and quantity exchanged from demand and supply curves.	30

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory (20 marks)** • Class Participation: 05 marks • Seminar/presentation/assignment/quiz/class test etc.:05 marks • Mid-Term Exam: 10 marks ➢ **Practicum (10 marks)** • Class Participation: Nil • Seminar/Demonstration/Viva-voce/Lab records etc.:10 marks • Mid-Term Exam: Nil	➢ **Theory**: 50 marks ➢ **Practicum**: 20 marks

Part C-Learning Resources

S. No.	Title of Book	Name of author	Publisher
1.	Fundamentals of Applied Statistics	Gupta, S.C.& Kapoor, V.K.	Sultan Chand & Sons (2020)
2.	Fundamental of Statistics Vol.II	Goon, A.M., Gupta, M.K., Dasgupta, B.	World Press, Calcutta (2016)
3.	Introduction to Mathematical Statistics	Hoel, P.G.	Asia Pub. House (2018)
4.	New Mathematical Statistics	Bansi Lal & Arora, S.	Satya Prakashan (1989)
5.	Introduction to Mathematical Statistics	Kapoor & Sexena.	S.Chand (1960)

<table>
<tr><td colspan="4" align="center">**Session: 2023-24**</td></tr>
<tr><td colspan="4" align="center">**Part A - Introduction**</td></tr>
<tr><td colspan="2">Subject</td><td colspan="2">Statistics</td></tr>
<tr><td colspan="2">Semester</td><td colspan="2">Third</td></tr>
<tr><td colspan="2">Name of the Course</td><td colspan="2">**Advanced Probability**</td></tr>
<tr><td colspan="2">Course Code</td><td colspan="2">B23-STA-302</td></tr>
<tr><td colspan="2">Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="2">MCC-5</td></tr>
<tr><td colspan="2">Level of the course</td><td colspan="2">200-299</td></tr>
<tr><td colspan="2">Pre-requisite for the course (if any)</td><td colspan="2">Mathematics as a Subject at 4.0 Level (Class XII)</td></tr>
<tr><td colspan="2">Course Learning Outcomes (CLO):</td><td colspan="2">After completing this course, the learner will demonstrate knowledge of:
6. Some important discrete probability distributions, with their characteristics, and their implementation at realistic models
7. Some important Continuous probability distributions, with their characteristics, and their implementation at realistic models
8. Important limit laws, and central limit theorem for *i.i.d.* variate.
9. Two dimensional random variables along with their properties and bivariate normal distribution.</td></tr>
<tr><td colspan="2">CLO 5 is related to the practical components of the course</td><td colspan="2">10. Problems based on theoretical discrete and uniform distributions, estimating and finding lower bound using limit laws, and finding marginal, conditional probabilities for two dimensional random variables along with other applications in probability.</td></tr>
<tr><td rowspan="2">Credits</td><td>Theory</td><td>Practical</td><td>Total</td></tr>
<tr><td>3</td><td>1</td><td>4</td></tr>
<tr><td>Contact Hours</td><td>3</td><td>2</td><td>5</td></tr>
<tr><td colspan="2">Max. Marks: 100
Internal Assessment Marks: 30
End Term Exam Marks: 70</td><td colspan="2">Time: 3 Hours</td></tr>
<tr><td colspan="4" align="center">**Part B- Contents of the Course**</td></tr>
<tr><td colspan="4" align="center">**Instructions for Paper- Setter**
There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be</td></tr>
</table>

set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.

Unit	Topics	Contact Hours
I	**Theoretical Discrete Distributions:** Uniform, Negative Binomial Distribution**,** Geometric Distribution and lack of memory, Hyper geometric Distribution, Multinomial Distribution along with their properties	12
II	**Theoretical Continuous Distributions:** Rectangular Distribution, Gamma Distribution, Log Normal distribution, Beta distribution of first and second kind, Exponential distribution, Logistic and Cauchy distribution.	11
III	**Limit laws**: convergence in probability, Chebyshev's inequality, Weak law of large numbers and their applications, De-Moivre Laplace theorem, Central Limit Theorem (C.L.T.) for *i.i.d.* variates, applications of C.L.T.	11
IV	**Two dimensional random variables:** discrete and continuous type, joint, marginal and conditional p.m.f, p.d.f., and c.d.f., independence of random variables and conditional expectations, Bivariate normal distribution and associated marginal and conditional probability distributions (without derivation).	11
Practicum		
	1. Problem based on Uniform distribution. 2. Fitting of Negative Binomial Distribution. 3. Estimation using Hyper-geometric model. 4. Problems based on Rectangular and Gamma distributions. 5. Fitting of Exponential distribution. 6. To estimate probability using CLT. 7. To find lower bound using Chebyshev's inequality. 8. To find the joint, marginal and conditional probabilities of given bivariate probability distribution. 9. To check if the two random variables are independent or not. 10. To find the Correlation coefficient of a given bivariate normal distribution.	30

Suggested Evaluation Methods		

Internal Assessment:

➢ **Theory (20 marks)**
- Class Participation: 05 marks
- Seminar/presentation/assignment/quiz/class test etc.:05 marks
- Mid-Term Exam: 10 marks

➢ **Practicum (10 marks)**
- Class Participation: Nil
- Seminar/Demonstration/Viva-voce/Lab records etc.:10
- Mid-Term Exam: Nil

End Term Examination:
➢ **Theory**: 50 marks

➢ **Practicum**: 20 marks

Part C-Learning Resources		

S. No.	Title of Book	Name of Author	Publisher
1.	Fundamentals of Mathematical Statistics	Gupta S.C.& Kapoor V.K.	Sultan Chand & Sons (2020)
2.	Elementary Probability	David S.	Oxford Press (2003)
3.	Introduction to Mathematical Statistics	Hoel P.G.	Asia Pub. House (2018)
4.	New Mathematical Statistics	Bansi Lal& Arora S.	Satya Prakashan (1989)
5.	Introduction to Mathematical Statistics	Kapoor & Sexena.	S.Chand (1960)

<table>
<tr><td colspan="4" align="center">**Session: 2023-24**</td></tr>
<tr><td colspan="4" align="center">**Part A - Introduction**</td></tr>
<tr><td colspan="2">Subject</td><td colspan="2">Statistics</td></tr>
<tr><td colspan="2">Semester</td><td colspan="2">Third</td></tr>
<tr><td colspan="2">Name of the Course</td><td colspan="2">**Industrial Statistics**</td></tr>
<tr><td colspan="2">Course Code</td><td colspan="2">B23-STA-303</td></tr>
<tr><td colspan="2">Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="2">MDC-3</td></tr>
<tr><td colspan="2">Level of the course</td><td colspan="2">200-299</td></tr>
<tr><td colspan="2">Pre-requisite for the course (if any)</td><td colspan="2">NA</td></tr>
<tr><td colspan="2">Course Learning Outcomes (CLO):</td><td colspan="2">After completing this course, the learner will demonstrate the knowledge of:
1. Basic concepts of Statistical Quality Control and its uses in industries.
2. Statistical quality of product using mean and range charts.
3. Statistical quality of attributes using p, d and c charts.
4. Basic sampling methods and acceptance sampling plans.</td></tr>
<tr><td colspan="2">CLO 5 is related to the practical components of the course</td><td colspan="2">5. Problems to construct control charts for mean, range to check the quality of product, to construct control charts for number of defectives, defects, and fraction defective, to establish quality standards for future.</td></tr>
<tr><td>Credits</td><td align="center">Theory</td><td align="center">Practical</td><td align="center">Total</td></tr>
<tr><td></td><td align="center">2</td><td align="center">1</td><td align="center">3</td></tr>
<tr><td>Contact Hours</td><td align="center">2</td><td align="center">2</td><td align="center">4</td></tr>
<tr><td colspan="2">Max. Marks: 75
Internal Assessment Marks: 20
End Term Exam Marks: 55</td><td colspan="2">Time: 3 Hours</td></tr>
<tr><td colspan="4" align="center">**Part B- Contents of the Course**</td></tr>
<tr><td colspan="4" align="center">**Instructions for Paper- Setter**
There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.</td></tr>
</table>

Unit	Topics	Contact Hours
I	**Statistical Quality Control (SQC)**: Meaning and uses of SQC, Basis of SQC, causes of variations in quality, Benefits of SQC, product and process control. Control, Specification and tolerance limit. Control charts, 3-σ control limits.	7
II	**Control chart for variables**- $\overline{X}$ and R chart, selection of sample or subgroups, construction of control charts, criteria for detection of lack of control in $\overline{X}$ & R Charts, Interpretation of $\overline{X}$ & R charts. Control chart for standard deviation (σ chart), s chart vs R chart.	7
III	**Control charts for attributes**: fraction defective chart, control chart for number of defective, interpretation of 'p' chart and 'd' chart, Revised control limits, Control chart for number of defects, 'c' chart for variable sample size, applications of 'c' chart, natural tolerance and specification limits.	7
IV	**Basic sampling methods**: Basic concepts in sampling. Sampling and Non-sampling errors, advantages of sampling over complete census, Limitation of sampling, Simple random sampling (SRS) with and without replacement (without derivation). **Acceptance Sampling Plan:** Concepts of Acceptable quality level, LTPD, producer's and consumer's risks, Rectifying inspection plans, Average sample number and average amount of total inspection, idea about single sampling plan.	9
	Practicum	
	1. To construct mean and range chart, and comment on the state of control of the process. 2. To construct control chart for fraction defectives and comment on the state of control of the process. 3. To construct 'number of defectives' chart and establish quality standards for future. 4. Construct the control chart using revised control limits. 5. To obtain control limits for number of defects and comment on the state of control plotting the appropriate chart. 6. To obtain control limits for number of defects per unit and comment on the state of control plotting the appropriate chart. 7. Single sample inspection plan: Construction and interpretation of OC .	30

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory (15 marks)** • Class Participation: 04 marks • Seminar/presentation/assignment/quiz/class test etc.:04 marks • Mid-Term Exam: 07 marks ➢ **Practicum (05 marks)** • Class Participation: Nil • Seminar/Demonstration/Viva-voce/Lab records etc.:05 marks • Mid-Term Exam: Nil	**End Term Examination:** ➢ Theory: 35 marks ➢ Practicum: 20 marks

Part C-Learning Resources

S. No.	Title of Book	Name of Author	Publisher
1.	Fundamentals of Applied Statistics	Gupta, S.C.& Kapoor, V.K.	Sultan Chand & Sons (2020)
3.	Fundamental of Calcutta Statistics Vol. II	Goon, A.M., Gupta, M.K., Dasgupta, B.	World Press, (2016)
3.	Programmed Statistics	Aggarwal, B.L.	New Age International (2017)
4.	Statistical Quality Control	Grant, E.L.	McGraw Hill (2017)
5.	Applied General Statistics	Croxton, F.E., Cowden, D.J. & Kelin S.	Prentice Hall (1968)

Session: 2023-24	
Part A - Introduction	
Subject	Statistics
Semester	Fourth
Name of the Course	Statistical Inference
Course Code	B23-STA-401
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	CC-4 MCC-6
Level of the course	200-299
Pre-requisite for the course (if any)	Mathematics as a Subject at 4.0 Level (Class XII)

Course Learning Outcomes (CLO):	After completing this course, the learner will demonstrate the knowledge of: 1. Concepts of estimation and basic terminologies; parameter, statistic, standard error, sampling distribution of a statistic, characteristics of a good estimator. 2. Estimate parameters of different distribution using different methods of estimation and know about their properties. 3. Procedure of Statistical hypothesis testing along with related terms, and to test of significance based on Normal distribution. 4. Test of single mean, test of difference of two means, test for sample correlation coefficient, and test for the equality of two population variances.
CLO 5 is related to the practical components of the course	5. Solving problems based on unbiased, consistent and efficient estimators, to apply Statistical tests of significance for proportion, mean, correlation coefficient, variances, goodness of fit and independence of attributes.

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5

Max. Marks: 100 Internal Assessment Marks: 30 End Term Exam Marks: 70	Time: 3 Hours
Part B- Contents of the Course	

Instructions for Paper- Setter

There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to

attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.

Unit	Topics	Contact Hours
I	**Statistical Estimation**: Basic concept of sampling distribution, Parameter and statistic, Point and interval estimate of a parameter. Properties of a good estimator: Unbiasedness, Efficiency, Consistency and Sufficiency (definition and illustrations), Cramer-Rao Inequality (without proof).	12
II	**Methods of Estimation**: Method of moments, method of maximum likelihood and its properties (without proof). Estimation of parameters of Binomial, Poisson and Normal distributions.	11
III	**Testing of Hypothesis**-I: Statistical Hypothesis:- Simple and composite, test of statistical hypothesis, Null and alternative hypotheses, critical region, types of errors, level of significance, size and power of a test, one tailed and two tailed testing, p-value, Test of significance based on normal distribution (tests for single proportion, difference of two proportions, single mean and difference of two means).	11
IV	**Testing of Hypothesis-II:** Test based on t-distribution, Test of single mean, difference of two means, paired t-test, test for sample correlation coefficient. Tests based on Chi-square distribution and test based on F-distribution for the equality of two population variances.	11
Practicum		
	1. Problems based on unbiased estimators 2. Problems based on consistent estimators and efficient estimators. 3. To apply large sample test of significance for single proportion and difference of two proportions. 4. To apply large sample test of significance for single mean and to obtained confidence interval. 5. To apply large sample test of significance for difference between two means. 6. To apply t-test for testing single mean and difference between means. 7. To apply paired t-test for difference between two means. 8. To apply test of significance of sample correlation coefficient. 9. To apply Chi- square test for goodness of fit and independence of attributes. 10. To apply F-test for testing difference of two variances.	30

		Suggested Evaluation Methods		

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory (20 marks)** • Class Participation: 05 marks • Seminar/presentation/assignment/quiz/class test etc.:05 marks • Mid-Term Exam: 10 marks ➢ **Practicum (10 marks)** • Class Participation: Nil • Seminar/Demonstration/Viva-voce/Lab records etc.:10 marks • Mid-Term Exam: Nil	➢ **Theory**: 50 marks ➢ **Practicum**: 20 marks

Part C-Learning Resources

S. No.	Title of Book	Name of Author	Publisher
1.	A First Course on Parametric Inference	Kale, B.K.	Narosa (2005)
2.	Introduction to Theory of Statistics	Mood, A.M., Graybill F.A. & Boes, D.C.	McGraw Hill (2017)
3.	Mathematical Statistics With Applications	Freund, J.E.	Prentice Hall (2013)
4.	Fundamentals of Mathematical Statistics	Gupta, S.C. & Kapoor, V.K.	Sultan Chand & Sons (2014)
5.	An Introduction to Probability Theory and Mathematical Statistics	Rohatgi, V.K.	John Wiley (1988)

<table>
<tr><td colspan="4" align="center">**Session: 2023-24**</td></tr>
<tr><td colspan="4" align="center">**Part A - Introduction**</td></tr>
<tr><td colspan="2">Subject</td><td colspan="2">Statistics</td></tr>
<tr><td colspan="2">Semester</td><td colspan="2">Fourth</td></tr>
<tr><td colspan="2">Name of the Course</td><td colspan="2">**Linear Algebra**</td></tr>
<tr><td colspan="2">Course Code</td><td colspan="2">B23- STA -402</td></tr>
<tr><td colspan="2">Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="2">MCC-7</td></tr>
<tr><td colspan="2">Level of the course</td><td colspan="2">200-299</td></tr>
<tr><td colspan="2">Pre-requisite for the course (if any)</td><td colspan="2">Mathematics as a Subject at 4.0 Level (Class XII)</td></tr>
<tr><td>Course Learning Outcomes (CLO):</td><td colspan="3">After completing this course, the learner will demonstrate knowledge of:
6. Basic concepts of matrices, Sylvester's Law, echelon form which is useful in various Statistics courses.
7. Vector spaces, Spanning Sets, Basis, and dimensions.
8. Linear transformation and algebra of linear transformation.
9. Inverse of matrices using Cayley Hamilton theorem, Eigen values and Eigen vectors of linear transformations and characteristic & minimal polynomial of a linear transformation.</td></tr>
<tr><td>CLO 5 is related to the practical components of the course</td><td colspan="3">10.   Problems based on matrices, vector spaces, consistency and solutions of equations, row reduced echelon form, Eigen values and Eigen vectors and finding inverse using Cayley Hamilton theorem which has application in major courses of statistics.</td></tr>
<tr><td>Credits</td><td align="center">Theory</td><td align="center">Practical</td><td align="center">Total</td></tr>
<tr><td></td><td align="center">3</td><td align="center">1</td><td align="center">4</td></tr>
<tr><td>Contact Hours</td><td align="center">3</td><td align="center">2</td><td align="center">5</td></tr>
<tr><td colspan="2">Max. Marks: 100
Internal Assessment Marks: 30
End Term Exam Marks: 70</td><td colspan="2">Time: 3 Hours</td></tr>
<tr><td colspan="4" align="center">**Part B- Contents of the Course**</td></tr>
<tr><td colspan="4" align="center">**Instructions for Paper- Setter**
There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.</td></tr>
</table>

Unit	Topics	Contact Hours
I	**Matrices**: Determinant and trace, Rank of a matrix, Row rank and column rank of a matrix, ranks of the product of two matrices, Sylvester's Law, consistency and solution of a system of linear equations, elementary matrices and echelon form.	12
II	**Vector spaces**: definition and examples of vector spaces, Subspace and Null space, Linear span and Spanning Sets, Linearly Independent and dependent subsets of a vector space, Basis and Dimension.	11
III	**Linear Transformation-I**: Linear transformation, Algebra of Linear Transformation, Singular and non-singular linear transformations, Matrix of a linear transformation, Rank and Nullity Theorem.	11
IV	**Linear Transformation-II:** Characteristic polynomial of a linear transformation, Minimal Polynomial of a linear transformation, Cayley Hamilton Theorem, diagonalization, Eigen values and Eigen vectors of linear transformations.	11
	Practicum	
	11. To find the rank and nullity of given matrix. 12. To discuss the consistency of given system of equations and find the solution. 13. To reduce the matrix to row reduced echelon form. 14. To check whether the given vectors are linearly independent or not. 15. To find the characteristic polynomial and minimal polynomial of the matrix formed by linear transformation with respect to the standard basis. 16. To find the Eigen values and Eigen vectors of the given matrices. 17. To find the inverse of matrix using Cayley Hamilton theorem**.** 18. To find a matrix P such that $P^{-1}AP$ is diagonal.	30

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory (20 marks)** • Class Participation: 05 marks • Seminar/presentation/assignment/quiz/class test etc.:05 marks • Mid-Term Exam: 10 marks ➢ **Practicum (10 marks)** • Class Participation: Nil • Seminar/Demonstration/Viva-voce/Lab records etc.:10 marks • Mid-Term Exam: Nil	**End Term Examination:** ➢ **Theory**: 50 marks ➢ **Practicum**: 20 marks

Part C-Learning Resources

S. No.	Title of Book	Name of Author	Publisher
1.	Linear Algebra	Rao. A.R., Sankaran, P. B.	Hindustan Book Agency (2002)
2.	Linear Algebra	Sahai V. & Bist V..	Narosa (2002)
3.	Linear Algebra	Hadley, G	Addison-Wesley- Publishing Company(2002)
4.	Matrix and Linear Algebra	Datta,K.B.	Prentice-Hall of India Pvt.Ltd (2004)
5.	Matrices with Applications in Statistics	Franklin A. Graybill	Wadsworth International Group (1983)

<table>
<tr><td colspan="4" align="center">**Session: 2023-24**</td></tr>
<tr><td colspan="4" align="center">**Part A - Introduction**</td></tr>
</table>

Subject	Statistics
Semester	Fourth
Name of the Course	Linear Programming
Course Code	B23- STA -403
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	MCC-8
Level of the course	200-299
Pre-requisite for the course (if any)	Mathematics as a Subject at 4.0 Level (Class XII)
Course Learning Outcomes (CLO):	After completing this course, the learner will demonstrate knowledge of: 1. Linear Programming Problems and their formulations, Graphical procedure and simplex method 2. Artificial variables using Big-M & Two-Phase methods, Duality & situations where duality is fruitful 3. Optimum solution of transportation problem using different methods. 4. Assignment problem and its solution by using Hungarian method**.**
CLO 5 is related to the practical components of the course	5. Based on Mathematical formulation of L.P.P, and solve using graphical Method, and Simplex technique, using Big M method and Two-Phase method. To solve Transportation problem, optimal solutions, and assignment problem.

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5

Max. Marks: 100 Internal Assessment Marks: 30 End Term Exam Marks: 70	Time: 3 Hours

<table>
<tr><td colspan="2" align="center">**Part B- Contents of the Course**</td></tr>
</table>

Instructions for Paper- Setter

There will be nine questions in all. Question No.1 will be compulsory covering whole of the

syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.

Unit	Topics	Contact Hours
I	**Introduction:** Elementary theory of convex sets, definition of general linear programming problems (LPP), Requirements, Assumptions, Applications of LPP, Canonical and Standard forms of Linear Programming, Concept of initial basic feasible solution, graphical solution of L.P.P., limitations of graphical method, Simplex method to solve L.P.P., computation procedure for Simplex method.	12
II	**Artificial variable techniques**: Introduction of artificial variables, Big-M method or M-technique, Two-phase method. **Duality in Linear Programming**; Concept and applications of Duality in L.P.P., Rules of forming dual and dual simplex method.	11
III	**Transportation Problem** (T.P.): Formulation, Basic feasible solution. Different methods to find initial feasible solution: North-West corner rule, Row minima method, column minima method, Matrix minima method (Least cost entry method), Vogel's Approximation method (or Unit cost penalty method). UV-method (MODI method) for finding the optimum solution of T.P.	11
IV	**Assignment problem**: Introduction of assignment problem, Mathematical representation, comparison with the transportation model, Solution of the assignment Models, Hungarian Method along with its flowchart.	11
	Practicum	
	1. Mathematical formulation of L.P.P and solving the problem using graphical Method. 2. Solving the problem using Simplex technique. 3. Solving the LPP problems using Big M method. 4. Solving the LPP problems using Two-Phase method. 5. Identifying Special cases by Graphical and Simplex method and interpretation of a. Degenerate solution b. Unbounded solution c. Alternate solution d. Infeasible solution 6. Allocation problem using Transportation model. 7. To find the optimal solutions of transportation problem using UV method. 8. To solve the assignment problem using Hungarian Method.	30

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory (20 marks)** • Class Participation: 05 marks • Seminar/presentation/assignment/quiz/class test etc.:05 marks • Mid-Term Exam: 10 marks ➢ **Practicum (10 marks)** • Class Participation: Nil • Seminar/Demonstration/Viva-voce/Lab records etc.:10 marks • Mid-Term Exam:　Nil	**End Term Examination:** ➢ **Theory:** 50 marks ➢ **Practicum**: 20 marks

Part C-Learning Resources			
<u>S. No.</u>	<u>Title of Book</u>	<u>Name of Author</u>	<u>Publisher</u>
1.	Linear Programming	Hadley ,G.	Narosa (2002)
2.	Operations Research: An Introduction	Taha, H.A.	Macmillan Pub. Co. (2019)
3.	Operations Research	Goel, B.S. & Mittal, S.K.	Pragati Prakashan (2014)
4.	Operations Research	Sharma, S.D.	KedarNath & Co. (2017)
5.	Operations Research	Sharma, J.K.	Macmillan Pub. (2017)

Session: 2023-24	
Part A - Introduction	
Subject	Statistics
Semester	Fourth
Name of the Course	**Demography**
Course Code	B23- STA -404
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	DSE-1
Level of the course	200-299
Pre-requisite for the course (if any)	NA

Course Learning Outcomes (CLO):	After completing this course, the learner will demonstrate knowledge of: 1. Concept of Vital statistics and measurement of mortality. 2. Basic concepts of Life tables and its main features, assumptions, descriptions and construction of a life tables along with its uses. 3. Abridged life table and measurement of fertility. 4. Measures of population growth and Graduation of mortality rates.		
CLO 5 is related to the practical components of the course	5. Measures of crude death rates, specific death rates, infant mortality rate and standardized death rates. To complete the incomplete life table. Measures of Crude Birth rate, General Fertility rate, total fertility rate, gross reproduction rate and net reproduction rate along with interpretation.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Max. Marks: 100 Internal Assessment Marks: 30 End Term Exam Marks: 70	Time: 3 Hours		

Part B- Contents of the Course

Instructions for Paper- Setter

There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.

Unit	Topics	Contact Hours
I	**Vital Statistics**: Introduction and uses of vital statistics, Methods of obtaining vital statistics, Sources of demographic data-census, measurement of population, rate and ratio of vital events. **Measurement of mortality**: crude death rate, specific death rate, infant mortality rate, standardized death rates (direct and indirect methods) along with their merits and demerits.	12
II	**Life Tables**: Introduction and terminology of life tables, expectation of life, central mortality rate, force of mortality, complete life tables and its main features, assumptions, descriptions and construction of life tables, uses of life tables, stationary and stable population.	11
III	**Abridged life table**: introduction, difference between complete and abridged life tables, Reed & Merrell's method for construction of abridged life table. **Measurement of fertility** - crude birth rate, general fertility rate, specific fertility rate, Age specific fertility rate, total fertility rate along with their merits and demerits.	11
IV	**Measurement of population growth**: crude rate of natural increase, Pearle's vital index, gross reproduction rate, net reproduction rate with applications. **Graduation of mortality rates**: Makehams and Gompertz graduation formula.	11
	Practicum	
	1. To calculate the crude death rates 2. To measure specific death rates of given data. 3. To find the infant mortality rate and standardized death rates of the population using Direct Method. 4. To measure the standardized death rates using Indirect Method regarding one of the population as standard population. 5. To complete the given incomplete life table by computing various elements of life table. 6. To calculate the Crude Birth rate, General Fertility rate. 7. To measure the total fertility rate for the given data. 8. To measure the population growth using vital index, gross reproduction rate and net reproduction rate.	30

Suggested Evaluation Methods	

Internal Assessment:
 	
➢ **Theory (20 marks)**
  • Class Participation: 05 marks
  • Seminar/presentation/assignment/quiz/class test etc.:05 marks
  • Mid-Term Exam: 10 marks
 	
➢ **Practicum (10 marks)**
  • Class Participation: Nil
  • Seminar/Demonstration/Viva-voce/Lab records etc.:10
  • Mid-Term Exam: Nil
	End Term Examination:
	➢ **Theory**: 50 marks
	
	➢ **Practicum**: 20 marks

Part C-Learning Resources

S. No.	Title of Book	Name of Author	Publisher
1.	Fundamentals of Applied Statistics	Gupta, S.C.& Kapoor, V.K.	Sultan Chand & Sons (2020)
4.	Fundamental of Statistics Vol. II	Goon, A.M., Gupta, M.K., Dasgupta, B.	World Press, Calcutta (2016)
3.	Programmed Statistics	Aggarwal, B.L.	New Age International (2017)
4.	Applied General Statistics	Croxton, F.E., Cowden, D.J. & Kelin, S.	Prentice Hall (1968)

<table>
<tr><td colspan="4" align="center">**Session: 2023-24**</td></tr>
<tr><td colspan="4" align="center">**Part A - Introduction**</td></tr>
<tr><td colspan="2">Subject</td><td colspan="2">Statistics</td></tr>
<tr><td colspan="2">Semester</td><td colspan="2">Fourth</td></tr>
<tr><td colspan="2">Name of the Course</td><td colspan="2">**Statistical Methods in Epidemiology**</td></tr>
<tr><td colspan="2">Course Code</td><td colspan="2">B23- STA -405</td></tr>
<tr><td colspan="2">Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="2">DSE-1</td></tr>
<tr><td colspan="2">Level of the course</td><td colspan="2">200-299</td></tr>
<tr><td colspan="2">Pre-requisite for the course (if any)</td><td colspan="2">N.A.</td></tr>
<tr><td colspan="2">Course Learning Outcomes (CLO):</td><td colspan="2">After completing this course, the learner will demonstrate knowledge of:
1. Basic principles and concepts of epidemiology and statistics.
2. Proficiency in descriptive statistics, including measures of central tendency and dispersion, graphical representation of epidemiology data and Interpret measures of association.
3. Various statistical tests appropriate for epidemiological data analysis.
4. Regression analysis techniques, including simple and multiple linear regression and logistic regression in epidemiology.</td></tr>
<tr><td colspan="2">CLO 5 is related to the practical components of the course</td><td colspan="2">5. Hypothesis testing and statistical inference techniques to analyze epidemiological data, evaluate associations, compare groups, and draw conclusions based on statistical evidence to generate reliable insights for public health research and decision-making.</td></tr>
<tr><td>Credits</td><td align="center">Theory</td><td align="center">Practical</td><td align="center">Total</td></tr>
<tr><td></td><td align="center">3</td><td align="center">1</td><td align="center">4</td></tr>
<tr><td>Contact Hours</td><td align="center">3</td><td align="center">2</td><td align="center">5</td></tr>
<tr><td colspan="2">Max. Marks: 100
Internal Assessment Marks: 30
End Term Exam Marks: 70</td><td colspan="2">Time: 3 Hours</td></tr>
<tr><td colspan="4" align="center">**Part B- Contents of the Course**</td></tr>
<tr><td colspan="4" align="center">**Instructions for Paper- Setter**
There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the</td></tr>
</table>

Unit	Topics	Contact Hours
	questions will carry equal marks except the compulsory question.	
I	**Introduction to Epidemiology**: Basic concepts and principles, historical development, and key measures of disease occurrence and association. **Study Designs in Epidemiology**: Cohort studies, case-control studies, cross-sectional studies, and experimental designs. Introduction to randomized controlled trials (RCTs) and their statistical analysis.	12
II	**Descriptive Epidemiology**: Calculation and interpretation of disease rates, prevalence, incidence, and standardization techniques. **Measures of Association**: Relative risk, odds ratio, attributable risk, population-attributable risk, and their interpretation in epidemiological studies.	11
III	**Understanding sources of bias** in epidemiological studies, such as selection bias, information bias, and confounding. **Statistical Analysis of Epidemiological Data:** Application of statistical techniques to epidemiological data, including chi-square test, t-tests and analysis of variance (ANOVA).	11
IV	**Regression Analysis in Epidemiology**: Simple and multiple linear regression models for continuous outcomes, logistic regression for binary outcomes, and interpretation of regression coefficients. **Critical Appraisal of Epidemiological Studies**: Evaluation of study quality, assessing validity and reliability, and interpretation of epidemiological literature.	11
	Practicum	
	1. See patterns and distributions of epidemiological data through descriptive statistics and visualizations. 2. Compute key epidemiological measures to assess disease burden and impact. 3. Perform hypothesis tests to compare means between two or more groups in epidemiological data, assessing differences in health outcomes or exposure variables. 4. Conduct hypothesis tests to assess the presence of associations between two variables, such as exposure and outcome, in epidemiological data. 5. Apply the chi-square test to evaluate the independence of two categorical variables in epidemiological data, examining the	30

	presence of associations. 6. Perform a paired t-test to evaluate differences in means between two related measurements, such as pre- and post-intervention data in a cohort study. 7. Conduct a goodness-of-fit test to assess how well observed data fit an expected distribution or theoretical model in epidemiological research. 8. Analyze the relationship between exposure variables and disease outcomes. 9. Explore the relationship between multiple risk factors and outcomes. 10. Analyze epidemiological data with categorical outcomes to assess associations and evaluate the impact of risk factors.	

Suggested Evaluation Methods

Internal Assessment:
 	
➢ **Theory (20 marks)**
  • Class Participation: 05 marks
  • Seminar/presentation/assignment/quiz/class test etc.:05 marks
  • Mid-Term Exam: 10 marks
 	
➢ **Practicum (10 marks)**
  • Class Participation: Nil
  • Seminar/Demonstration/Viva-voce/Lab records etc.:10 marks
  • Mid-Term Exam: Nil
	End Term Examination:
	➢ **Theory:** 50 marks
	
	➢ **Practicum:** 20 marks

Part C-Learning Resources

S. No.	Title of Book	Name of Author	Publisher
1.	Statistical Methods for Epidemiology	Koepsell, T.D and Weiss, N.S	Oxford University Press (2003)
2.	Introduction to Epidemiology	& Merrill, R.M	Jones & Bartlett Learning (2017).
3.	Principles of Biostatistics	Marcello Pagano and Kimberlee Gauvreau	Cengage Learning (2018)
4.	Statistical Methods in Epidemiology	Elwood, J.M	Oxford University Press (2018)
5.	Applied Epidemiology: Theory to Practice	Brownson, J.C, Petitti,D.B and Kathleen N.	Oxford University Press, (2018)

Session: 2023-24	
Part A - Introduction	
Subject	Statistics
Semester	Third
Name of the Course	Working with SPSS
Course Code	**B23-VOC-121**
Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)	VOC-I
Level of the course	200-299
Pre-requisite for the course (if any)	N.A.
Course Learning Outcomes (CLO):	After completing this course, the learner will demonstrate knowledge of: 1. Basic concepts and features of SPSS software. 2. Descriptive Statistics and data visualization using SPSS. 3. Correlation, Regression and Data Manipulation Techniques 4. Hypothesis testing and inferential statistics using SPSS.
CLO 5 is related to the practical components of the course	5. Interpretation and presentation the results of statistical analyses using SPSS.

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5

Max. Marks: 100 Internal Assessment Marks: 30 End Term Exam Marks: 70	Time: 3 Hours

Part B- Contents of the Course
<u>Instructions for Paper- Setter</u>   There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.

Unit	Topics	Contact Hours
I	**Introduction of SPSS:** Overview of SPSS software and its interface, Data types and variable properties in SPSS, Data entry and importing data into SPSS. Data Cleaning and Manipulation: Identifying and handling missing data, Data transformation and recoding, Merging and splitting datasets in SPSS.	12
II	**Descriptive Statistics and Data Visualization**: Calculating and interpreting measures of central tendency and dispersion, Creating charts and graphs in SPSS, Exploratory data analysis using SPSS.	11
III	**Correlation and Regression Analysis**: Understanding correlation and regression analysis. Performing bivariate and multiple regression in SPSS. Interpreting regression output and assessing model fit. **Data Manipulation Techniques:** Creating and computing new variables in SPSS, Subsetting and filtering data in SPSS.	11
IV	**Inferential Statistics** :Introduction to hypothesis testing, Conducting t-tests and analysis of variance (ANOVA) in SPSS. Chi-square tests for categorical data.	11
	Practicum	
	1. Data Entry and Cleaning: Importing data from various file formats (e.g., Excel, CSV) into SPSS. Performing data validation and cleaning tasks, such as identifying and handling missing values and outliers. 2. Descriptive Statistics and Data Visualization: Calculating descriptive statistics (mean, median, standard deviation) for variables. Creating various charts and graphs (e.g., bar charts, scatter plots) to visualize data distributions and relationships. 3. Hypothesis Testing: Conducting t-tests or chi-square tests to compare groups or assess relationships between variables. Interpreting statistical output and drawing conclusions from hypothesis tests. 4. Correlation and Regression Analysis: Performing correlation analysis to examine the strength and direction of relationships between variables. Conducting simple or multiple regression analysis to predict an outcome variable based on predictor	30

	variables.
	5. Data Manipulation:
	Creating new variables using transformations, recoding, or computing functions in SPSS.
	6. Reporting and Presenting Results:
	Summarizing and reporting the results of statistical analyses using SPSS.
	Creating tables and figures for research reports or presentations.
	7. Real-World Application Project:
	Applying SPSS techniques to a real-world dataset from a specific domain (e.g., social sciences, business, healthcare).
	Conducting data analysis, interpreting the results, and presenting the findings in a report.

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory (20 marks)**	
• Class Participation: 05 marks	➢ **Theory:** 50 marks
• Seminar/presentation/assignment/quiz/class test etc.:05 marks	
• Mid-Term Exam: 10 marks	
➢ **Practicum (10 marks)**	➢ **Practicum:** 20 marks
• Class Participation: Nil	
• Seminar/Demonstration/Viva-voce/Lab records etc.:10 marks	
• Mid-Term Exam: Nil	

Part C-Learning Resources

S. No.	Title of Book	Name of Author	Publisher & Year
2.	Discovering Statistics Using IBM SPSS Statistics	Field,A., Miles J. and Field Z.	SAGE Publications Ltd (2017)
2.	SPSS Survival Manual:	Pallant, J.	Allen &Unwin (2021)
3.	A Beginner's Guide to SPSS for Windows	Einspruch,E.L	SAGE Publications (2020)
4.	SPSS for Psychologists: A Guide to Data Analysis Using SPSS for Windows	Brace,N. Kemp, R. and Snelgar, R.	Palgrave Macmillan (2016)

<table>
<tr><td colspan="4" align="center">Session: 2023-24</td></tr>
<tr><td colspan="4" align="center">Part A - Introduction</td></tr>
<tr><td>Subject</td><td colspan="3">Statistics</td></tr>
<tr><td>Semester</td><td colspan="3">Fourth</td></tr>
<tr><td>Name of the Course</td><td colspan="3">Data Handling</td></tr>
<tr><td>Course Code</td><td colspan="3">B23-VOC-221</td></tr>
<tr><td>Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/VAC)</td><td colspan="3">VOC-II</td></tr>
<tr><td>Level of the course</td><td colspan="3">200-299</td></tr>
<tr><td>Pre-requisite for the course (if any)</td><td colspan="3">N.A.</td></tr>
<tr><td>Course Learning Outcomes (CLO):</td><td colspan="3">After completing this course, the learner will demonstrate knowledge of:

1. Basic concepts and features of Data and its visualization
2. Exploratory Data Analysis, Correlation, and Regression
3. Hypothesis testing and inferential statistics.
4. Statistical test based on sampling distributions.</td></tr>
<tr><td>CLO 5 is related to the practical components of the course</td><td colspan="3">5. Graphically representation of data, Measures of Central Tendency, Measures of Dispersion, Correlation coefficient, Regression lines and Statistical hypothesis tests.</td></tr>
<tr><td>Credits</td><td align="center">Theory</td><td align="center">Practical</td><td align="center">Total</td></tr>
<tr><td></td><td align="center">3</td><td align="center">1</td><td align="center">4</td></tr>
<tr><td>Contact Hours</td><td align="center">3</td><td align="center">2</td><td align="center">5</td></tr>
<tr><td colspan="2">Max. Marks: 100
Internal Assessment Marks: 30
End Term Exam Marks: 70</td><td colspan="2">Time: 3 Hours</td></tr>
<tr><td colspan="4" align="center">Part B- Contents of the Course</td></tr>
<tr><td colspan="4" align="center"><u>Instructions for Paper- Setter</u>
There will be nine questions in all. Question No.1 will be compulsory covering whole of the syllabus and comprising 4 to 5 short answer type questions. Rest of the eight questions will be set from the four units uniformly i.e. two from each unit. The candidate will be required to attempt five questions in all selecting one question from each unit and the compulsory one. All the questions will carry equal marks except the compulsory question.</td></tr>
</table>

Unit	Topics	Contact Hours
I	**Types of Data**: Source and collection of Data, Qualitative and quantitative data, nominal and ordinal data, time series data, discrete and continuous data, frequency and non-frequency data, Primary and Secondary data. **Data visualization techniques**: Frequency distribution and cumulative frequency distribution, diagrammatic and graphical presentation of data, construction of bar, pie diagrams, histograms, frequency polygon, frequency curve and Ogives.	12
II	**Exploratory Data Analysis:** Measures of Central Tendency: Arithmetic mean, median, mode, along with their applications. Measures of Dispersion: Concept of dispersion, characteristics for an ideal measure of dispersion. range, inter quartile range, quartile deviation, Mean deviation, variance, standard deviation (σ), coefficient of variation. **Correlation and regression**: Concept of correlation and regression, Karl Pearson's Coefficient of correlation, Principle of least squares, two lines of regression	11
III	**Statistical Analysis** Statistical Hypothesis:- Simple and composite, test of statistical hypothesis, Null and alternative hypotheses, critical region, types of errors, level of significance, size and power of a test, one tailed and two tailed testing, p-value. Testing of significance based on normal distribution (tests for single proportion, difference of two proportions, single mean and difference of two means).	11
IV	**Tests based on sampling distributions**: Test based on t-distribution, Test of single mean, difference of two means, paired t-test, test for sample correlation coefficient. Testing of independence of attributes using Chi-square distribution and test based on F-distribution for the equality of two population variances.	11
	Practicum	
	1. Representation of data using Bar, Pie Chart, Histogram, Frequency Polygon, Frequency Curve and Ogives. 2. To compute various measures of central tendency and dispersion. 3. To compute Karl Pearson's coefficient of correlation for given bivariate frequency distribution. 4. To fit the straight line for the given data on pairs of	30

observations.

5. To apply large sample test of significance for single proportion and difference of two proportions.
6. To apply large sample test of significance for single mean and to obtained confidence interval.
7. To apply large sample test of significance for difference between two means.
8. To apply t -test for testing single mean and difference between means.
9. To apply paired t-test for difference between two means.
10. To apply test of significance of sample correlation coefficient.
11. To apply Chi- square test for independence of attributes.
12. To apply F-test for testing difference of two variances.

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory (20 marks)** • Class Participation: 05 marks • Seminar/presentation/assignment/quiz/class test etc.:05 marks • Mid-Term Exam: 10 marks	➢ **Theory:** 50 marks
➢ **Practicum (10 marks)** • Class Participation: Nil • Seminar/Demonstration/Viva-voce/Lab records etc.:10 marks • Mid-Term Exam: Nil	➢ **Practicum:** 20 marks

Part C-Learning Resources

S. No.	Title of Book	Name of Author	Publisher & Year
1.	A First Course on Parametric Inference	Kale B.K.	Narosa (2005)
2.	Introduction to Theory of Statistics	Mood A.M., Graybill F.A. & Boes D.C.	McGraw Hill (2017)
3.	Mathematical Statistics With Applications	Freund's J.E.	Prentice Hall (2013)
4.	Fundamentals of Mathematical Statistics	Gupta S.C. & Kapoor V.K.	Sultan chand & Sons (2014)
5.	An Introduction to Probability Theory and Mathematical Statistics.	Rohatgi V.K.	John Wiley (1988)

KURUKSHETRA UNIVERSITY KURUKSHETRA

Scheme of Examination and Syllabus for

Under-Graduate Programme

Subject: Industrial Microbiology

Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance to NEP-2020 w.e.f. 2023-24 (in phased manner)

KURUKSHETRA UNIVERSITY, KURUKSHETRA
Scheme of Examination for Under-Graduate Programme
Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance to NEP-2020
w.e.f. 2023-24 (in phased manner), Course: Industrial Microbiology

(First Year)

Remarks	Course	Paper(s)	Nomenclature of Paper	Credits	Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
FIRST YEAR: SEMESTER-1									
Scheme A & C	**CC-1/ MCC-1 4 credit**	B23-IMB- 101	Introduction to Microbiology	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme C	**MCC-2 4 credit**	B23-IMB-102	Bacteriology	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme A	**CC-M1 2 credit**	B23-IMB-103	General Microbiology	1	1	10	20	30	3 hrs.
			Practical	1	2	5	15	20	4 hrs.
Scheme A & C	**MDC-1 3 credit**	B23-IMB-104	Introduction and Scope of Microbiology	2	2	15	35	50	3 hrs.
			Practical	1	2	5	20	25	4 hrs.
Scheme C	**CC-M1 4 credit**	From Available CC-M1 of 4 credits as per NEP							
Scheme A & C	**AEC-1 2 credit**	From Available AEC-1 of 2 credits as per NEP							
	SEC-1 3 credit	From Available SEC-1 of 3 credits as per NEP							
	VAC-1 2 credit	From Available VAC-1 of 2 credits as per NEP							
FIRST YEAR: SEMESTER-2									
Scheme A & C	**CC-2/ MCC-3 4 credit**	B23- IMB-201	Microbial Biochemistry, Physiology and Metabolism	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme C	**DSEC-2 4 credit**	B23-IMB-202	Microbes in Environment	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme A	**CC-M2 2 credit**	B23-IMB-203	Applied Microbiology	1	1	10	35	50	3 hrs.
			Practical	1	2	5			
Scheme A & C	**MDC-2 3 credit**	B23-IMB-204	Outlines of Microbial Characters, Physiology and Metabolism	2	2	15	35	50	3 hrs.
			Practical	1	2	5	20	25	4 hrs.
Scheme C	**CC-M2 4 credit**	From Available CC-M2 of 4 credits as per NEP							
Scheme A & C	**AEC-2 2 credit**	From Available AEC-2 of 2 credits as per NEP							
	SEC-2 3 credit	From Available SEC-2 of 3 credits as per NEP							
	VAC-2 2 credit	From Available VAC-2 of 2 credits as per NEP							
Internship of 4 credits of 4-6 weeks duration after 2ⁿᵈ Semester									

(Second Year)

Remarks	Course	Paper(s)	Nomenclature of Paper	Credits	Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
SECOND YEAR: SEMESTER-3								
Scheme A, B & C	**CC-3/ MCC-4 4 credit**	B23-IMB-301	Basics of Microbial Genetics	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme B & C	**MCC-5 4 credit**	B23-IMB-302	Microbial Diversity	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme A, B & C	**MDC-3 3 credit**	B23-IMB-303	Microbes in Human Welfare	2	2	15	35	50	3 hrs.
			Practical	1	2	5	20	25	4 hrs.
Scheme A & C	**CC-M3 4 credits**		From Available CC-M3 of 4 credits as per NEP						
Scheme B only	**CC-M3 (V) 4 credits**		From Available CC-M3(V) of 4 credits as per NEP						
Scheme A, B & C	**AEC-3 2 credit**		From Available AEC-3 of 2 credits as per NEP						
	SEC-3 3 credit		From Available SEC-3 of 3 credits as per NEP						
Scheme C only	**VAC-3 2 credits**		From Available VAC-3 of 2 credits as per NEP						
Scheme B only	**MCC-3**		MCC-2 FROM SCHEME C OF FIRST SEMESTER						
SECOND YEAR : SEMESTER-4								
Scheme A, B & C	**CC-4 / MCC-6 4 credit**	B23-IMB-401	Basics of Different Disciplines of Microbiology	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme B & C	**MCC-7 4 credit**	B23-IMB-402	Food and Dairy Microbiology	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme B & C	**MCC-8 4 credit**	B23-IMB-403	Virology	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme B & C	**DSE-1 4 credit Select one Option**	B23-IMB-404	Fermentation Technology	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
		B23-IMB-405	Medical Lab. Technology	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme A, B & C	**CC-M4 (V) 4 credits**		From Available CC-M4(V) of 4 credits as per NEP						
	AEC-4 2 credit		From Available AEC-4 of 2 credits as per NEP						
Scheme C	**VAC-4 2 credits**		From Available VAC-4 of 2 credits as per NEP						
Scheme A & B	**VAC-3 2 credits**		From Available VAC-3 of 2 credits as per NEP						
Internship of 4 credits of 4-6 weeks duration after 4th Semester (if not done after second semester)								

(Third Year)

Remarks	Course	Paper(s)	Nomenclature ofPaper	Credits	Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
			THIRD YEAR: SEMESTER-5						
Scheme A, B & C	**CC-5 / MCC-9 4 credit**	B23- IMB-501	Immunology	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme B & C	**MCC-10 4 credit**	B23-IMB-502	Agriculture Microbiology	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme B & C	**DSE-2 4 credit Select one Option**	B23- IMB- 503	Soil Microbiology	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
		B23-IMB-504	Molecular Biology	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme B & C	**DSE-3 4 credit Select one Option**	B23- IMB- 505	Microbial Pathogenesis	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
		B23-IMB-506	Industrial Microbiology	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme A & C	**CC-M5 (V) 4 credits**	From Available CC-M5(V) of 4 credits as per NEP							
Scheme A, B & C	**Internship 4 credits**	Internship#4 credit after 4th semester							
			THIRD YEAR : SEMESTER-6						
Scheme A, B & C	**CC-6 MCC-11 4 credit**	B23-IMB-601	Instrumentation and Biotechniques	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme B & C	**MCC-12 4 credit**	B23-IMB-602	Medical Microbiology	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme B & C	**DSE-4 4 credit Select one Option**	B23-IMB-603	Biofertilizers and Biopesticides	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
		B23-IMB-604	Genetic Engineering	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme B & C	**DSE-5 4 credit Select one Option**	B23-IMB-605	Biosafety and IPR	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
		B23-IMB-606	Basics of Bioinformatics	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
Scheme A	**CCM6 4 credits**	From Available CC-M6 of 4 credits as per NEP							
Scheme A	**CC-M7(V) 4 credits**	From Available CC-M7(V) of 4 credits as per NEP							
Scheme B	**CC-M5(V) 4 credits**	From Available CC-M5(V) of 4 credits as per NEP							
Scheme C	**CC-M6(V) 4 credits**	From Available CC-M6(V) of 4 credits as per N							
Scheme C	**SEC-4 2 credit**	From Available SEC-4 of 2 credits as per NEP							

(Fourth Year)

Remarks	Course	Paper(s)	Nomenclature ofPaper	Credits	Hours/ Week	Internal Marks	External Marks	Total Marks	Exam Duration
FORTH YEAR: SEMESTER-7 (FOR HONOURS/HONOURS WITH RESEARCH IN INDUSTRIAL MICROBIOLOGY)									
For Honours in Industrial Microbiology /Honours with Research Industrial Microbiology (For Scheme B & C)	**CC-H1 4 credit**	B23-IMB-701	Biostatistics and Computers	4	4	30	70	100	3 hrs.
	CC-H2 4 credit	B23-IMB-702	Advances in Microbiology	4	4	30	70	100	3 hrs.
	CC-H3 4 credit	B23-IMB-703	Advances in Microbial Biotechnology	4	4	30	70	100	3 hrs.
	DSE-H1 4 credit Select one Option	B23-IMB-704	Environment Microbiology	4	4	30	70	100	3 hrs.
		B23-IMB-705	Computational Biology	4	4	30	70	100	3 hrs.
	PC-H1 4 credit	B23-IMB-706	Practical Based on B23-IMB-701 to 704/705	4	8	30	70	100	6 hrs.
	CC-HM1 4 credit	From Available Minor of 4 credits as per NEP							
SEMESTER-8 (FOR HONOURS IN INDUSTRIAL MICROBIOLOGY)									
For Honours in Industrial Microbiology	**CC-H4 4 credit**	B23-IMB-801	Genomics and Proteomics	4	4	30	70	100	3 hrs.
	CC-H5 4 credit	B23-IMB-802	Food Safety and Quality Management	4	4	30	70	100	3 hrs.
	CC-H6 4 credit	B23-IMB-803	Entrepreneurship and Innovations in Microbiology	4	4	30	70	100	3 hrs.
	DSE-H2 4 credit Select one option	B23-IMB-804	Plant Pathology	4	4	30	70	100	3 hrs.
		B23-IMB-805	Vaccine Production Technology	4	4	30	70	100	3 hrs.
	PC-H2 4 credit	B23-IMB-806	Practical Based on B23-IMB-801 to 804/805	4	8	30	70	100	6 hrs.
	CC-HM2 4 credit	From Available Minor of 4 credits as per NEP							
OR SEMESTER-8 (FOR HONOURS WITH RESEARCH IN INDUSTRIAL MICROBIOLOGY)									
For Honours with Research Industrial Microbiology	**CC-H4 4 credit**	B23-IMB-801	Genomics and Proteomics	4	4	30	70	100	3 hrs.
	CC-H5 4 credit	B23-IMB-802	Food Safety and Quality Management	4	4	30	70	100	3 hrs.
	Project / Dissertation 12 credit	B23-IMB-806	Project / Dissertation	8+4	-	-	-	-	-
	CC-HM2 4 credit	From Available Minor of 4 credits as per NEP							

Programme Learning Outcomes (PLOs) for UG courses of Faculty of Life Sciences

1. Inculcate comprehensive knowledge and acquire skills in the field's biology

2. Develop experimenting skills in laboratory that enhances critical thinking skills, logical application these skills in problem solving

3. To equip students with necessary theoretical and practical skills to enable them to pursue multidisciplinary courses at Post Graduate level

4. Demonstrate the abilities to work in collaborative activities and inculcate leadership qualities

5. Identify and follow the ethical issues related to Biology, biosafety, and perform unbiased and truthful actions

6. Capability for raising relevant questions relating to basic understanding and applications biology and planning, executing and reporting the results of an experiment or investigation

CC-1/MCC-1

Session: 2023-24	
Part A - Introduction	
Subject	INDUSTRIAL MICROBIOLOGY
Semester	I
Name of the Course	INTRODUCTION TO MICROBIOLOGY
Course Code	B23-IMB-101
Course Type:	CC/MCC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	---
Course Learning Outcomes(CLO): CLO5 is related to practical component	After completing this course, the learner will be able to: 1. To acquaint with History and Scope of microorganisms 2. To give theoretical knowledge of isolation and growth of microorganisms 3. To impart knowledge of maintenance of cultures and sterilization techniques 4. To give detailed knowledge about structure of bacteria _____ 5. To impart practical knowledge of isolation culturing maintenance, Sterilization and staining of microorganisms

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Internal Assessment Marks	20	10	30
End Term Exam Marks	50	20	70
Exam Duration	3 hours	4 hours	

Maximum Marks 100

Part B- Contents of the Course

Instructions for Paper- Setter:

Nine questions will be set in all. Question No.1 comprising of objective/short answer type questions from the entire syllabus, will be compulsory. The remaining eight questions will be set taking two questions

from each unit. The candidates will be required to attempt Q.No.1 & four others selecting one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	**roduction and Classification** ory , Microbiology in India; Application of microbiology: Food and industry; Microbes in genetic engineering and biotechnology; Microbes in environmental microbiology (microbes in biogeochemical cycles); Microbes in pollution microbiology; Microbes in medical microbiology robial diversity; five kingdom classification; three domain classification; taxonomy, General methods of classifying bacteria; Genetic relatedness (DNA-DNA hybridization, 16S rRNA sequencing, classification and identification of bacteria); Bacterial nomenclature; Bergey's system of bacterial classification	3 Hours/week
II	**Methods in Microbiology** Isolation and culture of microorganisms- Mixed Cultures; Serial dilution method, Viable plate count by Streaking, spread plate method and Pour plate method , Isolation of anaerobic microbes, Culture Characteristics – Colony appearance, Colony forms, Colony elevation, Colony margins, Optical density, Colony colour, Colony Odour, Colony consistency. Microbial growth: Growth curve of bacteria – Measurement of growth, batch culture. Synchronous growth, Diauxic growth Culture	
III	**Medium, Preservation and Control of microbe** Characteristics of a medium, Types of media (liquid, semisolid, solid, selective, enrichment, differentia) Preparation of Media , requirements of medium, Nutritional types of microbe Preservation method: Lyophilisation, Liquid nitrogen, Serial subculture, Refrigeration, stocks of soil; Physical control: Autoclave, Hot air oven, Boiling, Tyndallisation; Chemical control : Alcohol, Halogens, ethylene oxide, Formaldehyde**.**	
IV	**Morphology and Fine Structure** Morphology of bacteria – Size and Shape; Arrangements. Structure of Bacterial cells – Capsule, Flagella, Locomotion , Fimbrae or pili; Chemotaxis; The cell wall Plasma membrane; Mesosomes; Cytoplasm : Ribosomes; Nucleoid, Plasmids; Cytoplasmic inclusions, (granules, lipid granules, glycogen, sulfur granules, magnetosomes, gas vesicles, gas vacuoles), Spores and cysts, Cell Structure of cyanobacteria, Algae, Fungi, Viruses : Cultivation , Cell cycle, Lysogenic and lytic phages ,Protozoa	
V*	**PRACTICAL** • Laboratory rule • Laboratory equipment's : Autoclave, Hot air oven, Laminar Air flow ,Incubator	2 Hours/week

- Microscope, parts and handling
- Staining: Simple, Differential, endospore
- Medium : Nutrient agar, Potato dextrose agar, Nutrient broth
- Measurement of pH
- To operate centrifuge
- To study common bacteria ,fungi and alga
- Isolation of microorganism by Streaking
- Isolation of microorganisms by spread plate method
- Isolation of microorganisms by pour plate method
- Report on safe handling techniques applied

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.:5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.:10 • Mid-Term Exam: NA	Theory -50 Written Exam Practical-20 Demonstration/Viva-voce/Lab records

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Powar,C.B. & Daginawala, H.F.: General Microbiology Vol.1, Himalaya Publishing House, Bombay
2. P.D. Sharma: Microbiology
3. R.C Dubey: A text book of Biotechnology S Chand and Company Ltd
4. Prescott, L.M. et al. (2005 & 2007).Microbiology, McGraw Hill International Edition, USA.
5. Pelczar, M.J., Chan, E.C.S. & Krieg, N.R.: Microbiology, Tata Mc Graw-Hill Publishing Company Limited, New Delhi.

PLO CLO MAPPING of B23-IMB-101						
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	1	1	1	1	1	1
CLO2	1	2	2	2	1.5	2
CLO3	2	2	2.5	2.5	1.5	2
CLO4	1	1	1	1	1	1
CLO5	1	2	2	2	1.5	2

MCC-2

Session: 2023-24			
Part A - Introduction			
Subject	INDUSTRIAL MICROBIOLOGY		
Semester	I		
Name of the Course	BACTERIOLOGY		
Course Code	B23-IMB-102		
Course Type:	MCC		
Level of the course (As per Annexure-I	100-199		
Pre-requisite for the course (if any)	---		
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Will be able to briefly explain methods of asexual reproduction in bacteria. 2. Will understand different phases of growth curve and be able to define generation time and growth rate. 3. Can define and differentiate various types of classifications. Will gain insight into techniques used in polyphasic bacterial taxonomy. 4. Will get acquainted with differences between archaea and eubacteria		
CLO5 is related to practical component	5. will be able to make different types of media and counting and staining of bacteria.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Internal Assessment Marks	20	10	30
End Term Exam Marks	50	20	70
Exam Duration	3 hours	4 hours	
Maximum Marks 100			
Part B- Contents of the Course			

Unit	Topics	Contact Hours
I	roduction in Bacteria xual methods of reproduction, logarithmic representation of bacterial populations, phases of growth, calculation of generation time and specific growth rate teriological techniques e culture isolation: Streaking, serial dilution and plating methods; cultivation, maintenance and preservation/stocking of pure cultures; cultivation of anaerobic bacteria, and accessing non-culturable eria.	3 Hours/week
II	Bacterial Systematics Concepts of systematics, taxonomy, taxa, species, strains, phenetic classification, phylogenetic classification, genotypic classification, polyphasic taxonomy, evolutionary chronometers, rRNA oligonucleotide sequencing and signature sequences. Conventional (classical characteristics, numerical taxonomy), molecular (nucleic acid hybridization, nucleic acid sequencing) and recent approaches (genomic fingerprinting: MLSA, ribotyping) to study polyphasic bacterial taxonomy	
III	Bergeys Mannual Archaebacteria: General characteristics, phylogenetic overview, genera belonging to Nanoarchaeota (Nanoarchaeum), Crenarchaeota (Sulfolobus, Thermoproteus) and Euryarchaeota [Methanogens thermophiles, and Halophiles] Gram Positive: Low G+ C (Firmicutes): General characteristics with suitable examples High G+C (Actinobacteria): General characteristics with suitable examples Cyanobacteria: An Introduction	
IV	Gram Negative- General characteristics with suitable examples of : Non proteobacteria, Alpha proteobacteria, Beta proteobacteria, Gamma proteobacteria, Epsilon proteobacteria.	
V*	Practical: • Preparation of different media: Synthetic Media (BG11), Complex media (Nutrient Agar, MacConkey agar).	2 Hours/week

	• Isolation of pure cultures of bacteria by Quadrant streaking method. • Enumeration of bacteria by CFU count using spread plate method/pour plate method. • To observe size, shape and arrangement of given bacterial sample using simple and negative staining. • To differentiate between different types of bacteria using differential staining methods: Gram staining, Capsule staining, Spore staining, Acid fast staining (Permanent slides) • Demonstration of motility by hanging drop method	

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.:5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.:10 • Mid-Term Exam: NA	Theory -50 Written Exam Practical-20 Demonstration/Viva-voce/Lab records

Part C-Learning Resources

Recommended Books/e-resources/LMS:

6. Powar,C.B. & Daginawala, H.F.: General Microbiology Vol.1, Himalaya Publishing House, Bombay
7. P.D. Sharma: Microbiology
8. R.C Dubey: A text book of Biotechnology S Chand and Company Ltd
9. Prescott, L.M. et al. (2005 & 2007).Microbiology, McGraw Hill International Edition, USA.
10. Pelczar, M.J., Chan, E.C.S. & Krieg, N.R.: Microbiology, Tata Mc Graw-Hill Publishing Company Limited, New Delhi.

PLO CLO MAPPING of B23-IMB-102						
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	1	1	1	1	1	1
CLO2	1	2	2	2	1	2
CLO3	2	2	2	2	1.5	2
CLO4	1.5	1.5	1.5	1.5	1.5	1.5
CLO5	1	1.5	1.5	2.5	2.5	2

Session: 2023-24			
Part A - Introduction			
Subject	INDUSTRIAL MICROBIOLOGY		
Semester	I		
Name of the Course	GENERAL MICROBIOLOGY		
Course Code	B23-IMB-103		
Course Type:	CC-M		
Level of the course (As per Annexure-I	100-199		
Pre-requisite for the course (if any)	--		
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. To acquaint with History and Scope of microorganisms 2. To give theoretical and practical knowledge of isolation and growth of microorganisms 3. To impart knowledge of maintenance of cultures and sterilization techniques 4. To give detailed knowledge about structure of bacteria		
CLO5 is related to practical component	5 To impart practical knowledge of isolation culturing maintenance, Sterilization and staining of microorganisms		
Credits	Theory	Practical	Total
	1	1	2
Contact Hours	1	2	3
Internal Assessment Marks	10	5	15
End Term Exam Marks	20	15	35
Exam Duration	3 hours	4 hours	
			Maximum Marks 50
Part B- Contents of the Course			

Instructions for Paper- Setter:
Nine questions will be set in all. Question No.1 comprising of objective/short answer type questions from the entire syllabus, will be compulsory. The remaining eight questions will be set taking two questions

from each unit. The candidates will be required to attempt Q.No.1 & four others selecting one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	**Introduction** History of Microbiology, Microbiology in India; Application of microbiology: Food and industry; Genetic Engineering and biotechnology; Environmental microbiology, Medical microbiology, Fermentation technology, Agriculture Microbiology	1 hour/week
II	**Methods in Microbiology** Isolation and culture of microorganisms- Mixed Cultures; Serial dilution method , Viable plate count by Streaking, spread plate method and Pour plate method , Isolation of anaerobic microbes, Microbial growth: Growth curve of bacteria – Measurement of growth, batch culture. Synchronous growth, Diauxic growth Culture	
III	**Morphology and Fine Structure** Characteristics of a medium, Types of media(liquid, semisolid, solid, selective, enrichment, differentia) Preparation of Media , requirements of medium, Nutritional types of microbe Preservation method: Lyophilisation , Liquid nitrogen, Serial subculture, Refrigeration, stocks of soil ; Physical control: Autoclave, Hot air oven ,Boiling, Tyndallisation ; Chemical control : Alcohol, Halogens, ethylene oxide, Formaldehyde.	
IV	**Morphology and Fine Structure** Morphology of bacteria – Size and Shape; Arrangements . Structure of Bacterial cells – Capsule, Flagella, Locomotion , Fimbriae or pili; Chemotaxis ; The cell wall Plasma membrane; Mesosomes; Cytoplasm : Ribosomes; Nucleoid , Plasmids; Cytoplasmic inclusions, (granules, lipid granules, glycogen, sulfur granules, magnetosomes, gas vesicles, gas vacuoles), Spores and cysts, Cell Structure of cyanobacteria, Algae ,Fungi ,Viruses ,Protozoa	
V*	**PRACTICAL** - Laboratory rule - Laboratory equipment's : Autoclave, Hot air oven, Laminar Air flow ,Incubator - Microscope, parts and handling - Staining: Simple, Differential, endospore - Medium : Nutrient agar, Potato dextrose agar, Nutrient broth	2 hours/week

	• Isolation of microorganism by Streaking	

Suggested Evaluation Methods	

Internal Assessment:
➢ **Theory**
  • Class Participation: 4
  • Seminar/presentation/assignment/quiz/class test etc.: NA
  • Mid-Term Exam: 6
 	
➢ **Practicum**
  • Class Participation: NA
  • Seminar/Demonstration/Viva-voce/Lab records etc.:5
  • Mid-Term Exam: NA
	End Term Examination:
	Theory -20
	Written Exam
	Practical-15
	Demonstration/Viva-voce/Lab records

Part C-Learning Resources

Recommended Books/e-resources/LMS:

11. Powar,C.B. & Daginawala, H.F.: General Microbiology Vol.1, Himalaya Publishing House, Bombay
12. Prescott, L.M. et al. (2005 & 2007).Microbiology, McGraw Hill International Edition, USA.
13. Pelczar, M.J., Chan, E.C.S. & Krieg, N.R.: Microbiology, Tata Mc Graw-Hill Publishing Company Limited, New Delhi.

PLO CLO MAPPING of B23-IMB-103						
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	1	1	1	1	1	1
CLO2	1	2	2	2	1.5	2
CLO3	2	2	2.5	2.5	1.5	2
CLO4	1	1	1	1	1	1
CLO5	1	2	2	2	1.5	2

MDC-1

Session: 2023-24	
Part A - Introduction	
Subject	INDUSTRIAL MICROBIOLOGY
Semester	I
Name of the Course	INTRODUCTION AND SCOPE OF MICROBIOLOGY
Course Code	B23-IMB-104
Course Type:	MDC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	--
Course Learning Outcomes(CLO): CLO5 is related to practical component	After completing this course, the learner will be able to: 1. To introduce the different kinds of microorganisms 2. To give knowledge about culturing , isolation and identification of microorganisms 3. To acquaint with methods of maintenance and sterilization 4. To introduce the latest developments in microbiology 5* To give practical knowledge of growth, isolation, maintenance of microorganisms in addition to production of useful compounds

Credits	Theory	Practical	Total
	2	1	3
Contact Hours	2	2	4
Internal Assessment Marks	15	5	20
End Term Exam Marks	35	20	55
Exam Duration	3 hours	4 hours	

Maximum Marks 75

Part B- Contents of the Course

Instructions for Paper- Setter:
Nine questions will be set in all. Question No.1 comprising of objective/short answer type questions from the entire syllabus, will be compulsory. The remaining eight questions will be set taking two questions

from each unit. The candidates will be required to attempt Q.No.1 & four others selecting one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	**oduction ,Morphology and structure** ory, Microbiology in India, Microbial diversity, Morphology of bacteria – Size and Shape; Arrangements . Structure of Bacterial cells – Capsule, Flagella, Fimbrae ; The cell wall Plasma membrane; Mesosomes; Cytoplasm : Ribosomes; Nucleoid, Plasmids, Spores and cysts, Cell Structure of cyanobacteria, Algae ,Fungi ,Viruses , Protozoa	2 Hours/week
II	**Methods in Microbiology** Isolation and culture of microorganisms- Mixed Cultures; Serial dilution method , Viable plate count by Streaking, spread plate method and Pour plate method , Isolation of anaerobic microbes, Microbial growth: Growth curve of bacteria – Measurement of growth, batch culture. Synchronous growth, Diauxic growth , Type and preparation of media , Preservation by serial subculture lyophilisation, liquid nitrogen, Sterilization Autoclave, Hot Air oven , UV rays , Ethyleneoxide	
III	**Commercial Products** Production of Yoghurt, Beer ,Wine , Single cell protein, Lactic acid, Biofertilizer, Biopesticide , Penicillin, Streptomycin	
IV	**Future Prospects** Biomining :Extraction of Iron , Copper , Microbially enhanced oil recovery, Production of Hydrogen, Bioconcrete	
V*	**PRACTICAL** • Laboratory rule • • Laboratory equipments : Autoclave, Hot air oven, Laminar Air flow ,Incubator • Microscope, parts and handling • Staining: Simple, Differential, endospore • Medium : Nutrient agar, Potato dextrose agar, Nutrient broth • Measurement of pH • To operate centrifuge • To study common bacteria ,fungi and alga • Isolation of microorganism by Streaking • Isolation of microorganisms by spread plate method • Isolation of microorganisms by pour plate method • Production of biofertilizer • Production of wine by *Saccharomyces*	2 Hours/week

Suggested Evaluation Methods	

Internal Assessment:
➢ **Theory**
   • Class Participation: 4
   • Seminar/presentation/assignment/quiz/class test etc.:4
   • Mid-Term Exam: 7
 	
➢ **Practicum**
   • Class Participation: NA
   • Seminar/Demonstration/Viva-voce/Lab records etc.:5
   • Mid-Term Exam: NA
	End Term Examination:
	Theory -35
	Written Exam
	Practical-20
	Demonstration/Viva-voce/Lab records

Part C-Learning Resources
Recommended Books/e-resources/LMS: 14. Powar,C.B. & Daginawala, H.F.: General Microbiology Vol.1, Himalaya Publishing House, Bombay 15. Prescott, L.M. et al. (2005 & 2007).Microbiology, McGraw Hill International Edition, USA. 16. Pelczar, M.J., Chan, E.C.S. & Krieg, N.R.: Microbiology, Tata Mc Graw-Hill Publishing Company Limited, New Delhi.

PLO CLO MAPPING of B23-IMB-104						
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	1	1	1	1	1	1
CLO2	1	2	2	2	1	2
CLO3	2	2	2	2	1.5	2
CLO4	1.5	1.5	1.5	1.5	1.5	1.5
CLO5	1	1.5	1.5	2.5	2.5	2

CC-2/MCC-3

Session: 2023-24	
Part A - Introduction	
Subject	MICROBIAL BIOCHEMISTRY PHYSIOLOGY AND METABOLISM
Semester	II
Name of the Course	INDUSTRIAL MICROBIOLOGY
Course Code	B23-IMB-201
Course Type:	CC/MCC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	---
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. To acquaint with growth, measurement and factors affecting bacterial growth 2. To introduce concept of enzymology and methods of transport of compounds 3. To give information of carbohydrates, proteins and lipids 4. To acquaint with important metabolic pathways in microbes _____ To provide technical expertise for isolating and culturing microorganisms and colorimetric method for carbohydrates and proteins, and handling enzyme
CLO5 is related to practical component	

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Internal Assessment Marks	20	10	30
End Term Exam Marks	50	20	70
Exam Duration	3 hours	4 hours	
			Maximum Marks 100
Part B- Contents of the Course			

Unit	Topics	Contact Hours
I	**robial Growth** inition of growth, expression of growth, Generation time, Growth curve in bacteria, Synchronous growth, diauxic growth ,Prototroph Auxotroph ,Measurement of Growth (cell number, cell mass and cell constituent), Effect of environment on the microbial growth, (temperature, pH and oxygen).	3 Hours/week
II	**Membrane Transport and Enzymes** Types of cellular transport (diffusion, gaseous exchange, osmosis, plasmolysis, active & passive transport , facilitated transport) . Enzymes- mechanism of action, Enzyme kinetics- effect of pH and temperature on enzyme activity, Classification	
III	**Metabolic Pathways** Metabolism Anabolism, Glycolysis, Entner Daudoroff pathway, Pentose phosphate pathway, Krebs cycle Substrate level and oxidative phosphorylation ,Electrontransport chain	
IV	**Biochemistry** Classification of carbohydrate , Structure of Starch, Cellulose, Glycogen, glucose, fructose. Classification and structure of lipids, Structure of nucleotide. Structure, types and functions of DNA & RNA. Classification and Structure of amino acids, structure of proteins	
V*	**Practical** • To study the effect of pH • To study the effect of temperature • To study the effect of oxygen • Isolation of protease producer • Isolation of amylase producer • To plot the growth curve of bacteria • Estimation of carbohydrate by colorimetric method • Estimation of proteins by colorimetric method	2 Hours/week
Suggested Evaluation Methods		

	Internal Assessment:	End Term Examination:
➢ **Theory**		Theory -50
	• Class Participation: 5	Written Exam
	• Seminar/presentation/assignment/quiz/class test etc.:5	Practical-20
	• Mid-Term Exam: 10	Demonstration/Viva-voce/Lab records
➢ **Practicum**		
	• Class Participation: NA	
	• Seminar/Demonstration/Viva-voce/Lab records etc.:10	
	• Mid-Term Exam: NA	

Part C-Learning Resources

Recommended Books/e-resources/LMS:

17. Jain, J.L.: General Biochemistry- S. Chand & Co.
18. Nelson, David L. & Cox, Michael M.: Lehninger : Principles of Biochemistry, Freeman, W.H. and company.
19. Satyanarayan, U.: Biochemistry- Books & allied Pvt Ltd
20. Pelczar, M.J., Chan, E.C.S. & Krieg, N.R.: Microbiology, Tata Mc Graw-Hill Publishing Company Limited

PLO CLO MAPPING of B23-IMB-201						
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	1.5	1	0.5	2.0	1	1.5
CLO2	1.5	2	2	1	2	2
CLO3	1.5	1	1	0.6	2	2
CLO4	2	1	2	3	2.7	2
CLO5	2.5	2	1	0.5	2	2.5

DSEC-2

Session: 2023-24			
Part A - Introduction			
Subject	INDUSTRIAL MICROBIOLOGY		
Semester	II		
Name of the Course	MICROBES IN ENVIRONMENT		
Course Code	B23-IMB-202		
Course Type:	DSEC		
Level of the course (As per Annexure-I	100-199		
Pre-requisite for the course (if any)	--		
Course Learning Outcomes(CLO): CLO5 is related to practical component	After completing this course, the learner will be able to: 1. Introduction to soil microbiology , characteristics of soil and effect of microorganisms 2. To aquaint with aeromicrobiology ,its significance and allergens 3. To discuss different geochemical cycles mediated by microorganism 4. To introduce the aquatic microbiology and microbial diversity. _____ 5*. To give technical expertise for isolation of microorganisms from different environments.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Internal Assessment Marks	20	10	30
End Term Exam Marks	50	20	70
Exam Duration	3 hours	4 hours	
			Maximum Marks 100
Part B- Contents of the Course			
Instructions for Paper- Setter: Nine questions will be set in all. Question No.1 comprising of objective/short answer type questions from			

the entire syllabus, will be compulsory. The remaining eight questions will be set taking two questions from each unit. The candidates will be required to attempt Q.No.1 & four others selecting one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	**Microbiology:** as dynamic ecosystem, Physical characteristics of soil, Microbial flora of soil, Interaction among soil microorganism (Neutralism, commensalism, mutualism, antagonism, competition, parasitism and predation).	3 hours /week
II	**Biogeochemical cycles** Factors affecting soil microflora (moisture content, oxygen content, pH, temperature). Biogeochemical cycles (carbon, nitrogen, sulphur, phosphorus, magnesium and iron cycle) Landfill, Composting	
III	**Air Microbiology** Distribution of microorganism in Air, Outdoor and indoor microflora, Allergic disorders by air microflora, Collection and enumeration of microflora of air (Liquid and solid impingement devices)	
IV	**Water Microbiology** Type of water (atmospheric, surface and stored), Microflora of aquatic environment (freshwater & marine microbiology), Coliforms ,Sewage water (physical, chemical & microbiological characteristics) BOD and COD, Water treatment (primary treatment, secondary treatment, tertiary treatment, water disinfection by chlorination.	
V*	**Practical** • Isolation of fungi from soil •Isolation of bacteria from soil • Isolation of bacteria from water • To study air microflora • To isolate coliform from sewage sample • To isolate bacteria from water by filtration membrane • To calculate BOD of water sample • To calculate COD of water sample • To isolate antibiotic producing microorganism	3 hours /week
Suggested Evaluation Methods		

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.:5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.:10 • Mid-Term Exam: NA	Theory -50 Written Exam Practical-20 Demonstration/Viva-voce/Lab records

Part C-Learning Resources

Recommended Books/e-resources/LMS:

21. P.D. Sharma: Microbiology
22. R.C Dubey: A text book of Biotechnology
23. Atlas & Bartha: Microbial ecology Fundaments & applications
24. Tortora & Funke: Microbiology
25. Coyne, MS: Soil Microbiology: An Exploratory Approach

PLO CLO MAPPING of B23-IMB-202						
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	1.5	1	0.5	2.0	1	1.5
CLO2	1.5	2	2	1	2	2
CLO3	1.5	1	1	0.6	2	2
CLO4	2	1	2	3	2.7	2
CLO5	2.5	2	1	0.5	2	2.5

CC-M2

Session: 2023-24	
Part A - Introduction	
Subject	INDUSTRIAL MICROBIOLOGY
Semester	II
Name of the Course	APPLIED MICROBIOLOGY
Course Code	B23-IMB-203
Course Type:	CC-M
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	--
Course Learning Outcomes(CLO): CLO5 is related to practical component	After completing this course, the learner will be able to: 1. To acquaint with the useful food products of microorganism 2. To introduce concept of Biofertilizer and Biopesticide as ecofriendly compound 3. To give knowledge of future applications of microorganisms for sustainable development 4. To introduce the benefits of microorganisms in human welfare _____ 5*. To isolate rhizospheric and non rhizospheric microorganisms and basics testing of milk.

Credits	Theory	Practical	Total
	1	1	2
Contact Hours	1	2	3
Internal Assessment Marks	10	5	15
End Term Exam Marks	20	15	35
Exam Duration	3 hours	4 hours	
			Maximum Marks 50
Part B- Contents of the Course			

Unit	Topics	Contact Hours
I	**Food and Industrial Microbiology** Production of Yoghurt, Bread, Beer, Wine, Sauerkraut, Vinegar, Lactic acid, Single cell protein	1 hour/week
II	**Medical Microbiology** Production of Interferons , Insulin , Antibiotics: penicillin, Streptomycin, Vaccines : Inactivated ,Live attenuated, mRNA, Subunit , Recombinant, Toxoid ,Biopharming	
III	**Future Prospects** Biomining :Extraction of Iron , Copper , Microbially enhanced oil recovery, Production of Hydrogen, Bioconcrete	
IV	**Agricultural and Environmental Microbiology** Production of Biofertilizer of *, Rhizobium , Azotobacter,* Biopesticide (Bt), Mushroom, BOD, COD, Effluent treatment, Bioremediation, Petroleum degradation	
V*	Practical • Isolation of Rhizobium from root nodules. • Determination of BOD/ COD of sewage water (treated and untreated) • To perform methylene blue reduction test of raw and pasteurized milk. • Isolation of Lactobacilli and Streptococci from curd. • Isolation of important bacteria involved in food spoilage *(Bacillus, Escherchia, Staphylococcus)*	2 hours/week

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: 4 • Seminar/presentation/assignment/quiz/class test etc.: NA • Mid-Term Exam: 6 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.:5 • Mid-Term Exam: NA	Theory -20 Practical-15

Part C-Learning Resources

Recommended Books/e-resources/LMS:

26. Powar,C.B. & Daginawala, H.F.: General Microbiology Vol.1, Himalaya Publishing House, Bombay
27. Prescott, L.M. et al. (2005 & 2007).Microbiology, McGraw Hill
28. Pelczar, M.J., Chan, E.C.S. & Krieg, N.R.: Microbiology, Tata Mc Graw-Hill Publishing Company Limited, New Delhi.
29. P.D. Sharma: Microbiology
30. R.C Dubey: A text book of Biotechnology S Chand and Company Ltd
31. Atlas & Bartha: Microbial ecology Fundaments & applications
32. Tortora & Funke: Microbiology.

PLO CLO MAPPING of B23-IMB-203						
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	1	1	1	1	1	1
CLO2	1	2	2	2	1	2
CLO3	2	2	2	2	1.5	2
CLO4	1.5	1.5	1.5	1.5	1.5	1.5
CLO5	1	1.5	1.5	2.5	2.5	2

MDC-2

Session: 2023-24			
Part A - Introduction			
Subject	INDUSTRIAL MICROBIOLOGY		
Semester	II		
Name of the Course	OUTLINES OF MICROBIAL CHARACTERS, PHYSIOLOGY AND METABOLISM		
Course Code	B23-IMB-204		
Course Type:	MDC		
Level of the course (As per Annexure-I	100-199		
Pre-requisite for the course (if any)	--		
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. To acquaint with growth, its measurement and factors affecting bacterial growth 2. To discuss the methods of transport of compounds 3. To acquaint with important metabolic pathways in microbes. 4. To give information of morphology and nutrition of microorganisms.		
CLO5 is related to practical component	5*. To impart technical skills related to growth, isolation, identification of microorganisms in addition to handling enzyme.		
Credits	Theory	Practical	Total
	2	1	3
Contact Hours	2	2	4
Internal Assessment Marks	15	5	20
End Term Exam Marks	35	20	55
Exam Duration	3 hours	4 hours	
			Maximum Marks 75
Part B- Contents of the Course			
Instructions for Paper- Setter:			

Nine questions will be set in all. Question No.1 comprising of objective/short answer type questions from the entire syllabus, will be compulsory. The remaining eight questions will be set taking two questions from each unit. The candidates will be required to attempt Q.No.1 & four others selecting one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	**...robial Growth** ...inition of growth, expression of growth, Generation time, Growth curve in bacteria, Synchronous growth, diauxic growth ,Prototroph Auxotroph ,Measurement of Growth (cell number, cell mass and cell constituent), Effect of environment on the microbial growth, (temperature, pH and oxygen).	2 Hours/week
II	**Membrane Transport and Enzymes** Types of cellular transport (diffusion, gaseous exchange, osmosis, plasmolysis, active & passive transport , facilitated transport) , Enzymes in metabolism, enzyme kinetics- effect of pH and temperature on enzyme activity, allosteric enzyme, classification	
III	**Metabolic Pathways** Metabolism Anabolism, Glycolysis, Entner Daudoroff pathway, Pentose phosphate pathway, Krebs cycle Substrate level and oxidative phosphorylation ,Electron transport chain	
IV	**Microbial characters** The structure and morphology of Bacteria (cell shape, size ,arrangement, Cell wall , Endospore, Flagella, Pilli, Plasmid , Chromatin, Cytoplasm) , Algae, Fungi, Viruses ,Protozoa , Nutritional types of bacteria, Colony morphology of bacteria	
V*	**Practical** • Preparation of Nutrient Agar • Preparation of PDA • Effect of temperature on growth • Effect of pH on growth • Effect of oxygen on growth • Staining of bacteria simple and differential • To study common bacteria • To study common fungi • To study common algae	2 Hours/week
Suggested Evaluation Methods		

	Internal Assessment:	End Term Examination:
	Internal Assessment: ➢ **Theory** • Class Participation: 4 • Seminar/presentation/assignment/quiz/class test etc.:4 • Mid-Term Exam: 7 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.:5 • Mid-Term Exam: NA	**End Term Examination:** Theory -35 Written Exam Practical-20 Demonstration/Viva-voce/Lab records

Part C-Learning Resources

Recommended Books/e-resources/LMS:

33. Powar,C.B. & Daginawala, H.F.: General Microbiology Vol.18, Himalaya Publishing House, Bombay
34. Prescott, L.M. et al. (2005 & 2007).Microbiology, McGraw Hill International Edition, USA.
35. Pelczar, M.J., Chan, E.C.S. & Krieg, N.R.: Microbiology, Tata Mc Graw-Hill Publishing Company Limited, New Delhi
36. Satyanarayan, U.: Biochemistry- Books & allied Pvt Ltd

PLO CLO MAPPING of B23-IMB-204						
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	1.5	1	0.5	2.0	1	1.5
CLO2	1.5	2	2	1	2	2
CLO3	1.5	1	1	0.6	2	2
CLO4	2	1	2	3	2.7	2
CLO5	2.5	2	1	0.5	2	2.5

KURUKSHETRA UNIVERSITY KURUKSHETRA

Scheme of Examination and Syllabus for

Under-Graduate Programme

Course: Bachelor of Vocation in Medical Laboratory Technology

Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance to NEP-2020 w.e.f. 2023-24 (in phased manner)

KURUKSHETRA UNIVERSITY, KURUKSHETRA
Scheme of Examination for Under-Graduate Programme
Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance to NEP-2020
w.e.f. 2023-24 (in phased manner),

Course: Bachelor of Vocation in Medical Laboratory Technology

(First Year)

Remarks	Course	Paper(s)	Nomenclature of Paper	Credits	Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
			FIRST YEAR: SEMESTER-1						
Scheme D	**CC-A1 4 credit**	B23-MLT- 101	Biochemistry I	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-B1 4 credit	B23-MLT-102	Microbiology I	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-C1 4 credit	B23-MLT-103	Pathology I	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-M1 2 credit	From Available CC-M1 of 2 credits as per NEP							
	MDC 1 3 Credit	From Available MDC 1 of 3 credits as per NEP							
	AEC-1 2 credit	From Available AEC-1 of 2 credits as per NEP							
	SEC-1 3 credit	From Available SEC-1 of 3 credits as per NEP							
	VAC-1 2 credit	From Available VAC-1 of 2 credits as per NEP							
			FIRST YEAR: SEMESTER-2						
Scheme D	**CC-A2 4 credit**	B23- MLT-201	Biochemistry II	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-B2 4 credit	B23-MLT-202	Microbiology II	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-C2 4 credit	B23-MLT-203	Pathology II	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-M2 2 credit	From Available CC-M2 of 2 credits as per NEP							
	MDC 2 3 Credit	From Available MDC-2 of 3 credits as per NEP							
	AEC-2 2 credit	From Available AEC-2 of 2 credits as per NEP							
	SEC-2 3 credit	From Available SEC-2 of 3 credits as per NEP							
	VAC-2 2 credit	From Available VAC-2 of 2 credits as per NEP							
			Internship of 4 credits of 4-6 weeks duration after 2nd Semester						

(Second Year)

Remarks	Course	Paper(s)	Nomenclature of Paper	Credits	Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
			SECOND YEAR: SEMESTER-3						
Scheme D	**CC-A3 4 credit**	B23- MLT-301	Biochemistry III	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-B3 4 credit	B23-MLT-302	Microbiology III	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-C3 4 credit	B23-MLT-303	Pathology III	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-M3 4 credits	From Available CC-M3 of 4 credits as per NEP							
	MDC 3 3 Credit	From Available MDC 3 of 3 credits as per NEP							
	AEC-3 2 credit	From Available AEC-3 of 2 credits as per NEP							
	SEC-3 3 credit	From Available SEC-3 of 3 credits as per NEP							
			SECOND YEAR : SEMESTER-4						
Scheme D	**CC-A4 4 credit**	B23- MLT-401	Biochemistry IV	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-B4 4 credit	B23-MLT-402	Microbiology IV	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-C4 4 credit	B23-MLT-403	Pathology IV	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-M4 (V) 4 credits	From Available CC-M4(V) of 4 credits as per NEP							
	AEC-4 2 credit	From Available AEC-4 of 2 credits as per NEP							
	VAC-3 2 credits	From Available VAC-3 of 2 credits as per NEP							
Internship of 4 credits of 4-6 weeks duration after 4th Semester (if not done after second semester)									

(Third Year)

Remarks	Course	Paper(s)	Nomenclature ofPaper	Credits	Hours/ Week	Internal marks	External Marks	Total Marks	Exam Duration
			THIRD YEAR: SEMESTER-5						
Scheme D	**CC-A5 4 credit**	B23- MLT-501	Biochemistry V	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-B5 4 credit	B23-MLT-502	Microbiology V	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-C5 4 credit	B23-MLT-503	Pathology V	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-M5 (V) 4 credits	From Available CC-M5(V) of 4 credits as per NEP							
	Internship 4 credits	Internship#4 credit after 4th semester							
			THIRD YEAR : SEMESTER-6						
Scheme D	**CC-A6 4 credit**	B23- MLT-601	Biochemistry VI	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-B6 4 credit	B23-MLT-602	Microbiology VI	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-C6 4 credit	B23-MLT-603	Pathology VI	3	3	20	50	70	3 hrs.
			Practical	1	2	10	20	30	4 hrs.
	CC-M6 4 credits	From Available CC-M6 of 4 credits as per NEP							
	CC-M7(V) 4 credits	From Available CC-M7(V) of 4 credits as per NEP							

(Fourth Year)

Remarks	Course	Paper(s)	Nomenclature ofPaper	Credits	Hours/ Week	Internal Marks	External Marks	Total Marks	Exam Duration
FORTH YEAR: SEMESTER-7 (FOR HONOURS/HONOURS WITH RESEARCH IN Bachelor of Vocation in Medical Laboratory Technology)									
For Honours in Bachelor of Vocation in Medical Laboratory Technology /Honours with Research Bachelor of Vocation in Medical Laboratory Technology	**CC-H1 4 credit**	B23-MLT-701	Hematology I	4	4	30	70	100	3 hrs.
	CC-H2 4 credit	B23-MLT-702	Hematology II	4	4	30	70	100	3 hrs.
	CC-H3 4 credit	B23-MLT-703	Hematology III	4	4	30	70	100	3 hrs.
	DSE-H1 4 credit Select one Option	B23-MLT-704	Microbial Pathogenesis	4	4	30	70	100	3 hrs.
		B23-MLT-705	Advances in Microbiology	4	4	30	70	100	3 hrs.
	PC-H1 4 credit	B23-MLT-706	Practical Based on B23-MLT-701 to 704/705	4	8	30	70	100	6 hrs.
	CC-HM1 4 credit	From Available Minor of 4 credits as per NEP							
SEMESTER-8 (FOR HONOURS IN Bachelor of Vocation in Medical Laboratory Technology)									
For Honours in Bachelor of Vocation in Medical Laboratory Technology	**CC-H4 4 credit**	B23-MLT-801	Hematology IV	4	4	30	70	100	3 hrs.
	CC-H5 4 credit	B23-MLT-802	Hematology V	4	4	30	70	100	3 hrs.
	CC-H6 4 credit	B23-MLT-803	Hematology VI	4	4	30	70	100	3 hrs.
	DSE-H2 4 credit Select one option	B23-MLT-804	Genetic Engineering	4	4	30	70	100	3 hrs.
		B23-MLT-805	Vaccine Production Technology	4	4	30	70	100	3 hrs.
	PC-H2 4 credit	B23-MLT-806	Practical Based on B23-MLT-801 to 804/805	4	8	30	70	100	6 hrs.
	CC-HM2 4 credit	From Available Minor of 4 credits as per NEP							
OR SEMESTER-8 (FOR HONOURS WITH RESEARCH IN Bachelor of Vocation in Medical Laboratory Technology)									
For Honours with Research Bachelor of Vocation in Medical Laboratory Technology	**CC-H4 4 credit**	B23-MLT-801	Hematology IV	4	4	30	70	100	3 hrs.
	CC-H5 4 credit	B23-MLT-802	Hematology V	4	4	30	70	100	3 hrs.
	Project / Dissertation 12 credit	B23-MLT-806	Project / Dissertation	8+4	-	-	-	-	-
	CC-HM2 4 credit	From Available Minor of 4 credits as per NEP							

Programme Learning Outcomes (PLOs) for UG courses Bachelor of Vocation in Medical Laboratory Technology

1. To develop critical thinking and problem solving.

2. To operate and maintain laboratory equipment, utilizing appropriate quality control and safety protocol.

3. To understand rigorous specimen handling protocols, prepare samples for analysis.

4. To make aware the students about human physiology and immunology.

5. To highlight the role of medical lab technician in the diagnosis of the disease.

6. To effect a transition of information and experiences learned in the MLT program to employment situations.

Session: 2023-24

Part A - Introduction

Subject	Bachelor of Vocation in Medical Laboratory Technology
Semester	I
Name of the Course	Biochemistry – 1
Course Code	B23-MLT-101
Course Type:	CC
Level of the course (As per Annexure-I	**100-199**
Pre-requisite for the course (if any)	---
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Demonstrate the knowledge of structure, function and inter-relationship of bio molecules. 2. Understand the integration of various aspects of metabolism and their regulatory pathways. 3. Know about the apparatus and reagents used in analytical and diagnostic section of biochemistry. 4. Teach about the concept of quality control.
CLO5 is based on practical component	5*. Gain knowledge of handling of sophisticated instruments for performing various tests.

Credits	Theory	Practical	Total
	03	01	04
Contact Hours	03	02	05

Max. Marks: 100 Internal Assessment Marks: 30 (Theory 20 + Practical 10) End Term Exam Marks: 70 (Theory 50 + Practical 20)	Exam duration: Theory: 3 Hours Practical: 4 hours

Part B- Contents of the Course

Instructions for Paper- Setter:
Nine questions will be set in all. Question No.1 comprising of objective/short answer type questions from the entire syllabus, will be compulsory. The remaining eight questions will be set taking two questions from each unit. The candidates will be required to attempt Q.No.1 & four others selecting one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours

I	Introduction to Medical Lab Technology, Role of Medical Laboratory technologists-ethics, responsibility, safety measures and hazards in clinical biochemistry, first aid (accidents). Units of measurements, S.I. Units, measurement of volume, various volumetric apparatus (cylinders, flasks, pipettes), calibration of volumetric apparatus.	3 hours/ week
II	Cleaning and caring of general laboratory glassware and equipment, preparation and storage of distilled water, preparation of reagents and standard solutions, storage of chemicals and reagents, use of analytical balance, dry and moist heat radiation, filtration, autoclaving and chemical disinfection for sterilization.	
III	Introduction, aim and scope of Biochemistry. Elementary knowledge of inorganic chemistry :- atomic weight, molecular weight, equivalent weight, acid, bases. Elementary knowledge of organic chemistry : (a) Organic compounds (b) Aliphatic and aromatic compounds (c) Alcohols, Aldehydes, Ketones, Amines, Esters, Phenol etc.	
IV	Viscosity - principles and applications; sedimentation - principles and applications; Radio-isotopes and their use in Biochemistry, mole, molar, molal and normal solutions, pH measurement, buffer solutions, percent solutions, osmosis, dialysis, surface tension.	

V*	**PRACTICAL**
	1. Organization of clinical laboratories
	    (a) Organizational Structure
	    (b) Functional Components
	2. Study of laboratory ethics and responsibility of its workers.
	3. Biohazards and Safety precautions.
	4. First aid-knowledge of first aid procedures.
	5. The calibration of volumetric apparatus
	6. Study of cleaning and sterilization of glassware & equipments.
	7. Preparation of normal, molar, molal and percent solutions.
	8. Preparation of buffer solutions and determination of their pH.
	9. The determination of pH using indicators.
	10. The detection of changes in the confirmation of bovine serum albumin by viscosity measurements.
	11. The effect of pH on the conformation of bovine serum albumin.
	12. To study the phenomenon of osmosis.
	13. To study the phenomenon of dialysis.
		2 hours / week

Suggested Evaluation Methods		

Internal Assessment:		End Term Examination:
➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.: 5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.: 10 • Mid-Term Exam: NA		**Theory: 50** (Written exam) **Practical: 20** (Seminar/Dem onstration/Viv a-voce/Lab records etc)

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Medical Laboratory Technology (Volume 3): Procedure Manual for Routine Diagnostic, Kanai Mukharjee
2. Essentials of Biochemistry, Second Edition, Dr.(Prof) Satyanarayana
3. Essentials of Biochemistry, 2nd Edition, Dr. PankajaNaik
4. Principles and Techniques of Biochemistry and Molecular Biology, 5Th Edition, Wilson & Walker

PLO CLO Mapping of B23-MLT-101

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	1.5	1.0	1.0	1.5	0.5	0
CLO2	1.5	1.0	1.0	2.0	1.0	0
CLO3	2.0	2.0	2.0	1.5	1.5	0
CLO4	2.0	2.0	2.0	0	1.0	0
CLO5	2.0	2.0	0.5	0	0	0

CC-B1

Session: 2023-24	
Part A - Introduction	
Subject	Bachelor of Vocation in Medical Laboratory Technology
Semester	I
Name of the Course	Microbiology – 1
Course Code	B23-MLT-102
Course Type:	CC
Level of the course (As per Annexure-I	**100-199**
Pre-requisite for the course (if any)	---
Course Learning Outcomes(CLO): CLO5 is based on practical component	After completing this course, the learner will be able to: 1. To know the basics of microbiology and knowledge about the contributions of microbiologists. 2. Identify the microorganisms and the disease process as well as aseptic and sterile techniques. 3. Impart general insight into the history, bacterial genetics and serology. 4. Provide knowledge about the equipment used in microbiology and safety precautions. _____ 5*. Handle the instruments and know about the sterilization techniques.

Credits	Theory	Practical	Total
	03	01	04
Contact Hours	03	02	05

Max. Marks: 100 **Internal Assessment Marks: 30 (Theory 20 + Practical 10)** **End Term Exam Marks: 70 (Theory 50 + Practical 20)**	**Exam duration:** **Theory: 3 Hours** **Practical: 4 hours**

Part B- Contents of the Course

Instructions for Paper- Setter:

Nine questions will be set in all. Question No.1 comprising of objective/short answer type questions from the entire syllabus, will be compulsory. The remaining eight questions will be set taking two questions from each unit. The candidates will be required to attempt Q.No.1 & four others selecting one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	**Basic principles and usage of Instruments:** General Instruments : Distillation plant, Centrifuge machine, Analytical Balance, Hotplate, Magnetic Stirrer, Water Bath, Automatic dispenser and diluters, Deionizer. Microbiological Instruments : pH-meter, Autoclave, Incubator, Hot air oven, Laminar Air flow, Colony counter, Muffle furnace, Refrigerator, Inoculator, Mc Intosh and Flides anaerobic jar.	3 hours / week
II	**Microscopy and Micrometery:** Microscopy: Study of compound microscope-magnification, numerical aperture, resolution and components of microscope. Dark ground illumination, care of microscope and common difficulties. Study of phase contrast, interference, fluorescent, polarising and electron microscope. Calibration of ocular micrometer and measurement of microorganisms.	
III	**Microbiology & Medicine:** Introduction to Medical Microbiology, Discovery of microorganisms. Countribution of Robert Koch, Antonie Van Leeuwenhoek, Louis Pasteur, Bordet, Paul Ehrlich, Alexander Flemming, Elie Metchnikoff, Needham, Tyndall Janssen, Joseph Lister, Karl Landsteiner etc. Scope & relevance and safety measurers of Medical Microbiology. Role of medical microbiology in identification and management of various infectious diseases.	
IV	**Sterilization and Disinfection :** Definition, mode of action and uses of various physical methods of sterilization - heat, UV radiation, ionizing radiation, character affecting sterilization, autoclave control and sterilization indicators. Chemical disinfectants - phenol and its compounds, alcohol, halogen, heavy metals and quaternary ammonium compounds, aldehyde, gaseous compounds. Use and abuse of disinfectants. Disinfectants, antiseptics, chemotherapeutic agents, chemotherapeutic index, development of chemotherapy, antibiotics and effect of antibiotics on protein and nucleic acid synthesis and cytoplasmic membrane. Future development of chemo-therapy.	
V*	**PRACTICALS** 1. Role of Microbiology Laboratory 2. Basic rules for specimen collection and handling, transportation of specimen and safety regulations. 3. Laboratory Procedures in Microbiology : (a) Disinfection and sterilization (b) Laboratory culture 4. Study of Principle and Working of : (a) Microscopes (all types) (b) Distillation apparatus (c) Centrifuge (d) Balance (e) De-ionizer (f) pH meter (g) Autoclave (h) Incubator (i) Oven	2 hours/ week

(j)	Colony Counter	
(k)	Muffle Furnace	
(l)	Refrigerator	

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.: 5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.: 10 • Mid-Term Exam: NA	**Theory: 50** (Written exam) **Practical: 20** (Seminar/Dem onstration/Viv a-voce/Lab records etc)

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Text Book of Microbiology for Nursing Students, AnantNarayan Panikar
2. Text Book of Ophthalmology, Khurana
3. Text Book of Microbiology, Baveja.

PLO CLO Mapping of B23-MLT-102						
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	0.2	0.2	0	0.5	0.5	0
CLO2	1.5	0	1.0	1.0	1.5	0.5
CLO3	0.4	0.2	0.5	1.5	0.5	0.5
CLO4	1.0	0.2	0.5	0	1.0	1.5
CLO5	1.5	2.0	2.0	0	1.5	1.5

Session: 2023-24
Part A - Introduction

Subject	Bachelor of Vocation in Medical Laboratory Technology
Semester	I
Name of the Course	Pathology – 1
Course Code	B23-MLT-103
Course Type:	CC
Level of the course (As per Annexure-I	**100-199**
Pre-requisite for the course (if any)	---
Course Learning Outcomes(CLO): CLO5 is based on practical component	After completing this course, the learner will be able to: 1. Learn about histopathology, classification of tissues and their functions. 2. Impart awareness about recording of specimens and maintaining records. 3. Gain knowledge about the morphology and anatomy of human body. 4. Use of various equipments for histology. _____ 5*. Study of laboratory organization related to histology and cytology.

Credits	Theory	Practical	Total
	03	01	04
Contact Hours	03	02	05

Max. Marks: 100 Internal Assessment Marks: 30 (Theory 20 + Practical 10) End Term Exam Marks: 70 (Theory 50 + Practical 20)	Exam duration: Theory: 3 Hours Practical: 4 hours

Part B- Contents of the Course

Instructions for Paper- Setter:
Nine questions will be set in all. Question No.1 comprising of objective/short answer type questions from the entire syllabus, will be compulsory. The remaining eight questions will be set taking two questions from each unit. The candidates will be required to attempt Q.No.1 & four others selecting one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours

I	Introduction to histopathology and laboratory organization, Introduction to anatomical terms and organization of human body. Tissues - Definitions, types, classification, location and functions. Management and planning, receiving and recording of specimens, indexing, maintaining records, knowledge of maintenance and use of various equipments	3 hours/ week
II	**Study of:** Skeletal system, bones, joints and muscles. Respiratory system. Cardiovascular system. Alimentary system mechanism and physiology of digestion and absorption.	
III	**Study of:** **Liver** structure and function. Urinary system. Male genital system. Female genital system.	
IV	**Study of:** Nervous system. Spleen, lymph node and R.E. system. Endocrine glands and their functions.	
V*	**PRACTICALS** • Study of laboratory organization related to histology and cytology - basic terminologies and specimen handling. • Use and care of equipments, laboratory supplies and management. • Study of tissues. • Study of all the systems with the help of model/charts. • Study of bones.	2 hours/ week

Suggested Evaluation Methods

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.: 5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.: 10 • Mid-Term Exam: NA	**Theory: 50** (Written exam) **Practical: 20** (Seminar/Demonstration/Viva-voce/Lab records etc)

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Textbook of Medical Laboratory Technology, Volume 1, 3rd Edition by Praful Ghodkar
2. Textbook of Medical Laboratory Technology, Volume 2, 3rd Edition by Praful Ghodkar
3. Medical Laboratory Technology (Volume 1): Procedure Manual for Routine Diagnostic, Kanai Mukharjee

4.	Medical Laboratory Technology (Volume 2): Procedure Manual for Routine Diagnostic, Kanai Mukharjee
5.	Medical Laboratory Technology (Volume 3): Procedure Manual for Routine Diagnostic, Kanai Mukharjee

PLO CLO Mapping of B23-MLT-103						
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	0	1.0	1.0	1.5	1.0	0.5
CLO2	1.0	1.0	3.0	0.3	1.5	0.5
CLO3	0.5	1.5	1.0	1.5	1.5	1.5
CLO4	1.0	2.0	1.0	0	1.5	1.5
CLO5	1.5	2.5	1.5	0	1.5	1.5

Session: 2023-24			
Part A – Introduction			
Subject	Bachelor of Vocation in Medical Laboratory Technology		
Semester	II		
Name of the Course	Biochemistry – II		
Course Code	B23-MLT-201		
Course Type:	CC		
Level of the course (As per Annexure-I	**100-199**		
Pre-requisite for the course (if any)	---		
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: . Provide a good theoretical and practical education in understanding importance of water. . Understand the organization of a clinical laboratory including lab information system, autoanalyzers in laboratory for qualitative analysis. . Introduce various body fluids with their biochemical composition and regulatory mechanism in blood pH. . To provide knowledge about various body fluids with their importance in diagnosis of different diseases. _____ *. Provide skills for accurate results as well as calibrate different laboratory instruments.		
CLO5 is based on practical component			
Credits	Theory	Practical	Total
	03	01	04
Contact Hours	03	02	05
Max. Marks: 100 **Internal Assessment Marks: 30 (Theory 20 + Practical 10)** **End Term Exam Marks: 70 (Theory 50 + Practical 20)**		**Exam duration:** **Theory: 3 Hours** **Practical: 4 hours**	
Part B- Contents of the Course			

Instructions for Paper- Setter:

Nine questions will be set in all. Question No.1 comprising of objective/short answer type questions from the entire syllabus, will be compulsory. The remaining eight questions will be set taking two questions from each unit. The candidates will be required to attempt Q.No.1 & four others selecting one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	**Water :** Structure of water, solvents, properties of water, importance of water : **Carbohydrates :** Structure, classification and their functions in biological system.	3 hours/ week
II	**Lipids :** General structure of fatty acids and classification of lipids. **Amino acids :** Common structural features, physical and chemical properties, separation of amino acids and essential amino acids. **Proteins :** Classification, structural organization and functions of proteins.	
III	**Enzymes :** Definition, classification of enzymes, concept of active sites, general mode of action of enzymes, mechanism of enzyme activity, Coenzymes. A brief account of **Vitamins**.	
IV	**Nucleic acids :** Structure, function and types of DNA and RNA, Nucleotides, Nucleosides, Nitrogen bases and role of Nucleic acids. **Porphyrins :** A brief account of Porphyrins.	
V*	**PRACTICALS** • To study the phenomenon of imbibition of water. • To study the phenomenon of diffusion of water. • To study the phenomenon of plasmolysis and deplasmolysis. • To determine the osmotic pressure of cell sap by plasmolytic method. • To study the qualitative analysis of carbohydrates. • To study the qualitative analysis of proteins. • To study the qualitative analysis of fats & oils. • To study the structure of DNA and RNA from model/charts. • To study the effects of temperature, pH and substrate concentration on enzyme activity.	2 hours/ week
Suggested Evaluation Methods	

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.: 5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.: 10 • Mid-Term Exam: NA	**Theory: 50** (Written exam) **Practical: 20** (Seminar/Demonstration/Viva-voce/Lab records etc)

Part C-Learning Resources

Recommended Books/e-resources/LMS:

6. Essentials of Biochemistry, Second Edition, Dr.(Prof) Satyanarayana
7. Essentials of Biochemistry, 2nd Edition, Dr. PankajaNaik
8. Principles and Techniques of Biochemistry and Molecular Biology, 5Th Edition, Wilson & Walker
9. **An Introduction to Chemistry, 8th Edition by Mark Bishop**
10. Clinical Chemistry made easy, 1stEidtion by Hughes Tietz Fundamentals of Clinical Chemistry, 7th Edition by Carl Burtis

PLO CLO Mapping of B23-MLT-201						
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	1.5	1.0	0.5	2.0	1.0	1.5
CLO2	1.5	2.0	2.0	0.5	2.0	2.0
CLO3	1.5	1.0	1.0	0.6	2.0	2.0
CLO4	2.0	1.0	2.0	0.3	2.7	2.0
CLO5	2.5	2.0	1.0	0.2	2.0	2.5

CC-B2

Session: 2023-24	
Part A - Introduction	
Subject	Bachelor of Vocation in Medical Laboratory Technology
Semester	II
Name of the Course	Microbiology – II
Course Code	B23-MLT-202
Course Type:	CC
Level of the course (As per Annexure-I	**100-199**
Pre-requisite for the course (if any)	---
Course Learning Outcomes(CLO): CLO5 is based on practical component	After completing this course, the learner will be able to: Know the occurrence, spread and control of bacterial infections. Provide information about bacterial culture procedures, staining procedures and bio-chemical tests for identification of bacteria. Know the occurrence, spread and control of mycological infections, culture methods required to perform micro-biological tests. To learn general characters, life cycle and laboratory diagnosis of various medically important parasites. *. To train the students with knowledge of medically significant isolates in mycology, parasitology, isolation methods and treatments.

Credits	Theory	Practical	Total
	03	01	04
Contact Hours	03	02	05

Max. Marks: 100 **Internal Assessment Marks: 30 (Theory 20 + Practical 10)** **End Term Exam Marks: 70 (Theory 50 + Practical 20)**	**Exam duration:** **Theory: 3 Hours** **Practical: 4 hours**

Part B- Contents of the Course

Instructions for Paper- Setter:

Nine questions will be set in all. Question No.1 comprising of objective/short answer type questions from the entire syllabus, will be compulsory. The remaining eight questions will be set taking two questions from each unit. The candidates will be required to attempt Q.No.1 & four others selecting one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours
I	**Cultural Media :** Liquid and solid media, container for media distribution of media in tubes, bottles and petridishes. Common ingredients of cultural media, synthetic media, peptone water, nutrient agar and broth, chocolate and blood agar, malt extract and broth, milk agar etc. Special media for *Neisseria, Corynebacterium, Mycobacterium & Enterobacteriaceae* group.	3 hours/ week
II	**Cultivation of bacteria :** Instruments used, inoculation hood, laminar flow, culture procedure, incubation (aerobic and anaerobic). Isolation of pure culture and its preservation. Blood culture. Introduction and uses of culture, classification of cultures, antimicrobial sensitivity, anaerobic cultivation techniques. **Pure culture :** Maintenance and preservation of pure cultures. Collection, transport processing and storage of clinical sample for microbiological analysis.	
III	Anatomy of bacterial cell, intercellular components and their functions, bacterial reproduction, morphological study of bacteria and its appendages - flagella, fimbriae, pili, capsule, spore and cysts. **Classification and identification of bacteria :** Biological groups, morphological and biological classification, DNA composition as a basis of classification system of identification - morphology, staining reactions, cultural characters, biochemical reactions, antigenic characters and Medical importance.	
IV	Typical growth curve, various phases of growth physiology of bacteria-catabolism and anabolism. Nutrition of microbes and physical conditions required for growth. Effect of carbon, nitrogen, growth factors, vitamins, temperature, pH, osmotic pressure, oxygen and carbon dioxide on microbial growth.	
V*	**PRACTICALS** 1. Principle, construction and working of : Microscope, Laminar Air Flow 2. Study of bacterial cell morphology 3. Isolation of pure cultures and preservation. 4. Demonstration of staining procedures for Gram staining, endospore and capsules. 5. Classification and identification of bacteria with respect to Gram Staining. 6. Study of growth curve in Bacteria and yeast 7. Preparation of culture media and technique of aseptic transfers. 8. Study of composition and preparation of stains.	2 hours/ week

	Suggested Evaluation Methods	

Internal Assessment:	End Term Examination:
➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.: 5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.: 10 • Mid-Term Exam: NA	**Theory: 50** (Written exam) **Practical: 20** (Seminar/Demonstration/Viva-voce/Lab records etc)

Part C-Learning Resources

Recommended Books/e-resources/LMS:
1. Microbiology for Nursing and Allied Sciences. Dr. Arora 2nd Edition
2. Textbook of Microbiology for Nurses Anantnarayan 1st Edition
3. Practical and Applied Microbiology Anuradha De 4th Edition
4. Text Book of Microbiology Anantnarayan 10th Edition
5. TextBook of Microbiology and Parasitology PrafulGodkar 1st Edition
6. Medical Parasitology C. P. Baweja 3rd Edition

PLO CLO Mapping of B23-MLT-202						
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	1.5	1.0	1.0	0.5	2.0	1.4
CLO2	1.4	2.4	2.6	0.2	2.1	2.7
CLO3	1.5	2.5	2.2	0.2	2.3	2.6
CLO4	0.5	1.5	2.4	0.8	2.8	2.7
CLO5	1.5	2.5	2.3	0.3	2.7	2.7

CC-C3

Session: 2023-24	
Part A - Introduction	
Subject	Bachelor of Vocation in Medical Laboratory Technology
Semester	II
Name of the Course	Pathology – II
Course Code	B23-MLT-203
Course Type:	CC
Level of the course (As per Annexure-I	**100-199**
Pre-requisite for the course (if any)	---
Course Learning Outcomes(CLO): CLO5 is based on practical component	After completing this course, the learner will be able to: . Provide knowledge about general principles, recording and labeling of histology specimens. . Gain knowledge about various fixatives for tissue embedding. . Enable the students to know about the working of microtome. . Learn about the methods of collection of museum specimens, preparation and their storage. _____ *. Prepare microtomy slides of various organs.

Credits	Theory	Practical	Total
	03	01	04
Contact Hours	03	02	05

Max. Marks: 100 Internal Assessment Marks: 30 (Theory 20 + Practical 10) End Term Exam Marks: 70 (Theory 50 + Practical 20)	Exam duration: Theory: 3 Hours Practical: 4 hours
Part B- Contents of the Course	

Instructions for Paper- Setter:
Nine questions will be set in all. Question No.1 comprising of objective/short answer type questions from the entire syllabus, will be compulsory. The remaining eight questions will be set taking two questions from each unit. The candidates will be required to attempt Q.No.1 & four others selecting one question from each unit. All questions carry equal marks.

Unit	Topics	Contact Hours

I	**Introduction to Histopathology :** General Principle, Reception, recording and labelling of histology specimens. Fixation and various fixatives - Mode of action and indication preparation. Processing of histological tissues for paraffin-embedding. Embedding and embedding media, Vacuum embedding.		3 hours/ week
II	**Equipment used in Histopathology :** (1) Tissue Processor (2) Microtome - various types, their working principle and maintenance. (3) Microtome knives and knife-sharpening. (4) Automatic slide strainer (5) Freezing microtome (6) Cryostat Section cutting, cutting faults and remedies. Decalcification - Methods, advantages and disadvantages, various types - their mechanisms of action.		
III	**Major techniques used in Histopathology ;** Routine staining procedures, mounting and mounting media. Dye chemistry, theory and practice of staining. Solvent mordents, accelerators and accentuators. Use of controls in various staining procedures.		
IV	Preparation of Haematoxylin and Eosine Methods of preparation, staining technique for rapid diagnosis Histo-chemical staining Cyto-chemical staining Collection of Museum specimens Preparation and storage, methods of mounting		
V*	**PRACTICALS** • Histological study of all the systems. • Preparation of stains. • Microtomy.		2 hours/ week
Suggested Evaluation Methods			

Internal Assessment:		**End Term Examination:**

Internal Assessment:	**End Term Examination:**
➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.: 5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.: 10 • Mid-Term Exam: NA	**Theory: 50** (Written exam) **Practical: 20** (Seminar/Demonstration/Viva-voce/Lab records etc)

Part C-Learning Resources
Recommended Books/e-resources/LMS: 11. Textbook of Medical Laboratory Technology, Volume 1, 3rd Edition by Praful Ghodkar   12. Textbook of Medical Laboratory Technology, Volume 2, 3rd Edition by Praful Ghodkar   13. Medical Laboratory Technology (Volume 1): Procedure Manual for Routine Diagnostic, Kanai Mukharjee   14. Medical Laboratory Technology (Volume 2): Procedure Manual for Routine Diagnostic, Kanai Mukharjee   15. Medical Laboratory Technology (Volume 3): Procedure Manual for Routine Diagnostic, Kanai Mukharjee

PLO CLO Mapping						
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	1.0	1.7	2.3	0	2.0	2.2
CLO2	1.2	2.0	2.6	0	1.0	2.0
CLO3	1.4	2.4	2.2	0	1.0	2.0
CLO4	1.4	2.5	0.5	0	1.0	1.5
CLO5	1.2	2.4	2.6	0	1.0	3

KURUKSHETRA UNIVERSITY KURUKSHETRA

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

Scheme of Examination and Syllabus for

Undergraduate Programme

Subject: PHYSICS

Under Multiple Entry-Exit, Internships and

CBCS-LOCF in accordance to NEP 2020

w.e.f. 2023-24 (in phased manner)

Kurukshetra University Kurukshetra

Scheme and Syllabus of Examination for Undergraduate programme
Subject: PHYSICS
Under Multiple Entry-Exit, Internships and
CBCS-LOCF in accordance to NEP 2020
w.e.f. 2023-24 (in phased manner)

Semester	Course Type	Course Code	Nomenclature of paper	Credits	Contact hours	Internal marks	End term Marks	Total Marks	Duration of exam (Hrs) T + P
1	CC-1/ MCC-1	B23-PHY-101	Mechanics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
	MCC-2	B23-PHY-102	Mathematical Physics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
	CC-M1	B23-PHY-103	Elementary Mechanics	1	1	10	20	30	3
			Practicum	1	2	5	15	20	3
	MDC 1	B23-PHY-104	Physics Fundamentals-I	2	2	15	35	75	3
			Practicum	1	2	5	20	25	3
2	CC-2 MCC-3	B23-PHY-201	Electricity and Magnetism& EM Theory	3	3	20	50	70	3
			Practicum	1	3	10	20	30	3
	CC-M2	B23-PHY-202	Elementary Electricity, Magnetism & EM Theory	1	1	10	20	30	3
			Practicum	1	2	5	15	20	3
	DSEC-1	B23-PHY-203	Computational Physics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
	MDC- 2	B23-PHY-204	Physics Fundamentals-II	2	2	15	35	50	3
			Practicum	1	2	5	20	25	3

3	CC-3/ MCC-4	B23-PHY-301	Thermodynamics & Statistical Physics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
	MCC-2	B23-PHY-102	Mathematical Physics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
	MCC-5	B23-PHY-303	Classical Mechanics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
	MDC 3	B23-PHY-304	Elements of Modern Physics	2	2	15	35	50	3
			Practicum	1	2	5	20	25	3
4	CC-4/ MCC-6	B23-PHY-401	Waves and Optics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
	MCC-7	B23-PHY-402	Introductory Quantum Mechanics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
	MCC-8	B23-PHY-403	Atomic Spectroscopy	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
	DSE-1	B23-PHY-404	Laser Physics and Fiber Optics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
		OR							
		B23-PHY-405	Physics of Nano Materials	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
5	CC-5 MCC-9	B23-PHY-501	Modern Physics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
	MCC-10	B23-PHY-502	Nuclear Physics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3

	DSE-2	B23-PHY-503	Environmental Physics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
		OR							
		B23-PHY-504	Non-Linear Dynamics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
	DSE-3	B23-PHY-505	Instrumentation and Analytical Methods	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
		OR							
		B23-PHY-506	Renewable Energy and Energy Harvesting	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
6	CC-6 MCC-11	B23-PHY-601	Electronics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
	MCC-12	B23-PHY-602	Solid State Physics-1	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
	DSE-4	B23-PHY-603	Condensed Matter Physics-1	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
		OR							
		B23-PHY-604	Material Science	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
	DSE-5	B23-PHY-605	Nuclear and Particle Physics	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3
		OR							
		B23-PHY-606	Modern Characterization Techniques	3	3	20	50	70	3
			Practicum	1	2	10	20	30	3

7	CC-H1	B23-PHY-701	Advanced Mathematical Physics	4	4	30	70	100	3
	CC-H2	B23-PHY-702	Statistical Mechanics	4	4	30	70	100	3
	CC-H3	B23-PHY-703	Quantum Mechanics	4	4	30	70	100	3
	DSE-6	B23-PHY-704	Molecular Physics	4	4	30	70	100	3
		OR							
		B23-PHY-705	Sensors and Transducers	4	4	30	70	100	3
	PC-H1	B23-PHY-706	Practicum Course	4	8	30	70	100	6
8	CC-H4	B23-PHY-801	Electrodynamics and Plasma Physics	4	4	30	70	100	3
	CC-H5	B23-PHY-802	Advance Quantum Mechanics	4	4	30	70	100	3
	CC-H6	B23-PHY-803	Digital Electronics	4	4	30	70	100	3
	DSE-7	B23-PHY-804	Solid State Physics-II	4	4	30	70	100	3
		OR							
		B23-PHY-805	Condensed Matter Physics-II	4	4	30	70	100	3
	PC-H2	B23-PHY-806	Practicum Course	4	8	30	70	100	6
	Research	B23-PHY-R-807	Project/ Dissertation	12			300	300	

Scheme of Examination for VAC/VOC

Semester	Course Type	Course Code	Nomenclature of paper	Credits	Contact hours	Internal marks	End term Marks	Total Marks	Duration of exam (Hrs) T + P
3	VAC-3	B23-VAC-316	Indian Astronomy in the 18th and 19th Centuries	2	2	15	35	50	3
3	VAC-3	B23-VAC-318	Basics of Indian Astronomy	2	2	15	35	50	3
3	VAC-3	B23-VAC-326	Exploring the Journey of Indian Space Satellites	2	2	15	35	50	3
4	VAC-4	B23-VAC-419	Physics in Everyday Life	2	2	15	35	50	3
4	VAC-4	B23-VAC-423	Radiations and its Hazards in Daily Life	2	2	15	35	50	3
1	VOC-1	B23-VOC-114	Refrigeration and Air Conditioning	2	2	15	35	50	3
3	VOC-3	B23-VOC-322	Maintenance of Laboratory Instruments	2	2	15	35	50	3
3	VOC-3	B23-VOC-323	Installation and Maintenance of Solar Panels	2	2	15	35	50	3

Kurukshetra University Kurukshetra
Undergraduate Programs
Course: CC-1/MCC-1

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	1st
Name of the Course	Mechanics
Course Code	B23-PHY-101
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	CC/MCC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	Physics as main subject at level 4 (i.e. 10+2 or equivalent)
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Understand the dynamics of system of particles, conservation of energy and momentum application of both translational and rotational dynamics motions simultaneously in analyzing rolling with slipping. 2. Differentiate between elastic and plastic body. Elastic constants, determination and their physical significance. Torque and its significance. 3. Familiar about the special theory of relativity and its applications. Michelson's Morley experiments and its finding. 4. Analyze the two body Central Force problem and its applications 5. Learn to present observations, results, analysis and different concepts related to experiments of Mechanics.

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5

Max. Marks:100 Internal Assessment Marks:30 End Term Exam Marks: 70	Time:3hrs

Part B- Contents of the Course

Instructions for Paper- Setter

1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

Unit	Topics	Contact Hours
I	**Fundamentals of Dynamics**: Rigid body, Moment of Inertia, Radius of Gyration, Theorems of perpendicular and parallel axis (with proof), Moment of Inertia of ring, Disc, Angular Disc, Solid cylinder, Solid sphere, Hollow sphere, Rectangular plate, Square plate, Solid cone, Triangular plate, Torque, Rotational Kinetic Energy, Angular momentum, Law of conservation of angular momentum, Rolling motion, condition for pure rolling, acceleration of body rolling down an inclined plane, Fly wheel, Moment of Inertia of an irregular body.	11
II	**Elasticity:** Deforming force, Elastic limit, stress, strain and their types, Hooke's law, Modulus of rigidity, Relation between shear angle and angle of twist, elastic energy stored/volume in an elastic body, Elongation produced in heavy rod due to its own weight and elastic potential energy stored in it, Tension in rotating rod, Poisson's ratio and its limiting value, Elastic Constants and their relations. Torque required for twisting cylinder, Hollow shaft is stiffer than solid one. Bending of beam, bending moment and its magnitude, Flexural rigidity, Geometrical moment of inertia for beam of rectangular cross-section and circular cross-section. Bending of cantilever (loaded by a weight W at its free end), weight of cantilever uniformly distributed over its entire length. Dispersion of a centrally loaded beam supported at its ends, determination of elastic constants for material of wire by Searle's method.	12
III	**Special Theory of Relativity:** Michelson's Morley experiment and its outcomes, Postulates of special theory of relativity, Lorentz Transformations, Simultaneity and order of events, Lorentz contraction, Time dilation, Relativistic transformation of velocity, relativistic addition of velocities, variation of mass-energy equivalence, relativistic Doppler effect, relativistic kinematics, transformation of energy and momentum, transformation of force, Problems of relativistic dynamics.	11

IV	**Gravitation and central force motion:** Law of gravitation, Potential and field due to spherical shell and solid sphere. Motion of a particle under central force field, Two body problem and its reduction to one body problem and its solution, compound pendulum or physical pendulum in form of elliptical lamina and expression of time period, determination of g by means of bar pendulum, Normal coordinates and normal modes, Normal modes of vibration for given spring mass system, possible angular frequencies of oscillation of two identical simple pendulums of length (l) and small bob of mass (m_0 joined together with spring of spring constant (k).	11
	Practicum 1. Measurement of length (or diameter) using Vernier Caliper, screw gauge and travelling microscope. 2. To study the random error in observations. 3. To determine the area of window using a sextant. 4. Moment of Inertia of a Fly Wheel 5. Moment of Inertia of irregular body using a Torsion Pendulum. 6. Young's Modulus by Bending of Beam. 7. Modulus of rigidity of material of wire by Maxwell's Needle. 8. Elastic constants by Searle's method. 9. To determine the value of 'g' by using Bar pendulum. 10. To find the Poisson ratio of rubber by Rubber tube method. 11. To compare Moment of Inertia of a solid Sphere, Hollow Sphere and solid Disc of same mass with the help of Torsion Pendulum. 12. To determine the bending moment of a cantilever beam with uniformly distributed load, uniformly varying load and point load. **Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.**	30

Suggested Evaluation Methods		

Internal Assessment: ➢ **Theory (20 Marks)** • Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 Marks** • Mid-Term Exam: **10 Marks** ➢ **Practicum (10 Marks)** • Class Participation: **Nil** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 Marks** • Mid-Term Exam: **Nil**	**End Term Examination : 50 Marks** **: 20 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Mechanics "Berkeley Physics Course Vol. I", Charles Kittel, Tata McGraw-Hill
2. Mechanics, D.S. Mathur, S. Chand and Company Limited, 2000
3. Elements of Properties of Matter, D.S. Mathur, S .Chand & Com. Pt. Ltd., New Delhi
4. Physics, Resnick, Halliday & Walker, Wiley
5. Physics for scientists and Engineers with Modern Phys., J.W. Jewett, R.A. Serway, 2010, Cengage Learning
6. An introduction to mechanics, D. Kleppner, R.J. Kolenkow, 1973, McGraw-Hill.
7. Properties of Matter, R. Murgeshan, S. Chand & Com. Pt. Ltd., New Delhi
8. Classical Mechanics, J.C. Upadhyaya, Himalaya Publishing House.
9. B.Sc. Practical Physics, C.L. Arora, S. Chand Publisher, New Delhi
10. Advanced Level Practical Physics, M. Nelkon and Ogborn, Henemann Education Books Ltd., New Delhi
11. Practical Physics, S.S. Srivastava and M.K. Gupta, Atma Ram & Sons, Delhi
12. Practical Physics, S.L. Gupta and V. Kumar, Pragati Prakashan Meerut
13. Modern Approach to Practical Physics, R.K. Singla, Modern Publishers, Jalandhar
14. Advanced Practical Physics for students, B.L. Flint and H.T. Worsnop, Asia Publishing House.

Kurukshetra University Kurukshetra
Undergraduate Programs
Course: MCC-2

Session: 2023-24		
Part A - Introduction		
Subject	Physics	
Semester	1st	
Name of the Course	**Mathematical Physics**	
Course Code	B23-PHY-102	
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	MCC	
Level of the course (As per Annexure-I	100-199	
Pre-requisite for the course (if any)	Physics as main subject at level 4 (i.e. 10+2 or equivalent)	
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Learn the Fourier analysis of periodic functions and their applications in physical problems. Learn the beta, gamma and the error functions and their applications in doing integrations. 2. Acquire knowledge of methods to solve partial differential equations with the examples of important partial differential equations in Physics. 3. Write given function in terms of sine and cosine terms in Fourier series and also to get knowledge in Fourier transforms 4. Learn about beta gamma function, their properties, solve Legendre equations find generating function for Legendre Polynomial, Hermite equation, study orthogonal properties of Hermite Polynomials, recurrence relations of complex numbers and their properties such as analyticity, poles and residues. _____ 5. Learn about the methods to solve the mathematical problem using Fortran		
Credits	Theory	Practical	Total
	3	1	4

Contact Hours	3	2	5
Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**		**Time:3hrs**	

<table>
<tr><td colspan="4" align="center">Part B- Contents of the Course</td></tr>
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Instructions for Paper- Setter

1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

Unit	Topics	Contact Hours
I	**Theory of Errors:** Systematic and Random errors, Propagation of errors, Normal law of errors, Standard and Probable error, Least square fit, error on slope and intercept of fitted line. **Matrices:** Normal Matrices, Orthogonal Matrices, Hermitian Matrices, Unitary Matrices, Symmetric and Anti-symmetric Matrices, Conjugate of a Matrix, Anti-hermition Matrices, Trace of Matrix, Eigen values and eigen vectors of Matrices, Diagonalization of Matrices.	11
II	**Method of expansion of a function:** Taylor's expansion, Power series, Laurent's theorem. Partial and ordinary differential equations, Partial Differential equations, First order differential equations, Method of separation of variables, Singular points, Vibrations of an elastic string, One dimensional Heat Flow, Heat conduction equation for a 3-dimensional rectangular configuration and apply it to the cooling of a brick (assuming constant initial temperature distribution), vibrations of rectangular and circular membrane, Method of Frobenius, Diffusion equation, Laplace's equation in problems of rectangular , cylindrical and spherical symmetry, Inhomogeneous partial differential equation-Green's function.	12
III	**Fourier series and Integrals:** Introduction, Evaluation of coefficients of Fourier series, cosine series, sine series, Dirichlet's theorem; representation of Even and odd functions, Extension of interval, complex form of Fourier series, Properties of Fourier series: Convergence, Integration, Differentiation, Parseval's theorem, Physical applications of Fourier series analysis: square wave, Half wave rectifier, Full wave rectifier, sawtooth wave, triangular wave; Fourier Integrals, deduction of expressions for the Fourier Transform and its inverse.	11

IV	**Beta and Gamma Functions:** Definition of gamma function, beta function, other forms of beta function, Relationship between beta and gamma function, Legendre's equation, Legendre's Polynomial, Legendre's function of second kind, General solution of Legendre's equation, Generating function of Legendre's polynomial, orthogonality of Legendre's polynomials, Deduction of Rodrigue's formula for the Legendre's Polynomials, Hermite Polynomial, Hermite differential equation, Generating function of Hermite Polynomial, deduction of recursion relation for H_n of 1st kind and 2nd.	11
	Practicum **Review of FORTRAN Programming fundamentals:** FORTRAN Preliminaries: Integer and floating point arithmetic expression, built in functions, executable and non-executable statements, input and output statements, Formats, IF, DO, FOR and GO TO statements, Dimension arrays, statement function and function subprogram. To print out all natural (even/odd) numbers between given limits using computer. 1. Compute the product of two matrices of different dimension using DO loop 2. Numerical integration by Simpson 1/3 rule 3. Fitting of a straight line using Least-Square method 4. Using array variable, find out the average and standard deviation 5. Write a program to evaluate the function Y=1 / [C (1 + e Cos θ)] and V=√ [C M G (e2 + e Cos θ + 1)] e = 1.1, C = 3.0(E+08), M = 5.893(E+24), G = 6.67(E-11) for varying value of θ from 0 to π. 6. To find maximum, minimum and range of a given set of numbers using computer. 7. To evaluate sum of finite series. 8. Find the roots of a quadratic equation. 9. To find integration of a definite integral by trapezoidal rule. 10. To find the area of a triangle, sphere and cylinder. 11. Given values for a, b, c and d and a set of values for the variable x evaluate the function defined by. $f(x) = ax^2 + bx + c$ if x < d $f(x) = 0$ if x = d $f(x) = ax^2 + bx - c$ if x> d For each value of x and print the value of x and f(x). Write a program for an arbitrary number of x values. **Note: Teachers will discuss the fundamentals of FORTRAN Programming to the students. Thereafter student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.**	30
Suggested Evaluation Methods		

Internal Assessment:	End Term Examination : 50 Marks
➢ **Theory (20 Marks)**	
• Class Participation: **05 Marks**	
• Seminar/presentation/assignment/quiz/class test etc.: **05 Marks**	
• Mid-Term Exam: **10 Marks**	
➢ **Practicum (10 Marks)**	**20 Marks**
• Class Participation: **Nil**	
• Seminar/Demonstration/Viva-voce/Lab records etc.: **10 Marks**	
• Mid-Term Exam: **Nil**	

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Mathematical Methods for Physicists: Arfken, Weber, 2005, Harris, Elsevier
2. Fourier Analysis by M.R. Spiegel, 2004, Tata McGraw-Hill.
3. Mathematics for Physicists, Susan M. Lea, 2004, Thomson Brooks/Cole.
4. An Introduction to Ordinary Differential Equations, Earl A Coddington, 1961, PHI Learning.
5. Differential Equations, George F. Simmons, 2006, Tata McGraw-Hill.
6. Essential Mathematical Methods, K.F. Riley and M.P. Hobson, 2011, Cambridge University Press
7. Partial Differential Equations for Scientists and Engineers, S.J. Farlow, 1993, Dover Publications.
8. Mathematical methods for Scientists and Engineers, D.A. McQuarrie, 2003, Viva Books.
9. Advanced Practical Physics for students, B. L. Flint and H.T. Worsnop, 1971, Asia Publishing House
10. Advanced level Physics Practical's, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers
11. A Text Book of Practical Physics, I. Prakash & Ramakrishna, 11th Edn, 2011, Kitab Mahal
12. Engineering Practical Physics, S. Panigrahi & B.Mallick, 2015, Cengage Learning India Pvt. Ltd.
13. Practical Physics, G.L. Squires, 2015, 4th Edition, Cambridge University Press.
14. A Laboratory Manual of Physics for undergraduate classes, D.P. Khandelwal, 1985, Vani Pub.
15. Introduction to Numerical Analysis, S.S. Sastry, 5th Edn. , 2012, PHI Learning Pvt. Ltd.
16. Schaum's Outline of Programming with C++. J. Hubbard, 2000, McGraw-Hill Pub.
17. Numerical Recipes in C: The Art of Scientific Computing, W.H. Pressetal, 3rd Edn. , 2007, Cambridge University Press.
18. A first course in Numerical Methods, U.M. Ascher & C. Greif, 2012, PHI Learning.
19. Elementary Numerical Analysis, K.E. Atkinson, 3rd Edn . , 2007 , Wiley India Edition.
20. Numerical Methods for Scientists & Engineers, R.W. Hamming, 1973, Courier Dover Pub.
21. An Introduction to Computational Physics, T.Pang, 2 nd Edn. , 2006,Cambridge Univ. Press
22. Computational Physics, Darren Walker, 1 st Edn., 2015, Scientific International Pvt. Ltd.

Kurukshetra University Kurukshetra
Undergraduate Programs
Course: CC-M1

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	1st
Name of the Course	Elementary Mechanics
Course Code	B23-PHY-103
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	CC-M
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	Physics as main subject at level 4 (i.e. 10+2 or equivalent) and Physics not as major subject in 1st sem
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Understand the dynamics of system of particles, Determination of moment of inertia using Theorems of parallel and perpendicular axis. Application of both translational and rotational dynamics motions simultaneously in analyzing rolling with slipping 2. Differentiate between elastic and plastic bodies. Elastic constants, determination and their physical significance. Torque and its significance in rotatory motion 3. Familiar about the special theory of relativity and its applications. Michelson's Morley experiment and its findings. 4. Analyze the two body Central Force problem and its applications 5. Learn to present observations, results, analysis and different concepts related to experiments of Mechanics

Credits	Theory	Practical	Total
	1	1	2
Contact Hours	1	2	3

Max. Marks:50 Internal Assessment Marks:15 End Term Exam Marks: 35	Time:3hrs

Part B- Contents of the Course

Instructions for Paper- Setter

1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

Unit	Topics	Contact Hours
I	**Fundamentals of Dynamics**: Rigid body, Moment of Inertia, Radius of Gyration, Theorems of perpendicular and parallel axis (with proof), Moment of Inertia of ring, Disc, Angular Disc, Solid cylinder.	3
II	**Elasticity:** Deforming force, Elastic limit, stress, strain and their types, Hooks law, Module of elasticity Relation between shear angle and angle of twist, Poisson's ratio and its limiting value. Torque required for twisting cylinder.	4
III	**Special Theory of Relativity:** Michelson's Morley experiment and its outcomes, Postulates of special theory of relativity, Lorentz Transformations, Lorentz contraction, Time dilation, Relativistic transformation of velocity, relativistic addition of velocities, variation of mass-energy equivalence	4
IV	**Gravitation and central force motion:** Law of gravitation, Potential and field due to spherical shell and solid sphere. Motion of a particle under central force field, Normal coordinates and normal modes, Normal modes of vibration for given spring mass system, possible angular frequencies of oscillation of two identical simple pendulums of length (l) and small bob of mass (m_0 joined together with spring of spring constant (k).	4
	Practicum 1. Measurement of length (or diameter) using vernier caliper, screw gauge and travelling microscope. 2. To study the random error in observations. 3. To determine the area of window using a sextant. 4. Moment of Inertia of a Fly Wheel 5. Moment of Inertia of irregular body using a Torsion Pendulum. 6. Young's Modulus by Bending of Beam. 7. Young's modulus by Koenig's method. 8. Modulus of rigidity of material of wire by Maxwell's Needle.	15

	9. Elastic constant by Searle's method. 10. To determine the value of 'g' by using Bar pendulum. **Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.**	

Suggested Evaluation Methods

	End Term Examination : 20 Marks
Internal Assessment: ➢ **Theory (10 Marks)** • Class Participation: **04 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **Nil** • Mid-Term Exam: **6 Marks** ➢ **Practicum (5 Marks)** • Class Participation: **Nil** • Seminar/Demonstration/Viva-voce/Lab records etc.: **5 Marks** • Mid-Term Exam: **Nil**	**15 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Mechanics "Berkeley Physics Course Vol. I", Charles Kittel, Tata McGraw-Hill
2. Mechanics, D.S. Mathur, S. Chand and Company Limited, 2000
3. Elements of Properties of Matter, D.S. Mathur, S .Chand & Com. Pt. Ltd., New Delhi
4. Physics, Resnick, Halliday & Walker, Wiley
5. Physics for scientists and Engineers with Modern Phys., J.W. Jewett, R.A. Serway, 2010, Cengage Learning
6. An introduction to mechanics, D. Kleppner, R.J. Kolenkow, 1973, McGraw-Hill.
7. Properties of Matter, R. Murgeshan, S. Chand & Com. Pt. Ltd., New Delhi
8. Classical Mechanics, J.C. Upadhyaya, Himalaya Publishing House
9. B.Sc. Practical Physics, C.L. Arora, S. Chand Publisher, New Delhi
10. Advanced Level Practical Physics, M. Nelkon and Ogborn, Henemann Education Books Ltd., New Delhi
11. Practical Physics, S.S. Srivastava and M.K. Gupta, Atma Ram & Sons, Delhi
12. Practical Physics, S.L. Gupta and V. Kumar, Pragati Prakashan Meerut
13. Modern Approach to Practical Physics, R.K. Singla, Modern Publishers, Jalandhar
14. Advanced Practical Physics for students, B.L. Flint and H.T. Worsnop, Asia Publishing House.

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	1st
Name of the Course	Physics Fundamentals –I
Course Code	B23-PHY-104
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	MDC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	Not studied Physics subject at level 4 (i.e. 10+2 or equivalent)
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Have knowledge about the nature, scope and impact of physics on technological development of the society. 2. Understand and describe motion of an object in one dimension. 3. Understand and describe the laws of motion and their applications in daily life. 4. Understand and appreciate the importance of laws of conservation of energy and momentum in daily life. 5. Learn to present observations, results, analysis and different concepts related to experiments of Physics Fundamentals –I

Credits	Theory	Practical	Total
	2	1	3
Contact Hours	2	2	4

Max. Marks:75 **Internal Assessment Marks:20** **End Term Exam Marks: 55**	**Time:3hrs**
Part B- Contents of the Course	

Unit	Topics	Contact Hours
I	Physics-Nature, scope & excitement, Major discoveries in physics, major contribution by Indian Physicists, Fundamental physical constants, Physics in relation to other sciences, impact of physics on society and on latest development in science & technology. System of Measuring Units-Need for measurement, measuring process, concept of mass, length, time; Fundamental and derive units, system of units, concepts of error, types of error (only definition), Accuracy and precision in measurement, least count and applications of measuring instruments -Vernier caliper, Screw Gauge	8
II	Motion of objects in one dimension- position of the object, origin/reference point, frame of reference, definitions and examples of motion in one, two and three dimension, Scalar and Vector quantities, description of motion along a straight line- distance and displacement, uniform motion and non-uniform motion, average and instantaneous speed, average and instantaneous velocity, acceleration; graphical analysis of straight line motion- distance- time graph, velocity-time graph, equation of motions and their applications.	8
III	Causes of motion- concept of force, Newton's Ist law of motion, inertia and mass; Newton's 2nd law of motion, momentum and force; 3rd law of motion, daily life applications of Newton's laws of motion. Universal law of gravitation and its importance, acceleration due to gravity and free fall of a body; mass and weight of an object on earth and moon, concept of thrust and pressure and importance in daily life, buoyancy and Archimedes principle-the physics behind floating of objects on water.	7
IV	Work, energy, types of energy-Kinetic energy and Potential energy, P.E. of an object at a height; law of conservation of energy and its applications. Conservation of linear and angular momentum, collision (elastic and inelastic) and conservation laws in collisions- importance in daily life; concepts of center of mass-Physics behind cycling, rock climbing and skating.	7
	Practicum 1. To measure the diameter of a small spherical / cylindrical body. 2. To measure the length, width and height of the given rectangular block.	30

3. To measure the internal diameter and depth of a given beaker/calorimeter and hence find its volume. 4. Use of screw gauge:(i) to measure diameter of a given wire and (ii) to measure thickness of a given sheet 5. To determine radius of curvature of a given spherical surface by a spherometer. 6. To find the downward force, along an inclined plane, acting on a roller due to gravitational pull of the earth and study its relationship with the angle of inclination by plotting graph between force and sin θ 7. To find the weight of a given body using parallelogram law of vectors. 8. Verification of Archimedes principle. 9. Verification of Work-energy theorem. 10. Acceleration due to gravity (g) by bar pendulum. 11. To determine the moment of Inertia of a fly-wheel. 12. Study of law of conservation of linear momentum and Kinetic Energy. **Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.**	

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory (15 Marks)** • Class Participation: **04 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **04 Marks** • Mid-Term Exam: **7 Marks** ➢ **Practicum (5 Marks)** • Class Participation: **Nil** • Seminar/Demonstration/Viva-voce/Lab records etc.: **5 Marks** • Mid-Term Exam: **Nil**	**End Term Examination : 35 Marks** **: 20 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Essential University Physics, Vol.-1 &2 by Richard Wolfson, Pearson Education, Patparganj, Delhi, India.
2. Concept of Physics by H.C. Verma, Bharti Bhawan, Ansari Road, Daryaganj, New Delhi, India.
3. Modern Physics (2nd edition), by S.L. Kakani and Shubhra Kakani, Viva Books, New Delhi.
4. Physics for Scientists and Engineers with Modern Physics, 7th edition, by Raymond A. Serway and John W. Jewett, Jr., Thomson Higher Education 10 Davis Drive Belmont, CA 94002-3098 USA.
5. Physics For You, Fifth Edition, by Keith Johnson, OUP Oxford; 5th edition (23 June 2016).
6. B.Sc Practical Physics, C. L. Arora, R Chand & Co. New Delhi
7. B.Sc Practical Physics, Harnam Singh and Dr. P.S. Hemne, S Chand & Company Ltd.

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	2nd
Name of the Course	**Electricity, Magnetism and EM Theory**
Course Code	B23-PHY-201
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	CC/MCC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	Appeared or passed the 1st sem (B.Sc. Physical Science/ equivalent)
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Explain and differentiate the vector and scalar formalisms of electrostatics. Also be able to apply Gauss's Divergence & Stokes theorem to solve various problems in electrostatics 2. Describe the magnetic materials & important properties of magnetic field. Understand the properties and theories of dia-, para- & ferromagnetic materials. 3. Derive Maxwell equations and their physical significance and familiar about the propagation of electromagnetic waves i.e. boundary conditions at the interface between different media. The students will also be able to have basic idea about the propagation of electromagnetic waves in free space and in medium. 4. Understand D.C. and A.C. circuits, able to apply and analyse using networks. Analyze DC/AC circuits consisting of parallel and/or series combinations of voltage sources and resistors and to describe the graphical relationship of resistance, capacitor and inductor. 5. Learn to present observations, results, analysis and

Credits		Theory	Practical	Total
	different concepts related to experiments of Electricity and Magnetism.			
Credits		Theory	Practical	Total
		3	1	4
Contact Hours		3	2	5
Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**		**Time:3hrs**		

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Part B- Contents of the Course

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Instructions for Paper- Setter

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1.Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

Unit	Topics	Contact Hours
I	**Vector Background and Electric Field** : Gradient of a scalar and its physical significance, Line, Surface and Volume integrals of a vector and their physical significance, Flux of a vector field, Divergence and curl of a vector and their physical significance, Gauss's divergence theorem, Stoke's theorem. Conservative nature of Electrostatic Field, Electrostatic Potential, Potential as line integral of field, potential difference Derivation of electric field E from potential as gradient. Derivation of Laplace and Poisson equations. Electric flux, Gauss's Law, Differential form of Gauss's law and applications of Gauss's law. Mechanical force of charged surface, Energy per unit volume.	11
II	**Magnetic Field:** Biot-Savart law and its simple applications: straight wire and circular loop, Current Loop as a Magnetic Dipole and its Dipole Moment, Ampere's Circuital Law and its applications to (1) Solenoid and (2) Toroid, properties of B: curl and divergence, **Magnetic Properties of Matter:** Force on a dipole in an external field, Electric currents in Atoms, Electron spin and Magnetic moment, types of magnetic materials, Magnetization vector (M), Magnetic Intensity (H), Magnetic Susceptibility and permeability, Relation between B, H and M, Electronic theory of dia and paramagnetism, Domain theory of ferromagnetism (Langevin's theory), Cycle of Magnetization- B-H curve and hysteresis loop: Energy dissipation, Hysteresis loss and importance of Hysteresis Curve	12
III	**Time varying electromagnetic fields:** Electromagnetic induction,	11

	Faraday's laws of induction and Lenz's Law, Self-inductance, Mutual inductance, Energy stored in a Magnetic field, Derivation of Maxwell's equations, Displacement current, Maxwell's equations in differential and integral form and their physical significance. **Electromagnetic Waves:** Electromagnetic waves, Transverse nature of electromagnetic wave, energy transported by electromagnetic waves, Poynting vector, Poynting's theorem. Propagation of Plane electromagnetic waves in free space & Dielectrics	
IV	**DC current Circuits:** Electric current and current density, Electrical conductivity and Ohm's law (Review), Kirchhoff's laws for D.C. networks, Network theorems: Thevenin's theorem, Norton theorem, Superposition theorem. **Alternating Current Circuits:** A resonance circuit, Phasor, Complex Reactance and Impedance, Analysis for RL, RC and LC Circuits, Series LCR Circuit: (1) Resonance, (2) Power Dissipation (3) Quality Factor and (4) Band Width, Parallel LCR Circuit.	11
	Practicum 1. Use of Multimeter for measuring Resistance, A.C. and D.C. Voltage and Current, checking of electrical fuses. 2. Low resistance by Carey Foster's bridge with calibration. 3. Determination of Impedance of an A.C. circuit and its verification. 4. Frequency of A.C. mains using an electromagnet. 5. Frequency of A.C. mains Electrical vibrator. 6. High resistance by substitution method. 7. To compare capacitances using De'Sauty bridge. 8. To study the Characteristics of a Series RC Circuit. 9. To study a series LCR circuit and determine its (a) Resonant frequency, (b) Quality factor. 10. To study a parallel LCR circuit and determine its (a) Anti-resonant frequency and (b) Quality factor. 11. To verify the Thevenin and Norton theorems. 12. To verify the Superposition and Maximum Power Transfer Theorems. 13. Self-inductance by Anderson's bridge. 14. Verification of laws of electromagnetic induction. 15. Study of B-H curves of various materials using C.R.O, and determination of various parameters. **Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.**	30
	**Suggested Evaluation Methods**	

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	Faraday's laws of induction and Lenz's Law, Self-inductance, Mutual inductance, Energy stored in a Magnetic field, Derivation of Maxwell's equations, Displacement current, Maxwell's equations in differential and integral form and their physical significance. **Electromagnetic Waves:** Electromagnetic waves, Transverse nature of electromagnetic wave, energy transported by electromagnetic waves, Poynting vector, Poynting's theorem. Propagation of Plane electromagnetic waves in free space & Dielectrics	
IV	**DC current Circuits:** Electric current and current density, Electrical conductivity and Ohm's law (Review), Kirchhoff's laws for D.C. networks, Network theorems: Thevenin's theorem, Norton theorem, Superposition theorem. **Alternating Current Circuits:** A resonance circuit, Phasor, Complex Reactance and Impedance, Analysis for RL, RC and LC Circuits, Series LCR Circuit: (1) Resonance, (2) Power Dissipation (3) Quality Factor and (4) Band Width, Parallel LCR Circuit.	11
	Practicum 1. Use of Multimeter for measuring Resistance, A.C. and D.C. Voltage and Current, checking of electrical fuses. 2. Low resistance by Carey Foster's bridge with calibration. 3. Determination of Impedance of an A.C. circuit and its verification. 4. Frequency of A.C. mains using an electromagnet. 5. Frequency of A.C. mains Electrical vibrator. 6. High resistance by substitution method. 7. To compare capacitances using De'Sauty bridge. 8. To study the Characteristics of a Series RC Circuit. 9. To study a series LCR circuit and determine its (a) Resonant frequency, (b) Quality factor. 10. To study a parallel LCR circuit and determine its (a) Anti-resonant frequency and (b) Quality factor. 11. To verify the Thevenin and Norton theorems. 12. To verify the Superposition and Maximum Power Transfer Theorems. 13. Self-inductance by Anderson's bridge. 14. Verification of laws of electromagnetic induction. 15. Study of B-H curves of various materials using C.R.O, and determination of various parameters. **Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.**	30
Suggested Evaluation Methods		

Internal Assessment:	End Term Examination : 50 Marks
➢ **Theory (20 Marks)** • Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 Marks** • Mid-Term Exam: **10 Marks**	
➢ **Practicum (10 Marks)** • Class Participation: **Nil** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 Marks** • Mid-Term Exam: **Nil**	**20 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Electricity and Magnetism (Berkley, Phys. Course 2), Edward M. Purcell, 1986 McGraw-Hill Education
2. Electricity and Magnetism: A.S. Mahajan & A.A. Rangwala (Tata- McGraw Hill), 1988.
3. Electricity, Magnetism & Electromagnetic Theory, S. Mahajan and Choudhury, 2012, Tata McGraw
4. Introduction to Electrodynamics, D.J. Griffiths, 3rd Edn., 1998, Benjamin Cummings.
5. Feynman Lectures Vol.2, R.P. Feynman, R.B. Leighton, M. Sands, 2008, Pearson Education
6. Elements of Electromagnetics, M.N.O. Sadiku, 2010, Oxford University Press.
7. Electricity and Magnetism, J.H.Fewkes & J.Yarwood. Vol. I, 1991, Oxford Univ. Press.
8. Field and Wave Electromagnetics (2nd Edn.), David K. Cheng , Addison-Wesley Publishing Company.
9. B.Sc. Practical Physics, C.L. Arora, S. Chand Publisher, New Delhi
10. Advanced Level Practical Physics, M. Nelkon and Ogborn, Henemann Education Books Ltd., New Delhi
11. Practical Physics, S.S. Srivastava and M.K. Gupta, Atma Ram & Sons, Delhi
12. Practical Physics, S.L. Gupta and V. Kumar, Pragati Prakashan Meerut
13. Modern Approach to Practical Physics, R.K. Singla, Modern Publishers, Jalandhar
14. Advanced Practical Physics for students, B.L. Flint and H.T. Worsnop, Asia Publishing House

Session: 2023-24			
Part A - Introduction			
Subject	Physics		
Semester	2nd		
Name of the Course	**Elementary Electricity, Magnetism & EM Theory**		
Course Code	B23-PHY-202		
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	CC-M		
Level of the course (As per Annexure-I	100-199		
Pre-requisite for the course (if any)	Physics not as major subject in 2nd sem		
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Explain and differentiate the vector and scalar formalisms of electrostatics. Also be able to apply Gauss's Divergence & Stokes theorem to solve various problems in electrostatics 2. Describe the magnetic materials & important properties of magnetic field. Understand the properties and theories of dia-, para- & ferromagnetic materials 3. Derive Maxwell equations and their physical significance and familiar boundary conditions at the interface between different media. The students will also be able to have basic idea about the propagation of electromagnetic waves 4. Analyze DC/AC circuits consisting of parallel and/or series combinations of voltage sources and resistors and to describe the graphical relationship of resistance, capacitor and inductor 5. Learn to present observations, results, analysis and different concepts related to experiments of Electricity and Magnetism		
Credits	Theory	Practical	Total

	1	1	2
Contact Hours	1	2	3

Max. Marks:50 **Internal Assessment Marks:15** **End Term Exam Marks: 35**	**Time:3hrs**

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Part B- Contents of the Course

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Instructions for Paper- Setter

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1.Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

Unit	Topics	Contact Hours
I	**Vector background and electric field:** Gradient of a scalar and its physical significance, Line, Surface and Volume integrals of a vector and their physical significance, Flux of a vector field, Divergence and curl of a vector and their physical significance, Gauss's divergence theorem, Stoke's theorem.	4
II	**Magnetic field and magnetic properties :** Magnetic induction, Magnetic flux, Solenoidal nature of vector field of induction, properties of B (i) $\nabla.B = 0$ (ii) $\nabla \times B = \mu_o J$, Magnetic Materials, types, Hysteresis curve and importance of Hysteresis Curve.	3
III	**Time varying electromagnetic fields and electromagnetic waves :** Electromagnetic induction, Faraday's laws of induction and Lenz's Law, Derivation of Maxwell's equations and their physical significance. Boundary conditions at interface between two different media, Propagation of electromagnetic wave (Basic idea, no derivation), Poynting vector and Poynting theorem.	4
IV	**D.C. and A.C. circuits:** D.C. Network theorems: Thevenin's theorem, Norton theorem, Superposition theorem; Analysis of LCR Series and parallel resonant circuits.	4
	Practicum 1. Use of Multimeter for measuring Resistance, A.C. and D.C. Voltage and Current, checking of electrical fuses. 2. Low resistance by Carey Foster's bridge with calibration. 3. Determination of Impedance of an A.C. circuit and its verification. 4. Frequency of A.C. mains using an electromagnet. 5. Frequency of A.C. mains Electrical vibrator.	30

6. High resistance by substitution method. 7. To compare capacitances using De'Sauty bridge. 8. To study the Characteristics of a Series RC Circuit. 9. To study a series LCR circuit and determine its (a) Resonant frequency, (b) Quality factor. 10. To study a parallel LCR circuit and determine its (a) Anti-resonant frequency and (b) Quality factor. **Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.**	

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory (10 Marks)** • Class Participation: **04 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **Nil** • Mid-Term Exam: **6 Marks** ➢ **Practicum (5 Marks)** • Class Participation: **Nil** • Seminar/Demonstration/Viva-voce/Lab records etc.: 0**5 Marks** • Mid-Term Exam: **Nil**	**End Term Examination : 20 Marks** **: 15 Marks**

Part C-Learning Resources
Recommended Books/e-resources/LMS: 1. Electricity and Magnetism (Berkley, Phys. Course 2), Edward M. Purcell, 1986 McGraw-Hill Education 2. Electricity and Magnetism: A.S. Mahajan & A.A. Rangwala (Tata- McGraw Hill), 1988. 3. Electricity, Magnetism & Electromagnetic Theory, S. Mahajan and Choudhury, 2012, Tata McGraw 4. Introduction to Electrodynamics, D.J. Griffiths, 3rd Edn., 1998, Benjamin Cummings. 5. Feynman Lectures Vol.2, R.P. Feynman, R.B. Leighton, M. Sands, 2008, Pearson Education 6. Elements of Electromagnetics, M.N.O. Sadiku, 2010, Oxford University Press. 7. Electricity and Magnetism, J.H.Fewkes & J.Yarwood. Vol. I, 1991, Oxford Univ. Press. 8. Field and Wave Electromagnetics (2nd Edn.), David K. Cheng , Addison-Wesley Publishing Company.

Session: 2023-24			
Part A - Introduction			
Subject	Physics		
Semester	2nd		
Name of the Course	**Computational Physics**		
Course Code	B23-PHY-203		
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	**DSEC**		
Level of the course (As per Annexure-I	100-199		
Pre-requisite for the course (if any)	Appeared or passed the 1st sem (B.Sc. Physical Science/ equivalent)		
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Understand the programming language and their use in various applications 2. Develop Python programs to solve computational problems 3. Select a suitable programming to solve differential equations 4. Find the integral value of a function using appropriate method. 5. Understand how to develop a programme for a particular problem and it will improve logical thinking that helps to solve scientific problems using Python language.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**	**Time:3hrs**		
Part B- Contents of the Course			

Instructions for Paper- Setter

1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

Unit	Topics	Contact Hours
I	**Introduction to Programming using Python**: Structure of a Python Program, Functions, Interpreter shell, Indentation. Identifiers and keywords, Literals, Strings, Basic operators (Arithmetic operator, Relational operator, Logical or Boolean operator, Assignment Operator, Bit wise operator). Standard libraries in Python, notion of class, object and method.	11
II	**Creating Python Programs**: Identifiers and keywords; Literals, numbers, and strings; Operators; Expressions; Input/output statements; Defining functions; Control structures (conditional statements, loop control statements, break, continue and pass, exit function), default arguments. Mutable and immutable objects. Testing and debugging a program	12
III	**Differentiation:** Taylor series method, Newton's forward and backward difference formula, Stirling's formula. Numerical solutions of partial differential equations using Taylors's series method	11
IV	**Integration:** Trapezoidal rule, Simpson's 1/3 and 3/8 rule, Gaussian Quadrature, Legendre– Gauss Quadrature, Numerical double integration.	11
	Practicum 1. Write a Python program to illustrate the various functions of the "Math" module. 2. Write a function that takes the lengths of three sides: side1, side2 and side3 of the triangle as the input from the user using input function and return the area of the triangle as the output. Also, assert that sum of the length of any two sides is greater than the third side. 3. Write a Python function that takes a number as an input from the user and computes its factorial. 4. Write a function that takes a number with two or more digits as an input and finds its reverse and computes the sum of its digits. 5. Write a function that takes two numbers as input parameters and returns their least common multiple and highest common factor. 6. Write a Python function to calculate the sum and product of two compatible matrices. 7. Write a function that takes a list of numbers as input from the user and produces the corresponding cumulative list where each element in the	30

list present at index i is the sum of elements at index j <= i. <ol start="8"> - Write a function that takes n as an input and creates a list of n lists such that ith list contains first five multiples of i. - Solution of differential equations using Taylor's series method. - Numerical integration using (a) Simpson 1/3 and 3/8 rule - Gauss quadrature methods for one and two dimensional integrals **Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.**	

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Suggested Evaluation Methods

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Internal Assessment: ➢ **Theory (20 Marks)** • Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 Marks** • Mid-Term Exam: **10 Marks** ➢ **Practicum (10 Marks)** • Class Participation: **Nil** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 Marks** • Mid-Term Exam: **Nil**	**End Term Examination : 50 Marks** **: 20 Marks**

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Part C-Learning Resources

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Recommended Books/e-resources/LMS:

1. Sheetal Taneja, Naveen Kumar, Python Programming "A Modular Approach" Pearson India.
2. E. Balaguruswamy, Introduction to Computing and Problem Solving using Python, 2nd edition, McGraw Hill Education, 2018
3. R C Desai, Fortran Programming and Numerical methods, Tata McGraw Hill, New Delhi.
4. Suresh Chandra, Computer Applications in Physics, Narosa Publishing House
5. M L De Jong, Introduction to Computation Physics, Addison-Wesley publishing company.
6. R C Verma, P K Ahluwalia and K C Sharma, Computational Physics an Introduction, New Age International Publisher.
7. S S Sastry Introductory methods of numerical Analysis, Prentice Hall of India Pvt. Ltd.
8. V Rajaraman, Computer Oriented Numerical Method, Prentice Hall of India Pvt. Ltd.
9. C Balachandra Rao and C K Santha, Numerical Methods, University Press
10. K E Atkinson, An introduction to numerical analysis, John Wiley and Sons.

Kurukshetra University Kurukshetra
Undergraduate Programs
Course: MDC-2

Session: 2023-24			
Part A - Introduction			
Subject	Physics		
Semester	2nd		
Name of the Course	**Physics Fundamentals-II**		
Course Code	B23-PHY-204		
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	MDC		
Level of the course (As per Annexure-I	100-199		
Pre-requisite for the course (if any)	Not studied Physics subject at level 4 (i.e. 10+2 or equivalent)		
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Have basic knowledge about nature of light, the associated phenomena and their importance in daily life 2. Understand and describe the working of important optical instruments through the learning of image formation by mirrors and lenses 3. Have basic knowledge about electric current, electric circuit, electric components, and practical utility of heating and magnetic effects of electric current 4. Grasp an introductory idea about the generation of X-rays, α-, β- and γ-rays through an understanding of composition of atom & nucleus 5. Understand the observations, results, analysis and different concepts related to experiments of light & optics.		
Credits	Theory	Practical	Total
	2	1	3
Contact Hours	2	2	4

Max. Marks:75	Time:3hrs
Max. Marks:75 **Internal Assessment Marks:20** **End Term Exam Marks: 55**	**Time:3hrs**

Part B- Contents of the Course

Instructions for Paper- Setter

1.Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

Unit	Topics	Contact Hours
I	Light and optics-Nature and properties of light, its speed, frequency and wavelength; Reflection of light-types of reflection and their importance in daily life, laws of reflection, multiple reflection by mirrors and their applications. Refraction of light- laws of refraction, refractive index, refraction of light through prism (dispersion of light), formation Rainbow, twinkling of stars, advance Sunrise and delayed Sunset; Scattering of light and blue colour of the sky; apparent depth, total internal reflection and its important applications	7
II	Image formation through reflection-images formed by plane mirrors, multiple images formed by two flat mirrors and optical illusions; images formed by parabolic mirrors and spherical mirrors- Concave and convex mirrors, ray diagrams, mirror equation and magnification; applications of plane and curved mirrors in daily life. Image formation through refraction- images by convex and concave lenses, ray diagrams and lens equation. Optical instruments- Camera, eye, telescope and microscope	8
III	Electricity- electric charge, types of charges, unit of charge, frictional electricity, electricity by conduction and electric current, units of electric current, measurement of current, conductors and insulators; resistance, resistivity and Ohm's law, electric potential and potential difference, emf; Electric circuit- resistor, capacitor, battery, ammeter and voltmeter; Series and parallel combinations of resistors, electrical wiring in houses and electrical safety (fuse, hot wire, neutral, ground and short circuit), electric power and electric power transmission; Heating effect of current and its practical applications. Magnetic effect of electric current- Magnetic field and field lines, bar magnet, magnetic field and direction of field due to a current- through	8

	straight conductor and through a circular loop; solenoid, electromagnet		
IV	Structure of an atom- Rutherford's model of an atom, Bohr's model of an atom and composition of the atom-electron, proton and neutron, orbits or shells (energy levels in an atom), distribution of electrons in different shells of the atom, atomic number and atomic mass of an atom, core shell and outer shell, valency of an atom, excitation and ionization of the atom, meaning of atomic transitions; Discovery of X-rays, Generation of X-rays, their characteristics, applications and harmful effects; Composition of nucleus, meaning of nuclear transitions and properties of α-, β- and γ-rays	7	

Practicum   30

1. To find the focal length of a convex mirror using a convex lens.
2. To find the value of v for different values of u in the case of a concave mirror and to find the focal length
3. To find the focal length of a concave lens using a convex lens.
4. To determine the refractive index of a glass slab
5. To find the refractive index of a liquid using a convex lens and plane mirror
6. To determine the resistivity of different wires by plotting a graph for potential difference versus current.
7. To verify Ohm's law for metallic conductor and to determine its resistance.
8. To find the frequency of AC mains with a sonometer.
9. Use of Multimeter for measuring Resistance, A.C. and D.C. Voltage and Current, checking of electrical fuses.
10. Use of Multimeter to check the working condition of diode, an LED, a resistor and a capacitor.

Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.

Suggested Evaluation Methods

Internal Assessment:	End Term Examination : 35 Marks
➢ **Theory (15 Marks)**	
• Class Participation: **04 Marks**	
• Seminar/presentation/assignment/quiz/class test etc.: **04 Marks**	
• Mid-Term Exam: **7 Marks**	
➢ **Practicum (05 Marks)**	**20 Marks**
• Class Participation: **Nil**	
• Seminar/Demonstration/Viva-voce/Lab records etc.: **05 Marks**	
• Mid-Term Exam: **Nil**	

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Essential University Physics, Vol.-1 &2 by Richard Wolfson, Pearson Education, Patparganj, Delhi, India.
2. Concept of Physics by H.C. Verma, Bharti Bhawan, Ansari Road, Daryaganj, New Delhi, India.
3. Modern Physics (2nd edition), by S.L. Kakani and Shubhra Kakani, Viva Books, New Delhi.
4. Physics for Scientists and Engineers with Modern Physics, 7th edition, by Raymond A. Serway and John W. Jewett, Jr., Thomson Higher Education 10 Davis Drive Belmont, CA 94002-3098 USA.
5. Physics For You (Fifth Edition) by Keith Johnson.
6. B.Sc Practical Physics, C. L. Arora, R Chand & Co. New Delhi
7. B.Sc Practical Physics, Harnam Singh and Dr. P.S. Hemne, S Chand & Company Ltd.

Kurukshetra University Kurukshetra
Undergraduate Programs
Course: CC-3/MCC-4

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	3rd
Name of the Course	**Thermodynamics & Statistical Physics**
Course Code	B23-PHY-301
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	CC/MCC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	Appeared or passed the 2nd sem (B.Sc. Physical Science/ equivalent)
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Understand and describe the basic concepts and laws of thermodynamics 2. Apply the laws of thermodynamics to develop Maxwell's thermodynamic relations be able to understand their physical interpretations 3. Appreciate cellular nature of phase space and Have better knowledge of classical statistics which would result in greater insight into solutions of various complex problems 4. Have better understanding of quantum statistics and are in a position to extend the treatment to the analysis of complex problems 5. Learn to present observations, results, analysis and different concepts of experiments related to Thermodynamics & Statistical Physics

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5

Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**	**Time:3hrs**

Part B- Contents of the Course

Instructions for Paper- Setter

1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

Unit	Topics	Contact Hours
I	**THERMODYNAMICS-I** Thermodynamic-systems, variables and equation of state, thermal equilibrium, Zeroth law of thermodynamics; Concept of heat, work and its sign (work done- by the system on the system) & its path dependence, First law of thermodynamics- its significance and limitations, internal energy as a state function, different types of process-isochoric process, isobaric process, adiabatic process, isothermal process, cyclic process, Reversible and irreversible process, First law and cyclic process; Second law of thermodynamics and its significance, Carnot theorem; Absolute scale of temperature, Absolute Zero and magnitude of each division on work scale and perfect gas scale, Joule's free expansion, Joule Thomson effect, Joule-Thomson (Porous plug) experiment, conclusions and explanation, analytical treatment of Joule Thomson effect, Entropy, calculations of entropy of reversible and irreversible process, T-S diagram, entropy of a perfect gas, Nernst heat law (third law of thermodynamics); Liquefaction of gases, (oxygen, air, hydrogen and helium) solidification of helium below 4K, Cooling by adiabatic demagnetization	11
II	**THERMODYNAMICS-II** Derivation of Clausius-Clapeyron and Clausius latent heat equations and their significance, specific heat of saturated vapours, phase diagram and triple point of a substance, development of Maxwell thermodynamical relations, Thermodynamical functions: Internal energy (U), Helmholtz function (F), Enthalpy (H), Gibbs function (G) and the relations between them, derivation of Maxwell thermodynamical relations from thermodynamical functions, Application of Maxwell relations: relations between two specific heats of gas, Derivation of Clausius-Clapeyron and Clausius equation, variation of intrinsic energy with volume for (i) perfect gas (ii) Vander wall gas (iii) solids and liquids, derivation of Stefan's law, adiabatic compression and expansion of gas & deduction of theory of Joule Thomson effect.	11
III	**Statistical Physics-I**	12

		Distribution of N (for N= 2, 3, 4) distinguishable and indistinguishable particles in two boxes of equal size, microstates and macrostates, thermodynamical probability, constraints and accessible states, statistical fluctuations, general distribution of distinguishable particles in compartments of different sizes, β-parameter, entropy and probability; Concept of phase space, division of phase space into cells, postulates of statistical mechanics; Classical and quantum statistics, basic approach to these statistics, Maxwell-Boltzmann statistics applied to an ideal gas in equilibrium-energy distribution law, Maxwell's distribution of speed & velocity (derivation required), most probable speed, average and r.m.s. speed, mean energy for Maxwellian distribution.	
IV		**Statistical Physics-II** Dulong and Petit Law, derivation of Dulong and Petit law from classical physics; Need of Quantum statistics- classical versus quantum statistics, Bose-Einstein energy distribution Law, Application of B. E. Statistics to Planck's radiation law, degeneracy and B. E. condensation; Fermi-Dirac energy distribution Law, F. D. gas and degeneracy, Fermi energy and Fermi temperature; F. D. energy distribution Law for electron gas in metals, zero point energy, average speed (at 0 K) of electron gas	11
		Practicum 1. To determine Mechanical Equivalent of Heat, J, by Callender and Barne's constant flow method. 2. Measurement of Planck's constant using black body radiation. 3. To determine Stefan's Constant. 4. To determine the coefficient of thermal conductivity of copper by Searle's Apparatus. 5. To determine the Coefficient of Thermal Conductivity of Cu by Angstrom's Method. 6. To determine the coefficient of thermal conductivity of a bad conductor by Lee and Charlton's disc method. 7. To determine the temperature co-efficient of resistance by Platinum resistance thermometer. 8. To study the variation of thermo emf across two junctions of a thermocouple with temperature. 9. To record and analyze the cooling temperature of an hot object as a function of time using a thermocouple and suitable data acquisition system 10. To calibrate Resistance Temperature Device (RTD) using Null Method/Off-Balance Bridge 11. To prove the law of probability by using one coin, two coins and 10 or more coins. 12. To determine the coefficient of increase of volume of air at constant pressure. 13. To determine the coefficient of increase of pressure of air at constant volume. 14. Computer simulation of Maxwell-Boltzmann distribution, Fermi-	30

Dirac & Bose-Einstein
15. Study of statistical distribution from the given data and to find most probable, average, and rms value
16. Mechanical Equivalent of heat (J) by Joule's calorimeter.
17. Heating efficiency of electrical kettle with varying voltage.

Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.

Suggested Evaluation Methods

	End Term Examination : 50 Marks
Internal Assessment: ➢ **Theory (20 Marks)** • Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 Marks** • Mid-Term Exam: **10 Marks** ➢ **Practicum (10 Marks)** • Class Participation: **Nil** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 Marks** • Mid-Term Exam: **Nil**	**20 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Thermal Physics and Statistical Mechanics, S.K. Roy, New Age International Publishers, New Delhi
2. Thermodynamics and Statistical Physics, J.K. Sharma and K.K. Sarkar, Himalaya Publishing House, Bombay
3. Introduction to Thermodynamics and its Applications, Stowe Keith, University Press (India) Pvt. Ltd, Hyderabad
4. Introductory Thermodynamics, Pierre Infelta, BrownWalker Press, Boca Ratan, Florida
5. Fundamentals of Thermodynamics, J. K. Johnson, University of Pittsburgh 2009
6. Thermodynamics and Its Applications, Jefferson Tester, Michael Modell, 3rd Edition
7. Thermodynamics, Statistical Thermodynamics & Kinetics, Thomas Engel, Philip Reid, 2nd Edition
8. Advanced Practical Physics for students, B.L.Flint & H.T.Worsnop, 1971, Asia Publishing House.
9. Advanced level Physics Practicals, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers
10. A Text Book of Practical Physics, Indu Prakash and Ramakrishna, 11th Edition, 2011, Kitab Mahal, New Delhi.
11. A Laboratory Manual of Physics for Undergraduate Classes, D.P. Khandelwal, 1985, Vani Publication.

Kurukshetra University Kurukshetra
Undergraduate Programs
<u>**Course: MCC-2**</u>

Session: 2023-24			
Part A - Introduction			
Subject	Physics		
Semester	3rd		
Name of the Course	**Mathematical Physics**		
Course Code	B23-PHY-102		
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	MCC		
Level of the course (As per Annexure-I	100-199		
Pre-requisite for the course (if any)	Appeared or passed the 2nd sem (B.Sc. Physical Science/ equivalent)		
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Learn the Fourier analysis of periodic functions and their applications in physical problems. Learn the beta, gamma and the error functions and their applications in doing integrations. 2. Acquire knowledge of methods to solve partial differential equations with the examples of important partial differential equations in Physics. 3. Write given function in terms of sine and cosine terms in Fourier series and also to get knowledge in Fourier transforms 4. Learn about beta gamma function, their properties, solve Legendre equations find generating function for Legendre Polynomial, Hermite equation, study orthogonal properties of Hermite Polynomials, recurrence relations.s of complex numbers and their properties such as analyticity, poles and residues. 5. Learn about the methods to solve the mathematical problem using Fortran		
Credits	Theory	Practical	Total
	3	1	4

Contact Hours	3	2	5
Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**		**Time:3hrs**	

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Part B- Contents of the Course

Instructions for Paper- Setter

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1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

Unit	Topics	Contact Hours
I	**Theory of Errors:** Systematic and Random errors, Propagation of errors, Normal law of errors, Standard and Probable error, Least square fit, error on slope and intercept of fitted line. **Matrices:** Normal Matrices, Orthogonal Matrices, Hermitian Matrices, Unitary Matrices, Symmetric and Anti-symmetric Matrices, Conjugate of a Matrix, Anti-hermition Matrices, Trace of Matrix, Eigen values and eigen vectors of Matrices, Diagonalization of Matrices.	11
II	**Method of expansion of a function:** Taylor's expansion, Power series, Laurent's theorem. Partial and ordinary differential equations, Partial Differential equations, First order differential equations, Method of separation of variables, Singular points, Vibrations of an elastic string, One dimensional Heat Flow, Heat conduction equation for a 3-dimensional rectangular configuration and apply it to the cooling of a brick (assuming constant initial temperature distribution), vibrations of rectangular and circular membrane, Method of Frobenius, Diffusion equation, Laplace's equation in problems of rectangular , cylindrical and spherical symmetry, Inhomogeneous partial differential equation-Green's function.	12
III	**Fourier series and Integrals:** Introduction, Evaluation of coefficients of Fourier series, cosine series, sine series, Dirichlet's theorem, representation of Even and odd functions, Extension of interval, complex form of Fourier series, Properties of Fourier series: Convergence, Integration, Differentiation, Parseval's theorem, Physical applications of Fourier series analysis: square wave, Half wave rectifier, Full wave rectifier, sawtooth wave, triangular wave, Fourier Integrals, deduction of expressions for the Fourier Transform and its inverse.	11
IV	**Beta and Gamma Functions:** Definition of gamma function, beta function, other forms of beta function,	11

	Relationship between beta and gamma function, Legendre's equation, Legendre's Polynomial, Legendre's function of second kind, General solution of Legendre's equation, Generating function of Legendre's polynomial, orthogonality of Legendre's polynomials, Deduction of Rodrigue's formula for the Legendre's Polynomials, Hermite Polynomial, Hermite differential equation, Generating function of Hermite Polynomial, deduction of recursion relation for H_n of 1st kind and 2nd	
	Practicum **Review of FORTRAN Programming fundamentals:** FORTRAN Preliminaries: Integer and floating point arithmetic expression, built in functions, executable and non-executable statements, input and output statements, Formats, IF, DO and GO TO statements, Dimension arrays, statement function and function subprogram. To print out all natural (even/odd) numbers between given limits using computer. 1. Compute the product of two matrices of different dimension using DO loop 2. Numerical integration by Simpson 1/3 rule 3. Fitting of a straight line using Least-Square method 4. Using array variable, find out the average and standard deviation 5. Write a program to evaluate the function Y=1 / [C (1 + e Cos θ)] and V=√ [C M G (e2 + e Cos θ + 1)] e = 1.1, C = 3.0(E+08), M = 5.893(E+24), G = 6.67(E-11) for varying value of θ from 0 to π. 6. To find maximum, minimum and range of a given set of numbers using computer. 7. To evaluate sum of finite series. 8. Find the roots of a quadratic equation. 9. To find integration of a definite integral by trapezoidal rule. 10. To find the area of a triangle, sphere and cylinder. 11. Given values for a, b, c and d and a set of values for the variable x evaluate the function defined by. $\quad\quad f(x) = ax^2 + bx + c$ if $x < d$ $\quad\quad f(x) = 0 \quad\quad\quad$ if $x = d$ $\quad\quad f(x) = ax^2 + bx - c$ if $x > d$ For each value of x and print the value of x and f(x). Write a program for an arbitrary number of x values. **Note: Teachers will discuss the fundamentals of FORTRAN Programming to the students. Thereafter student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.**	30
	Suggested Evaluation Methods	

	End Term Examination : 50 Marks
Internal Assessment: ➢ **Theory (20 Marks)** • Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 Marks** • Mid-Term Exam: **10 Marks** ➢ **Practicum (10 Marks)** • Class Participation: **Nil** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 Marks** • Mid-Term Exam: **Nil**	**20 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Mathematical Methods for Physicists: Arfken, Weber, 2005, Harris, Elsevier
2. Fourier Analysis by M.R. Spiegel, 2004, Tata McGraw-Hill.
3. Mathematics for Physicists, Susan M. Lea, 2004, Thomson Brooks/Cole.
4. An Introduction to Ordinary Differential Equations, Earl A Coddington, 1961, PHI Learning.
5. Differential Equations, George F. Simmons, 2006, Tata McGraw-Hill.
6. Essential Mathematical Methods, K.F. Riley and M.P. Hobson, 2011, Cambridge University Press
7. Partial Differential Equations for Scientists and Engineers, S.J. Farlow, 1993, Dover Publications.
8. Mathematical methods for Scientists and Engineers, D.A. McQuarrie, 2003, Viva Books.
9. Advanced Practical Physics for students, B. L. Flint and H.T. Worsnop, 1971, Asia Publishing House
10. Advanced level Physics Practical's, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers
11. A Text Book of Practical Physics, I. Prakash & Ramakrishna, 11th Edn, 2011, Kitab Mahal
12. Engineering Practical Physics, S. Panigrahi & B.Mallick, 2015, Cengage Learning India Pvt. Ltd.
13. Practical Physics, G.L. Squires, 2015, 4th Edition, Cambridge University Press.
14. A Laboratory Manual of Physics for undergraduate classes, D.P. Khandelwal, 1985, Vani Pub.
15. Introduction to Numerical Analysis, S.S. Sastry, 5th Edn. , 2012, PHI Learning Pvt. Ltd.
16. Schaum's Outline of Programming with C++. J. Hubbard, 2000, McGraw-Hill Pub.
17. Numerical Recipes in C: The Art of Scientific Computing, W.H. Pressetal, 3rd Edn. , 2007, Cambridge University Press.
18. A first course in Numerical Methods, U.M. Ascher & C. Greif, 2012, PHI Learning.
19. Elementary Numerical Analysis, K.E. Atkinson, 3rd Edn . , 2007 , Wiley India Edition.
20. Numerical Methods for Scientists & Engineers, R.W. Hamming, 1973, Courier Dover Pub.
21. An Introduction to Computational Physics, T.Pang, 2 nd Edn. , 2006,Cambridge Univ. Press
22. Computational Physics, Darren Walker, 1 st Edn., 2015, Scientific International Pvt. Ltd.

Kurukshetra University Kurukshetra
Undergraduate Programs
Course: MCC-5

Session: 2023-24			
Part A - Introduction			
Subject	Physics		
Semester	3rd		
Name of the Course	**Classical Mechanics**		
Course Code	B23-PHY-303		
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	MCC		
Level of the course (As per Annexure-I	100-199		
Pre-requisite for the course (if any)	Appeared or passed the 2nd sem (B.Sc. Physical Science/ equivalent)		
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Learn the concept of conservation of energy, momentum, angular momentum and apply them to understand the basic problems in physics. 2. Understand the importance of Lagrangian & Hamiltonian dynamics and to find the Lagrangian and Hamiltonian for various simple mechanical systems such as Linear Harmonic oscillator, Simple pendulum, Atwood's machine 3. Describe and understand the concepts of central force motion, Kepler's laws of planetary motion and scattering in central force field 4. Differentiate between inertial and Non-inertial frame of references and describe how fictitious forces arise in a non-inertial frame and to understand the importance of these forces 5. Learn to present observations, results, analysis and different concepts related to experiments of Classical Mechanics.		
Credits	Theory	Practical	Total
	3	1	4

Contact Hours	3	2	5

Max. Marks:100 Internal Assessment Marks:30 End Term Exam Marks: 70	Time:3hrs

Part B- Contents of the Course

Instructions for Paper- Setter

1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

Unit	Topics	Contact Hours
I	**INTRODUCTORY IDEAS OF CLASSICAL MECHANICS** Newton's Laws of Motion, Limitation of Newton's programme; Space-time reference system; Introduction to different coordinate systems-Cartesian, cylindrical and spherical coordinate systems. Mechanics of single particle- Conservation Laws of linear momentum, Angular momentum and mechanical energy, First integrals of motion; Mechanics of a system of particles- Concept of external and internal forces, concept of centre of mass and centre of mass frame of reference, Conservation laws of linear momentum, Angular momentum and mechanical energy, relation between angular momentum and angular momentum about the Centre of Mass.	11
II	**LAGRANGIAN AND HAMILTONIAN DYNAMICS** Degrees of freedom; Constraints - Their classification, properties and examples; Generalized coordinates, Transformation equations, Generalized Displacement, Velocity, Acceleration, Momentum, Force and Potential; Principle of Virtual Work & D'Alembert's Principle, Lagrange's equations of motion from D'Alembert's Principle; Cyclic or ignorable coordinates; Integrals of motion; Concept of symmetry-Homogeneity and isotropy. Hamilton's Function and Hamilton's equations of motion, Properties of Hamiltonian and Hamilton's equations of motion; Formation of (i) Lagrangian and Lagrange's equations of motion (ii) Hamiltonian and Hamilton's equation of motion-for-Linear Harmonic oscillator, Atwood's machine, simple pendulum & compound pendulum.	12
III	**MOTION UNDER CENTRAL FORCE** Definition and properties of the central force, two body central force problem- reduction to equivalent one body problem (Lagrangian and Lagrange's equations of motion); differential equation for an orbit, general features of the orbit, stability of the orbits under central force and conditions	11

		for closure. Inverse square law- Kepler's law of planetary motion and their derivation; Scattering in central force field- Scattering cross-section, scattering angle, impact parameter and derivation of Rutherford scattering cross-section	
IV		**ROTATING FRAMES AND RELATIVE COORDINATE SYSTEMS** Inertial and non-inertial frame of references; inertial forces in rotating frame (rotating coordinate systems) – Coriolis force and derivation of Coriolis force from Lagrangian formulation, electromagnetic analogy of the inertial forces; effect of Coriolis force- on projectile motion (a) the projectile dropped from a height (h) with initial velocity zero (b) the projectile is sent vertically up with velocity v_o to reach a height h above the ground and if returns to the ground, river flow on the surface of earth, formation of cyclones, trade and tropical winds, Coriolis force effect in atomic nuclei, Coriolis phenomenon in the planetary atmospheres; Focault pendulum, Precession of charged particles in a magnetic field, methods of handling the situations with two rotations separated by a time varying translation.	11
		Practicum 1. To study the Motion of spring and calculate spring constant & value of Acceleration due to Gravity. 2. To determine the value of 'g' by using Kater's pendulum. 3. To study (i) the law of conservation of linear momentum (ii) the law of conservation of kinetic energy and (iii) to calculate the restitution using one dimensional collision apparatus of two hanging spheres. 4. To investigate the motion of coupled oscillators. 5. Surface tension by Quinke's method 6. Young's modulus by Koenig's method. 7. To determine "Y" by optical lever. 8. Viscosity of liquid using Stokes method. 9. To determine the surface tension of a liquid by jaeger's method. 10. To determine the coefficient of Viscosity by Poiseuille's method 11. Verification of parallel & perpendicular axis theorem – using Moment of Inertia. 12. Determination of Log decrement & viscosity. 13. Verification of vibrating string Melde's experiment **Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.**	30
		Suggested Evaluation Methods	

Internal Assessment:
➢ **Theory (20 Marks)**
   • Class Participation: **05 Marks**
   • Seminar/presentation/assignment/quiz/class test etc.: **05 Marks**
   • Mid-Term Exam: **10 Marks**
➢ **Practicum (10 Marks)**
   • Class Participation: **Nil**
   • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 Marks**
   • Mid-Term Exam: **Nil**
	End Term Examination : 50 Marks
	
	20 Marks

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Classical Mechanics by H. Goldstein (2nd Edition)
2. Mechanics, D.S. Mathur, S.Chand & Com. Pt. Ltd., New Delhi
3. Classical Mechanics by J. C. Upadhyaya, Himalya Publishing House, Mumbai.
4. Classical Mechanics by S. L. Gupta, V. Kumar & H. V. Sharma, Pragati Prakashan, Meerut.
5. Classical Mechanics by N. C. Rana & P. S. Joag, Tata McGraw-Hill Publishing company Limted, New Delhi
6. B.Sc. Practical Physics, C.L. Arora, S. Chand Publisher, New Delhi
7. Advanced Level Practical Physics, M. Nelkon and Ogborn, Henemann Education Books Ltd., New Delhi
8. Practical Physics, S.S. Srivastava and M.K. Gupta, Atma Ram & Sons, Delhi
9. Practical Physics, S.L. Gupta and V. Kumar, Pragati Prakashan Meerut
10. Modern Approach to Practical Physics, R.K. Singla, Modern Publishers, Jalandhar
11. Advanced Practical Physics for students, B.L. Flint and H.T. Worsnop, Asia Publishing House.

Kurukshetra University Kurukshetra
Undergraduate Programs
Course: MDC-3

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	3rd
Name of the Course	**Elements of modern Physics**
Course Code	B23-PHY-304
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	MDC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	Not studied Physics subject at level 4 (i.e. 10+2 or equivalent)
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Have introductory idea about the importance of semiconductors and basic semiconductor devices 2. Have the knowledge about the lasers and optical fibers and their importance in scientific and technological fields 3. Understand importance of radioisotopes, Nuclear fission and fusion reactions and their hazardous aspects also 4. Have the knowledge about the importance of some scientifically and technologically advanced materials. _____ 5. Learn to present observations, results, analysis and different concepts related to experiments of Elements of modern Physics.

Credits	Theory	Practical	Total
	2	1	3
Contact Hours	2	2	4

Max. Marks:75 **Internal Assessment Marks:20** **End Term Exam Marks: 55**	**Time:3hrs**
Part B- Contents of the Course	

1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

Unit	Topics	Contact Hours
I	Basics of semiconductor and semiconductor devices-Atomic structure and energy levels, energy bands (basic idea), definition of conductor, semiconductor and insulators (on the basis of energy gap), Intrinsic semiconductors, extrinsic semiconductors-p-type and n-type semiconductor), P-N junction diode-depletion layer, forward biasing and reverse biasing, V-I characteristics; Principle, working and applications of - Zener diode, Photodiode, Solar cell and Light emitting diode (LED); Basic idea of transistors, semiconductors in computers-integrated circuits	8
II	Basics of Laser systems - introduction to LASER, important properties of laser light, Principle of laser- Light amplification, population inversion and pumping; Working of laser- schematic diagram for functioning of laser, three level and four level Laser systems; applications of Lasers in different fields of science and technology. Basics of fiber optics- introduction to optical fibers, total internal reflection and the optical fibers, structure and types of optical fiber (basic idea), advantages and disadvantages of optical fibers, optical fiber communication system (basic idea), applications of optical fibers.	8
III	Introduction to nuclear physics- the atomic nucleus and the nucleons, atomic number, mass number, isotopes, isobars and isotones; nuclear binding energy, natural radioactivity and radioactive decay- α, β, and γ-decay; Laws of radioactivity, decay constant, relative activity, half life, average life, radioisotopes, carbon dating and other applications of radioactive isotopes; Nuclear fission reaction and its application as a source of energy (nuclear reactor) and hazardous aspect of nuclear fission; Nuclear fusion reaction and source of stellar energy	7
IV	Magnetic Materials- Introduction, classification and applications of magnetic materials; Piezoelectricity and applications of Piezoelectric materials; Ceramics and polymers and their applications; Superconductors and their applications; Nanomaterials - Introduction to nanomaterials, extraordinary properties of nanomaterials, applications and limitations of nanotechnology	7
	Practicum 1. V-I characteristics of p-n junction diode.	30

2. V-I characteristics of Zener diode.
3. Characteristics of Solar Cell
4. To verify the inverse square law of light using a photo-voltaic cell.
5. To determine value of Boltzmann constant using V-I characteristic of PN diode.
6. To study the effect of intensity of light (by varying distance of the source) on an LDR
7. To verify the characteristics of LASER
8. To measure the numerical aperture of an optical fibre using He-Ne laser source.
9. Study double slit interference by He-Ne laser
10. Determine the diameter of a wire using (He-Ne Laser) diffraction method

Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory (15 Marks)** • Class Participation: **04 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **04 Marks** • Mid-Term Exam: **7 Marks** ➢ **Practicum (5 Marks)** • Class Participation: **Nil** • Seminar/Demonstration/Viva-voce/Lab records etc.: **5 Marks** • Mid-Term Exam: **Nil**	**End Term Examination : 35 Marks** **: 20 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Concept of Modern Physics by Arthur Beiser, McGraw Hill Education.
2. Modern Physics (2nd edition), by S.L. Kakani and Shubhra Kakani, Viva Books, New Delhi.
3. Semiconductor Devices - Physics and Technology by S.M .Sze ,Wiley (1985)
4. Laser and Non-linear optics by B.B.Laud. ,Wiley Eastern Limited (1985)
5. Semiconductor Electronics by A.K.Sharma ,New Age International Publisher(1996)
6. Kenneth S. Krane, Introductory Nuclear Physics, Wiley, New York, 1988
7. Radiation detection and measurement: G.F. Knoll (Wiley, New York) (2000)
8. Verma and Srivastava : Crystallography for Solid State Physics
9. Rajnikant; Solid State Physics, Willey India, 2011.
10. J.C. Anderson, KD. Leaver, R.D. Rawlings and J.M. Alexander, Materials Science, 4th Edition (ChapmanHall, London, 1990).
11. V. Raghavan, Materials Science and Engineering, 3rd Ed. (Prentice-Hall India, New Delhi, 1993).
12. Advanced Practical Physics for students, B.L. Flint and H.T. Worsnop, 1971, Asia Publishing House
13. Advanced level Physics Practicals, Michael Nelson and Jon M. Ogborn 4 Edition, reprinted

1985, Heinemann Educational Publishers
14. B.Sc Practical Physics, C. L. Arora, R Chand & Co. New Delhi
15. B.Sc Practical Physics, Harnam Singh and Dr. P.S. Hemne, S Chand & Company Ltd.

Kurukshetra University Kurukshetra
Undergraduate Programs
Course: CC-4/MCC-6

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	4th
Name of the Course	**Waves and Optics**
Course Code	B23-PHY-401
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	CC/MCC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	Appeared or passed the 3rd sem (B.Sc. Physical Science/ equivalent)
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Have understanding of Interference - by Division of Wave front, by Division of Amplitude and Interference due to transmitted light & reflected light 2. Learn about Huygens-Fresnel's theory, diffraction at a straight edge and at a circular aperture, diffraction due to a narrow slit and due to a narrow wire. Understand and explain the Fraunhoffer diffraction, dispersive power of grating, Rayleigh's criterion and resolving power of telescope & a grating 3. Understand the theories and laws of polarization along with understanding of the production and detection of (i) Plane polarized light (ii) Circularly polarized light and (iii) Elliptically polarized light 4. Understand and appreciate the applications of Lasers in developing LED, Holography, in materials processing, in Medicine, Industry and Military. Have the idea of optical fibres, their properties and principle of propagation of electromagnetic waves through optical fibres _____ 5. Understand various optical phenomena, principles, workings and applications optical instruments through Experiments

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5

Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**	**Time:3hrs**

Part B- Contents of the Course

Instructions for Paper- Setter

1.Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

Unit	Topics	Contact Hours
I	**INTERFERENCE** **Interference by Division of Wave front:** Young's double slit experiment, Coherence, Conditions of interference, Fresnel's biprism and its applications to determine the wavelength of sodium light and thickness of a mica sheet, phase change on reflection. **Interference by Division of Amplitude:** Plane parallel thin film, production of colors in thin films, classification of fringes in films, Interference due to transmitted light and reflected light, wedge shaped film, Newton's rings	11
II	**DIFFRACTION** Fresnel's diffraction: Huygens-Fresnel's theory, Fresnel's assumptions, rectilinear propagation of light, diffraction at a straight edge, rectangular slit and diffraction at a circular aperature. Diffraction due to a narrow slit, diffraction due to a narrow wire. Fraunhoffer diffraction: Single slit diffraction, double slit diffraction, plane transmission grating spectrum, dispersive power of grating, limit of resolution, Rayleigh's criterion, resolving power of telescope and a grating	11
III	**POLARIZATION** Polarization: Polarisation by reflection, refraction and scattering, Malus Law, Phenomenon of double refraction, Huygens's wave theory of double refraction (Normal and oblique incidence), Analysis of polarized Light. Nicol prism, Quarter wave plate and half wave plate, production and detection of (i) Plane polarized light (ii) Circularly polarized light and (iii) Elliptically polarized light. Optical activity, Fresnel's theory of optical rotation, Specific rotation, Polarimeters (half shade and Biquartz)	11

IV	**Lasers:** Basic concept of absorption and emission of radiations, amplification and population inversion; Main components of lasers: (i) Active Medium (ii) Pumping (iii) Optical Resonator; Properties of laser beam: Monochromaticity, Directionality, Intensity, Coherence (Spatial & Temporal coherence); Metastable state, Excitation mechanism and Types of Lasers (He-Ne Laser & Ruby Laser), Applications of Lasers **Fibre optics:** Optical fibres and their properties, Principal of light propagation through a optical fibre, Acceptance angle and numerical aperture, Types of optical fibles: Single mode and multimode fibres, Advantages and Disadvantages of optical fibres, Applications of optical fibres, Fibre optic sensors: Fibre Bragg Grating	12
	Practicum 1 To determine Refractive index of the material of a prism using sodium source. 2 Determination of wave length of sodium light using Newton's Rings. 3 To determine the dispersive power and Cauchy constants of the material of a prism using Mercury discharge source. 4 To draw a graph between wave length and minimum deviation for various lines from a Mercury discharge source. 5 Determination of wavelength of sodium light by using a diffraction grating. 6 Resolving power of a telescope. 7 Resolving power of a prism. 8 Resolving power of a grating . 9 Comparison of Illuminating Powers by a Photometer. 10 Measurement of (a) Specific rotation (b) concentration of sugar solution using polarimeter. 11 Ordinary and extra ordinary refractive indices for calcite or quartz. 12 To find the equivalent focal length of a lens system by nodal slide assembly. **Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.**	30

Suggested Evaluation Methods	

| **Internal Assessment:**
➢ **Theory (20 Marks)**
 • Class Participation: **05 Marks**
 • Seminar/presentation/assignment/quiz/class test etc.: **05 Marks**
 • Mid-Term Exam: **10 Marks**
➢ **Practicum (10 Marks)**
 • Class Participation: **Nil**
 • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 Marks**
 • Mid-Term Exam: **Nil** | **End Term Examination : 50 Marks**

20 Marks |

Part C-Learning Resources	

Recommended Books/e-resources/LMS:

1. Principles of Optics, M. Born and E. Wolf, Pergamaman Press
2. Optics by Ajoy Ghatak, 2008, Tata McGraw Hill
3. Fundamentals of Optics, Jenkins and White, McGraw Hill Book Co. Ltd., New Delhi
4. Optics, K.D. Muller, University Science Books, Mill ally California
5. An Introduction to Interferometery, Tolansky, John Wiley & Sons, New Delhi
6. Polarized Light Production and Use, Shurcliff, Harward University Press, Cambridge, M A (USA)
7. Lasers and Non-Linear Optics, B.B.Laud, New Age International (P) Ltd., Publishers, New Delhi
8. Lasers, Principles, Types and Applications, K.R. Nambiar, New Age International (P) Ltd., Publishers, New Delhi
9. Laser, Theory & Applications by K. Thyagarajan and A.K. Ghatak, Macmillan India limited
10. A textbook of optics by N. Subrahmanyam and Brijlal, S. Chand & Company
11. B.Sc. Practical Physics, C.L. Arora, S. Chand Publisher, New Delhi
12. Advanced Level Practical Physics, M. Nelkon and Ogborn, Henemann Education Books Ltd., New Delhi
13. Practical Physics, S.S. Srivastava and M.K. Gupta, Atma Ram & Sons, Delhi
14. Practical Physics, S.L. Gupta and V. Kumar, Pragati Prakashan Meerut
15. Modern Approach to Practical Physics, R.K. Singla, Modern Publishers, Jalandhar
16. Advanced Practical Physics for students, B.L. Flint and H.T. Worsnop, Asia Publishing House

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	4th
Name of the Course	**Introductory Quantum Mechanics**
Course Code	B23-PHY-402
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	MCC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	Appeared or passed the 3rd sem (B.Sc. Physical Science(H)/ equivalent)
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Know main aspects of the inadequacies of classical mechanics and understand historical development of quantum mechanics and understand the theory of quantum measurements, wave packets and uncertainty principle. 2. Understand the central concepts of quantum mechanics: wave functions, Interpretation of Wave Function, momentum and energy operator, expectation values, the Schrodinger equation, time dependent and time independent cases, probability density, the normalization techniques, Eigen functions, Eigen values and their significance. 3. Understanding the behavior of quantum particle encountering the (i) barrier & ii) potential. 4. Solve Schrodinger equation for ground state energy and wave functions of various simple quantum mechanical one dimensional and three dimensional potentials 5. Learn to present observations, results, analysis and different concepts related to experiments of Elements of Quantum Mechanics.

Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5

Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**	**Time:3hrs**

Part B- Contents of the Course

Instructions for Paper- Setter

1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

Unit	Topics	Contact Hours
I	**THE ORIGIN QUANTUM PHYSICS** Inadequacies in Classical Physics, Overview of quantum physics, boundary between classical and quantum phenomena**,** Blackbody Radiation, Planck's Quantum Theory, Photons, Photoelectric effect, Compton effect (theory and result), Frank-Hertz experiment, de-Broglie hypothesis, Davisson and Germer experiment, wave packet, phase velocity, group velocity and their relation, Heisenberg's uncertainty principle, Time energy and angular momentum, position uncertainty. Uncertainty principle from de Broglie wave. (Wave particle duality). Gamma Ray Microscope, Electron diffraction from a slit	12
II	**THE SCHRODINGER WAVE EQUATION-I** Time dependent and time independent Schrodinger equation, dynamical evolution of a quantum state; properties of Wave Function, Interpretation of Wave Function, Condition for physical acceptability of Wave Functions. Eigenvalues and Eigen functions, Mathematical consideration of Schrodinger equation: Normalization, Orthogonality, Observables, Stationary states, Position, Linear momentum & Energy operators; commutator of position and linear momentum operators; Postulates of quantum mechanics, Probability current density, Expectation values of position and linear momentum, Ehrenfest's theorem	11
III	**THE SCHRODINGER WAVE EQUATION-II** Solution of time dependent Schrodinger equation, Proof of Uncertainty principle (1D wave packet), Gaussian wave packet, Spread of Gaussian wave packet, Fourier analysis and Parseval's formula (main results only),	12

	Fourier integral theorem from Parseval's formula, General forms of Fourier transform, Kronecker delta and Dirac delta functions, Coordinate and momentum representations, Schrondinger equation in momentum representation, Significance of momentum wavefunctions, Box and Dirac delta normalization, Momentum wavefunctions for a free particle	
IV	**One-Dimensional Problems** Eigen Functions and Eigenvalues for a Particle in a One Dimensional Box, Potential step: reflectance and transmittance, Penetration of a barrier: reflectance, transmittance and tunnel effect, Application of barrier penetration, Tunnel diode and alpha decay (Qualitative description), One Dimensional Simple Harmonic Oscillator: Energy Levels and Wave Functions. Zero Point Energy	10

	<u>Practicum</u>
	  1. To find the specific heat of a solid by a method of mixture.
	  2. To find the specific heat of a liquid (Turpentine oil) by law of cooling.
	  3. To find coefficient of apparent expansion of glycerine
	  4. Study of Electron spin resonance- determine magnetic field as a function of the resonance frequency
	  5. Study of Zeeman effect: with external magnetic field; Hyperfine splitting
	  6. To study the quantum tunnelling effect with solid state device, e.g. tunnelling current in backward diode or tunnel diode.
	  7. Determination of Planck's Constant Using the Photoelectric Effect.
	  8. Determination of work function Using the Photoelectric Effect.
	  9. To demonstrate the concept of quantisation of the energy levels according to the Bohr's model of an atom.
	  10. Study of excitations of a given atom by Franck Hertz set up.
	  11. To determine the ionization potential of mercury
	  12. Study of Arc emission spectrum of given samples (Fe and Cu).
	  13. Determination of e/m of an electron by Helical method.
	  14. Determination of e/m of an electron by Thomson method
	Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.
		30

	Suggested Evaluation Methods	

Internal Assessment:	End Term Examination : 50 Marks
➢ **Theory (20 Marks)**	
• Class Participation: **05 Marks**	
• Seminar/presentation/assignment/quiz/class test etc.: **05 Marks**	
• Mid-Term Exam: **10 Marks**	
➢ **Practicum (10 Marks)**	**20 Marks**
• Class Participation: **Nil**	
• Seminar/Demonstration/Viva-voce/Lab records etc.: **10 Marks**	
• Mid-Term Exam: **Nil**	

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. Quantum Mechanics, Leonard I. Schiff , 3rd Edn 2010, Tata McGraw Hill.
2. A Text book of Quantum Mechanics, P.M. Mathews and K. Venkatesan, 2nd Edn, 2010, McGraw Hill.
3. A. Ghatak & S. Lokanathan, Quantum Mechanics: Theory and Applications, 5th Edition, (Macmillan India , 2004)
4. Quantum Mechanics, Robert Eisberg and Robert Resnick, 2nd Edn, 2002, Wiley.
5. Quantum Mechanics, G. Aruldhas, 2nd Edn 2002, PHI Learning of India.
6. Quantum Mechanics, B.H. Bransden and C.J. Joachain, Pearson Education, New Delhi.
7. Introductory Quantum Mechanics, David J. Griffith, 2nd Ed. 2005, Pearson Education.
8. Quantum Physics of Atoms Molecules, Solids, Nuclei and Particles, R.M. Eisberg and R. Resnick, Wiley Eastern Ltd, New Delhi
9. Quantum Mechanics, G R Chatwal and S K Anand, Himalaya Publishing House, New Delhi
10. Quantum Physics(Berkeley Physics Course), E H Witchman, Tata McGraw Hill, Chennai
11. B.Sc. Practical Physics, C.L. Arora, S. Chand Publisher, New Delhi
12. Advanced Level Practical Physics, M. Nelkon and Ogborn, Henemann Education Books Ltd., New Delhi
13. Practical Physics, S.S. Srivastava and M.K. Gupta, Atma Ram & Sons, Delhi
14. Practical Physics, S.L. Gupta and V. Kumar, Pragati Prakashan Meerut

Kurukshetra University Kurukshetra
Undergraduate Programs
<u>**Course: MCC-8**</u>

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	4th
Name of the Course	**Atomic spectroscopy**
Course Code	B23-PHY-403
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	MCC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	Appeared or passed the 3rd sem (B.Sc. Physical Science (H)/ equivalent)
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Acquire knowledge about the historical background and developments of atomic spectroscopy through the study of spectral series in Hydrogen atom, effect of nuclear motion on line spectra (correction of finite nuclear mass), short comings of Bohr's theory, Wilson sommerfeld quantization rule, Sommerfeld's extension of Bohr's model, Sommerfeld relativistic correction, Short comings of Bohr-Sommerfeld theory and finally Vector atom model 2. Understand and explain the vector atom model, various coupling schemes and atomic spectra of one and two electron atoms 3. Understand the LS & JJ coupling 4. Explain the influence on the spectra of atoms in the presence of external applied electric and magnetic field i.e. Zeeman effect, Paschen-Back effect, Stark effect _____ 5. Learn to present observations, results, analysis and different concepts related to experiments of Elements of Atomic and Molecular Physics.

Credits	Theory	Practical	Total

		3	1	4
Contact Hours		3	2	5

Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**	**Time:3hrs**

<table>
<tr><td colspan="3" align="center">Part B- Contents of the Course</td></tr>
<tr><td colspan="3">

Instructions for Paper- Setter

1.Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

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Unit	Topics	Contact Hours
I	**Historical background of atomic spectroscopy:** Introduction of early observations, emission and absorption spectra, atomic spectra, wave number, Bohr atomic model(Bohr's postulates) , spectra of Hydrogen atom , explanation of spectral series in Hydrogen atom, un-quantized states and continuous spectra, spectral series in absorption spectra, effect of nuclear motion on line spectra (correction of finite nuclear mass), variation in Rydberg constant due to finite mass, short comings of Bohr's theory, Vector atom model**;** space quantization, electron spin, coupling of orbital and spin angular momentum, spectroscopic terms and their notation, quantum numbers associated with vector atom model, transition probability and selection rules.	11
II	**Vector atom model (single valance electron):** Orbital magnetic dipole moment (Bohr megnaton), behavior of magnetic dipole in external magnetic field; Larmor's precession and Larmor's theorem. Penetrating and Non-penetrating orbits, Penetrating orbits on the classical model**;** Quantum defect, spin orbit interaction energy of the single valance electron. Hydrogen fine spectra, Main features of Alkali Spectra and their theoretical interpretation, term series and limits, Rydeburg-Ritze combination principle, Absorption spectra of Alkali atoms. observed doublet fine structure in the spectra of alkali metals and its Interpretation, Intensity rules for doublets, comparison of Alkali spectra and Hydrogen spectrum	12
III	**Vector atom model (two valance electron):** Essential features of spectra of Alkaline-earth elements, Vector model for two valance electron atom: application of spectra. Coupling Schemes;LS or Russell – Saunders Coupling Scheme and JJ coupling scheme, Interaction energy in L-S coupling (sp, pd configuration), Lande interval rule, Pauli principal and	12

		periodic classification of the elements. Interaction energy in JJ Coupling (sp, pd configuration), equivalent and non-equivalent electrons, Two valance electron system-spectral terms of non-equivalent and equivalent electrons, comparison of spectral terms in L-S And J-J coupling. Hyperfine structure of spectral lines and its origin; isotope effect, nuclear spin	
IV		**Atom in external field:** Zeeman Effect (normal and Anomalous),Experimental set-up for studying Zeeman effect, Explanation of normal Zeeman effect(classical and quantum mechanical), Explanation of anomalous Zeeman effect(Lande g-factor), Zeeman pattern of D1 and D2 lines of Na-atom, Paschen-Back effect of a single valence electron system. Weak field Stark effect of Hydrogen atom.	10
		Practicum 1. To determine the value of Boltzmann Constant by studying Forward Characteristics of a Diode. 2. To determine the value of Planck's Constant by using four different LEDs. 3. To determine the value of e/m by (a) Magnetic Focussing or (b) Bar Magnet. 4. To determine the wavelengths of Hydrogen spectrum and hence to determine the value of Rydberg's Constant. 5. To determine the Wavelength of H-alpha Emission Line of Hydrogen Atom. 6. To determine the Wavelength and the Angular Spread of a He-Ne Laser. 7. To determine the value of Stefan's Constant. 8. To determine the Wavelength and the Velocity of Ultrasonic Waves in a liquid (Kerosene Oil, Xylene, etc.) by studying the Diffraction of light through an Ultrasonic Grating 9. To estimate the temperature of Sodium flame by studying the reversal of spectral lines (D lines). 10. To study the characteristics of LASER. **Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.**	30

Suggested Evaluation Methods	

Internal Assessment:
➢ **Theory (20 Marks)**
  • Class Participation: **05 Marks**
  • Seminar/presentation/assignment/quiz/class test etc.: **05 Marks**
  • Mid-Term Exam: **10 Marks**
➢ **Practicum (10 Marks)**
  • Class Participation: **Nil**
  • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 Marks**
  • Mid-Term Exam: **Nil**
	End Term Examination : 50 Marks
	
	20 Marks

Part C-Learning Resources	

Recommended Books/e-resources/LMS:

1. Concept of Modern Physics (1987), A. Beiser, Mc Graw Hill Co Ltd. New Delhi
2. Atomic Physics (2007), J.B. Rajab, S Chand & Co, New Delhi
3. Atomic Physics Vol II (1991), J.H. Fewkes and J. Yarwood, Oxford University Press
4. Physics of Atoms and Molecules 2nd Ed (2009), B.H.Bransden and C.J. Joachain, Pearson Education, New Delhi
5. Fundamental of Molecular Spectroscopy,Colin N. Banwell and Elaine M. McCash, McGraw Hill Co Ltd. New Delhi
6. Atomic and Nuclear Physics Vol I (1996) S.N. Ghoshal, S. Chand & Com., New Delhi
7. Atomic and Nuclear Physics (1982), K. Gopalkrishnan, Mc Millan India, New Delhi
8. Elements of Spectroscopy S.L.Gupta, V. Kumar and R.C.Sharma, Pragati Prakashan, Meerut.
9. Geeta Sanon, BSc Practical Physics, 1st Edn. (2007), R. Chand & Co.
10. B. L. Worsnop and H. T. Flint, Advanced Practical Physics, Asia Publishing House, New Delhi.
11. Indu Prakash and Ramakrishna, A Text Book of Practical Physics, Kitab Mahal, New Delhi.
12. D. P. Khandelwal, A Laboratory Manual of Physics for Undergraduate Classes, Vani Publication House, New Delhi.
13. Nelson and Jon Ogborn, Practical Physics.

Kurukshetra University Kurukshetra
Undergraduate Programs
<u>**Course: DSE-1**</u>

Session: 2023-24			
Part A - Introduction			
Subject	Physics		
Semester	4th		
Name of the Course	**Laser Physics & Fiber Optics**		
Course Code	B23-PHY-404		
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	DSE		
Level of the course (As per Annexure-I	100-199		
Pre-requisite for the course (if any)	Appeared or passed the 3rd sem (B.Sc. Physical Science (H)/ equivalent)		
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Understand the basic principle of laser, Einstein's coefficients and their physical significance. Line broadening and its reasons 2. Qualitative understanding of different lasing mechanism, variation of output laser power around threshold and basic idea of oscillating of modes in laser cavity and their roles in propagation 3. Understand about optical fibres and its classification, basic principle involved in propagation of light through optical fibre and its application in communication 4. Have the idea of Fibre materials, Fibre Cables and Fabrication Techniques _____ 5. Understand how and why to use of laser source in performing experiments in laboratory and have the idea how the signal that carries information transmitted through the optical fibre.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5

Max. Marks:100 Internal Assessment Marks:30 End Term Exam Marks: 70	Time:3hrs

Part B- Contents of the Course

Instructions for Paper- Setter

1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

4. 20% numerical problems are to be set.

5. Use of scientific (non-programmable) calculator is allowed.

Unit	Topics	Contact Hours
I	**Introduction to Laser:** The Einstein Coefficients, Absorption and Emission cross-sections; Light amplification by an atomic system; Threshold condition; Origin of Line Shape function: Lorentzian and Gaussian shape functions; Line Broadening mechanisms - Homogeneous broadening: Natural Broadening, Collision broadening; Inhomogeneous broadening: Doppler Broadening	11
II	**Laser Rate Equations:** Two Level laser system, Three Level laser system, Four Level Laser Systems (Threshold Population, threshold pump rate, Laser power output with suitable examples), Variation of laser power around threshold; Optimum output coupling. Cavity modes: Number of modes in 1D, 2D and 3D cavities, Mode locking, Q switched lasers and methods of Q-switching	12
III	**Optical fibres:** Introduction; step index fibre, numerical aperture, pulse dispersion in step index fibre, graded index, material dispersion. Comparison of step and graded index fibres Propagation of light in optical Fibres : Basic structure and optical path of an optical fibre, Modes of propagation, meridional and skew rays, number of modes and cut off parameters of fibres, Single mode propagation. Disadvantage of monomode and graded index multimode fibre	11
IV	**Fibre materials & Fabrication Techniques**: Glass fibre, plastic fibre, losses of fibres; bending losses, intrinsic fibre losses, scattering losses and absorption losses. Fibre Cables: Fibre cable construction, Strength member, cable tensile loading, Minimum bend radius, Losses incurred during installation of cables or during subscriber service, testing of cables, cable selection criteria. Outside vapour phase oxidation, vapour phase axial deposition, modified chemical vapour deposition	11
	Practicum 1. To determine wavelength and angular divergence of LASER beam.	30

2. Demonstration of Temporal coherence and measurement of wavelength of laser light using Michelson interferometer. 3. Measurement of refractive index using Brewster angle. 4. Febry-Parrot interferometer. 5. Study of spectrum of iodine vapour and deduce force constant for the iodine molecule. 6. To study modulation and demodulation (Amplitude and frequency). 7. To study and perform Pulse Amplitude Modulation and Demodulation. 8. To study and perform Pulse Width Modulation and Demodulation. 9. To study and perform Pulse Position Modulation and Demodulation. 10. To determine Numerical aperture and acceptance angle of a given optical fiber. 11. Determination of diameter of wire using He-Ne Laser. 12. Study double slit interference by He-Ne laser 13. Determination of wavelength of He-Ne Laser by using a diffraction grating. 14. To measure the numerical aperture of an optical fibre using He-Ne laser source. **Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.**	

Suggested Evaluation Methods

Internal Assessment:	End Term Examination : 50 Marks
➢ **Theory (20 Marks)** • Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 Marks** • Mid-Term Exam: **10 Marks** ➢ **Practicum (10 Marks)** • Class Participation: **Nil** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 Marks** • Mid-Term Exam: **Nil**	 **20 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
 1.Laser and Optical Engineering P.Das, Narosa Publication.
 2.Lasers and Nonlinear Optics - B.B. Land.
 3.Optical Electronics - A Ghatak and K. Thyagarayan.
 4.Principles of Lasers, O. Svelto, Plenum (1989)
 5.Laser Physics, L.V. Tarasov, Mir (1983)
 6.Quantum Electronics, A.Yavir, John Wiley (1992)
 7.Laser: Theory & Applications, A. Ghatak & K. Tayagrajan, Macmillan India
 8.Optical fibre communication (second edition) - Gerd Keiser, McGraw Hill, Inc. New York.
 9.Optical fibres and fibre optic communication systems - S.Sarkar.
  10. Lasers: Principle, Typesand applications-K.R. Nambiar New Age International Publishers

Kurukshetra University Kurukshetra
Undergraduate Programs
<u>Course: DSE-1</u>

Session: 2023-24			
Part A - Introduction			
Subject	Physics		
Semester	4th		
Name of the Course	**Physics of Nanomaterials**		
Course Code	B23-PHY-405		
Course Type: (CC/MCC/MDC/CC-M/ DSEC /VOC/DSE/PC/AEC/VAC)	DSE		
Level of the course (As per Annexure-I	100-199		
Pre-requisite for the course (if any)	Appeared or passed the 3rd sem (B.Sc. Physical Science (H)/ equivalent)		
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Understand the properties of Nanomaterials/ nanostructures 2. Understand the basic Physics of methods for preparation ofNanomaterials/nanostructures. 3. Understand the basic Physics of Characterization & Instrumentation Technique for Nanomaterials/ nanostructures. 4. Understand the application and advantages of Nanomaterials 5. Understand the analysis and plotting of experimental data using various techniques.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Max. Marks:100 **Internal Assessment Marks:30** **End Term Exam Marks: 70**		**Time:3hrs**	
Part B- Contents of the Course			

Unit	Topics	Contact Hours
I	Definition, Length scale, Historical background & developments, Richard Feynman Statement, Moore's law, Vision and objective of Nano-technology , Top down and Bottom up approach, Surface to Volume Ratio, Quantum confinement, Size effect in nano system, Quantum dots, Nanowires, Different Allotropes of carbon, Introduction to CNTs, Structure of CNTs, Types of CNTs- SWNTs, MWNTs, Bucky balls (C60), Graphene, Semiconductor Nano particles–types and properties.	10
II	**Synthesis methods for Nanomaterials/Nanostructures:** Bottom up and top down approaches for synthesis of nanomaterials, Synthesis of zero-dimensional nanostructures (Nanoparticles): Sol-Gel Process, Epitaxial core-shell nanoparticles, Ball milling, Synthesis of One-dimensional nanostructures (Nanowires, Nanorods, Nanotubes): Electrochemical deposition, Lithography, Synthesis of Two- dimensional nanostructures (Thin Films & Quantum wells): Molecular beam epitaxy (MBE), MOCVD, Cluster beam evaporation, Ion beam deposition.	12
III	**Characterization & Instrumentation Technique for Nanomaterials/Nanostructures**: X -ray Diffraction (XRD): Basic principle and idea of instrumentation, Determination of crystallite/particle size and strain in nanomaterials using Debye Scherer's formula and Williamson–Hall's plot, UV Visible spectroscopy: Basic principle and idea of instrumentation, optical energy band gap, Tauc plot, surface plasmon peaks Photoluminescence (PL) spectroscopy: Basic principle and idea of instrumentation, Shift in PL peaks with particle Size, Determination of alloy composition in thin films of compound semiconductors, Estimation for width of quantum wells, Raman spectroscopy: Basic principle and idea of instrumentation, Variations in Raman spectra of nanomaterials with particle size, Study of Raman spectra of carbon nanotubes and graphene.	13
IV	**Applications of Nanomaterials:** Importance of nano-scale and technology, Applications of Nanotechnology in different field: Automobiles, Electronics and Devices, Nano-biotechnology, Materials, Medicine, Food, Textiles and Fabrics, Sporting Equipment and Goods, Chemical and Bio sensor, Enhancing Water Quality, Space Science, Improving Air Quality , IT sector, Environmental Remediation, agriculture; Advantages of Nanomaterials	10

	Practicum	30
	1. To analyze the crystal structure of simple cubic, FCC and associated defects using XRD data.	
	2. To study the crystallite by W-H analysis of XRD data.	
	3. To study wavelength used by using standard FCC/BCC lattice in XRD.	
	4. To analyze the structural of different carbonaceous material (Quantum dot, CNT, grapheme, amorphous, graphite) using RAMAN spectroscopy data.	
	5. To study the RAMAN spectra of Polycarbonate monomer structure.	
	6. To study the band gap/energy gap of different materials using UV-visible spectroscopy data.	
	7. To study the Transmission spectra using UV-visible spectroscopy data.	
	8. To study the Absorption spectra using UV-visible spectroscopy data.	
	9. To study the band transition in different luminescent materials using PL spectroscopy data.	
	10. To study the emission and absorption spectra of a material using PL spectroscopy data.	
	Note: Student will perform at least six experiments. The examiner will allot one practical at the time of end term examination.	

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory (20 Marks)** • Class Participation: **05 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **05 Marks** • Mid-Term Exam: **10 Marks** ➢ **Practicum (10 Marks)** • Class Participation: **Nil** • Seminar/Demonstration/Viva-voce/Lab records etc.: **10 Marks** • Mid-Term Exam: **Nil**	**End Term Examination : 50 Marks** **20 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
1.Nanotechnologies: The Physics of Nanomaterials Volume I, David S. Schmool.
2.Introduction to Nanoscience by Gabor L Hornyak and Joydeep Dutta
3.Nanophysics and Nanotechnology by Edward L Wolf
4.Essentials in Nano-science and nanotechnology by Narendra Kumar, Sunit Kumbhat
5.Nanostructures & Nanomaterials: Synthesis, Properties & Applications by Guozhong Cao
6.Nanotechnology: Principles and Practices by Sulabha K Kulkarni
7.Introduction to Nano: Basics to Nanoscience and Nanotechnology by Amretashis Sengupta and Chandan Kumar Sarkar.

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	3rd
Name of the Course	**Indian Astronomy in the 18th and 19th Centuries**
Course Code	B23-VAC-316
Course Type: (CC/MCC/MDC/CC-M/DSEC/ VOC/DSE/PC/AEC/VAC)	VAC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Understand the Classical Astronomy in India and Early astronomical measurements. 2. Understand the Growth and Development of Space and Radio Astronomy in India 3. Understand the Growth of Optical Astronomy in India 4. Understand the Astronomy in ancient, medieval and early telescopic era of India,

Credits	Theory	Practical	Total
	2	NA	2
Contact Hours	2	NA	2

Max. Marks:50 **Internal Assessment Marks:15** **End Term Exam Marks: 35**	**Time:3hrs**

Part B- Contents of the Course	

<u>**Instructions for Paper- Setter**</u>

1.Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from

each unit. Each question may contain two or more parts. All questions will carry equal marks.

Unit	Topics	Contact Hours
I	Classical Astronomy in India- Astronomy of the Vedas, Vedanga Jyotisa, Siddhantas- Famous Astronomers and Their Works, Aryabhata-I (b. 476 AD), Earth's Shape and Rotation, Post-Aryabhatan Astronomy, Indian Astronomers and Eclipses, Early astronomical measurements: Measurement of Earth's radius by Eratosthenes; Lunarand solar motion studies by Hipparchus - equinoxes and solstices, lunar and solar eclipses;	8
II	Aryabhatta-I and his seminal contributions to astronomy - relative motion, spinning Earth, eclipses, etc.; Varahamihira, Brahmagupta and other siddhantic astronomers of India; symbiotic relation between mathematics and astronomy; evidence of the precession of equinox from vedic literature; Jai Singh and his Jantar Mantar **Developments of Space Astronomy in India**-Satellite Experiments, Astrosat instruments,	7
III	**Growth and Development of Radio Astronomy in India-** Introduction, Radio Recombination Lines, The Gauribidanur T-array Radio Telescope, The Mauritius Radio Telescope, Pulsar Studies, Observations of Neutral Hydrogen Gas, Millimetre Wave Astronomy, Interplanetary Scintillations, Solar Wind and Solar Studies, Solar Radio Emission and Space Weather, Quasar and Pulsars	7
IV	**Growth of Optical Astronomy in India-** Birth of the Kodaikanal Observatory, Takhtasinghji Observatory and the Bhavnagar Telescope, Nizamiah Observatory, Post-war Development of Astronomy, Kodaikanal Observatory, The Vainu Bappu Observatory (VBO), Near-Infrared Astronomy, Udaipur Solar Observatory (USO)	8

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory (15 Marks)** • Class Participation: **4 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **04 Marks** • Mid-Term Exam: **7 Marks**	**End Term Examination : 35 Marks**

Part C-Learning Resources
Recommended Books/e-resources/LMS: 1. Astronomy in India: A Historical Perspective   2. The Story Of Astronomy In India by Chander Mohan   3. Indian Astronmy-An introduction by S Balachandra Rao Books

Session: 2023-24			
Part A - Introduction			
Subject	Physics		
Semester	3rd		
Name of the Course	**Basics of Indian Astronomy**		
Course Code	B23-VAC-318		
Course Type: (CC/MCC/MDC/CC-M/DSEC/ VOC/DSE/PC/AEC/VAC)	VAC		
Level of the course (As per Annexure-I	100-199		
Pre-requisite for the course (if any)			
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Understand the Astronomy and Astronomical Scales 2. Learn about the Astronomical Instruments, Astronomy in the Internet Age and Citizen Science Initiatives 3. Understand Sun and the solar family & Physics of Galaxies 4. Learn about the Astronomy in ancient, medieval and early telescopic era of India,		
Credits	Theory	Practical	Total
	2	NA	2
Contact Hours	2	NA	2
Max. Marks:50 **Internal Assessment Marks:15** **End Term Exam Marks: 35**	**Time:3hrs**		
Part B- Contents of the Course			
Instructions for Paper- Setter			

1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from

each unit. Each question may contain two or more parts. All questions will carry equal marks.

Unit	Topics	Contact Hours
I	**Introduction to Astronomy and Astronomical Scales:** History of astronomy, wonders of the Universe, overview of the night sky, diurnal and yearly motions of the Sun, size, mass, density and temperature of astronomical objects, basic concepts of positional astronomy: Celestial sphere, Astronomical coordinate systems, Horizon system and Equatorial system	7
II	**Astronomical Instruments:** Observing through the atmosphere (Scintillation, Seeing, Atmospheric Windows and Extinction). Basic optical definitions for telescopes: Magnification, Light Gathering Power, Limiting magnitude, Resolving Power, Diffraction Limit. Optical telescopes, radio telescopes, Hubble space telescope, James Web space telescope, Fermi Gamma ray space telescope. **Astronomy in the Internet Age:** Overview of Aladin Sky Atlas, Astrometrica, Sloan Digital Sky Survey, Stellarium, virtual telescope **Citizen Science Initiatives:** Galaxy Zoo, SETI@Home, RAD@Home India	8
III	**Sun and the solar family:** Solar parameters, Sun's internal structure, solar photosphere, solar atmosphere, chromosphere, corona, solar activity, origin of the solar system, the nebular model, tidal forces and planetary rings **Physics of Galaxies:** Basic structure and properties of different types of Galaxies, Nature of rotation of the Milky Way (Differential rotation of the Galaxy), Idea of dark matter	8
IV	**Astronomy in India:** Astronomy in ancient, medieval and early telescopic era of India, current Indian observatories (Hanle-Indian Astronomical Observatory, Devasthal Observatory, Vainu Bappu Observatory, Mount Abu Infrared Observatory, Gauribidanur Radio Observatory, Giant Metre-wave Radio Telescope, Udaipur Solar Observatory, LIGOIndia) (qualitative discussion), Indian astronomy missions (Astrosat, Aditya).	7

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory (15 Marks)** • Class Participation: **4 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **04 Marks** • Mid-Term Exam: **7 Marks**	**End Term Examination : 35 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. 1. Seven Wonders of the Cosmos, Jayant V Narlikar, Cambridge University Press
2. Fundamental of Astronomy, H. Karttunen et al. Springer
3. Modern Astrophysics, B.W. Carroll and D.A. Ostlie, Addison-Wesley Publishing Co.
4. Introductory Astronomy and Astrophysics, M. Zeilik and S.A. Gregory, Saunders College Publishing.
5. The Molecular Universe, A.G.G.M. Tielens (Sections I, II and III), Reviews of Modern Physics, Volume 85, July-September, 2013
6. Astronomy in India: A Historical Perspective, Thanu Padmanabhan, Springer
7. Textbook of Astronomy and Astrophysics with elements of cosmology, V.B.Bhatia, Narosa Publication
8. https://aladin.u-strasbg.fr/
9. http://www.astrometrica.at/
10. https://www.sdss.org/
11. http://stellarium.org/
12. https://www.zooniverse.org/projects/zookeeper/galaxy-zoo/
13. https://setiathome.berkeley.edu/
14. https://www.radathomeindia.org/

Kurukshetra University Kurukshetra
Undergraduate Programs
Course: VAC-3

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	3rd
Name of the Course	**Exploring the Journey of Indian Space Satellites**
Course Code	B23-VAC-326
Course Type: (CC/MCC/MDC/CC-M/DSEC/ VOC/DSE/PC/AEC/VAC)	VAC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Learn about the Concept, , ideas and theories of Satellite and Orbits. 2. Elementary understanding of Satellite Systems and their Applications. 3. Get the idea of Indian Communications satellites and their applications and Classification of Satellites. 4. Get knowledge about Milestones in India's Space Programme.

Credits	Theory	Practical	Total
	2	NA	2
Contact Hours	2	NA	2

Max. Marks:50 **Internal Assessment Marks:15** **End Term Exam Marks: 35**	**Time:3hrs**
Part B- Contents of the Course	

Instructions for Paper- Setter

1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

Unit	Topics	Contact Hours
I	Concept of Satellite, ideas and theories, Concept of Orbits, The transfer orbit, hurdles in launching a satellite, space scarcity in space. Indian pace program, Objectives of the Indian Space Program, Organizational set-up.	7
II	Communication Satellite: Orbit and Description: A brief History of Satellite Communication, Satellite Frequency bands, Satellite Systems, Applications, Orbital Period and Velocity, Effects of Orbital inclination, Azimuth and Elevation, Coverage and Slant range, Eclipse, Orbital perturbations , Placement of a Satellite in a Geo-Stationary Orbit	8
III	Space Centres and institutes, Genesis of Indian's space program, Indian Satellites, Indian Communications satellites and their applications. Classification of Satellites based on Orbit Height. Indian remote sensing satellites, Indian National Satellites	8
IV	Launch vehicle technology, Milestones in India's Space Programme.	7

Suggested Evaluation Methods	

Internal Assessment:
➢ **Theory (15 Marks)**
  • Class Participation: **4 Marks**
  • Seminar/presentation/assignment/quiz/class test etc.: **04 Marks**
  • Mid-Term Exam: **7 Marks**
	End Term Examination : 35 Marks

Part C-Learning Resources

Recommended Books/e-resources/LMS:
  1. https://www.indiascience.in/videos/isro-indias-space-journey-e-2
  2. https://www.indiascience.in/videos/isro-indias-space-journey-part-2-e-1
  3. https://www.insightsonindia.com/science-technology/space-technology/milestones-in-indias-space-programme/
  4. https://www.clearias.com/indian-space-program/
  5. SCIENCE 366: A Chronicle of Science and Technology, Basu Biman
  6. Science and technology, Praveen Chandra Mishra, Chronicle Books

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	4th
Name of the Course	**Physics in Everyday Life**
Course Code	B23-VAC-419
Course Type: (CC/MCC/MDC/CC-M/DSEC/ VOC/DSE/PC/AEC/VAC)	VAC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Elementary understanding of the mechanical concepts and application in daily life related to Force, weight, work, energy, power. 2. Get the idea of working of refrigerator, air conditioner, Bernoulli principle, pressure cooker.in various engines. 3. Learn about the daily life activities related to sound and optics. 4. Basic understanding some electrical and electronic appliances

Credits	Theory	Practical	Total
	2	NA	2
Contact Hours	2	NA	2

Max. Marks:50 **Internal Assessment Marks:15** **End Term Exam Marks: 35**	**Time:3hrs**
Part B- Contents of the Course	
<u>**Instructions for Paper- Setter**</u>	

6.Nine questions will be set in total.

7. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

8. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

Unit	Topics	Contact Hours
I	**MECHANICS** Every day activities related to Force, weight, work, energy, power and centrifuge; washing machine.	7
II	**HEAT** Variation of boiling point with pressure, pressure cooker, cooling by expansion, refrigerator, air conditioner, Bernoulli principle – Bunsen burner, aeroplane	8
III	**SOUND AND OPTICS** Sound waves, Doppler Effect, power of lens, long sight and short sight, microscope, telescope, binocular camera, video camera.	8
IV	**ELECTRICAL AND ELECTRONIC APPLIANCES** Working of the tube light and fan, kilowatt hour, fuse and heating elements, microwave oven, electric heater, photoelectric effect.	7

Suggested Evaluation Methods	
Internal Assessment: **Theory (15 Marks)** • Class Participation: **4 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **04 Marks** • Mid-Term Exam: **7 Marks**	**End Term Examination : 35 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
1. R. Murugeshan, Allied Physics I & II, S. Chand & Co, New Delhi (2006).
2. D.S. Mathur, Elements of properties of matter and acoustics, S. Chand & Company Ltd., New Delhi(2010)
3. R.Murugeshan, Properties of matter and acoustics, S. Chand & Co, New Delhi(2012)
4. Brijal&Dr.N. Subramanyan and P.S. Hemne, Heat and Thermodynamics, S. Chand & Co, New Delhi, (2004)
5. R. Murugeshan, Electricity, S. Chand & Co, New Delhi (2010)
6. R. Murugeshan and KiruthigaSivaprasath, Modern Physics, S. Chand & Co, New Delhi (2016)
7. N. Subramaniyam, Brijlal and M.N.Avadhanulu, A textbook of Optics S. Chand & Co, New Delhi (2012)

Kurukshetra University Kurukshetra
Undergraduate Programs
Course: VAC-4

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	4th
Name of the Course	**Radiations and its Hazards in Daily Life**
Course Code	B23-PHY-423
Course Type: (CC/MCC/MDC/CC-M/DSEC/ VOC/DSE/PC/AEC/VAC)	VAC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Understanding of the sources of Radiation exposure Realize the importance of radiation protection and safe disposal of radioactive 2. Get the idea of Basics of Radiation detectors. 3. Learn about Hidden hazards of various radiation sources in the daily life. 4. Basic understanding of Cares against Hidden hazards of radiations.

Credits	Theory	Practical	Total
	2	NA	2
Contact Hours	2	NA	2

Max. Marks:50 **Internal Assessment Marks:15** **End Term Exam Marks: 35**	**Time:3hrs**
Part B- Contents of the Course	

Instructions for Paper- Setter

1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

Unit	Topics	Contact Hours
I	Radiation and need for its measurement, Physical features of radiation, Conventional sources of radiations. Exposure to natural radiation: external to the body, Radiation from cosmic rays and solar radiation, Internal exposure to the body, Radioactivity arising from technological development: Possible health hazards from nuclear and laser radiations. Maximum permissible level of radiation. Radiation quantities and units of energy flux, energy influence, cross-section.	7
II	Biological effects of radiation: Dose response characteristics, Direct and indirect action, Acute effects, Delayed effects, Cumulative effect, Accidental exposure, Radiation induced chemical changes in tissues, Radiation protection procedures (diagnostics and therapy). Radioactive waste disposal and management: Type of radioactive waste, Airborne waste, Solid and liquid waste, Assessment of Hazard.	8
III	Hidden hazards of Non-Thermal Radiation, RF and microwave radiation, Non-Thermal Effects of Pulsed RF EMR, Power Line 50/60 Hz Electric and Magnetic Fields (EMFs), Airport Scanners, Occupational Exposure, Electricity**,** Non-Thermal Radiation, Cell phones, Cell Phone Towers, Wi-Fi, Smart meters, microwave oven.	8
IV	Basic radiation safety criteria, Protection from direct radiation, Energy deposition, Effect of distance and shielding, Protection from contamination, Preparation of a safe radiation area, Basic Cares against Hidden hazards, Exposure Controls, Designing of labs to reduce radiation hazards.	7

Suggested Evaluation Methods

Internal Assessment:	End Term Examination : 35 Marks
➢ **Theory (15 Marks)** • Class Participation: **4 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **04 Marks** • Mid-Term Exam: **7 Marks**	

Part C-Learning Resources

Recommended Books/e-resources/LMS:
1. RF and Microwave Radiation Safety Handbook by Ronald Kitchen
2. Hidden Dangers 5G By Captain Jerry G. Flynn
3. Health Physics: Radiation-Generating Devices, Characteristics, and Hazards by Joseph John Bevelacqua
4. Basics of Radiation Protection for Everyday Use by Leonie Munro
5. Radiation Safety Officer's Handbook by Gunhild von Oertzen and Detlof von Oertzen
6. Physics for Radiation Protection: A Handbook (Second Edition) by James E. Martin

7. Atoms, Radiation, and Radiation Protection (3rd edition) James E. Turner
8. Radiation Protection: A guide for Scientists, Regulators and Physicians (4th Edition) by Jacob Shapiro
9. Introduction to Radiobiology and Radiation Dosimetery - F.H. Aurix, John Wiley.
10. Techniques of Radiation Dosimetery - Eds K. Mahesh and DR Vij Wiley Eastern Limited.
11. Nuclear Energy - Raymond L. Murray Pergamon Press, N.Y.

Kurukshetra University Kurukshetra
Undergraduate Programs
Course: VOC-1

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	3rd
Name of the Course	**Refrigeration and Air Conditioning**
Course Code	B23-VOC-114
Course Type: (CC/MCC/MDC/CC-M/DSEC/ VOC/DSE/PC/AEC/VAC)	VOC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Learn about the factors contributing to food spoilage, causes of food spoilage, methods of food preservation 2. Learn about the Commercial Applications of air-conditioning 3. Understand the principles of ice production, different methods of ice manufacturing 4. Learn about the Industrial Applications of air-conditioning

Credits	Theory	Practical	Total
	2	NA	2
Contact Hours	2	NA	2

Max. Marks:50 **Internal Assessment Marks:15** **End Term Exam Marks: 35**	**Time:3hrs**
Part B- Contents of the Course	
Instructions for Paper- Setter	

1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

Unit	Topics	Contact Hours
I	Food Preservation: Introduction, factors contributing to food spoilage, causes of food spoilage, methods of food preservation, freezing method of food preservation, preservation of food with direct contact of liquid N2, freeze drying, preservation of different products, cold storage and commercial cabinets	8
II	Commercial Applications: Introduction, air-conditioning of houses, offices, hotels and restaurants, air-conditioning of departmental stores, air-conditioning of theatres and auditoriums, hospitals and medical applications	7
III	Ice-Manufacturing: Introduction, principles of ice production, different methods of ice manufacturing, treatment of water for making ice, brines, freezing tanks, ice cans, quality of ice	7
IV	Industrial Applications: Introduction, importance of RH in different industries, ice-cream manufacturing, refrigeration for breweries, selection of refrigerant for breweries, use of liquid N2 for fabric, quality, air conditioning in textile and photographic industries	8

Suggested Evaluation Methods	

Internal Assessment:
➢ **Theory (15 Marks)**
  • Class Participation: **5 Marks**
  • Seminar/presentation/assignment/quiz/class test etc.: **10Marks**
  • Mid-Term Exam: **NA**
	End Term Examination : 35 Marks

Part C-Learning Resources

Recommended Books/e-resources/LMS:
1.Refrigeration and Air Conditioning, Sadhu Singh, Khanna Publishing House
2.Refrigeration and Air Conditioning by C.P.Arora, McGraw Hill education (India) (P) limited, New Delhi
3.Principles of Refrigeration by Roy J. Dossat, Pearson education, New Delhi
4.Refrigeration and Air Conditioning by Manohar Prasad, New age international (P) limited, New Delhi
5.Course in Refrigeration and Air Conditioning by S.C.Arora and S.Domkundwar, Dhanpatrai and sons, Delhi

Kurukshetra University Kurukshetra
Undergraduate Programs
Course: VOC-3

Session: 2023-24			
Part A - Introduction			
Subject	Physics		
Semester	3ʳᵈ		
Name of the Course	**Maintenance of Laboratory Instruments**		
Course Code	B23-VOC-322		
Course Type: (CC/MCC/MDC/CC-M/DSEC/ VOC/DSE/PC/AEC/VAC)	VOC		
Level of the course (As per Annexure-I	100-199		
Pre-requisite for the course (if any)			
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Understand the SOP related to Physics Laboratory. 2. Understand the Maintenance of Electronics experiment 3. Understand the Maintenance of mechanics experiments 4. Understand the Maintenance of optics experiments		
Credits	Theory	Practical	Total
	2	NA	2
Contact Hours	2	NA	2
Max. Marks:50 **Internal Assessment Marks:15** **End Term Exam Marks: 35**	**Time:3hrs**		
Part B- Contents of the Course			

Instructions for Paper- Setter

1. Nine questions will be set in total.

2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.

3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

Unit	Topics	Contact Hours
I	Standard Operating Procedure for Maintenance of Lab Equipment, safety rules and policies, culture of laboratory safety, responsibility and accountability for laboratory safety, special safety considerations in Physics Lab, other factors that influence laboratory safety programs,	7
II	Equipment Maintenance Documentation, Maintenance of Electronics experiment, Symbols, Terminal identification & List applications of various semiconductor devices- Diodes, Transistors, SCR, UJT etc. Introduction to voltage regulator, List types of regulators, CRO, GM Counter.	8
III	Maintenance of mechanics experiments, Basic Terms related to experiments of Mechanics,	8
IV	Maintenance of optics experiments, Basic Terms related to experiments of optics. Circuit designing and testing.	7

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory (15 Marks)** • Class Participation: **5 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **10Marks** • Mid-Term Exam: **NA**	**End Term Examination : 35 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
1. B.Sc. Practical Physics, C.L. Arora, S. Chand Publisher, New Delhi
2. Advanced Level Practical Physics, M. Nelkon and Ogborn, Henemann Education Books Ltd., New Delhi
3. Practical Physics, S.S. Srivastava and M.K. Gupta, Atma Ram & Sons, Delhi
4. Practical Physics, S.L. Gupta and V. Kumar, Pragati Prakashan Meerut
5. Modern Approach to Practical Physics, R.K. Singla, Modern Publishers, Jalandhar
6. Advanced Practical Physics for students, B.L. Flint and H.T. Worsnop, Asia Publishing House

Session: 2023-24	
Part A - Introduction	
Subject	Physics
Semester	3rd
Name of the Course	**Installation and Maintenance of Solar Panels**
Course Code	B23-VOC-323
Course Type: (CC/MCC/MDC/CC-M/DSEC/ VOC/DSE/PC/AEC/VAC)	VOC
Level of the course (As per Annexure-I	100-199
Pre-requisite for the course (if any)	
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Understand the basics of solar energy and solar panels 2. Learn about the SPV Panels systems and their Installation 3. Get the knowledge about the testing methods and techniques SPV. 4. Learn about Maintenance and Troubleshooting process of SPV.

Credits	Theory	Practical	Total
	2	NA	2
Contact Hours	2	NA	2

Max. Marks:50 **Internal Assessment Marks:15** **End Term Exam Marks: 35**	**Time:3hrs**
Part B- Contents of the Course	

Instructions for Paper- Setter

1. Nine questions will be set in total.
2. Question no. 1 will be compulsory and based on the conceptual aspects of the entire syllabus. This question may have 4 parts and the answer should be in brief but not in Yes/No.
3. Four more questions are to be attempted, selecting one question out of two questions set from each unit. Each question may contain two or more parts. All questions will carry equal marks.

Unit	Topics	Contact Hours
I	**Introduction to solar energy and solar panels** Solar Energy and its potential, Harnessing solar energy, need for Solar energy to electrical energy conversion, Solar photo voltaic (SPV) system, SPV panels and their types, ratings and specifications. Advantages and disadvantages of SPV panels, basics of load calculation and SPV requirement	7
II	**SPV Panels systems and their Installation** Solar panel to SPV systems: OFF grid and ON grid solar systems, Areas of applications of SPV systems, components of solar systems; solar panel, inverter (Stand alone and grid tied) , Battery Energy system (BES), Charge controller, **Tools and equipments** : Digital Multimeter Clamp Meter Hydrometer, Sun pathfinder Thermography Camera , drills and fasteners, sealents, pliers and strippers, Pyranometer, Personal Protective Equipments (PPE), Battery maintenance kit Battery water filler etc. Installation: Site selection criteria, steps and procedure for solar panel array installation, different mounting structures, installation of AC and DC distribution boxes, earthing and grounding pits, optimal cable sizing and cable laying.	8
III	**Testing and Inspection** Testing methods and techniques, testing of SPV open circuit and load voltage, Battery SOC testing, testing of protective systems and earth resistance, Inspection of connected systems and running a test,	8
IV	**Maintenance and Trouble shooting** Scheduled and unscheduled maintenance, checking dust accumulation, Module Shading Module Mismatch, Physical Integrity, standard trouble shooting procedure.	7
Suggested Evaluation Methods	

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory (15 Marks)** • Class Participation: **5 Marks** • Seminar/presentation/assignment/quiz/class test etc.: **10Marks** • Mid-Term Exam: **NA**	**End Term Examination : 35 Marks**

Part C-Learning Resources

Recommended Books/e-resources/LMS:
1. Solar Photovoltaic technology PHI 2013, Chetan Singh Soalnki
2. Solar Electrical Handbook 2021, Michael Boxwell
3. Handbook for rooftop solar panel installation in Asia, 2014 Asian Development Bank (ADB)