DEPARTMENT OF ECONOMICS
KURUKSHETRA UNIVERSITY, KURUKSHETRA
(Established by the state Legislature Act –XII of 1956)
Structure, Scheme of Examination and Syllabi (Semester I, II, III & IV) for the Subject of

M. Sc. Economics (Honors) 5 Year Integrated Programme: Scheme C

To be implemented in Institute of Integrated Honors Studies (IIHS)
Choice Based Credit System (CBCS-LOCF) in accordance with NEP-2020 with Multiple Entry/Exit System
w.e.f. 2023-24 (in phased manner)

List of All Courses (For Sem I to VIII only) Offered in Subject of M. Sc. Economics (Honors) 5 Year Integrated Programme – Single Major in Economics (Scheme C)

Sem	Course Type	Course Code	Name of Course	Credits	Contact Hours per Week	Internal Assessment Marks	End Term Exam Marks	Total Marks	Duration of Exam (Hrs.)
I	MCC-1	B23-MSE-101	APPLIED MICRO ECONOMICS-I	4	5	30	70	100	3
I	MCC-2	B23-MSE-102	APPLIED MACRO ECONOMICS-I	4	5	30	70	100	3
I	CC-M1	B23-ECO-103	INTRODUCTORY ECONOMICS	2	2	15	35	50	3
I	MDC-1	B23-ECO-104	BASICS OF ECONOMICS	3	3	25	50	75	3
II	MCC-3	B23-MSE-201	QUANTITATIVE METHODS FOR ECONOMISTS-I	4	5	30	70	100	3
II	CC-M2	B23-ECO-202	INTRODUCTION TO INDIAN ECONOMY	2	2	15	35	50	3
II	DSEC-1	B23-MSE-203	STATISTICAL TECHNIQUES FOR ECONOMICS	4	5	30	70	100	3
II	MDC-2	B23-ECO-204	INDIAN ECONOMIC ENVIRONMENT	3	3	25	50	75	3
III	MCC-4	B23-MSE-301	APPLIED MICRO ECONOMICS-II	4	5	30	70	100	3
III	MCC-5	B23-MSE-302	APPLIED MACRO ECONOMICS-II	4	5	30	70	100	3
III	MDC-3	B23-ECO-303	CURRENT ISSUES IN GLOBAL ECONOMY	3	3	25	50	75	3
IV	MCC-6	B23-MSE-401	QUANTITATIVE METHODS FOR ECONOMISTS-II	4	5	30	70	100	3
IV	MCC-7	B23-MSE-402	BASIC ECONOMETRICS	4	5	30	70	100	3
IV	MCC-8	B23-MSE-403	ADVANCED STATISTICAL METHODS FOR ECONOMISTS	4	5	30	70	100	3
IV	DSE-1	B23-MSE-404	FINACIAL MARKETS & SYSTEM	4	5	30	70	100	3

	OR								
IV	DSE-1	B23-MSE-405	MONEY, BANKING & FINANCE	4	5	30	70	100	3
V	MCC-9	B23-MSE-501	DEVELOPMENT ECONOMICS –I	4	5	30	70	100	3
V	MCC-10	B23-MSE-502	INTERNATIONAL TRADE	4	5	30	70	100	3
V	DSE-2 OR	B23-MSE-503	PUBLIC FINANCE	4	5	30	70	100	3
V	DSE-2	B23-ECO-503	ECONOMICS OF INFRASTRUCTURE	4	4	30	70	100	3
V	DSE-3 OR	B23-MSE-504	CONTEMPORARY ISSUES IN INDIAN ECONOMY-I	4	5	30	70	100	3
V	DSE-3	B23-ECO-506	HARYANA ECONOMY	4	4	30	70	100	3
VI	MCC-11	B23-MSE-601	DEVELOPMENT ECONOMICS-II	4	5	30	70	100	3
VI	MCC-12	B23-MSE-602	INTERNATIONAL FINANCE	4	5	30	70	100	3
VI	DSE-4 OR	B23-MSE-603	ECONOMICS OF SOCIAL CHOICE	4	5	30	70	100	3
VI	DSE-4	B23-ECO-604	ECONOMICS OF INSURANCE	4	4	30	70	100	3
VI	DSE-5 OR	B23-MSE-605	CONTEMPORARY ISSUES IN INDIAN ECONOMY-II	4	5	30	70	100	3
VI	DSE-5	B23-ECO-606	WELFARE ECONOMICS	4	4	30	70	100	3
VII	CC-H1	B23-MSE-701	HISTORY OF ECONOMIC TGHOUGHT	4	5	30	70	100	3
VII	CC-H2	B23-MSE-702	RESOURCE ECONOMICS	4	5	30	70	100	3
VII	CC-H3	B23-MSE-703	RESEARCH METHODOLOGY IN ECONOMICS	4	5	30	70	100	3
VII	DSE-6 OR	B23-MSE-704	ECONOMICS OF INDUSTRIES	4	5	30	70	100	3
VII	DSE-6	B23-MSE-705	ECONOMICS OF FINANCE	4	5	30	70	100	3
VII	PC-H1	B23-ECO-706	ECONOMIC DATA ANALYSIS	4	8	30	70	100	3
VIII	CC-H4	B23-MSE-801	POPULATION STUDIES	4	5	30	70	100	3
VIII	CC-H5	B23-MSE-802	APPLIED MATHEMATICAL ECONOMICS	4	5	30	70	100	3
VIII	CC-H6	B23-MSE-803	AGRICULTURE & RURAL ECONOMICS	4	5	30	70	100	3
VIII	DSE-7 OR	B23-ECO-804	ECONOMICS OF HEALTH	4	4	30	70	100	3
VIII	DSE-7	B23-ECO-805	ECONOMICS OF EDUCATION	4	4	30	70	100	3
VIII	PC-H2	B23-ECO-806	APPLICATION SOFTWARE FOR ECONOMICS	4	8	30	70	100	3

Note: All Syllabi with Paper Code B23-ECO-NUM have been taken from UG Programme in Subject of Economics with Schemes A and B. All Syllabi with Paper Code B23-MSE-NUM are only for M.Sc. Economics (Hons.) 5-Year Integrated Programme : Scheme- C

SCHEME 'C' : UG Programme with Single Major (ECONOMICS)
(A student will take admission in UG Programme with Single Major (Economics) in the first year)

I Year Scheme C:Bachelor with Major in (Economics) and Minor in Same Subject (Economics)								
Semester	Major Subject	Minor /Vocational	Multidisciplinary Courses	Ability Enhancement Courses	Skill Enhancement Courses	Value Added Courses	Total Credits	Exit Option
I	MCC-A1(4 credit) B23-MSE-101 APPLIED MICRO ECONOMICS-I MCC-A2(4 credit) B23-MSE-102 APPLIED MACRO ECONOMICS-I	CC-M1 (4 credit) B23-ECO-103 INTRODUCTORY ECONOMICS	MDC-1 3 credit B23-ECO-104 BASIC ECONOMICS	AEC-1 2 credit	SEC-1 3 credit	VAC-1 2credit	22	Under Graduate Certificate in Economics with 48 credits
II	MCC-A3(4 credit) B23-MSE-201 QUANTITATIVE METHODS FOR ECONOMISTS-I DSEC-A1(4 credit) B23-MSE-203 STATISTICAL TECHNIQUES FOR ECONOMICS	CC-M2 (4 credit) B23-ECO-202 INTRODUCTION TO INDIAN ECONOMY	MDC-2 3 credit B23-ECO-204 INDIAN ECONOMIC ENVIRONMENT	AEC-2 2 credit	SEC-2 3 credit	VAC-2 2 credit	22	
	Internship of (4 credit)s of 4-6 weeks duration after 2nd semester							

2nd Year Scheme C:UG Programme with Single Major (Economics)								
III	MCC-A4 (4 credit) B23-MSE-301 APPLIED MICRO ECONOMICS-II MCC-A5 (4 credit) MCC-5 B23-MSE-302 APPLIED MACRO ECONOMICS-II	CC-M3 (4 credit)	MDC-3 3 credit B23-ECO-303 CURRENT ISSUES IN GLOBAL ECONOMY	AEC-3 2 credit	SEC-3 3 credit	VAC-3 2 credit	22	Under Graduate Diploma in Economics with 94 credits

IV	MCC-A6 (4 credit) B23-MSE-401 QUANTITATIVE METHODS FOR ECONOMISTS-II MCC-A7 (4 credit) B23-MSE-402 BASIC ECONOMETRICS MCC-A8(4 credit) B23-MSE-403 ADVANCED STATISTICAL METHODS FOR ECONOMICS DSE-A1 (4 credit) B23-MSE-404 FINACIAL MARKETS & SYSTEM OR B23-MSE-405 MONEY, BANKING & FINANCE	CC-M4(V) (4 credit)	--	AEC-4 2 credit	--	VAC-4 2 credit	24	

Internship of (4 credit)s of 4-6 weeks duration after 4th semester

3rd Year Scheme C:UG Programme with Single Major(Economics)

Semester	Major Subject	Minor /Vocational	Multi Disciplinary Courses	Ability Enhancement Courses	Skill Enhancement Courses	Value Added Courses	Total Credits	Exit Option

V	MCC-A9 (4 credit) B23-MSE-501 DEVELOPMENT ECONOMICS -I MCC-A10 (4 credit) B23-MSE-502 INTERNATIONAL TRADE (4 credit) DSE-A2 (4 credit) B23-MSE-503 PUBLIC FINANCE OR B23-ECO-503 ECONOMICS OF INFRASTRUCTURE DSE-A3(4 credit) B23-MSE-504 CONTEMPORARY ISSUES IN INDIAN ECONOMY-I OR B23-ECO-506 HARYANA ECONOMY	CC-M5(V) (4 credit)	--		Internship#(4 credit)s	--	24	B.Sc. Economics (Single Major) after earning 136 credits
VI	MCC-A11 (4 credit) B23-MSE-601 DEVELOPMENT ECONOMICS-II MCC-A12 (4 credit) B23-MSE-602 INTERNATIONAL	CC-M6(V) (4 credit)	--	--	SEC-4 2 credit	--	22	

	FINANCE DSE-A4(4 credit) B23-MSE-603 ECONOMICS OF SOCIAL CHOICE OR B23-ECO-604 ECONOMICS OF INSURANCE DSE-A5(4 credit) B23-MSE-605 CONTEMPORARY ISSUES IN INDIAN ECONOMY-II OR B23-ECO-606 WELFARE ECONOMICS							

Credits	Major = 72	Minor = 24	MDC = 09	SEC = 11	AEC = 08	VAC=08	Internship = 04	Total = 136

#Four credits of internship, earned by a student during summer internship after 2nd semester or 4th semester, will be taken into account in 5th semester of a student who pursue 3 year UG Programmes without taking exit option.

Notes:

1. Subjects, DSE, DSEC, SEC, AEC, MDC and VAC courses will be offered by the Department/ College/ Institute depending upon its available faculty, infrastructure and time table.
2. A student will opt for Multidisciplinary Course from the subject which is different from the discipline of major and minor subjects. Students are not allowed to choose or repeat courses already undergone at the higher secondary level (12th class) or opted as major and minor stream under this category. Provided further that if a Multidisciplinary Course across the discipline cannot be offered by the Department/Institute/College, due to its constraints and available resources, then
   i. MDC can be opted out of MOOCs through SWAYAM
   ii. MDC can be completed out of online courses offered by the Kurukshetra University
   iii. MDC can be completed from a cluster college, i.e., from a neighboring college/institute
3. A student will opt for AEC, SEC, VAC and Minor(Vocational) courses from the respective pools of courses offered by the

Department/College/Institute duly approved by the University. A Department/Institute/College can add more courses in the pools of AEC, SEC, VAC and Vocational courses with prior approval of the university.

4. For first and second semester of UG programme (Multidisciplinary) (Scheme A and B), a student can choose a Minor Course of 2 credit from the pool of minor subjects in that semester offered by the Department/Institute/College.

5. For first and second semester of UG programme with Single Major (Scheme C), a student can choose a Minor Course of (4 credit), say Subject E, out of available Core Courses of that subject E offered in that semester.

6. From 3rd semester onwards of all three schemes, a student can choose a Minor Course, say Subject E, out of available Core Courses of that subject E offered in that semester.

7. In the subjects/courses which involve practicum, i.e. Practical/ Laboratory/ Studio/ Project/ Survey/Field work, etc., a course of 4 credits will dedicate 3 credits for lectures and one credit for practicum and in other subjects/courses, a course of 4 credits will dedicate 3 credits for lectures and 1 credit for tutorial. During 4th year, when the practicum course is offered as a separate course in that subject, then a course of 4 credits will dedicate 3 credits for lectures and 1 credit for tutorial. However, for any DSE course, a course of 4 credits will dedicate 3 credits for lectures and one credit for tutorial.

8. In case of AEC of 2 credits, the entire 2 credits will be dedicated for lectures.

9. In the SEC courses of 3 credits, 2 credits will be dedicated for lectures and 1 credit for practicum, In the SEC courses of 2 credits, 1 credits will be dedicated for lecture and 1 credit for practicum and in the DSEC courses of 4 credits, 3 credits will be dedicated for lectures and 1 credit for practicum.

10. If a student takes exit after the second semester, then Undergraduate Certificate in Discipline/subject will be awarded after earning 52/48 credits including 4 credits for the internship of 4-6 weeks during the summer vacation. The nomenclature of the Discipline will depend upon the subjects opted during the programme. For example, if a student has studied two subjects Physics and Chemistry or Physics and Mathematics or Chemistry and Zoology, the Undergraduate Certificate in Physical Science and Life Science respectively will be awarded. Similarly, if a student has studied two subjects Economics and Sociology or Economics and Mathematics or Political Science and Hindi, the Undergraduate Certificate in Arts will be awarded.

11. If a student takes exit after the 4th semester, then Undergraduate Diploma in Discipline will be awarded after earning 96 credits including 4 credits for the internship of 4-6 weeks during the summer vacation. In case, a student takes exit after 2nd year of UG Programme with Single Major, then Undergraduate Diploma in Major Subject will be awarded after 100 credits (scheme B) and 94 credits (scheme C) including 4 credits for the internship of 4-6 weeks during the summer vacation.

Fourth Year Scheme C - M. Sc. Economics (Honors) 5 Year Integrated Programme

Fourth Year: Scheme D

Semester	Major Subject			Minor Subject		
	Core Courses	Discipline SpecificCourses	Practicum Courses	Core Courses	Total credits	Degree to beawarded
VII Level-8	CC-H1 B23-MSE-701 HISTORY OF ECONOMIC TGHOUGHT CC-H2 B23- MSE -702 RESOURCE ECONOMICS CC-H3 B23- MSE -703 RESEARCH METHODOLOGY IN ECONOMICS (4+4+4 CREDITS)	DSE- H1 B23- MSE -704 ECONOMICS OF INDUSTRIES OR DSE- H1 B23- MSE -705 ECONOMICS OF FINANCE	PC-H1 4 credit B23- ECO -706 ECONOMIC DATA ANALYSIS	CC-HM1 4 credit B23-MSE-701 HISTORY OF ECONOMIC TGHOUGHT	24	B.Sc. Economics (Hons.) Bachelor (Hons) In Discipline with 184 credits
VIII Level- 8	CC-H4 B23- MSE -801 POPULATION STUDIES CC-H5 B23- MSE -802 APPLIED MATHEMATICAL ECONOMICS CC-H6	DSE- H2 4 credit B23- ECO -804 ECONOMICS OF HEALTH OR DSE- H2 B23- ECO -805	PC-H2 4 credit B23-ECO-806 APPLICATION SOFTWARE FOR ECONOMICS	CC-HM2 4 credit B23- MSE -801 POPULATION STUDIES	24	

	B23- MSE -803 AGRICULTURE & RURAL ECONOMICS (4+4+4 CREDITS)	ECONOMICS OF EDUCATION				
OR						
VII Level-8	CC-H1 B23-MSE-701 HISTORY OF ECONOMIC TGHOUGHT CC-H2 B23- MSE -702 RESOURCE ECONOMICS CC-H3 B23- MSE -703 RESEARCH METHODOLOGY IN ECONOMICS (4+4+4 CREDITS)	DSE- H1 B23- MSE -704 ECONOMICS OF INDUSTRIES OR DSE- H1 B23- MSE -705 ECONOMICS OF FINANCE	PC-H1 4 credit B23- ECO -706 ECONOMIC DATA ANALYSIS	CC-HM1 4 credit B23-MSE-701 HISTORY OF ECONOMIC TGHOUGHT	24	B.Sc. Economics (Hons. With Research) 184 credits
VIII Level- 8	CC-H4 B23- MSE -801 POPULATION STUDIES CC-H5 B23- MSE -802 APPLIED MATHEMATICAL ECONOMICS (4+4 CREDITS)		Project /Dissertation 12 Credits	CC-HM2 4 credit B23- MSE -801 POPULATION STUDIES	24	

Notes:

1. 4-year UG (Honours) or (Honours with Research) in Major Subject will be offered after completion of 3 year UG programme with one major and one minor subject to those students who have completed at least 60 credits in the concerned major subject. In addition to the above, 4- year UG (Honours with Research) in Major Subject will be offered only to those students who have obtained CGPA 7.5 or more in the 3 year UG programme.
2. Core course in Honours subject (CCH): Discipline specific elective course in Honours (DSE-H); Practicum Course in Honours subject (PC- H); Core Course in Minor Subject (CC-HM) of Honours Program.
3. Bachelor degree (Honours) or (Honours with Research) will be awarded in the Major subject after successful completion of the four year programme securing 184 credits and satisfying the minimum credit requirement as given in the Credit Table.
4. Student opting for Honours with Research will work on a Research Project or do research during the eighth semester. The dissertation work will be of 12 credits. 8 credits will be earmarked for the evaluation report of the dissertation and viva-voce examination will carry weightage of 4 credits.
5. The evaluation of the Dissertation and the conduct of viva-voce examination will be done by an external examiner.

DETAILED SYLLABI OF M.SC. ECONOMICS (HONOURS) 5-YEAR INTEGRATED PROGRAMME (SEM I,II, III & IV ONLY)

MCC-1

Session 2023-2024			
Part-A Introduction			
Subject	MSC- Economics (Honours) 5-Year Integrated Programme		
Semester	I		
Name of the Course	**APPLIED MICRO ECONOMICS-I**		
Course Code	**B23-MSE-101**		
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	**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. Know the scope and breadth of Micro Economics along with understanding the core principles of demand and supply so that they are able to apply the understanding of these concepts to comprehend real world problems along with the ability to think critically and analyze economic problems. 2. Understanding the core principles of production and costs so that they are able to apply the understanding of these concepts to comprehend real world problems along with the ability to think critically and analyze economic problems. 3. Analyze given situations in a variety of markets on a microeconomic level. Understand the internal structure and assumptions of the different analytical frameworks of market conditions, their explanatory power and limitations. 4. Exhibit the ability to learn and apply relevant optimization techniques for analysis of microeconomic Behaviour of consumer, producer and firm. Simultaneously Understanding the implications and ethical as well as value part of it.		
	5*. Apply the basic concepts of scarcity and opportunity cost; manipulate the basic demand and supply model to determine an equilibrium price and quantity, changes to equilibrium price and quantity, and their impact on resource allocation.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Max. Marks: 100 **Internal Assessment Marks: 20+10*** **End Term Exam Marks: 50+20***	**Time: 3 Hours**		

Part-B Contents of the Course

Instructions for Paper Setters

1. Nine Questions will be set in all and students will be required to attempt 5 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 2 marks spread over the entire syllabus (2*5=10 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Unit	**Topics**	**Contact Hours**
I	**Introduction and Demand Analysis** Subject matter of Economics; Scarcity as basic economic problem; Analysis of basic problems through Production Possibility Frontier; Law of Demand and Elasticity of Demand (Price, Income and Cross) and their measurement	15
II	**Utility analysis** Diminishing Marginal and Equi-Marginal Utility; Ordinal utility analysis and Consumer Equilibrium; Revealed Preference and Hicks' revised Demand Theory; Consumer Surplus and Producer Surplus.	15
III	**Theory of Production** Production function-types; Law of variable proportions; Iso- quants & least-cost Combination; Laws of returns & economies of scale	15

IV	**Supply and Cost Analysis** Law of supply; Elasticity of Supply and its measurement; Economies and Diseconomies of Scale; Costs- Traditional & Modern Theory	15
V*	**Practicum Syllabus:** 1. Derivation of Demand Curve 2. Computation of Demand Elasticity 3. Compensating Variation for Consumer Surplus 4. Equivalent Variation for Consumer Surplus 5. Derivation of A Production Function 6. TR, MR, AR Relationship 7. TC, MC, AC Relationship 8. TP, MP, AP Relationship 9. Computation of Elasticity of Supply 10. Derive PE=SE+IE	15

Suggested Evaluation Methods

Internal Assessment:		**End Term Examination:**
➢ **Theory**		
Class Participation	5	Theory - 50
Seminar/Presentation/Assignment/Quiz/Class Test etc.	5	viva voce* - 20
Mid Term Exam:	10	
➢ **Practicum (15 Hours)**		
Class Participation		
Seminar/Demonstration/Viva Voce/Lab Records etc.	10	
Mid Term Exam:		

Part-C Learning Resources

Recommended Books/E-Resources/LMS:

- Archibald, G.C. (Ed.) (1971). *Theory of the Firm*. Penguin, Harmondsworth.
- Baumol, W.J. (1982). *Economic Theory and Operations Analysis.* Prentice Hall of India, New Delhi.
- C. Snyder and W. Nicholson (2016), '*Microeconomic Theory- Basic Principles and Extensions*' 12th ed.
- Da Costa, G.C. (1980). *Production, Prices and Distribution*. Tata McGraw Hill, New Delhi.
- Gravelle, H., & Rees, R. (2004). Microeconomics (3rd ed). Financial Times/ Prentice Hall.
- Green, H.A.G. (1971). *Consumer Theory* .Penguin, Harmondsworth.
- Healthfields and Wibe (1987). *An Introduction to Cost and Production Functions*. Macmillan, London.
- Henderson & Quandt (1980). *Microeconomic Theory: A Mathematical Approach.* McGraw Hill, New Delhi.
- Hirshleifer, J. & Glazer, A. (1997). *Price Theory and Applications*. Prentice Hall of India, New Delhi.
- Koutsoyiannis, A. (1979). *Modern Microeconomics (2nd Edition)*. Macmillan Press, London.
- Mankiw, N. G. (2016). Principles of microeconomics (8th ed.). Cengage Learning.
- Pindyck R. & Rubinfeld, D. (2015). *Microeconomics (9th Edition)*. Pearson.
- Salvatore, D. (1974). Schaum's outline of theory and problems of microeconomic theory. New York, McGraw-Hill.
- Salvatore, D. (2009). *Microeconomics-Theory and Applications.* Oxford University Press.
- Varian, H. (2003). *Intermediate Microeconomics*. East-West Press.

* Applicable for courses having practical component.

MCC-2

Session 2023-2024			
Part-A Introduction			
Subject	MSC- Economics (Honours)5year integrated		
Semester	1st Semester		
Name of the Course	**Applied Macro Economics-I**		
Course Code	**B23- MSE-102**		
Course Type: (CC/MCC/MDC/ CCM/ 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. Have knowledge about national income and related concept. 2. Have knowledge about different approaches of measurement of national income aggregates and methodology. 3. Have knowledge about different approaches of accounting and limitations of GDP concept. 4. Have understanding about basic elements consumption and investment functions.		
	5*. Have knowledge about Computation of GDP at market price, Computation of GNP at market price, Computation of NNP at market price ,Computation of NDP at market price, Computation of GDP at factor cost, Computation of GNP at factor cost, Computation of NDP at factor cost ,Computation of NNP at factor cost ,Derivation and computation of APC, MPC, MPS, APS & Derivation and computation of MEC, Supply price.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Max. Marks:100 **Internal Assessment Marks:20+10*** **End Term Exam Marks: 50+20***	**Time:3 Hrs**		

Part-B Contents of the Course

Instructions for Paper Setters

1. Nine Questions will be set in all and students will be required to attempt 5 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 2 marks spread over the entire syllabus (2*5=10 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Unit	**Topics**	**Contact Hours**
I	**Introduction and National Income Aggregates** -Nature and Scope of Macro Economics - GDP, NDP, GNP and NNP at market price - GDP, NDP, GNP and NNP at factor cost -Private, personal and personal Disposable Income	15
II	**Measurement of National Income** -Expenditure Approach -Income Approach -Value Added Approach -Problem in the estimation of National Income	15
III	**System of Accounting** -Flow of fund Accounting -Balance of Payment Accounting -Limitations of GDP Concept	15
IV	**Consumption and Income Functions** -Concepts of APC, MPC, MPS, APS - Autonomous and Induced Investment - MEC, Supply price - Actual and Potential GDP	15

V*	**Practicum syllabus:** 1. Computation of GDP at market price 2. Computation of GNP at market price 3. Computation of NNP at market price 4. Computation of NDP at market price 5. Computation of GDP at factor cost 6. Computation of GNP at factor cost 7. Computation of NDP at factor cost 8. Computation of NNP at factor cost 9. Derivation and computation of APC, MPC, MPS, APS 10. Derivation and computation of MEC, Supply price	15

Suggested Evaluation Methods

Internal Assessment:		**End Term Examination:**
➢ **Theory**		**Theory 50**
Class Participation	5	**Viva Voce* 20**
Seminar/Presentation/Assignment/Quiz/Class Test etc.	5	
Mid Term Exam:	10	
➢ **Practicum (15 Hours)**		
Class Participation		
Seminar/Demonstration/Viva Voce/Lab Records etc.	10	
Mid Term Exam:		

Part-C Learning Resources

Recommended Books/E-Resources/LMS:

- N. Gregory Mankiw (2010): Macroeconomics, 7th edition, Cengage Learning India Private Limited, New Delhi
- Richard T. Froyen (2005): Macroeconomics, 2nd Edition, Pearson Education Asia, New Delhi.
- Blanchard: Macroeconomics (Pearson Education), 4th Edition.
- Branson, W.A. (1989), Macroeconomic Theory and Policy, (3rd Edition), Harper and Row, New York.
- Dernburg, T.F.and D. M.Mc Dougall, Macroeconomics, McGraw Hill International Book Company.
- Dornbusch, Fisher and Startz: Macroeconomics (Tata McGraw-Hill), 9th Edition.
- Ackley, G. (1978), Macroeconomics: Theory and Policy, Macmillan, New York.
- Bernanke and Abel: Macroeconomics, 4th Edition

* Applicable for courses having practical component.

MCC-3

Session 2023-2024			
Part-A Introduction			
Subject	MSC- Economics (Honours)5year integrated		
Semester	II		
Name of the Course	Quantitative Methods for Economists –I		
Course Code	**B23-MSE-201**		
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	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. Understand about fundamentals of Set theory and applications and making the students understand the concept of functions, limit and continuity. 2. To get exposure about Matrices, and operations on matrices, introducing students about applications of matrices, and higher operations on them. 3. Understanding about derivatives, partial and total, and their economic applications. It also has the objective of detailing about maxima and minima of functions, and applications of constrained and unconstrained maxima and minima. 4. Learn about the basics of Linear programming problems and solution; explaining the applications of game theory and Nash equilibrium.		
	5* Aims at introducing students about applications of Matrix Cramer rule ,Matrix inverse method, Leontief metric, Simple derivatives, Higher order derivatives, Partial and total derivatives, Maxima and minima of a function, Principle of dominance, Prisoner's dilemma, and Nash Equilibrium. .		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Max. Marks:100 **Internal Assessment Marks:20+10*** **End Term Exam Marks: 50+20***	**Time: 3 Hrs**		

Part-B Contents of the Course

Instructions for Paper Setters

1. Nine Questions will be set in all and students will be required to attempt 5 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 2 marks spread over the entire syllabus (2*5=10 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Unit	**Topics**	**Contact Hours**
I	**Set Theory and Economic Applications** Concepts of set, elementary set operations, laws of set operations, Number of elements in a set, applications of sets Functions, limits & continuity: Types of functions, Factors, Substitution and rationalization Methods, continuity and discontinuity of functions;	15
II	**Matrix Algebra and Economic Applications** Matrices-types, addition, multiplication of Matrices, Inverse of matrix, Cramer's rule and matrix inverse method Applications of matrices in economics, Input-output analysis; more on matrices (vectors, quadratic forms, Eigen roots and Eigen vectors)	15
III	**Derivatives and Differentiation, Optimization of a Function** Differentiation, simple derivatives, higher order derivatives of one variable, their economic applications. Partial total derivatives, double order partial derivative, economic applications Maxima & minima of functions: necessary and sufficient conditions for functions, economic application of unconstrained & constrained maxima & Minima.	15
IV	**Linear Programming and Game Theory**	15

	Linear Programming: Graphical and Simplex method, Dual Problem in linear programming Game Theory: odd moment's method, principle of dominance & simplex method, Prisoner's dilemma in game theory, concept of Nash Equilibrium.	
V*	1. Matrix Cramer rule 2. Matrix inverse method 3. Leontief metric 4. Hawkins Simon conditions 5. Simple derivatives 6. Higher order derivatives 7. Partial and total derivatives 8. Maxima and minima of a function 9. Constraint and unconstraint maxima and minima 10. Principle of dominance 11. Prisoner's dilemma 12. Nash Equilibrium.	15

Suggested Evaluation Methods

Internal Assessment:		**End Term Examination:**
➢ **Theory**		Theory -50
Class Participation:	5	viva voce*-20
Seminar/Presentation/Assignment/Quiz/Class Test etc.	5	
Mid Term Exam:	10	
➢ **Practicum (15 Hours)**		
Class Participation		
Seminar/Demonstration/Viva Voce/Lab Records etc.	10	
Mid Term Exam:		

Part-C Learning Resources

Recommended Books/E-Resources/LMS:

- Quantitative Methods by D.R. Aggarwal ,Basic Mathematics for Economists by R.C. Joshi, New Academic Publishing.
- Operations Research by Hamdy A. Taha
- Operations Research by R. Wagnor
- Jain TR, Aggarwal SC, Rana, RK: Basic Mathematics for Economists, V Publications, New Delhi
- Bhardwaj RS: Mathematics for Economics and Business, EXCEL Books, New Delhi
- Jain TR, Aggarwal SC, Rana, RK: Basic Mathematics for Economists, V Publications, New Delhi
- Mathematics for Economics by Michael Hoy etal, PHI, New Delhi, 2004.
- Miller, R.E. and P.D. Blair (1985) Input-Output Analysis: Foundations and Extensions. Prentice-Hall, Englewood Cliffs, New Jersey.
- Quantitative Methods for Business and Economics by Adil H. Mouhammed, PHI, New Delhi, 2003.
- Quantitative Techniques in Management by N.D. Vohra, TMH.
- Sydsaeter K, Hammond. P. J(2002): Mathematics for economic analysis, Pearson Education Asia, Delhi Taro Yamane, Mathematics for Economists, PHI, 1973
- Quantitative Methods by D.R. Aggarwal, Basic Mathematics for Economists by R.C. Joshi, New Academic Publishing.
- Jain TR, Aggarwal SC, Rana, RK: Basic Mathematics for Economists, V Publications, New Delhi
- Leontief, W. (1936) Quantitative input-output relations in the economic systems of the United States. Review of Economics and Statistics, Vol 15, pp.105-125.
- AC Chaing, K Wainwright: Fundamental Methods of mathematical economics, McGraw-Hill Proops, J., Faber, M. and Wagenhals, G. (1993) Reducing CO2 Emissions: A Comparative Input-Output Study for Germany and the UK, Springer-Verlag, Heidelberg.
- Aggarwal, H.S. : Modren Micro -Economics, Konark, New Delhi, 1998.

* Applicable for courses having practical component.

DSEC-1

Session 2023-2024			
Part-A Introduction			
Subject	MSC- Economics (Honours)5year integrated		
Semester	II		
Name of the Course	**STATISTICAL TECHNIQUES FOR ECONOMICS**		
Course Code	**B23-MSE-203**		
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	DSEC-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 the scope and breadth of Statistics along with understanding the core principles of measurement and scaling of variables, methods of data collection, editing and presentation so that they are able to apply the understanding of these concepts to comprehend real world problems along with the ability to think critically and analyze statistical problems. 2. Understanding the core principles of correlation and regression so that they are able to apply the understanding of interrelationships for forecasting among variables to comprehend real world problems along with the ability to think critically and analyze economic problems. 3. Analyze given situations on prices and quantities in a variety of cases on Index numbers relating to price and quantities. Helping the students understand the basic structure and assumptions of the different kinds of index numbers , their adequacy and limitations. 4. Exhibit the ability to learn and apply techniques for analysis of seasonal and long term variations of time series data. Simultaneously make the students understanding the significance of trend determination and deseasonalisation of data.		
	5*Develop a practical knowledge of data presentation, relationship between variables and understanding of the time series and Index Number methods.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Max. Marks:100 **Internal Assessment Marks:20+10*** **End Term Exam Marks: 50+20***	**Time: 3 Hrs**		

Part-B Contents of the Course

Instructions for Paper Setters

1. Nine Questions will be set in all and students will be required to attempt 5 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 2 marks spread over the entire syllabus (2*5=10 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Unit	**Topics**	**Contact Hours**
I	**Introduction of Data** -Subject matter of statistics - functions and limitations Measurement of data: Nominal, Ordinal, Interval and Ratio scale -Collection, Editing and presentation of data: Primary data collection methods, Editing, Classification, Tabulation and presentation: One-way, Two-way, classification, frequency graphs, histograms, Pi-graphs, stem-and-leaf diagrams	15
II	**Correlation and Regression Analysis** -Correlation: meaning, types. Observation of correlation-Scatter diagram method, Product moment formula, Bivariate data, Basic idea about multiple correlations.	15

	Properties of correlation coefficient, Probable error -Regression Analysis: meaning, types, regression lines and regression coefficients, Least square method, Explained and unexplained variation, Standard error of estimate.	
III	**Index numbers** -meaning, types, unweighted and unweighted Price index numbers and Quantity Index numbers, Fixed base and Chain base, Splicing and Base-shifting, Tests on adequacy of Index numbers - Problems in the construction of index numbers, Importance of Index numbers	15
IV	**Time Series Analysis** - Components of time series-Regular, Seasonal, Cyclical and Secular variations. Models-additive and multiplicative. -Measurement of trend: semi-average method, moving average method, Least square method- Linear, Parabolic and Exponential trend -Measurement of seasonal variation: Method of simple Averages, Method of moving averages, Ratio-to-moving average method, Ratio-to-trend method, Link Relatives method	15
V*	**Practicum syllabus:** 1. Processing of raw data into tables and graphs 2. Correlation for bivariate table 3. Regression for bivariate table 4. Standard error of estimate of trend values 5. Construction of Chain based index numbers 6. Construction of Fixed base index numbers. 7. Base-shifting and Splicing of Index number series. 8. Calculation of long term trend in Time series 9. Calculation of seasonal trend in Time series 10. De-seasonalisation of data	15

Suggested Evaluation Methods

Internal Assessment:		**End Term Examination:**
➢ **Theory**		Theory -50
Class Participation:	5	viva voce*-20
Seminar/Presentation/Assignment/Quiz/Class Test etc.	5	
Mid Term Exam:	10	
➢ **Practicum (15 Hours)**		
Class Participation		
Seminar/Demonstration/Viva Voce/Lab Records etc.	10	
Mid Term Exam:		

Part-C Learning Resources

Recommended Books/E-Resources/LMS:

- ***Stephen Bernstein & Ruth Bernstein: Schaum's Outline-Theory and Problems of Elements of Statistics(McGraw Hill Professional)***
- ***BL Aggarwal: Basic Statistics(New Age International Publications)***
- Gupta, SC and Kapoor,VK: Fundamental of Mathematical Statistics(Sultan Chand and sons,Delhi)
- Joseph H Healey-Statistics(Thomson Wadsworth)
- Gupta,SC and Kapoor,VK- Fundamentals of Applied Statistics(Sultan Chand&sons,Delhi)
- *Gupta,SP -Statistical Methods(Sultan Chand,Delhi)

* Applicable for courses having practical component.

MCC-4

Session 2023-2024			
Part-A Introduction			
Subject	MSC- Economics (Honours)5year integrated		
Semester	**III**		
Name of the Course	**APPLIED MICRO ECONOMICS-II**		
Course Code	**B23-MSE-301**		
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	**MCC-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. Have insight about basics of perfect completion and determination of market equilibrium 2. Have knowledge about imperfect markets and determination of market equilibrium 3. Exhibit the ability to learn and apply relevant optimization techniques of pricing strategy involves the processes and methodologies that can be used to set prices for products and services. 4. Learn the concepts of factor prices and understanding the concept of wage, rent profit and interest determination theory		
	5*. Critically evaluate the usage of policy in microeconomic markets, explain the theory of the firm; model and explain the theoretical market structures of perfect competition and imperfect competition.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Max. Marks: 100 **Internal Assessment Marks: 20+10*** **End Term Exam Marks: 50+20***	**Time: 3 Hours**		

Part-B Contents of the Course

Instructions for Paper Setters

1. Nine Questions will be set in all and students will be required to attempt 5 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 2 marks spread over the entire syllabus (2*5=10 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Unit	**Topics**	**Contact Hours**
I	**Market Structure-I** Structure of markets, perfect competition- characteristics, Equilibrium of firm and Industry, price determination under perfect competition. Monopoly-Characteristics, equilibrium, price or output determination under monopoly. Price discrimination and its degrees.	15
II	**Market Structure-II** Monopolistic Competition-Characteristics, equilibrium, price and non-price competition; Features of Oligopoly markets and Kinked demand curve.	15
III	**Pricing Strategies** Pricing Practices: Cost Plus Pricing, Marginal Cost Pricing, Rate of Return Pricing, Product Life Pricing, Price Skimming, Penetration Pricing, Markup Pricing. State Intervention and Administered Prices.	15
IV	**Theory of Distribution** Theory of Factor Pricing: Marginal Productivity theory of Distribution, Modern Theories of Wage, Rent, Interest & Profit.	15
V*	**Practicum Syllabus:** 1. Equilibrium of the firm under Perfect competition market 2. Equilibrium of the Industry under Perfect competition market 3. Short run equilibrium of the firm under Monopoly market	

	4. Long run equilibrium of the firm under Monopoly market 5. Short run equilibrium of the firm under monopolistic market 6. Long run equilibrium of the firm under monopolistic market 7. Derivation of Kinked Demand curve 8. Pricing Practices 9. Computation and relationship of MPP, MRP, and VMP 10. Derivation and computation of Quasi rent	15

Suggested Evaluation Methods

Internal Assessment:		**End Term Examination:**
➢ **Theory**		
Class Participation	5	Theory - 50
Seminar/Presentation/Assignment/Quiz/Class Test etc.	5	viva voce* - 20
Mid Term Exam:	10	
➢ **Practicum (15 Hours)**		
Class Participation		
Seminar/Demonstration/Viva Voce/Lab Records etc.	10	
Mid Term Exam:		

Part-C Learning Resources

Recommended Books/E-Resources/LMS:

- Archibald, G.C. (Ed.) (1971). *Theory of the Firm*. Penguin, Harmondsworth.
- Baumol, W.J. (1982). *Economic Theory and Operations Analysis.* Prentice Hall of India, New Delhi.
- C. Snyder and W. Nicholson (2016), '*Microeconomic Theory- Basic Principles and Extensions*' 12th ed.
- Da Costa, G.C. (1980). *Production, Prices and Distribution*. Tata McGraw Hill, New Delhi.
- E.K. Browning and M.A. Zupan (2014), '*Microeconomics- Theory and Applications'* 12th ed.
- Gravelle, H., & Rees, R. (2004). Microeconomics (3rd ed). Financial Times/ Prentice Hall.
- Green, H.A.G. (1971). *Consumer Theory* .Penguin, Harmondsworth.
- Healthfields and Wibe (1987). *An Introduction to Cost and Production Functions*. Macmillan, London.
- Henderson & Quandt (1980). *Microeconomic Theory: A Mathematical Approach.* McGraw Hill, New Delhi.
- Hirshleifer, J. & Glazer, A. (1997). *Price Theory and Applications*. Prentice Hall of India, New Delhi.
- Koutsoyiannis, A. (1979). *Modern Microeconomics (2nd Edition).*Macmillan Press, London.
- N. Mankiw (2023), '*Principles of Economics'* 10th ed.
- Pindyck R. & Rubinfeld, D. (2015). *Microeconomics (9th Edition)*. Pearson.
- Salvatore, D. (1974). Schaum's outline of theory and problems of microeconomic theory. New York, McGraw-Hill.
- Salvatore, D. (2009). *Microeconomics-Theory and Applications.* Oxford University Press.
- Varian, H. (2014). *Intermediate Microeconomics*. East-West Press. 9th ed.

* Applicable for courses having practical component.

MCC-5

Session 2023-2024			
Part-A Introduction			
Subject	MSC- Economics (Honours)5year integrated		
Semester	III		
Name of the Course	**APPLIED MACRO ECONOMICS-II**		
Course Code	**B23- MSE-302**		
Course Type: (CC/MCC/MDC/ CCM/ 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. Have knowledge about flow of income**,** Classical and Keynesian Theory of income and employment. 2. Have knowledge about hypothesis of income and consumption relationship. 3. Have understanding about the concept of multiplier and theory of money. 4. Have further understanding the implications of monetary and fiscal policies.		
	5*. Have understanding about the presentation of circular flow of income, derivation of IS-LM and derivation of Philips curve.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Max. Marks:100 **Internal Assessment Marks:20+10*** **End Term Exam Marks: 50+20***	**Time:3 Hrs**		

Part-B Contents of the Course

Instructions for Paper Setters

1. Nine Questions will be set in all and students will be required to attempt 5 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 2 marks spread over the entire syllabus (2*5=10 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Unit	**Topics**	**Contact Hours**
I	**Flow of Income and Employment Equilibrium** -Circular flow of income -Say's Law of Market -Classical Theory of Income and Employment -Keynesian theory	15
II	**Income and Consumption Relationship** -Absolute income hypothesis -Relative Income hypothesis -Life cycle hypothesis - Permanent income hypothesis	15
III	**Demand for Money and supply of Money** -Classical, Keynesian and Friedman approach -Money supply determination, aggregates	15
IV	**Concept Multiplier, Inflation and Policies** -Investment, Tax, Foreign trade multiplier and Accelerator Principle - Philips curve analysis -External and Internal balance through IS-LM approach -Fiscal and Monetary policy	15
V*	**Practicum syllabus:** 1. Presentation of Circular flow of Income 2. Derivation, presentation and formulation of income multiplier 3. Derivation and presentation and formulation of foreign trade multiplier 4. Graphical presentation and derivation of aggregate demand and aggregate supply	15

	5. (AD-AS) 6. Graphical presentation and derivation of Invest and saving (IS-LM) 7. Graphical presentation and derivation of IS-LM in closed and open economy 8. Derivation and computation of money supply aggregates measures 9. Graphical presentation and derivation of Philips Curve analysis 10. Derivation of liquidity preference theory	
Suggested Evaluation Methods		
Internal Assessment: ➢ **Theory** Class Participation 5 Seminar/Presentation/Assignment/Quiz/Class Test etc. 5 Mid Term Exam: 10 ➢ **Practicum (15 Hours)** Class Participation Seminar/Demonstration/Viva Voce/Lab Records etc. 10 Mid Term Exam:		**End Term Examination:** **Theory 50** **Viva Voce* 20**

Part-C Learning Resources

Recommended Books/E-Resources/LMS:

- N. Gregory Mankiw (2010): Macroeconomics, 7th edition, Cengage Learning India Private Limited, New Delhi
- Richard T. Froyen (2005): Macroeconomics, 2nd Edition, Pearson Education Asia, New Delhi.
- Blanchard: Macroeconomics (Pearson Education), 4th Edition.
- Branson, W.A. (1989), Macroeconomic Theory and Policy, (3rd Edition), Harper and Row, New York.
- Dernburg, T.F.and D. M.Mc Dougall, Macroeconomics, McGraw Hill International Book Company.
- Dornbusch, Fisher and Startz: Macroeconomics (Tata McGraw-Hill), 9th Edition.
- Ackley, G. (1978), Macroeconomics: Theory and Policy, Macmillan, New York.
- Bernanke and Abel: Macroeconomics, 4th Edition

* Applicable for courses having practical component.

MCC-6

Session 2023-2024			
Part-A Introduction			
Subject	MSC- Economics (Honours)5year integrated		
Semester	IV		
Name of the Course	QUANTITATIVE METHODS FOR ECONOMISTS-II		
Course Code	B23-MSE-401		
Course Type: (CC/MCC/MDC/ CCM/ DSEC/VOC/DSE/PC/AEC/ VAC	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 fundamentals of straight line equation and its parameters; and also making the students understand the point slope formula, and derivation in case of circle, conic sections, and applications in economics 2. to get exposure about Integration, and its methods ;and introducing students about integration of logarithmic and exponential functions; definite integral; economic applications 3understanding about differential equations, solution, and its economic applications and also detailing about difference equations, solution and their economic applications 4. Describe and explain the basics of Linear and quadratic equations; and their applications and explaining the applications of linear and quadratic equations in present value of assets and fixed regular inflows.		
	5*Aims at introducing students about applications of Equation of straight line ,Consumer surplus, Producer surplus, differential equation, General and particular solution of non homogeneous equations, Compounded annual growth rate, Annuity, Present value.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Max. Marks:100 **Internal Assessment Marks:20+10*** **End Term Exam Marks: 50+20***	**Time: 3 Hrs**		

Part-B Contents of the Course

Instructions for Paper Setters

1. Nine Questions will be set in all and students will be required to attempt 5 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 2 marks spread over the entire syllabus (2*5=10 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Unit	**Topics**	**Contact Hours**
I	**Analytical Geometry and its Economic Applications** Analytical geometry- Equation of straight line Slope: Positive & Negative slope, Zero slope, Undefined Slope The point slope formula; circle, conic sections, parabola, rectangular hyperbola; Applications in economics	15
II	**Integration Methods and its Economic Applications** Integration-rules of integration, by parts, and by substitution, by partial fractions Integration of logarithmic & exponential functions, evaluation of areas, Definite Integral, Economic applications.	15
III	**Differential Equations and its Economic Applications** Differential equations-solution; homogeneous & non-homogeneous differential equations, Exact differential equation, Economic applications Difference equations-Solution, general & particular; Homogeneous & General linear difference equations with constant co-efficient, economic applications.	15
IV	**Linear and Quadratic Equations and Applications in Economics** Linear and quadratic equation and its economic applications, Rate of growth	15

	(Compound Annual Growth Rate) and its measurement Present value (Or capital value) and its application; Annuities: types, amount and Present value	
V*	1. Equation of straight line Slope 2. Circle, parabola and rectangular hyperbola 3. Consumer surplus 4. Producer surplus 5. homogeneous & non-homogeneous differential 6. Exact differential equation 7. General and particular solution of non homogeneous equations 8. Compounded annual growth rate 9. Annuity 10. Present value	15

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 (15 Hours)** Class Participation Seminar/Demonstration/Viva Voce/Lab Records etc 10 Mid Term Exam:	Theory-50 Viva voce*-20

Part-C Learning Resources

Recommended Books/E-Resources/LMS:

- Quantitative Methods by D.R. Aggarwal ,Basic Mathematics for Economists by R.C. Joshi, New Academic Publishing.
- Operations Research by Hamdy A. Taha
- Operations Research by R. Wagnor
- Jain TR, Aggarwal SC, Rana, RK: Basic Mathematics for Economists, V Publications, New Delhi
- Bhardwaj RS: Mathematics for Economics and Business, EXCEL Books, New Delhi
- Jain TR, Aggarwal SC, Rana, RK: Basic Mathematics for Economists, V Publications, New Delhi
- Mathematics for Economics by Michael Hoy etal, PHI, New Delhi, 2004.
- Miller, R.E. and P.D. Blair (1985) Input-Output Analysis: Foundations and Extensions. Prentice-Hall, Englewood Cliffs, New Jersey.
- Quantitative Methods for Business and Economics by Adil H. Mouhammed, PHI, New Delhi, 2003.
- Quantitative Techniques in Management by N.D. Vohra, TMH.
- Sydsaeter K, Hammond. P. J(2002): Mathematics for economic analysis, Pearson Education Asia, Delhi Taro Yamane, Mathematics for Economists, PHI, 1973
- Quantitative Methods by D.R. Aggarwal, Basic Mathematics for Economists by R.C. Joshi, New Academic Publishing.
- Jain TR, Aggarwal SC, Rana, RK: Basic Mathematics for Economists, V Publications, New Delhi
- Leontief, W. (1936) Quantitative input-output relations in the economic systems of the United States. Review of Economics and Statistics, Vol 15, pp.105-125.
- AC Chaing, K Wainwright: Fundamental Methods of mathematical economics, McGraw-Hill Proops, J., Faber, M. and Wagenhals, G. (1993) Reducing CO2 Emissions: A Comparative Input-Output Study for Germany and the UK, Springer-Verlag, Heidelberg.
- Aggarwal, H.S. : Modren Micro -Economics, Konark, New Delhi, 1998.

* Applicable for courses having practical component.

MCC-7

Session 2023-2024			
Part-A Introduction			
Subject	MSC- Economics (Honours)5year integrated		
Semester	IV		
Name of the Course	**BASIC ECONOMETRICS**		
Course Code	**B23-MSE-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)	N.A.		
Course Learning Outcomes (CLO)	After completing this course, the learner will be able to: 1. Have knowledge about the basics of econometrics, econometric models. 2. Have understanding of nature of regression analysis, with regard to its assumptions, and least square method. 3. Have knowledge about tests of significance of parameter Estimates, and sampling distribution of the estimates, tests. 4. Have understanding about basic elements of Best Linear Unbiased efficient estimates, problems of autocorrelation, Multi-collinearity and heteroscedasticity.		
	5*Have knowledge about Covariance and variance, two variable regression model, Least square criterion, tests, probem.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Max. Marks:100 **Internal Assessment Marks:20+10*** **End Term Exam Marks:50+20***	**Time:3 Hrs**		

Part-B Contents of the Course

Instructions for Paper Setters

1. Nine Questions will be set in all and students will be required to attempt 5 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 2 marks spread over the entire syllabus (2*5=10 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Unit	**Topics**	**Contact Hours**
I	**Introduction** Nature and scope of econometrics; Methodology of econometric research; Desirable properties of an econometric model, Random variables and sampling theory (only review); Covariance, variance, and correlation.	15
II	**Regression Analysis** Nature of the regression analysis; Two variable regression analysis: Some basic ideas; Assumptions of the linear stochastic regression model; Distribution of the dependent variable Y; Problem of estimation: The least square criterion and normal equations.	15
III	**Tests of the significance** Test of the goodness of fit with R^2; Tests of the significance of parameter estimates: Mean and variance of the OLS estimates; Variance of the random variable, Sampling distribution of the OLS estimates (standard error test, Z test and student's t test); Confidence intervals for OLS	15

	estimates; Test of significance for sample correlation coefficient.	
IV	**OLS Properties and problems** Desirable properties of estimators; Properties of OLS estimators; Second order tests of the assumptions of linear regression model: The assumption of the randomness of u, The assumption of zero mean of u, The assumption of normality of u, the problem of Heteroscedasticity, Autocorrelation and Multicollinearity (Nature, causes and consequences).	15
V*	Practicum syllabus: 1. Covariance and variance 2. Estimation of two variable regression model 3. Least square criterion 4. Formulation of Z test 5. Formulation of student's T test 6. Heteroscedasticity with example 7. Autocorrelation with example 8. Multicollinearity with example	15

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 (15 Hours)** Class Participation Seminar/Demonstration/Viva Voce/Lab Records etc. 10 Mid Term Exam:	**Theory 50** **Viva Voce *20**

Part-C Learning Resources

Recommended Books/E-Resources/LMS:

- Amemiya, T. (1985), Advanced Econometrics, Harvard University Press, Cambridge, Mass.
- Baltagi, B.H. (1988), Econometrics, Springer, New York.
- Goldberger, A.S. (1998), Introductory Econometrics, Oxford University Press, New York.
- Gujarati, D.N. (1995), Basic Econometrics (2nd Edition) MC Graw Hill New Delhi.
- Intrilligator, M.D. (1978), Econometric Methods, Techniques and Applications, Prentice Hall Englewood Cliffs, New Jersey.
- Johnson J. (1991), Econometric Methods, MCGraw Hall Book Co. London
- Kmenta J. (1998), Elements of Econometrics, University of Michigan Press, NewYork
- Koutsoyiannis, A. (1977), Theory of Econometrics, The Macmillan Press Ltd. London
- Maddala G.S.(Ed) (1993), Econometric Methods and application, Aldershot U.K.
- Pindyck R.S. and D.L. Rubinfield (1976), Econometric Models and Economic Forecasts, MCGraw Hill Kogakusha Tokyo
- Theil H. (1981), Introduction to Econometrics, Prentice Hall of India, New Delhi

* Applicable for courses having practical component.

MCC-8

Session 2023-2024			
Part-A Introduction			
Subject	MSC- Economics (Honours)5year integrated		
Semester	IV		
Name of the Course	**ADVANCED STATISTICAL METODS FOR ECONOMISTS**		
Course Code	B23-MSE-403		
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. Knowledge about the Probability along with understanding the Binomial, Poisson and Normal distributions so that they are able to apply the understanding of these concepts to comprehend real world problems along with the ability to think critically and analyze statistical problems. 2. Understanding the core principles of sampling and sampling distributions so that they are able to apply the understanding and comprehend real world problems along with the ability to testing of hypotheses and analyze economic problems relating to large samples and small samples and non-parametric tests. 3. Analyze choice making among situations involving risk and uncertainty. Helping the students understand the basic criteria of decision problems. 4. Exhibit the ability to learn and apply statistical techniques for quality control. Simultaneously make the students understanding the buyer's risk and producer's risk.		
	5* Develop a practical knowledge of different sampling methods and their techniques and different test of analysis.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Max. Marks:100 **Internal Assessment Marks:20+10*** **End Term Exam Marks: 50+20***	**Time: 3 Hrs**		

Part-B Contents of the Course

Instructions for Paper Setters

1. Nine Questions will be set in all and students will be required to attempt 5 questions.
2. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 2 marks spread over the entire syllabus (2*5=10 marks).
3. For the remaining four questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Unit	Topics	Contact Hours
I	**Probability and Probability Distributions** -Probability: definition, basic concepts, Addition & multiplication theorem, Bernoulli's rule, Conditional probability and Bay's rule - functions and limitations -Binomial, Poisson and Normal distributions, Fitting of the distributions to the observed data	15
II	**Sampling theory and Testing of hypotheses** - Sampling methods, sampling errors, Central Limit theorem (without proof). - Testing of hypotheses- large and small sample tests- z test, t-test and F test, p-values. Non-parametric tests- Chi-square and others-Wilcoxon, Mann-Whiney only - Interval estimation and properties of good estimators, Confidence intervals, Determination of sample size	15
III	**Statistical Decision theory** -meaning, different criteria of decision making uncertainty and risk. Expected money value and Expected Opportunity Loss(with and without payoff matrix given),Expected Value of Perfect Information	15

IV	**Statistical Quality Control** - Meaning, basic concepts, Making control charts for variables and Attributes, Acceptance Sampling and Sampling plans, Operating Characteristic Curve	15
V*	**Practicum syllabus:** 1. Fitting of Binomial, Poisson and Normal distributions. 2. Sampling distributions- finding mean 3. Sampling distributions- finding variance of sampling distribution 4. Non-parametric tests-applications and limitations. 5. Interval estimation- confidence Intervals 6. p-values 7. Decision criteria under risk and uncertainty. 8. Acceptance sampling 9. Sampling plans. 10.OC curve	15
Suggested Evaluation Methods		
Internal Assessment: ➢ **Theory** Class Participation: 5 Seminar/Presentation/Assignment/Quiz/Class Test etc. 5 Mid Term Exam: 10 ➢ **Practicum (15 Hours)** Class Participation Seminar/Demonstration/Viva Voce/Lab Records etc. 10 Mid Term Exam:		**End Term Examination:** Theory -50 viva voce*-20

* Applicable for courses having practical component.

Part-C Learning Resources
Recommended Books/E-Resources/LMS: • ***Stephen Bernstein & Ruth Bernstein: Schaum's Outline-Theory and Problems of Elements of Statistics(McGraw Hill Professional)*** • ***BL Aggarwal: Basic Statistics(New Age International Publications)*** • Gupta,SC and Kapoor,VK: Fundamental of Mathematical Statistics(Sultan Chand and sons,Delhi) • Joseph H Healey-Statistics(Thomson Wadsworth) • Gupta,SC and Kapoor,VK- Fundamentals of Applied Statistics(Sultan Chand&sons,Delhi) • *Gupta,SP -Statistical Methods(Sultan Chand, Delhi)

DSE-1

Session 2023-2024	
Part-A Introduction	
Subject	MSC- Economics (Honours)5year integrated
Semester	IV
Name of the Course	**FINACIAL MARKETS & SYSTEM**
Course Code	**B23-MSE-404**
Course Type: (CC/MCC/MDC/ CCM/ 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. Have understanding of money and capital market instruments. 2. Have understanding about development banking, refinancing and EXIM bank operations for trade financing. 3. Have knowledge about exchange rate mechanism, and foreign exchange market operations. 4. Have understanding the mechanism of stock markets and leading stock exchanges.		
	5*Have the practical understanding of the different money, capital and foreign market operations.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Max. Marks:100 **Internal Assessment Marks:20+10*** **End Term Exam Marks:50+20***	**Time:3 Hrs**		

Part-B Contents of the Course

Instructions for Paper Setters

4. Nine Questions will be set in all and students will be required to attempt 5 questions.
5. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 2 marks spread over the entire syllabus (2*5=10 marks).
6. For the remaining four questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Unit+-+	Topics	Contact Hours
I	**Money and Capital markets**: Call Money Operations: Inter-Bank Call Money Market; Bill market operations: Treasury Bill, Commercial Bill; Bonds and mutual funds.	15
II	**Financial System**: Role, Nature and Functions, Non-Banking Financial intermediaries, Merchant Banking, Investment Banking, Refinancing institutions; Export-Import Bank(EXIM): Role and Functions.	15
III	**Foreign Exchange Rate System**: Fixed and Flexible Exchange Rate ; Meaning, merits and demerits; determination, Multiple Exchange Rates; Speculation, Hedging, Swapping and arbitrage operations in foreign currency.	15
IV	**Equity/Stock markets**: Mechanism, Instruments and Operations; National Stock Exchange; Bombay Stock Exchange. SEBI – Powers and functions.	15
V*	Practicum syllabus: 1. Call money market operation with example 2. Bill market operation with example 3. Treasury bill market operation with example 4. Bond market operation with example 5. Mutual fund operation with example 6. Speculation operation with example 7. Hedging operation with example 8. Swapping operation with example 9. Arbitrage operation with example	15

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** Class Participation 5 Seminar/Presentation/Assignment/Quiz/Class Test etc. 5	**End Term Examination:** **Theory 50** **Viva Voce *20**

Mid Term Exam:	10	
➢ **Practicum (15 Hours)**		
Class Participation		
Seminar/Demonstration/Viva Voce/Lab Records etc.	10	
Mid Term Exam:		

Part-C Learning Resources

Recommended Books/E-Resources/LMS:

- A.D. Bain (1992) Economics of the Financial System
- Committee Report II) Summary in RBI Bulletin, July, 1998.
- DM Mithani:Money, Banking and Public Finance
- Goodhart, C.A.E (1978), Money. Information and Uncertainty, The Macmillan Press Ltd., London.
- Johnson, H.G (1972), Further Essays in Monetary Economics, George Allen and Unwin, London.
- Johnson, H.G and Nobay A.R. (1974), Issues in Monetary Economics, Oxford University Press, Delhi.
- Khan, MY: Indian Financial System; Tata-McGrawhill
- Krishna, K.L (1999), Econometric Applications in India, Oxford University Press, New Delhi.
- Laidler, D.E.W. (1977), Demand for Money: Theory and Evidence, Dum-Don Valley, New York.
- Narendra Jadhav (1993), Monetary Economics for India, Macmillan India Ltd., Madras.
- Pierce, David G and Shaw, David M (1974), Monetary Economics: Theories, Evidence and Policy, Butterworths, London.
- R.B.I - Report of the Working Group : Money Supply Analytics and Methodology ofCompilation, 1998.
- R.B.I. - Report of the Committee on Banking Sector Reforms (Narasimham
- Roy Bailey (2005) The Economics of Financial Markets
- Suraj.B.Gupta: Monetary Economics - Institutions, Theory & Policy; S Chand publications
- Suraj.B.Gupta:Monetary Planning for India
- Venugopal Reddy, Y (2000), Monetary and Financial Sector Reforms in India, UBS Publishers' Distributors Ltd., Chennai.
- Wrightsman, Dwayne (1971), An Introduction to Monetary Theory and Policy, The Free Press, New York. Gibson, Williamson E and Kaufman, George G (1971), Monetary Economics: Readings on Current Issues, TATA McGraw-Hill Publishing Company Ltd., New Delhi.

Y.V. Reddy (2000), Monetary and Financial Sector Reforms in India UBSPD, New Delhi.

* Applicable for courses having practical component.

DSE-1

Session 2023-2024			
Part-A Introduction			
Subject	MSC- Economics (Honours)5year integrated		
Semester	IV		
Name of the Course	**MONEY, BANKING & FINANCE**		
Course Code	**B23-MSE-405**		
Course Type: (CC/MCC/MDC/ CCM/ 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.Have insight about the Money, Money supply, Money & Capital Markets- Organisation, Structure and Working. 2. Have further understanding of Banking, Commercial banks-functions & Credit Creation, RBI and Credit Control measures. 3. Have knowledge about nature of financial sector-money and capital market of India, Non-bank financial intermediaries . 4. Have understanding about the banking and financial reforms 1990's		
	5*Have the understanding of the monetary measures, instruments of financial markets, and case study of two banks.		
Credits	Theory	Practical	Total
	3	1	4
Contact Hours	3	2	5
Max. Marks:100 **Internal Assessment Marks:20+10*** **End Term Exam Marks:50+20***	**Time:3 Hrs**		

Part-B Contents of the Course

Instructions for Paper Setters

10. Nine Questions will be set in all and students will be required to attempt 5 questions.
11. Question No. 1 will be compulsory and will consist of 5 short answer type questions of 2 marks spread over the entire syllabus (2*5=10 marks).
12. For the remaining four questions, students will attempt 1 out of 2 questions from each of the four units (10 marks each).

Unit	**Topics**	**Contact Hours**
I	Money: Barter system – Characteristics and difficulties; Money-Definition, functions, classification, and significance; Money supply determinants, High-powered money and money multiplier; RBI measures of monetary aggregates.	15
II	**Banking:** Commercial Banks- Functions and Importance, Process of Credit Creation; The Reserve Banking of India: Functions and Instruments of credit control, Recent Monetary Policy of RBI.	15
III	**Financial sector:** Money and Capital Markets in India: Structure, Functions and Significance; SEBI: Powers and Functions; Non-Bank Financial Intermediaries- Role and Significance, Merchant Banking, Investment Banking,	15
IV	**Banking and financial Reforms**:Need of Reform in Banking and Financial System, The Narasimham Committee Report: Report of Committee to Review the Financial System 1991, Narsimham Committee Report on Banking Sector Reforms 1998.	15
V*	Practicum syllabus:	15

	1. Money supply determinants 2. High powered money 3. Measures of monetary aggregates 4. Process of credit creation 5. Examples of Lender's instruments 6. Examples of Borrower's instruments 7. Case study of ICICI bank 8. Case study of HDFC bank	

Suggested Evaluation Methods	
Internal Assessment: ➢ **Theory** Class Participation 5 Seminar/Presentation/Assignment/Quiz/Class Test etc. 5 Mid Term Exam: 10 ➢ **Practicum (15 Hours)** Class Participation Seminar/Demonstration/Viva Voce/Lab Records etc. 10 Mid Term Exam:	**End Term Examination:** **Theory 50** **Viva Voce *20**

Part-C Learning Resources
Recommended Books/E-Resources/LMS: • *M.K. Lewis (2000), Monetary Economics, Oxford University Press.* • *Bailey Roy (2005) The Economics of Financial Markets* • *R.R. Paul "Money, Banking and International Trade" Kalyani Publishers.* • *R.B.I. Bulletin, Annual Report; Report on Currency and Finance.*

* Applicable for courses having practical component.

Note: All Syllabi with Paper Code B23-ECO-NUM have been taken from UG Programme in Subject of Economics with Schemes A and B. All Syllabi with Paper Code B23-MSE-NUM are only for M.Sc. Economics (Hons.) 5-Year Integrated Programme : Scheme- C