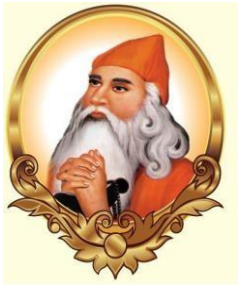

Department of Economics

Scheme of Examination and Syllabus for Post Graduate Programme

Under Multiple Entry and Exit, Internship and CBCS-LOCF as per NEP-2020

w.e.f. session 2025-26 (in phased manner)

Subject: Economics

Guru Jambheshwar University of Science &Technology Hisar-125001, Haryana

(A+ NAAC Accredited State Govt. University)

Department of Economics

GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR

(Established by State Legislature Act 17 of 1995)

'A+' Grade, NAAC Accredited

Scheme of Examination for PG Two Year Programme

[PG Two Year Programme)

Name of the Programme: M.Sc. Economics

According to National Education Policy-2020

w.e.f. 2025-26

M.Sc. Economics I SEM as per NEP-2020

Type of Course	Course Code	Paper Nomenclature	Credits	Internal Marks	External Marks	Total Marks	Duration of Exam (Hrs.)
Discipline Specific Courses (Core)	U25ECO101T	Microeconomic Analysis-I	**04**	**30**	**70**	**100**	**3**
	U25ECO102T	Macroeconomic Analysis-I	**04**	**30**	**70**	**100**	**3**
	U25ECO103T	Economics of ESG (Environment, Social and Governance)	**04**	**30**	**70**	**100**	**3**
Discipline Specific Courses (Elective)	U25ECO111T **Or** U25ECO112T	Mathematics for Economics **Or** History of Economic Thoughts	**04**	**30**	**70**	**100**	**3**
Discipline Specific Courses (Practicum)	U25ECO104P	Computer Applications in Economic Analysis	**02**	**15**	**35**	**50**	**Practical**
VAC/Seminar/ OEC/ EEC/VOC @ 2 credits	U25VAC111T	**To be Opted from Pool of VAC**	-----	-----	-----	-----	-----
Total			18	135	315	450	-----

Department of Economics

GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR

(Established by State Legislature Act 17 of 1995)

'A+' Grade, NAAC Accredited

Scheme of Examination for PG Two Year Programme
[PG Two Year Programme)
Name of the Programme: M.Sc. Economics
According to National Education Policy-2020
w.e.f. 2025-26

M.Sc. Economics II SEM as per NEP-2020

Type of Course	Course Code	Paper Nomenclature	Credits	Internal Marks	External Marks	Total Marks	Duration of Exam (Hrs.)
Discipline Specific Courses (Core)	U25ECO201T	Microeconomic Analysis-II	04	30	70	100	3
	U25ECO202T	Macroeconomic Analysis-II	04	30	70	100	3
	U25ECO203T	Public Economics	04	30	70	100	3
Discipline Specific Courses (Elective)	U25ECO211T **Or** U25ECO212T	Statistics for Economics **Or** Labor Economics	04	30	70	100	3
Discipline Specific Courses (Practical)	U25ECO204P **Or** U25ECO205P	Practices of Indian Public Finance **Or** Indian Statistical System	02	15	35	50	Practical
VAC/Seminar/ OEC/ EEC/VOC @ 2 credits	U25ECO201S	**Seminar**	02	-----	-----	-----	
Total			20	135	315	450	

Note: Internship of 04 credits of 04 weeks (120 Hrs.) duration after 2nd semester is mandatory for each student either for enhancing the employability or for developing research aptitude. The marks of internship will be credited into second semester.

Department of Economics

GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR

(Established by State Legislature Act 17 of 1995)

'A+' Grade, NAAC Accredited

Scheme of Examination for PG Two Year Programme

[PG Two Year Programme)

Name of the Programme: M.Sc. Economics

According to National Education Policy-2020

w.e.f. 2025-26

M.Sc. Economics I SEM as per NEP-2020						
Department Courses offered for the pools (VAC/VOC/SEC/OEC/EEC)						
Type of Course	**Course Code**	**Paper Nomenclature**	**Credits**	**Internal Marks**	**External Marks**	**Total Marks**
VAC/Seminar/ OEC/ EEC/VOC @ 2 credits	**U25VAC111T**	Political Economy of India (VAC)	02	15	35	50

Programme Outcomes (POs) – M.Sc. Economics (As per NEP-2020)

PO1: To equip students with the ability to critically analyse economic theories, policies, and institutions using quantitative and qualitative techniques.

PO2: To develop the capability to evaluate and formulate sound public and private sector policies addressing real-world socio-economic challenges at national and global levels.

PO3: To foster strong analytical and empirical research skills through statistical, mathematical, and computational tools relevant to economic analysis and policymaking.

PO4: To promote a comprehensive understanding of inclusive growth, sustainability, and ethics in economic decision-making for holistic national development.

Semester-I DSC (core)
Microeconomic Analysis-I
Course Code: U25ECO101T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To provide foundational understanding of microeconomic principles and consumer-producer decision-making.

Unit-I

Introduction to microeconomics; theory of consumer behaviour: cardinal utility, indifference curve, revealed preference theory, derivation of consumer demand, Slutsky's theorem, elasticity of demand, consumer surplus, indirect utility function.

Unit II

Consumer behaviour under risk and uncertainty: concept of certainty, risk, and uncertainty, measurement of risk, attitudes towards risk, risk aversion, risk loving and risk neutral, risk aversion and indifference curves, reducing risk and uncertainty, insurance and gambling.

Unit III

Theory of production: Short run and long run production functions, marginal rate of technical substitution, elasticity of substitution, factor intensity, efficiency of production, Traditional and modern theories of cost, total, fixed and variable costs, short run and long run cost functions, relation between average and marginal costs, envelope' and L-shaped curves.

Unit IV

Theory of firm: price and output determination under perfect competition, short run and long run equilibrium of the firm and industry, supply curve, efficiency implications of perfect competition, determination of price and output under monopoly; short run and long run equilibrium, price discrimination, regulated monopoly and monopoly control.

Suggested Readings

1. Koutsoyiannis – *Modern Microeconomics*, International Edition, Palgrave Macmillan
2. Jehle & Reny – *Advanced Microeconomic Theory*, Pearson Education, India
3. Mas-Colell, Andreu, Michael D. Whinston, Jerry R. Green – *Microeconomic Theory*, OUP, New York
4. Salvatore, Dominick – *Principles of Micro-Economics*, Oxford University Press
5. Varian, Hal R. – *Microeconomic Analysis*, W. W. Norton & Company, New York, London
6. Sen, A. – *Microeconomics: Theory and Applications*, Oxford University Press, New Delhi
7. Stigler, G. – *Theory of Price*, Prentice Hall of India, New Delhi
8. Varian, H. – *Intermediate Microeconomics: A Modern Approach*, W.W. Norton, New York.

Course Outcomes: At the end of the course, the students would be able to:

1. Analyse consumer and producer decisions using microeconomic theories.
2. Understand market functioning under perfect competition, monopoly, and uncertainty.
3. Apply theoretical models to interpret and evaluate real-world economic situations.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	M
CO2	S	S	M	S
CO3	S	S	M	M

S = Strong, M = Medium, W = Weak

Semester-I DSC (core)
Macroeconomic Analysis-I
Course Code: U25ECO102T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To introduce students to the fundamental concepts and analytical tools of macroeconomic theory.

Unit-I

Introduction, measurement of national income: product approach, income approach, expenditure approach; measures of aggregate income: concept of gross, net, national, domestic, market prices and factor costs, concept of value added; methodology of estimation of national income in India; GDP deflator, consumer and producer price index.

Unit-II

Consumption function: average and marginal propensity to consume, consumption hypothesis; permanent income hypothesis, relative income hypothesis, life cycle hypothesis.

Unit-III

Investment Function: Inducement to invest - Marginal efficiency of investment and Marginal efficiency of capital criterion; the accelerator and investment behaviour; Jorgensen's Model.

Unit-IV

Demand for Money: Classical Approach to Demand for Money, Keynesian approach, Milton Friedman's Approach - Wealth theory; Portfolio balance Approach.

Suggested Readings

1. N. Gregory Mankiw – *Macroeconomics*, 11th Edition, Worth Publishers (2023)
2. Olivier Blanchard & David R. Johnson – *Macroeconomics*, 8th Edition, Pearson (2022)
3. Paul Krugman & Robin Wells – *Macroeconomics*, 6th Edition, Worth Publishers (2023)
4. David Romer – *Advanced Macroeconomics*, 6th Edition, McGraw-Hill Education (2023)
5. Charles I. Jones – *Macroeconomics*, 5th Edition, W. W. Norton & Company (2021)
6. Daron Acemoglu, David Laibson & John A. List – *Macroeconomics*, 2nd Edition, Pearson (2021)
7. Rudiger Dornbusch, Stanley Fischer & Richard Startz – *Macroeconomics*, 13th Edition, McGraw-Hill Education (2021)

Course Outcomes: At the end of the course, the students would be able to:

1. Students will understand how to measure and interpret key macroeconomic indicators like GDP, inflation, and employment.
2. They will be able to analyse classical and Keynesian theories of income, output, and investment.
3. Students will apply macroeconomic models to evaluate monetary and fiscal policies in real-world contexts.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	S
CO2	S	M	S	S
CO3	S	S	M	W

S = Strong, M = Medium, W = Weak

Semester-I DSC (core)
Economics of ESG (Environment, Social and Governance)
Course Code: U25ECO103T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To develop a comprehensive understanding of ESG principles, their economic implications, and sustainable development strategies**.**

Unit-I

Meaning and Definition of Environment, Social and Governance (ESG). Components of ESG and Integration of Institutions to work on ESG. Components of Environment: Renewable and Non-renewable. Relation of Environmental Economics with Economics. The distinction between Economic activities risks and Natural/ Climate Risks (Global Warming and Climate Change, Acid rain, Urban Pollution and Urban Health).

Unit-II

Relation among Environment, Society and Economy. Environmental pollution includes air, water, and noise pollution, as well as economic incentive (quasi-market) instruments. Emission tax, emission abatement subsidy and marketable permit instruments. The theory of environmental valuation. Natural capital stock and sustainable resource accounting.

Unit-III

Social Factors: Human Rights and Social responsibility, Climate impact on labour practices and working conditions. Community impact on societal diversity in stakeholder engagement. Sustainability problems include drivers of environmental impact, Poverty and inequality, Public goods, Externalities, and Imperfect information.

Unit-IV

Demand for Environmental Service, Corporate governance principles and ethical and unethical practices. Willingness to Pay and Willingness to Accept. Hedonic pricing, Contingent Valuation method, travel cost method, Coase Theorem and its limitations. Green Accounting. Environmental input-output analysis. Issues of state government regulations in context of industry/firm setup regarding environment and social.

Suggested Readings:

1. Nicola Castellano, Francesco De Luca, Giuseppe D' Onza, Macro Maffei, Andrea Melis (2025),
2. Environmental, Social , Governance (ESG), Risk, Performance, Monitoring, Springer.
3. Shyam Divan and Armin Rosencranz (2023), Environmental Law and Policy in India, Cases and Materials
4. (3 rd Edition), OXFORD
5. Rear Admiral Sanjay Roye (2024). Decoding ESG A comprehensive Guide to Environmental, Social , and
6. Governance Principles, White Falcon Publishing.
7. Sanjay Sharma (2024), Environmental Governance in India: Exploring National and International
8. Perspectives, HOW ACADEMICS.
9. Field, B. C., & Field, M. K. (2021). Environmental economics: An introduction (8th ed.). McGraw Hill.
10. Tietenberg, T., & Lewis, L. (2019). Environmental and natural resource economics (12th ed.). Routledge.
11. Hanley, N., Shogren, J. F., & White, B. (2019). Introduction to environmental economics (3rd ed.). Oxford
12. University Press.
13. Perman, R., Ma, Y., Common, M., Maddison, D., & McGilvray, J. (2011). Natural resource and
14. environmental economics (4th ed.). Pearson Education.

Course Outcomes: At the end of the course, the students would be able to:

1. Evaluate environmental externalities and policy instruments for pollution control and sustainable accounting.
2. Analyze the social dimensions of ESG, including human rights, labor practices, and stakeholder diversity.
3. Apply valuation techniques and ethical governance tools in assessing environmental and social trade-offs.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	W
CO2	S	M	M	S
CO3	S	S	M	M

S = Strong, M = Medium, W = Weak

Semester-I DSC (Elective)
Mathematics for Economics (option-I)
Course Code: U25ECO111T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To equip students with essential mathematical tools and techniques for understanding and solving economic problems.

Unit-I

Concepts of sets subset and bounded set, set operations, convex set, identification of convex set-in budget line statement, production possibility frontier, indifference and isoquant curves, Cartesian product, relations and functions, idea of polynomial, exponential, logarithmic and trigonometric functions; Solution of linear and quadratic equations; limit and continuity of functions (single variable).

Unit-II

Concept of a derivative and rules of differentiation: monotonicity, concavity and convexity of functions of a single variable; necessary and sufficient conditions for a maximum and minimum: applications to economics, total to marginal magnitudes, elasticities. Idea of integration: definite and indefinite integral, rules of integration, applications in economics, relation between marginal and total magnitudes, relations between cost curves, consumer surplus.

Unit-III

Definitions of vector and matrix: addition and multiplication of matrices, transpose and inverse of a matrix, minors and co-factors of a matrix, determinant of a matrix, rank of a matrix, simultaneous system of equations, Cramer's rule, solution of homogeneous and nonhomogeneous system of equations; signs of quadratic forms with and without constraints, positive definite, negative definite, positive semi definite, negative semi- definite. Functions of several variables: production functions, utility functions, cost functions; partial and total derivatives; implicit functions and their derivatives. Homogeneous functions;

Unit-IV

Euler's theorem; degrees of homogeneity of production functions, cost functions, demand, functions and their economic interpretation, Necessary and sufficient conditions for stationary values without constraints; necessary and sufficient conditions for stationary values with linear constraints- the Lagrange method; constrained maximization of utility.

Suggested Readings

1. Sydsaeter, Knut & Hammond, Peter – *Essential Mathematics for Economic Analysis*, 6th Edition, Pearson (2022)
2. Simon, Carl P. & Blume, Lawrence – *Mathematics for Economists*, 2nd Edition, W. W. Norton (2021)
3. Chiang, Alpha C. & Wainwright, Kevin – *Fundamental Methods of Mathematical Economics*, 5th Edition, McGraw-Hill (2021)
4. Geoff Renshaw – *Maths for Economics*, 5th Edition, Oxford University Press (2023)
5. Rosser, Mike – *Basic Mathematics for Economists*, 4th Edition, Routledge (2022)

Course Outcomes: At the end of the course, the students would be able to:

1. Apply mathematical techniques such as calculus and algebra to analyze economic models.
2. Understand the use of matrices and multivariable functions in solving systems of economic equations.
3. Develop problem-solving skills to optimize economic functions under various constraints.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	S
CO2	M	S	M	S
CO3	S	S	M	M

S = Strong, M = Medium, W = Weak

Semester-I DSC (elective)
History of Economic Thoughts (option-II)
Course Code: U25ECO112T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To understand the evolution of economic thoughts, classical, neo-classical, and Keynesian theories, and evaluate modern schools of economics, including supply-side theories and contributions of Nobel laureates.

Unit-I

Early Period Economic thoughts: Plato, Aristotle and Hebrew — Doctrines of Just cost and Just price, Economic thoughts of Kautilya, Valluvar; Indian economic thoughts: Naoroji, Gandhi- Village, Swadeshi, J.K. Mehta-Wantlessness.

Unit-II

Mercantilism: main characteristics; Thomas Mun — Physiocracy: primacy of agriculture, taxation, Locke and Hume. Classical Period Adam Smith — division of labour, theory of value, capital accumulation, distribution, views on trade, economic progress; Thomas R. Malthus — theory of population, theory of gluts; Karl Marx - dynamics of social change, theory of value, surplus value, profit, and crisis of capitalism; Economic ideas of J.B. Say.

Unit-III

Neo-Classical and Keynesian Economic Thoughts: Marshall as a great synthesizer: role of time in price determination, Pigou: Welfare economics; Schumpeter: role of entrepreneur and innovations. Keynesian Ideas: the aggregate economy, underemployment equilibrium, role of fiscal policy, Friedman, Hayek.

Unit-IV

Neo-Classical synthesis (Phillips Curve, IS-LM and Mundell Fleming Model), New Classical Economics: Market Clearing model, rational expectations and Lucas's critique, Supply Side Economics, Real Business Cycles, New Keynesian Economics, Economics of Nobel Laureates

Suggested Readings

1. Blaug, M. (1997), *Economic Theory in Retrospect: A History of Economic Thought from Adam Smith to J.M. Keynes* (5th Edition), Cambridge University Press, Cambridge.
2. Screpanti, E., & Zamagni, S. (2006), *An Outline of the History of Economic Thought*, Oxford University Press, Oxford.
3. Hunt, E.K., & Lautzenheiser, M. (2011), *History of Economic Thought: A Critical Perspective* (3rd Edition), PHI Learning, New Delhi.

Course Outcomes: At the end of the course, the students would be able to:

1. Explain key economic ideas from early thinkers, classical economists, and Indian economic philosophers.
2. Assess the contributions of classical, neo-classical, and Keynesian economists to modern economic thought.
3. Critically evaluate contemporary economic theories, including rational expectations, real business cycles, and new Keynesian economics.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	M	M	S	S
CO2	S	S	M	S
CO3	S	S	M	M

S = Strong, M = Medium, W = Weak

Semester-I DSC (Practicum)
Computer Applications in Economic Analysis
Course Code: U25ECO104P

Maximum Marks: 50 **Total Credits: 02**
Internal Assessment: 15 **(Practicum)**
External Assessment: 35

Course Objective: To equip students with hands-on skills in using computer software and tools for data analysis and visualization in economic research.

Unit I

Data Handling and Analysis using Spreadsheet: Introduction to spreadsheets and their interface, Data entry, formatting, filtering, and sorting, Basic statistical functions: mean, median, mode, standard deviation, Use of logical and lookup functions: IF, VLOOKUP, HLOOKUP, Creating data tables and pivot tables, Charts and graphs for economic data visualization, Case studies: inflation, GDP growth, consumption data

Unit II

Introduction to Statistical Software for Economic Analysis (R/Stata/SPSS): Overview of statistical software in economic research, importing datasets from Excel/CSV, Data types, variable labelling, and data transformation, Descriptive statistics and frequency distributions, Graphical representation: histograms, box plots, scatter plots, Introduction to correlation and regression using software, Case application: NSSO or NFHS dataset-based analysis

Suggested Readings

1. Gujarati, D. N., & Porter, D. C. (Latest Ed.). *Basic Econometrics.* McGraw-Hill.
2. Baum, C. F. (Latest Ed.). *An Introduction to Modern Econometrics Using Stata.* Stata Press.
3. Field, A. (Latest Ed.). *Discovering Statistics Using IBM SPSS Statistics.* Sage.
4. Kabacoff, R. I. (Latest Ed.). *R in Action: Data Analysis and Graphics with R.* Manning Publications.
5. Winston, W. L. (Latest Ed.). *Microsoft Excel Data Analysis and Business Modeling.* Microsoft Press.
6. Government open data portals: data.gov.in, rbi.org.in, mospi.gov.in

Course Outcomes: After completing this course, students would be able to:

1. Apply spreadsheet tools like Excel for basic economic data organization and analysis.
2. Use statistical software (e.g., R/Stata/SPSS) for data cleaning and descriptive analysis.
3. Visualize economic data using charts and graphs to derive insights for policy and research.

The practical Exam will be taken by external examiner

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	M	M	S	S
CO2	S	W	M	S
CO3	S	S	M	S

S = Strong, M = Medium, W = Weak

Semester-I (VAC)
Political Economy of India
Course Code: U25VAC111T

Maximum Marks: 50
Internal Assessment: 15
External Assessment: 35

Total Credits: 02
(Theory)
Time Allowed: 02 Hours

Course Objective: To develop a critical understanding of the interplay between political institutions, economic policies, and development outcomes in India.

Unit I

The Indian State and Economic Reforms: Colonial legacy and post-independence economic planning, Role of the state in industrial and agricultural policy, The 1991 economic reforms: context, features, and consequences, Globalization and the changing nature of the Indian state, Public-private partnerships and governance in infrastructure, digital governance.

Unit II

Political Institutions and Development Outcomes: Democratic institutions and fiscal federalism in India, Electoral politics, populism, and public spending, Political economy of welfare schemes, Political capture and corruption: causes and consequences, Inter-state economic disparities and regional development politics, Case discussions: Bihar vs Gujarat model; Centre-State financial relations.

Suggested Readings

1. Bardhan, P. (2005). *The Political Economy of Development in India.* Oxford University Press.
2. Kohli, A. (2012). *Poverty Amid Plenty in the New India.* Cambridge University Press.
3. Sen, A., & Dreze, J. (Latest Ed.). *India: Economic Development and Social Opportunity.* Oxford University Press.
4. Chhibber, P., & Nooruddin, I. (2004). "Do Party Systems Count? The Number of Parties and Government Performance in the Indian States." *Comparative Political Studies.*
5. Frankel, F. R. (2005). *India's Political Economy: 1947–2004.* Oxford University Press.

Course Outcomes: After completing this course, students would be able to:

1. Analyze the role of the Indian state in shaping economic reforms and policies.
2. Evaluate how political factors influence economic inequality, development, and welfare.
3. Interpret contemporary policy debates within the framework of political economy.

Examiner's Note: The maximum time duration for attempting the paper will be of 2 hours. The examiner is required to set five questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 3 marks each. In addition to that four more question will be set, two questions from each unit. The students shall be required to attempt three questions in all selecting one question from each unit in consisting of 10 marks each in addition to compulsory question No. 1.

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	S
CO2	M	S	W	S
CO3	S	S	M	M

S = Strong, M = Medium, W = Weak

Semester-II

Semester-II DSC (core)
Microeconomic Analysis-II
Course Code: U25ECO201T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To develop a deeper understanding of market structures, firm behaviour, and factor pricing under imperfect competition.

Unit-I

Monopolistic competition; price and output decisions under monopolistic competition, criticism of monopolistic competition.

Unit-II

Oligopoly: non-collusive oligopoly, Cournot, Bertrand, Chamberlin, and kinked demand model, collusive and non-collusive oligopoly behaviour; cartels and mergers, price leadership.

Unit-III

Alternative theories of the firm: Baumol's sales revenue maximization model, Williamson model of managerial discretion, Marris model of managerial enterprise, Bain's limit pricing theory.

Unit-IV

Neoclassical theory of factor pricing: marginal productivity theory, product exhaustion theorem, elasticity of technical substitution, technical progress and factor shares.

Suggested Readings

1. Hal R. Varian – *Intermediate Microeconomics: A Modern Approach*, 10th Edition, W. W. Norton (2023)
2. Andreu Mas-Colell, Michael D. Whinston, Jerry R. Green – *Microeconomic Theory*, OUP (Latest Reprint 2022)
3. Walter Nicholson & Christopher Snyder – *Microeconomic Theory: Basic Principles and Extensions*, 12th Edition, Cengage (2022)
4. Jehle & Reny – *Advanced Microeconomic Theory*, 4th Edition, Pearson (2022)
5. Robert S. Pindyck & Daniel L. Rubinfeld – *Microeconomics*, 10th Edition, Pearson (2023)
6. Dominick Salvatore – *Principles of Microeconomics*, Oxford University Press (Latest Edition)
7. Koutsoyiannis – *Modern Microeconomics*, Palgrave Macmillan (Reprint 2021)

Course Outcomes: At the end of the course, the students would be able to:

1. Understand pricing and output decisions under monopolistic and oligopolistic market structures.
2. Evaluate alternative theories of the firm and analyze managerial behaviour in real-world enterprises.
3. Apply factor pricing theories to determine rent, wages, interest, and profits in various market conditions.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	S	S	S
CO2	S	S	M	S
CO3	S	W	M	M

S = Strong, M = Medium, W = Weak

Semester-II DSC (core)
Macroeconomic Analysis-II
Course Code: U25ECO202T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective To provide advanced understanding of macroeconomic theories related to inflation, business cycles, open economy, and policy frameworks.

Unit-I

Neo-classical and Keynesian Synthesis: The IS-LM model; Extension of IS-LM model with government sector, labour market and flexible prices, Relative effectiveness of monetary and fiscal policies.

Unit-II

Theory of Inflation: Classical, Keynesian and Monetarist approaches; Structuralist theory of inflation; Philips curve analysis - short run and long run Philips curve; Natural Rate of Unemployment hypothesis; Tobin's modified Philips curve; Adaptive expectations and rational expectations; Policies to control inflation.

Unit-III

Business Cycles: Theories of Schumpeter, Kaldor, Samuelson, Hicks and Goodwin's model; Control of business cycles.

Unit-IV

Macroeconomics in an Open Economy: Mundell-Fleming Model-Asset markets, Monetary approach to balance of payments. Recent Developments in Macroeconomics: The New classical critique of micro foundations, the New classical approaches; Policy implications of New classical approach; New Keynesian Approach.

Suggested Readings:

1. N. Gregory Mankiw – *Macroeconomics*, 11th Edition, Worth Publishers (2023)
2. Olivier Blanchard & David R. Johnson – *Macroeconomics*, 8th Edition, Pearson (2022)
3. David Romer – *Advanced Macroeconomics*, 6th Edition, McGraw-Hill Education (2023)
4. Robert J. Barro – *Macroeconomics: A Modern Approach*, Cengage Learning (2022)
5. Charles I. Jones – *Macroeconomics*, 5th Edition, W. W. Norton & Company (2021)
6. Brian Snowdon & Howard R. Vane – *Modern Macroeconomics: Its Origins, Development and Current State*, Edward Elgar (2023)
7. Hall, R.E. and J.B. Taylor – *Macroeconomics*, W. W. Norton (2023)

Course Outcomes: At the end of the course, the students would be able to:

1. Understand and analyze the IS-LM framework and its policy implications in different economic conditions.
2. Evaluate various theories of inflation, expectations, and their relevance in contemporary macroeconomic policy.
3. Assess business cycles and open economy models, including recent developments in macroeconomic theory.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	S
CO2	S	M	M	S
CO3	S	S	S	M

S = Strong, M = Medium, W = Weak

Semester-II DSC (core)
Public Economics
Course Code: U25ECO203T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective To develop an understanding of the role of government in resource allocation, income distribution, and economic stabilization.

Unit-I

Introduction to Public Economics, Difference between public finance and public economics, Allocation of resources - Provision of public goods; Voluntary exchange models; Impossibility of decentralized provision of public goods (contributions of Samuelson and Musgrave); Demand revealing schemes for public goods - Tiebout model, theory of club goods;

Unit-II

Stabilization Policy - Keynesian case of stabilization policy; Uncertainty and expectations; Failure of inter temporal markets; Liquidity preference; Social goals; Poverty alleviation; Provision of infrastructural facilities, removing distributional inequalities and regional imbalances

Unit-III

Role of Government in an Economy - The Allocation, Distribution and The Stabilisation Functions; Private Goods, Public Goods, and Merit Goods; Market Failure - Imperfections, Decreasing Costs, Externalities; Wagner's law of increasing state activities; Wiseman- Peacock hypothesis; Pure theory of public expenditure; Structure and growth of public expenditure; Criteria for public investment; Social cost-benefit analysis - Project evaluation; Estimation of costs, discount rate; Reforms in expenditure budgeting; Programme budgeting and Zero base budgeting.

Unit-IV

Theory of incidence; Alternative concepts of incidence - Allocative and equity aspects of individual taxes; Benefit and ability to pay approaches; Theory of optimal taxation; Excess burden of taxes; Trade-off between equity and efficiency; Theory of measurement of dead weight losses; The problem of double taxation.

Suggested Readings

1. Harvey S. Rosen & Ted Gayer – *Public Finance*, 12th Edition, McGraw-Hill Education (2022)
2. Jonathan Gruber – *Public Finance and Public Policy*, 7th Edition, Worth Publishers (2023)
3. Richard W. Tresch – *Public Finance: A Normative Theory*, 3rd Edition, Academic Press (2022)
4. Gareth D. Myles – *Public Economics*, Cambridge University Press (Reprint 2023)
5. R.A. Musgrave & P.B. Musgrave – *Public Finance in Theory and Practice*, McGraw-Hill Education (Latest Indian Edition)
6. Stiglitz, Joseph E. & Jay K. Rosengard – *Economics of the Public Sector*, 5th Edition, W. W. Norton (2022)
7. Goode, R. – *Government Finance in Developing Countries*, TMH (Reprint 2021)

Course Outcomes: At the end of the course, the students would be able to:

1. Understand the provision of public goods, market failures, and the role of government in resource allocation.
2. Evaluate taxation principles, expenditure policies, and their impact on efficiency and equity.
3. Analyze budgeting techniques and assess policy measures for redistribution and stabilization.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	M
CO2	S	S	M	S
CO3	S	S	M	M

S = Strong, M = Medium, W = Weak

Semester-I DSC (Elective)
Statistics for Economics (Option-1)
Course Code: U25ECO211T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To provide students with foundational statistical tools essential for analysing economic data and making informed decisions.

Unit-I

Descriptive statistics: measures of central tendency, spreadness, skewness and kurtosis; moments and moment generating functions

Unit-II

Probability theory: Laws of addition and multiplication; Conditional probability and concept of independence; Bayes theorem and its applications; Random variable; Discrete and Continuous random variables; Probability mass function and probability density functions; Properties (without derivations) of Binomial, Poisson and Normal distributions.

Unit-III

Correlation: Pearson's product moment and spearman's rank correlation-their properties; Partial and multiple correlations

Unit-IV

Statistical Inference: Concept of an estimator and its sampling distribution; Desirable properties of a good estimator; Point and Interval estimation. Formulation of statistical hypotheses - Null and alternative; Type 1 and Type 2 errors, Goodness of fit; Confidence intervals and level of significance; Hypothesis testing based on standard normal, t, Chi-square and F tests;.

Suggested Readings

1. Andy Field – *Discovering Statistics Using IBM SPSS Statistics*, 6th Edition, SAGE Publications (2023)
2. Paul Newbold, William Carlson & Betty Thorne – *Statistics for Business and Economics*, 9th Edition, Pearson (2021)
3. Robert S. Witte & John S. Witte – *Statistics*, 11th Edition, Wiley (2022)
4. Ken Black – *Business Statistics: For Contemporary Decision Making*, 10th Edition, Wiley (2022)
5. David Freedman, Robert Pisani, Roger Purves – *Statistics*, 5th Edition, Norton (2021)
6. S. C. Gupta & V. K. Kapoor – *Fundamentals of Applied Statistics*, S. Chand Publishing (Latest Reprint)
7. M. R. Spiegel & Larry Stephens – *Schaum's Outline of Statistics*, 5th Edition, McGraw-Hill (2021)

Course Outcomes: At the end of the course, the students would be able to:

1. summarize and interpret economic data using descriptive statistical measures.
2. understand and apply probability theory and statistical distributions in economic contexts.
3. perform correlation analysis and hypothesis testing for informed economic decision-making.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	W
CO2	S	M	M	S
CO3	S	S	M	M

S = Strong, M = Medium, W = Weak

Semester-II DSC (Elective)
Labor Economics (option-II)
Course Code: U25ECO212T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective To provide students with a comprehensive understanding of labour market theories, wage determination, labour mobility, and the functioning of labour institutions.

Unit-I

Labour - Its Characteristics; Role of Labour in Economic Development, Mobility and productivity of labour. Supply of Labour: Static Labour-Leisure Choice, Effects of Social Programs and Income Taxes, The Life-Cycle Model, Investments in Human Capital, Collective Models of Household Labour Supply, Occupational Choice;

Unit-II

Demand of Labour: Static Cost, Profit and Labour Demand Functions, Elasticity of Derived Demand: the Hicks-Marshall Rules, Adjustment Costs and Dynamic Labour Demand; Equilibrium in Labour Market: Compensating Differences, Efficiency Wages, Segmented Labour Markets, Migration.

Unit-III

Classical, Neo-classical and Bargaining Theories of Wage Determination; Concepts of Minimum Wage, Living Wage and Fair Wage in Theory and Practice; Discrimination in Labour Markets; Productivity and Wage Relationship; Analysis of Rigidity in Labour Markets; National Wage Policy; Wages and Wage Boards in India; Bonus System and Profit Sharing.

Unit-IV

Theories of Origin and Growth of Labour Movement - Growth, Pattern and Structure of Labour Unions in India, Achievements and. Failures of Labour Unions; Industrial Relations -Industrial Disputes and industrial Peace; Causes of industrial Disputes and their Settlement and Prevention Mechanism.

Suggested Readings

1. Campbell R. McConnell, Stanley L. Brue, and David A. Macpherson – *Contemporary Labour Economics*, Student Edition
2. George J. Borjas – *Labour Economics*, McGraw-Hill
3. Pierre Cahuc and André Zylberberg – *Labour Economics*, The MIT Press

Course Outcomes: At the end of the course, the students would be able to:

1. Analyse labour market behaviour and assess factors influencing labour supply and demand.
2. Evaluate theories of wage determination and understand wage-related policies and practices.
3. Examine labour unions, industrial relations, and mechanisms for dispute resolution in the labour market.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	W
CO2	S	S	M	S
CO3	S	S	S	M

S = Strong, M = Medium, W = Weak

Semester-II DSC (Practicum)
Practices of Indian Public Finance (option-I)
Course Code: U25ECO204P

Maximum Marks: 50 **Total Credits: 02**
Internal Assessment: 15 **(Practicum)**
External Assessment: 35

Course Objective To understand public finance and fiscal federalism in India, taxation, fiscal policy, and debt management, and evaluate social sector expenditure, subsidies, and global public finance trends.

Unit-I

Analysis of Union and State Budget Data, Case Studies on Public Expenditure Trends, Fiscal Federalism in India: Analysis of Centre-State Financial Relations, Finance Commissions (Recommendations & Implementation).

Unit-II

Computation of Tax Liabilities (Income Tax, GST), Case Study on Impact of GST on Different Sectors, Debt Sustainability, Public Borrowing: Internal vs. External Borrowing, Crowding-Out Effect, Budget Analysis: Recent Budget Policies and Their Economic Implications, Analyzing India's Union Budget (Current Year), Preparation of a Mock Budget for a State Government, Estimation of Fiscal Multipliers using Public Finance Data.

Suggested Readings

1. Richard A. Musgrave & Peggy B. Musgrave – "Public Finance in Theory and Practice," 5th Edition, McGraw-Hill.
2. S.K. Singh – "Public Finance in Developed and Developing Countries," S. Chand, 1986.
3. Government of India – "Economic Survey," Latest Edition.
4. Government of India – "Union Budget and Finance Ministry Reports," Latest Editions.
5. Reserve Bank of India (RBI) – "Reports on State Finances," Latest Editions.
6. A.P. Thirlwall – "Growth and Development: With Special Reference to Developing Economies," 8th Edition, Palgrave Macmillan, 2006.
7. J. Raja & A. Sen – "Fiscal Federalism in India," Oxford University Press, 2010.

Course Outcomes: At the end of the course, the students would be able to:

1. Explain the role of public finance in economic development, fiscal federalism, and budgetary processes in India.
2. Develop analytical skills to assess taxation policies, fiscal reforms, deficit financing, and debt sustainability.
3. Critically evaluate social sector spending, monetary-fiscal coordination, and global public finance practices using data-driven analysis.

The Practical Exam will be taken by External Examiner

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	S
CO2	S	M	M	S
CO3	S	S	S	M

S = Strong, M = Medium, W = Weak

Semester-II DSC (Practicum)
Indian Statistical System (option-II)
Course Code: U25ECO205P

Maximum Marks: 50 **Total Credits: 02**
Internal Assessment: 15 **(Practicum)**
External Assessment: 35

Course Objective: To develop advanced understanding and hands-on skills in navigating and analyzing data from India's statistical system for policy-oriented economic research.

Unit I

Advanced National and Sub-national Accounts Framework: Structure and functioning of the Indian Statistical System: Institutional Framework (MoSPI, NSO, CSO, State DESs), Revised methodology for GDP estimation post-2011-12 base year, Integration of administrative and survey data for State and District Domestic Product estimation, Measurement issues in the informal sector and services, Role of Big Data and administrative data in future GDP compilation (GST, satellite data, digital payments)

Unit II

Sectoral Statistics, Capital Formation & Labour Estimates: Advanced estimation techniques for capital formation at sub-national level: issues and methodologies, Labour statistics: PLFS, E-Shram, and periodicity of employment-unemployment surveys, Sectoral data analysis: Agriculture (LUS, Crop Cutting Experiments), Industries (IIP, ASI), Services (trade, tourism, transport), Challenges in estimating value added per worker across sectors, Case application: Using NSSO or ASI unit-level data for regional productivity comparison.

Suggested Readings & Sources of data

1. Government of India. *Manual on National Accounts (2020).* MoSPI.
2. CSO. *Changes in Methodology and Data Sources in the New Series of National Accounts (Base: 2011-12).*
3. EPW Research Foundation. *Statistical Outline of India.* EPW Publications.
4. UN System of National Accounts (SNA 2008) – for global comparability
5. Sundaram, K., and Tendulkar, S. D. (Latest Ed.). *India's Statistical System.*
6. Relevant websites and databases: https://www.mospi.gov.in, https://data.gov.in, https://www.rbi.org.in, https://www.niti.gov.in

Course Outcomes: After completing this course, students will be able to:

1. Analyze the structure, methodology, and challenges of India's decentralized statistical system.
2. Use official data sources (NSSO, NSO, ASI, MOSPI, etc.) for micro and macroeconomic analysis.
3. Evaluate the reliability, gaps, and improvements in India's statistical databases for academic and applied research.

The Practical Exam will be taken by external examiner

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	S
CO2	S	M	M	S
CO3	S	S	S	M

S = Strong, M = Medium, W = Weak

Seminar (Semester II)
@ 2 credits
Course code: U25ECO201S

Department of Economics

GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR

(Established by State Legislature Act 17 of 1995)

'A+' Grade, NAAC Accredited

Scheme of Examination for PG Two Year Programme

[PG Two Year Programme)

Name of the Programme: M.Sc. Economics

According to National Education Policy-2020

For the batch of 2025-26 Onwards

M.Sc. Economics III SEM as per NEP-2020

Type of Course	Course Code	Paper Nomenclature	Credits	Internal Marks	External Marks	Total Marks	Duration of Exam (Hrs.)
Discipline Specific Courses (Core)	U25ECO301T	Basic Econometrics	04	30	70	100	33
	U25ECO302T	International Economics	04	30	70	100	3
	U25ECO303T **Or** U25ECO304T	Development Economics **Or** Corporate Finance	04	30	70	100	3
Discipline Specific Courses (Elective)	U25ECO311T **Or** U25ECO312T	Agriculture economics **Or** Industrial Economics	04	30	70	100	3
Discipline Specific Courses (Practicum)	U25ECO305P **Or** U25ECO306P	Financial Modelling using Excel **Or** Basic Econometric Applications	02	15	35	50	Practical
VAC/Seminar/ OEC/ EEC/VOC @ 2 credits	U25OEC311T(i) **Or** U25OEC311T(ii)	**To be opted from the pool of OEC of the University**	02	15	35	50	2
Total			20	150	350	500	

Department of Economics

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(Established by State Legislature Act 17 of 1995)

'A+' Grade, NAAC Accredited

Scheme of Examination for PG Two Year Programme
[PG Two Year Programme)
Name of the Programme: M.Sc. Economics
According to National Education Policy-2020
2025-26 M.Sc. Economics Onwards

M.Sc. Economics IV SEM as per NEP-2020							
Type of Course (Option A)	**Course Code**	**Paper Nomenclature**	**Credits**	**Internal Marks**	**External Marks**	**Total Marks**	**Duration of Exam (Hrs.)**
Discipline Specific Courses (Core)	U25ECO401T	Contemporary Issues in Indian Economy	04	30	70	100	3
	U25ECO402T	Research Methodology	04	30	70	100	3
	U25ECO403T **Or** U25ECO404T	Economics of Social Sector **Or** Financial Economics	04	30	70	100	3
Discipline Specific Courses (Elective)	U25ECO411T **Or** U25ECO412T **Or** U25ECO413T	Economics of Business Strategy **Or** Behavioural Economics **Or** Advanced Econometrics	04	30	70	100	3
Discipline Specific Courses (Practical)	U25ECO405P **Or** U25ECO406P	Practices of Economic Data Analysis **Or** Advanced Econometric Applications	02	15	35	50	Practical
VAC/Seminar/ OEC/ EEC/VOC @ 2 credits	U25SEC411P(i) **Or** U25SEC411P(ii)	**To be opted from the pool of SEC of the University**	02	15	35	50	2
Total			20	135	315	450	-----
Students can opt either Option A or Option B in the IV SEM							
SEM-IV (Option B)	**Disciplinary Specific @ 4 credits + Disciplinary Elective @4 credits + Dissertation/Project Work @12 Credits in lieu of 03 Papers @12 credits) +SEC/EEC/OEC/VAC/VOC@2credits**				**Total=4+4+12+2=22 Credits For (Option B)**		
The students who opt Option B i.e., Project work they shall be required to submit three hard copies of Dissertation/Project work along with soft copy as PDF file to department by 30th June of the concerned year. The dissertation/Project report will be of total 12 credits (300marks) and evaluation will be done in two components; report (200 marks) and Open Viva-voce (100 marks). The panel of examiners for evaluation will be approved by the respective PGBOSR.							

Department of Economics

GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR

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Scheme of Examination for PG Two Year Programme

[PG Two Year Programme)

Name of the Programme: M.Sc. Economics

According to National Education Policy-2020

w.e.f. 2025-26

M.Sc. Economics III SEM as per NEP-2020						
Department Courses offered for the pools (VAC/VOC/SEC/OEC/EEC)						
Type of Course	**Course Code**	**Paper Nomenclature**	**Credits**	**Internal Marks**	**External Marks**	**Total Marks**
VAC/Seminar/ OEC/ EEC/VOC @ 2 credits	U25OEC311T(i) **Or** U25OEC311T(ii)	Quantitative Economics **Or** Economics of Infrastructure	02	15	35	50

M.Sc. Economics IV SEM as per NEP-2020						
Department Courses offered for the pools (VAC/VOC/SEC/OEC/EEC)						
Type of Course	**Course Code**	**Paper Nomenclature**	**Credits**	**Internal Marks**	**External Marks**	**Total Marks**
VAC/Seminar/ OEC/ EEC/VOC @ 2 credits	U25SEC411P(i) **Or** U25SEC411P(ii)	Field Survey and Report Writing **Or** Basics of Data Visualization and Dashboard Creation	02	15	35	50

Semester-III DSC (Core)
Basic Econometrics
Course Code: U25ECO301T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective To provide a foundational understanding of econometric techniques for analysing economic relationships using empirical data.

Unit-I

Nature, scope and methodology of econometrics; Simple Linear Regression Model: Assumptions, Estimation using OLS and Maximum Likelihood Method, Co-efficient of determination, matrix approach to linear regression models, General and confidence approach to hypothesis testing.

Unit-II

Multiple Linear Regression Analysis: Method of least squares, Test of significance of regression coefficients, R^2 and adjusted R^2; An overview of econometric Problems.

Unit-III

Dummy Variables: Regression on qualitative and quantitative variables, dummy variable trap, structural stability of regression models, Chow test, piecewise linear regression model

Unit-IV

Dynamic Econometric Models: Koyck distributed lag model, the adaptive expectation model, and the partial adjustment model.

Suggested Readings:

1. Greene, W. H. *Econometric Analysis*, Pearson Education.
2. Gujarati, D.N. *Econometrics by Example*, McGraw Hill (Latest Edition).
3. Gujarati, D.N. & Porter, D.C. *Basic Econometrics*, McGraw-Hill Education, 5th Edition.
4. Johnston, J. & Dinardo, J. *Econometric Methods*, McGraw-Hill Education.
5. Maddala, G.S. *Introduction to Econometrics*, Wiley India.
6. Wooldridge, J.M. *Introductory Econometrics: A Modern Approach*, Cengage Learning.
7. Koutsoyiannis, A. *Theory of Econometrics*, Palgrave Macmillan.

Course Outcomes: At the end of the course, the students would be able to:

1. Understand the core concepts, scope, and methodology of econometrics and apply linear regression techniques to economic data.
2. Identify and address key econometric issues such as multicollinearity, heteroscedasticity, and autocorrelation.
3. Estimate complex models including dummy variable regressions, dynamic models, and simultaneous equation systems.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	M
CO2	S	S	M	S
CO3	S	S	S	M

S = Strong, M = Medium, W = Weak

Semester-III DSC (Core)
International Economics
Course Code: U25ECO302T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective To provide an understanding of international trade theories, trade policy, and the economic implications of international trade and protectionism.

Unit-I

International economics: introduction, international trade and Nation's standard of living, current international economic problems;

Unit-II

Trade theories: concept of international trade, basis for and gains from trade, trade based on Absolute Advantages, Comparative advantages, Comparative advantages and opportunity cost; standard theory of trade: production frontier with increasing costs, community indifference curve, equilibrium in isolation.

Unit-III

Factor endowments and Hecksher-Ohlin Theory: factor intensity, factor abundance, factor price equalization, and income distribution, Stopler Samuelson theorem, Leontief paradox; Modern trade theory: economies of scale, imperfect competition, product differentiation.

Unit-IV

International Trade Policy: Trade Restrictions; tariffs, partial equilibrium analysis of a tariff, theory of tariff structure, general equilibrium analysis of tariff in small country and large country, optimum tariff; non-tariff barriers: import quotas, other non-tariff barriers and new protectionism, political economy of protectionism.

Suggested Readings:

1. Bhagwati, J. (Ed.), *International Trade: Selected Readings*, Cambridge University Press, Massachusetts
2. Kindleberger, C.P., *International Economics*, R.D. Irwin, Homewood
3. King, P.G., *International Economics and International Economics Policy: A Reader*, McGraw Hill International, Singapore
4. Salvatore, D., *International Economics*, Prentice Hall, N.J., New York
5. Sodersten, B.O., *International Economics*, Macmillan Press Ltd, London

Course Outcomes: At the end of the course, the students would be able to:

1. Explain the core principles and theories governing international trade and standard of living impacts.
2. Analyze various classical and modern trade theories, including comparative and absolute advantage and Heckscher-Ohlin theory.
3. Evaluate the impact of trade restrictions, tariffs, and non-tariff barriers in global economic policymaking.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	S
CO2	S	M	M	S
CO3	S	S	S	M

S = Strong, M = Medium, W = Weak

Semester-III DSC (Core)
Development Economics (option-I)
Course Code: U25ECO303T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective To provide students with a comprehensive understanding of the theories, issues, and strategies related to economic development, with a special focus on underdeveloped economies and the Indian development experience.

Unit-II

Economic Development: Meaning and measurement, Features of underdeveloped economies, developing economies, determinants of economic development, Economic and noneconomic factors of development, Obstacles in growth and development, Arguments on Growth Vs Development, Sen's View, Role of state in economic development, Indicators of Development.

Unit-II

Social and Institutional Aspects of Development: Absolute and Relative, causes of poverty, trends in poverty, economic inequality, Kuznets inverted 'U' curve, Population problem and growth pattern - Theory of demographic transition; demographic dividend.

Unit-II

Development Strategies: Vicious circle of poverty; Theory of balanced and unbalanced growth; Rodan's big push; critical minimum effort thesis; import substitution and export promotion; investment allocation criteria, choice of technique.

Unit-II

Indian Development Experience: Growth and development experience of India since independence, Human development and quality of life, The population and economic development, occupational distribution of labour force; Poverty and Income distribution in India, Problems of unemployment and Rising prices.

Suggested Readings:

1. Ghatak, S., *An Introduction to Development Economics*, Allen and Unwin, Londo
2. Debraj Ray, *Development Economics*, Oxford University Press
3. Meier, G.M., *Leading Issues in Economic Development*, Oxford University Press, New Delhi
4. Thirlwall, A.P., *Growth and Development*, Macmillan, London
5. Todaro, M.P., *Economic Development in the Third World*, Oxford University Press, London

Course Outcomes: At the end of the course, the students would be able to:

1. Understand key concepts, measurements, and determinants of economic development.
1. Analyze institutional, demographic, and policy factors influencing poverty, inequality, and growth.
2. Evaluate development strategies and assess India's development experience post-independence

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	S
CO2	S	S	M	S
CO3	S	S	M	M

S = Strong, M = Medium, W = Weak

Semester-III DSC (Core)
Corporate Finance (option-II)
Course Code: U25ECO304T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective To equip students with foundational knowledge and analytical skills in corporate finance, focusing on investment, financing, and working capital decisions.

Unit-I

Investment Decisions: Capital Budgeting: Principles and techniques - Nature of capital budgeting Identifying relevant cash flows Evaluation Techniques: Payback, Accounting rate of return, Net Present Value, Internal Rate of Return, Profitability Index - Comparison of DCF techniques - Project selection under capital rationing Inflation and capital budgeting - Concept and measurement of cost of capital - Specific cost and overall cost of capital

Unit-II

Financing and Dividend Decision: Financial and operating leverage - capital structure - Cost of capital and valuation - designing capital structure. Dividend policy - Aspects of dividend policy - practical consideration - forms of dividend policy - forms of dividends - share splits.

Unit-III

Working Capital Management: Principles of working capital: Concepts, Needs, Determinants, issues and estimation of working capital - Accounts Receivables Management and factoring - Inventory management Cash management Working capital finance: Trade credit, Bank finance and Commercial paper.

Unit-IV

Long Term Sources of Finance: Indian capital and stock market, new issues market long term finance: Shares, debentures and term loans, lease, hire purchase, venture capital financing, Private Equity.

Suggested Readings

1. M.Y. Khan and P.K. Jain, *Financial Management: Text, Problems and Cases*, Tata McGraw Hill
2. M. Pandey, *Financial Management*, Vikas Publishing House Pvt. Ltd.
3. Aswath Damodaran, *Corporate Finance: Theory and Practice*, John Wiley & Sons
4. James C. Van Horne, *Fundamentals of Financial Management*, PHI Learning
5. Brigham and Ehrhardt, *Financial Management: Theory and Practice*, Cengage Learning
6. Prasanna Chandra, *Financial Management*, Tata McGraw Hill
7. Srivastava and Mishra, *Financial Management*, Oxford University Press

Course Outcomes: At the end of the course, the students would be able to:

1. Apply key principles of capital budgeting and evaluate investment projects using various financial techniques.
2. Analyze and design appropriate capital structures and dividend policies for businesses.
3. Manage working capital efficiently and assess long-term sources of finance in the context of financial markets.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	W
CO2	S	S	S	S
CO3	M	S	M	S

S = Strong, M = Medium, W = Weak

Semester-III DSC (Elective)
Agriculture Economics (option-I)
Course Code: U25ECO311T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective To provide students with a detailed understanding of the economic principles and policies related to agriculture, focusing on labour, production, rural credit, markets, and development strategies in developing economies, with emphasis on India.

Unit-I

Nature and scope of agricultural economics; economic development with unlimited supplies of labour; Lewis-Fei-Ranis model; Lewis versus the Harris-Todaro view of underemployment in LDCS, wage spill over and unemployment in a wage-gap economy; measurement problems of surplus labour and disguised unemployment; theory of agricultural production, three stages of production function.

Unit-II

Agricultural labour force and productivity: farm size and productivity, supply functions and price responsiveness, contractual arrangements, employment and wages in rural markets; interdependence between agricultural and industry; terms of trade between agriculture and industry.

Unit-III

Rural credit markets and institutions in developing countries; rural infrastructure prospects and strategies for land reforms; some theoretical aspects of agricultural policies; agricultural diversification, food processing, and standardisation.

Unit-Iv

Agricultural development strategies: induced technical and institutional change, green revolution; microeconomics of the rural sector; the new development economics; risk and uncertainty in agriculture, environment and agricultural a development; WTO and agriculture.

Suggested Readings:

1. A.P. Thirlwall, *Growth and Development*, ELBS
2. D. Ray, *Development Economics*, Oxford University Press (OUP)
3. S. Ghatak, *Introduction to Development Economics*, Rutledge
4. Kaushik Basu, *Analytical Development Economics: The Less Developed Economy Revisited*, OUP
5. D. Lal, *The Poverty of Development Economics*, OUP
6. G. Meier, *Leading Issues in Economic Development*, OUP
7. Meier and Rauch, *Leading Issues in Economic Development*, OUP
8. M.P. Todaro and S.C. Smith, *Economic Development*, Pearson

Course Outcomes: At the end of the course, the students would be able to:

1. Understand the theoretical foundations and models relevant to agricultural economics and development.
2. Analyze productivity, employment, and wage dynamics in rural agricultural settings.
3. Evaluate rural credit, infrastructure, and policy issues related to agriculture.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	S	S	W
CO2	S	S	M	S
CO3	S	S	M	S

S = Strong, M = Medium, W = Weak

Semester-III DSC (Elective)
Industrial Economics (option-II)
Course Code: U25ECO312T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective To provide students with a comprehensive understanding of firm behaviour, market structure, industrial performance, and regional industrial development

Unit-I

Structure and Objectives of the Firm: Nature and scope of industrial economics, Types of firm ownership and control: Proprietorship, Partnership, Corporation, Objectives of firms: Profit maximization, Sales maximization, Managerial theories, Growth of the firm: Internal and external growth, Constraints on growth: Financial, managerial, market-based

Unit-II

Industrial Location and Structure: Theories of industrial location: Weber, Sargent Florence, Behavioural, Factors affecting location decisions: Costs, infrastructure, government policy, Industrial clusters and agglomeration economies, Structural characteristics of industries: S-C-P paradigm, Market concentration and its measurement (CR, HHI, Gini coefficients)

Unit-III

Market Conduct and Performance: Price and non-price competition, Barriers to entry and contestability, Research and Development (R&D), Innovation and technological change, Mergers and acquisitions: Types, motives, and effects, Productivity and efficiency: Concepts and measurement methods

Unit-IV

Industrial Policy and Regulation: Evolution of industrial policy in India: Pre and post-1991 reforms, Role of public sector and disinvestment, Competition policy and role of CCI (Competition Commission of India), Environmental and labour regulations, Current issues in Indian industries: MSMEs, Startups, and digital transformation. Regional Development and concept of core competency of different regions, Theories competitiveness

Suggested Readings

1. Hay, D. & Morris, D. J. – *Industrial Economics: Theory and Evidence*, Oxford University Press.
2. Martin, Stephen – *Advanced Industrial Economics*, Routledge.
3. Shepherd, W. G. – *The Economics of Industrial Organization*, Prentice Hall.
4. Tirole, Jean – *The Theory of Industrial Organization*, MIT Press.
5. Barthwal, R. R. – *Industrial Economics: An Introductory Textbook*, New Age International Publishers.
6. Government of India – *Industrial Policy Documents* (latest editions)
7. Competition Commission of India (CCI) – *Annual Reports and Policy Documents*

Course Outcomes: At the end of the course, the students would be able to:

1. Understand the organization, behaviour, and objectives of firms in different market structures.
2. Analyse industrial location theories, diversification strategies, and productivity measures.
3. Evaluate the role of policy, regulation, and competition in shaping industrial performance.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	S
CO2	S	M	M	S
CO3	S	S	S	M

S = Strong, M = Medium, W = Weak

Semester-III DSC (Practicum)
Financial Model Using Excel (option-I)
Course Code: U25ECO305P

Maximum Marks: 50 **Total Credits: 02**
Internal Assessment: 15 **(Theory)**
External Assessment: 35 **(Practicum)**

Course Objective To equip students with practical skills in financial analysis, investment decision-making, portfolio modeling, and option pricing using Excel-based tools and techniques.

Unit-I

Financial Ratio analysis. Financial planning & control -budgeting & planning cycle, forecasting & projections, measuring quality, Investment Decisions -PV, NPV, IRR, Multiple Internal rate of returns.

Unit-II

Investment Analysis: Portfolio models- Mean & variances, efficient portfolio, Betas & Security Market Line; Value at risk;

Suggested Readings:

1. Carlberg, Canard, *Business Analysis with Microsoft Excel*, QUE Press.
2. Benninga, Simon, *Financial Modelling*, The MIT Press.
3. Palepu, Healy, Bernard, *Business Analysis & Valuation: Using Financial Statements*, Cambridge Business Publishers.
4. Soper, V., *Financial Analysis Using Excel*, VJ Books.
5. Holden, Craig, *Spreadsheet Modelling in Corporate Finance*, Prentice-Hall.

Course Outcomes: At the end of the course, the students would be able to:

1. Gain hands-on experience in analyzing financial statements and planning with Excel.
2. Compute and evaluate investment decisions using techniques like NPV, IRR, and MIRR.
3. Apply financial modeling concepts to portfolio analysis, option pricing, and bond valuation using Excel functions and tools.

The practical exam will be taken by External Examiner

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	S
CO2	S	S	M	S
CO3	S	S	W	M

S = Strong, M = Medium, W = Weak

Semester-III DSC (Practicum)
Basic Econometric Applications (option-II)
Course Code: U25ECO306P

Maximum Marks: 50 **Total Credits: 02**
Internal Assessment: 15 **(Practicum)**
External Assessment: 35

Course Objective: To train students in applying econometric tools to real-world economic data using statistical software.

Unit I

Econometric Modelling and Software Implementation: Introduction to software: R/Stata/Gretl/SPSS (any one); Hands-on with data importing, cleaning, transformation, Estimation of linear regression models, Hypothesis testing and goodness-of-fit, Model specification and functional form, Case studies using economic data: inflation, unemployment, demand estimation.

Unit II

Application to Economic Issues and Model Diagnostics: Application of dummy variables and interaction terms, Dealing with multicollinearity, heteroskedasticity, and autocorrelation.

Suggested Readings

1. Gujarati, D. N. & Porter, D. C. – *Basic Econometrics*, McGraw Hill.
2. Stock, J. H. & Watson, M. W. – *Introduction to Econometrics*, Pearson.
3. Wooldridge, J. M. – *Introductory Econometrics: A Modern Approach*, Cengage Learning.
4. Baum, C. F. – *An Introduction to Modern Econometrics Using Stata*, Stata Press.
5. Field, A. & Miles, J. – *Discovering Statistics Using R*, Sage Publications.
6. Datasets from RBI, World Bank, NFHS, PLFS, and CMIE (as per availability)

The practical exam will be taken by External Examiner

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	S
CO2	S	S	M	S
CO3	S	M	S	M

S = Strong, M = Medium, W = Weak

Semester-III (OEC)
Quantitative Economics (option-I)
Course Code: U25OEC311T(i)

Maximum Marks: 50 **Total Credits: 02**
Internal Assessment: 15 **(Theory)**
External Assessment: 35 **Time Allowed: 02 Hours**

Course Objective: To introduce fundamental mathematical and statistical tools used in economic analysis and decision-making.

Unit I

Mathematical Foundations for Economic Analysis: Functions of one and multiple variables: Demand, Cost, Revenue, Utility, Partial derivatives and applications in constrained optimization (Lagrange method), Input-output analysis and basics of matrix algebra, Comparative statics and equilibrium analysis, Applications in consumer and producer theory.

Unit II

Statistical Tools for Economic Analysis: Data types, classification, and presentation: tables, graphs, frequency distributions, Measures of central tendency and dispersion, Correlation and regression (bivariate), Index numbers and time series basics, Probability distributions: Normal and Binomial (basic introduction only)

Suggested Readings

1. Chiang, A. C. & Wainwright, K. – *Fundamental Methods of Mathematical Economics*, McGraw Hill.
2. Sydsaeter, K., Hammond, P., & Strom, A. – *Essential Mathematics for Economic Analysis*, Pearson.
3. Gujarati, D. N. & Kapoor, S. – *Fundamentals of Mathematical Statistics*, S. Chand.
4. Spiegel, M. R. & Stephens, L. J. – *Schaum's Outline of Statistics*, McGraw Hill.
5. Medhi, J. – *Statistical Methods: An Introductory Text*, New Age International.
6. Government datasets (e.g., RBI Handbook, CSO, MOSPI, NITI Aayog) for illustrative data examples.

Course Outcomes: At the end of the course the students would be able to

1. Understand and apply mathematical functions, optimization, and matrix algebra in economics.
2. Analyze economic relationships using descriptive and inferential statistical techniques.
3. Interpret and evaluate economic data for research and policy-making using quantitative reasoning.

Examiner's Note: The course contents of the courses having 02 credits will be distributed among 2 units and maximum marks will be assigned 50 (35 external: 15 internal). The maximum time duration for attempting the paper will be of 2 hours. The examiner is required to set five questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 3 marks each. In addition to that four more questions will be set, two questions from each unit. The students shall be required to attempt three questions in all selecting one question from each unit consisting of 10 marks each in addition to compulsory question No. 1.

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	S
CO2	S	S	M	S
CO3	S	M	S	S

S = Strong, M = Medium, W = Weak

Semester-III (OEC)
Economics of Infrastructure (option-II)
Course Code: U25OEC311T(ii)

Maximum Marks: 50 **Total Credits: 02**
Internal Assessment: 15 **(Theory)**
External Assessment: 35 **Time Allowed: 02 Hours**

Course Objective To provide a comprehensive understanding of infrastructure as a vital component of economic development, exploring the pricing, efficiency, and policy challenges associated with public utilities and energy sectors.

Unit-I

Infrastructure and economic development- Infrastructure as a public good; Social and physical infrastructure; Special characteristics of public utilities. The peak load, Off load problem; Dual principal controversy; Economies of scale of joint supply; Marginal cost pricing vs. other methods of pricing in public utilities; Cross subsidization - free prices, equity and efficiency.

Unit-II

The structure of transport costs and location of economic activities; Demand for transport - Models of freight and passenger demand; Model choice; Cost functions in the transport sector; Principle of pricing; Special problems of individuals modes of transport; Inter-model condition in the Indian situation.

Suggested Readings:

1. National Council of Applied Economic Research, *India Infrastructure Report: Policy Implications for Growth and Welfare*, New Delhi.
2. Parikh, K.S., *India Development Report*, Oxford University Press, New Delhi.
3. ICSSR, *Economics of Infrastructure*, Vol. VI, ICSSR, New Delhi.
4. Crew, M.A. and P.R. Kleindorfer, *Public Utility Economics*, Macmillan, New York. *(Also check recent updated texts on infrastructure economics)*

Course Outcomes: At the end of the course, the students would be able to:

1. Understand the economic principles underlying infrastructure as a public good and its role in development.
2. Analyze transportation, communication, and energy infrastructure with a focus on cost structures and pricing.
3. Evaluate policy frameworks and explore the efficiency of different models in infrastructure provision and usage.

Examiner's Note: The course contents of the courses having 02 credits will be distributed among 2 units and maximum marks will be assigned 50 (35 external: 15 internal). The maximum time duration for attempting the paper will be of 2 hours. The examiner is required to set five questions in all. The first question will be compulsory consisting of five short questions covering the entire syllabus consisting of 3 marks each. In addition to that four more questions will be set, two questions from each unit. The students shall be required to attempt three questions in all selecting one question from each unit consisting of 10 marks each in addition to compulsory question No. 1.

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	S
CO2	S	S	S	S
CO3	S	S	M	W

S = Strong, M = Medium, W = Weak

Semester-IV

Semester-IV DSC (Core)
Contemporary Issues in Indian Economy
Course Code: U25ECO401T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective To develop an in-depth understanding of structural, fiscal, and external sector issues in the Indian economy and their policy implications.

Unit-I

Changing structure of Indian economy, Imbalance in occupational pattern and contribution to GDP, Determinants of growth rate of GDP in India, Behaviour of saving and investment in recent years, Infrastructure bottlenecks in Indian economy, Impact of institutional factors on development of Indian economy.

Unit-II

Issues of productivity in agriculture sector and trends in its diversification; Issues of competitiveness of Indian manufacturing sector and emergence of knowledge intensive industries in India.

Unit-III

Centre-State finance relations; Recent Finance Commissions, NITI Ayog; other sources of transfer; Tax revenue of the central and state governments; evaluation of Indian tax structure; Goods and services tax in India.

Unit-IV

Recent foreign trade policy in India; Composition and Direction of India's foreign trade, Indian government's policy towards foreign capital; foreign investment inflows, foreign aid and India's external debt.

Suggested Readings:

1. Dhirendra Nath Konar, *Contemporary Issues of Indian Economy*, Akansha Publishing House, Delhi
2. Uma Kapila, *India's Economic Development since 1947*, Academic Foundation
3. Reserve Bank of India, *Handbook of Statistics on Indian Economy*
4. Government of India, Ministry of Finance, *Economic Survey*
5. Government of India, Planning Commission, *Union Budgets*
6. Government of India, Ministry of Commerce, Department of Commerce, *India's Foreign Trade Policy*
7. Government of India, Department of Industrial Policy and Promotion, SIA Newsletters, FDI Factsheets
8. Timothy Besley, *Contemporary Issues in Development Economics*, Palgrave Macmillan
9. Kaushik Basu, *The Oxford Companion to Economics in India*, Oxford University Press, New Delhi
10. Mahendra Dev, S., *Inclusive Growth in India*, Oxford University Press, New Delhi

Course Outcomes: At the end of the course, the students would be able to:

1. Evaluate structural changes, sectoral contributions, and institutional influences on India's economic development.
2. Analyze key issues in agriculture, manufacturing, and knowledge-driven sectors.
3. Examine fiscal dynamics, Centre-State relations, and the impact of foreign trade and capital flows on the Indian economy.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	S	S	M
CO2	S	S	M	S
CO3	S	S	S	W

S = Strong, M = Medium, W = Weak

Semester-IV DSC (Core)
Research Methodology
Course Code: U25ECO402T

Maximum Marks: 100
Internal Assessment: 30
External Assessment: 70

Total Credits: 04
(Theory)
Time Allowed: 3 Hours

Course Objective: To equip students with the foundational concepts and practical tools of research design, data collection, and data analysis in social science research.

Unit-I

Meaning and objectives of research, Meaning and formulation of hypothesis, theory, and models of a theory, Testing of theories and models, Methodology vs. methods of research, Research problem and selection of research problem, Review of literature and its role in selecting a research problem.

Unit-II

Meaning and need for research design, meaning of population, sample, and sample size, Types and characteristics of sample design, Random and non-random samples, Stratified and multistage random samples, Systematic samples.

Unit-III

Methods of data collection: primary and secondary data sources, Brief information about databases of Indian economy, Nature of cross-section, time series, and panel data, Diagrammatic and tabular presentation of data, Pie chart, bar diagram, histogram, scatter diagram, curve tracing, One-way and two-way tables.

Unit-IV

Analysis of data: measures of central tendency and dispersion, Hypothesis testing: parametric and non-parametric tests, Linear regression: simple, partial, and multiple correlation coefficients, Rank correlation, simple and multiple regression models, Multivariate analysis techniques: factor analysis, cluster analysis, conjoint analysis, multidimensional scaling, discriminant analysis, Analysis of variance (ANOVA), Report writing.

Suggested Readings

1. C.R. Kothari & Gaurav Garg, *Research Methodology: Methods and Techniques*, New Age International Publishers, New Delhi.
2. Don E. Ethridge, *Research Methodology in Applied Economics*, Wiley-Blackwell.
3. W.G. Cochran, *Sampling Techniques*, John Wiley & Sons, New York.
4. W.J. Goode and P.K. Hatt, *Methods in Social Research*, McGraw-Hill Education.
5. T.S. Wilkinson & P.L. Bhandarkar, *Methodology and Techniques of Social Research*, Himalaya Publishing House, Mumbai.

Course Outcomes: At the end of the course, student would be able to:

1. Understand the principles and methods of formulating research problems and hypotheses.
2. Gain knowledge about sampling techniques, data sources, and research design.
3. Analyse and interpret data using various statistical and multivariate tools.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	M
CO2	S	S	M	S
CO3	S	S	S	M

S = Strong, M = Medium, W = Weak

Semester-IV DSC (Core)
Economics of Social Sector (option-I)
Course Code: U25ECO403T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To provide an analytical understanding of the role of education, health, environment, and public policy in human development and economic growth.

Unit-I

Economics of Education: Education as an investment in human capital, Rate of return to education: private and social returns, Education and economic growth, Costs of education: direct, indirect, and opportunity costs, Education financing in India: public and private sectors, Issues in access, quality, and inequality in education.

Unit-II

Economics of Health: Health and economic development: concepts and linkages, Demand and supply of healthcare services, Cost–benefit and cost–effectiveness analysis in health economics, Health financing in India: insurance, public-private models, Inequality in health outcomes and accessibility, National Health Policy and recent initiatives (Ayushman Bharat, etc.)

Unit-III

Environment and Sustainable Development: Environment as a public good, Market failure and externalities, Valuation of environmental resources: methods and challenges, Sustainable development goals (SDGs) and economic policies, Environmental regulations and policies in India, Climate change and its economic impact.

Unit-IV

Social Sector Planning and Policy: Role of the state and market in social sector development, Social protection and social security: conceptual framework, Gender budgeting and inclusive development, Public expenditure on social sectors: trends and efficiency, Monitoring and evaluation of social sector schemes, Inter-sectoral linkages and integrated policy approaches.

Suggested Readings

1. Jean Dreze & Amartya Sen, *India: Development and Participation*, Oxford University Press.
2. Anand, S. & Hanson, K. (eds.), *Health Economics*, Oxford University Press.
3. Tilak, J.B.G., *Economics of Inequality in Education*, Sage Publications.
4. Berman, P., *National Health Accounts and Health System Financing*, WHO Reports.
5. World Bank, *World Development Report* (annual issues) – Education, Health, and Gender editions.
6. United Nations Development Programme (UNDP), *Human Development Reports*.
7. Sankar, U., *Environmental Economics*, Oxford University Press.
8. Government of India, *Economic Survey* and *NITI Aayog Reports* on social sectors.

Course Outcomes: At the of the course students would be able to

1. Understand the economic rationale for public intervention in education and health sectors.
2. Able to evaluate the effectiveness and equity aspects of social sector policies.
3. Develop the ability to critically analyze environmental and gender-related social issues from an economic perspective.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	M
CO2	S	S	M	S
CO3	S	S	M	M

S = Strong, M = Medium, W = Weak

Semester-IV DSC (Core)
Financial Economics (option-II)
Course Code: U25ECO404T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective

To introduce students to the fundamental concepts of interest theory, portfolio analysis, asset pricing models, and derivatives in financial markets.

Unit-I

Basic theory of interest; discounting and present value; internal rate of return; evaluation criteria; fixed-income securities; bond prices and yields; interest rate sensitivity and duration; immunization; the term structure of interest rates; yield curves; spot rates and forward rates.

Unit-II

Portfolio Analysis (Single-period random cash flows): Random asset returns; portfolios of assets; portfolio mean and variance; feasible combinations of mean and variance; mean-variance portfolio analysis: the Markowitz model and the two-fund theorem; risk-free assets and the one-fund theorem.

Unit-III

CAPM: The capital market line; the capital asset pricing model; the beta of an asset and of a portfolio; security market line; use of the CAPM model in investment analysis and as a pricing formula.

Unit-IV

Options and Derivatives: Introduction to derivatives and options; forward and futures contracts; options; forward and future prices; stock index futures; interest rate futures; the use of futures for Hedging.

Suggested Readings:

1. David G. Luenberger (1997), Investment Science, Oxford University Press, USA.
2. Hull, John C. (2005), Options, Futures and Other Derivatives, Pearson Education, 6th edition.
3. Thomas E. Copeland, J. Fred Weston and Kuldeep Shastri, (2003), Financial Theory and Corporate Policy, Prentice Hall, 4th edition.
4. Richard A. Brealey and Stewart C. Myers, (2002), Principles of Corporate Finance, McGraw- Hill, 7th edition.
5. Stephen A. Ross, Randolph W. Westerfield and Bradford D. Jordan (2005), Fundamentals of Corporate Finance. McGraw-Hill, 7th edition.
6. Burton G. Malkiel (2003), A Random Walk Down Wall Street, W.W. Norton & Company. William Sharpe (2003), Gordon Alexander and Jeffery Bailey, Investments, Prentice Hall of India, 6th edition.

Course Outcomes: At the end of the course, the students would be able to:

1. Apply concepts of interest rates, bond pricing, and term structures in financial evaluations.
2. Analyse risk-return trade-offs using portfolio theory and the Capital Asset Pricing Model (CAPM).
3. Understand and utilize derivative instruments like options, forwards, and futures for investment and hedging

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	M
CO2	S	S	M	S
CO3	S	S	S	M

S = Strong, M = Medium, W = Weak

Semester-IV DSC (Elective)
Economics of Business Strategy (option-I)
Course Code: U25ECO411T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To develop a theoretical and practical understanding of firm behavior, business strategies, and market structures using microeconomic tools and game theory.

Unit-I

Theory of the Firm and its Objectives, Boundary of a firm, Change in boundary of a firm (Mergers and acquisitions),

Unit-II

Entry Deterrence, Accommodation and Exit Mergers and acquisitions, Fixed costs as barriers to entry, sunk costs and pre-commitment, the taxonomy of business strategies, entry deterrence, limit pricing, predation.

Unit-III

Product Differentiation and Pricing Strategies, Characteristic Approach, the notion of product space, equilibrium in price and location, Pricing- Cost plus pricing, bundling, auction, quality and pricing, limit pricing theory

Unit-IV

Rationale of Firm in Market economy, Resource Based view of Firm, Component of Value Creation, - Architecture, Reputation, and Knowledge, Competitive Advantage of a Firm: Concept, Value Creation, Cost Advantage, Origin of Competitive Advantage- Creative Destruction, Innovation, etc.

Suggested Readings:

1. Andreu Mas-Colell, Michael D. Whinston & Jerry R. Green – *Microeconomic Theory*, Oxford University Press. *(Latest: International Student Edition, 2023)*
2. Timothy C.G. Fisher & Robert G. Waschik – *Managerial Economics: A Game Theoretic Approach*, Routledge. *(Latest: 3rd Edition, 2018)*
3. Paul Milgrom & John Roberts – *Economics, Organization, and Management*, Prentice Hall. *(Classic text, no newer editions – 1st Edition, 1992)*
4. D.N. Sengupta & Anindya Sen – *Economics of Business Policy*, Oxford University Press. *(Latest available edition)*
5. Steven E. Landsburg – *Price Theory & Applications*, Cengage Learning. *(Latest: 9th Edition, 2014)*
6. Walter Nicholson – *Microeconomic Theory: Basic Principles and Extensions*, Thomson. *(Latest: 12th Edition by Nicholson & Snyder, 2016)*

Course Outcomes: At the end of the course, the students would be able to:

1. understand firm objectives, boundaries, and strategic decisions such as mergers and acquisitions.
2. analyze market strategies like entry deterrence, pricing mechanisms, and product differentiation.
3. assess how firms gain and sustain competitive advantage in dynamic market environments

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Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks.

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	M
CO2	S	S	M	S
CO3	S	S	M	M

S = Strong, M = Medium, W = Weak

Semester-IV DSC (Elective)
Behavioural Economics (option-II)
Course Code: U25ECO412T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective: To explore the psychological foundations of economic behavior and their implications for decision-making, policy design, and market dynamics.

Unit-I

Introduction of Behavioural Economics, Brain functions and Mental Accounting: History and Evolution of Behavioural Economics, Relationship with Other Disciplines, Introduction of major part of the brain and its functions, Uses of brain-specific parts in the decision-making with the outer world, Major types of Hormones and their functions toward behavioural aspects; Nature and Components of Mental Accounting; Framing and Editing; Budgeting and Fungibility; Choice Bracketing and Dynamics; Policy Implications

Unit-II

Intertemporal Choice: The Discounted Utility Model (DUM): Introduction, Origins, Features, Methodology, and Anomalies; Alternative Intertemporal Choice Models: Time Preferences, Inconsistent Preferences, Hyperbolic Discounting, Modifying the Instantaneous Utility Function, and Radical Models; Empirical Evidence; Policy Implications

Unit-III

Strategic Interaction: Behavioural Game Theory: Nature, Equilibrium, Mixed Strategies, Bargaining, Iterated Games, Learning, and Signaling; Social Preferences: Nature, Factors, Modeling (Inequality-Aversion and Reciprocity Models), Empirical Evidence, and Policy Implications

Unit-IV

Behavioural Insights in Markets and Public Policy: Consumer behavior: Defaults, nudges, and choice architecture; Conventional Approaches to Modifying Expected Utility Theory (EUT), Prospect Theory , Behavioural insights in financial markets: Herd behavior, bubbles, and overtrading; Designing policies using nudges: Applications in health, education, and environment; Critiques and ethical considerations of nudging

Suggested Readings:

1. Wilkinson, N., & Klaes, M. (2012). *An introduction to behavioral economics* (2nd ed.). Palgrave Macmillan.
2. Camerer, C. F. (2003). *Behavioral game theory: Experiments in strategic interaction*. Princeton University Press.
3. Fehr, E., & Schmidt, K. M. (2006). The economics of fairness, reciprocity, and altruism: Experimental evidence and new theories. In S.-C. Kolm & J. M. Ythier (Eds.), *Handbook of the economics of giving, altruism and reciprocity: Foundations* (Vol. 1, pp. 615–691).
4. Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press.
5. Sunstein, C. R. (2016). *The ethics of influence: Government in the age of behavioral science*. Cambridge University Press.
6. Laibson, D., & List, J. A. (2020). *Behavioral economics*. Edward Elgar Publishing.
7. Kumar M. (2025), Behavioural Economics and Sustainable Consumption, Delta Publication

Course Outcomes: At the end of the course, the students would be able to:

1. Understand how psychological and neurological factors influence individual decision-making and mental accounting.
2. Analyze intertemporal choices and time-inconsistent behaviors using alternative economic models.
3. Apply behavioral game theory to strategic decision-making and understand the role of social preferences.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	
CO2	S	S	M	S
CO3	S	S	M	M

S = Strong, M = Medium, W = Weak

Semester-IV DSC (Elective)
Advanced Econometrics (option-III)
Course Code: U25ECO413T

Maximum Marks: 100 **Total Credits: 04**
Internal Assessment: 30 **(Theory)**
External Assessment: 70 **Time Allowed: 3 Hours**

Course Objective To introduce students to the basic concepts, techniques, and applications of econometrics with an emphasis on regression analysis and model diagnostics in economic research.

Unit-I

Extension of Linear Regression Models; partial effects and elasticity, Properties of OLS estimators, Model evaluation

Unit-II

Problems of Linear Regression Model: Consequences and detection of multicollinearity, heteroskedasticity, and autocorrelation, Error of Specification, Error of Measurement; and remedial measures

Unit-III

Dummy variables-Nature and uses, Regression on dummy variables, Regression on Dummy Dependent Variable-The basic idea of the Linear Probability Model (LPM), Probit and Logit Models.

Unit-IV

Simultaneous Equation Models: Structural, Reduced and final forms, Identification-Order and rank conditions, Methods for estimating the simultaneous models-Basic idea of Indirect Least Square (ILS) and Two Stage Least Square (2SLS) methods. Seemingly Unrelated Regressions (SUR), SUR versus OLS.

Suggested Readings:

1. Wooldridge, Jeffrey M. – *Introductory Econometrics: A Modern Approach*, South-Western Cengage Learning. *(Latest: 7th Edition, 2024)*
2. Ramanathan, R. – *Introductory Econometrics with Applications*, Thomson Asia Private Limited. *(Latest: 5th Edition, 2002 – most recent available)*
3. Gujarati, Damodar N. & Porter, Dawn C. – *Basic Econometrics*, McGraw Hill. *(Latest: 6th Edition, 2021)*
4. Johnston, J. & DiNardo, John – *Econometric Methods*, McGraw Hill. *(Latest: 4th Edition, 1997 – still in academic use)*
5. Brooks, Chris – *Introductory Econometrics for Finance*, Cambridge University Press. *(Latest: 4th Edition, 2019)*

Course Outcomes: At the end of the course, the students would be able to:

1. Students will understand and apply linear regression models using economic data.
2. They will be able to diagnose econometric issues such as multicollinearity, heteroskedasticity, and autocorrelation.
3. Students will gain hands-on knowledge in working with dummy variables, Chow test, and simultaneous equation models.

Examiner's Note: The course contents of the courses having 04 credits will be distributed among 4 units and maximum marks will be assigned 100 marks (70 external: 30 internal). The maximum time duration for attempting the paper will be3 hours. The examiner is required to set nine questions in all. The first question will be compulsory consisting of seven short questions covering the entire syllabus of 02 marks each. In addition to that eight more question will be set, two questions from each unit. The students shall be required to attempt any five questions in all selecting one question from each unit in addition to compulsory question No. 1. All questions shall carry equal marks

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	
CO2	S	S	M	S
CO3	S	S	M	M

S = Strong, M = Medium, W = Weak

Semester-IV DSC (Practicum)
Practices of Economic Data Analysis (option-I)
Course Code: U25ECO405P

Maximum Marks: 50 **Total Credits: 02**
Internal Assessment: 15 **(Theory)**
External Assessment: 35 **Time Allowed: 02 Hours**

Course Objective: To equip students with hands-on skills in organizing, analyzing, and interpreting economic data using statistical and econometric tools.

Unit-I

Data Acquisition and Preparation: Sources of economic data: government databases (NSSO, NFHS, MOSPI, ASI, CMIE), international databases (World Bank, IMF, DHS, UNDP), Importing, merging, filtering, reshaping datasets (wide/long format), Data cleaning: missing data treatment, outlier detection, and data transformation, Variable creation, dummy variables, date/time formatting, Basics of reproducible data workflows and documentation.
Practical Software: R / Stata / Excel

Unit-II

Exploratory and Descriptive Data Analysis: Summary statistics (central tendency, dispersion, shape), Data visualization: bar charts, histograms, boxplots, scatterplots, heatmaps, Cross-tabulations and pivot tables for categorical data, Correlation analysis and simple linear regression diagnostics.

Suggested Readings:

1. Wooldridge, J. M. (2020). *Introductory Econometrics: A Modern Approach*. Cengage.
2. Gujarati, D. N., & Porter, D. C. (2009). *Basic Econometrics*. McGraw-Hill.
3. Healy, K. (2018). *Data Visualization: A Practical Introduction*. Princeton University Press.
4. Peng, R. D., & Matsui, E. (2015). *The Art of Data Science*. Leanpub.
5. Field, A. (2013). *Discovering Statistics Using R*. Sage.
6. CMIE, NSSO, RBI, and World Bank database documentation (online sources).

Course Outcomes: At the end of the course students would be able to:

1. Apply appropriate data cleaning and management techniques to economic datasets.
2. Conduct exploratory and inferential statistical analysis using real-world economic data.
3. Interpret analytical outputs and prepare data-driven economic insights and reports.

The practical Exam will be taken by outside examiner

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	S
CO2	S	M	M	S
CO3	S	S	S	M

S = Strong, M = Medium, W = Weak

Semester-IV DSC (Practicum)
Advanced Econometric Applications (option-II)
Course Code: U25ECO406P

Maximum Marks: 50 **Total Credits: 02**
Internal Assessment: 15 **(Theory)**
External Assessment: 35 **Time Allowed: 02 Hours**

Course Objective To provide students with advanced tools of econometric analysis such as Panel data methods, and time series techniques to apply in real-world economic research and policy evaluation.

Unit-I

Practical on Panel Data Models using Software Tools: **R / Stata / EViews:**
Importing and reshaping panel datasets (wide to long format), Descriptive statistics and visualizations for panel data (line plots by individual over time), Estimation and interpretation of Pooled OLS model, Apply and compare Fixed Effects (FE) and Random Effects (RE) models using; Within estimator (FE), Between estimator, Perform Hausman Test to choose between FE and RE, Estimate Two-way FE model (individual + time effects), Apply Random Coefficients model using simulation or GMM-based methods (where available), Estimate Dynamic Panel Models using, Diagnostic testing (autocorrelation, heteroskedasticity in panel setting), Interpretation of fixed vs. random intercepts and time effects.

Unit-II

Practical on Stationary Time Series Models using R / Stata / EViews software: Time Series Exploration, Plotting and analyzing ACF and PACF, Performing Dickey-Fuller tests for stationarity (ADF test), Seasonal decomposition of time series (additive/multiplicative), Model Estimation, Fit AR, MA, and ARMA models to stationary data, Identify correct order using ACF/PACF and information criteria (AIC, BIC), Box-Jenkins Methodology, Model identification, estimation, diagnostic checking, and forecasting.

Suggested Readings:

1. Hamilton, J. D. – *Time Series Analysis*, Princeton University Press.
   (Latest: 2020 Reprint Edition)
2. Enders, Walter – *Applied Econometric Time Series*, John Wiley and Sons.
   (Latest: 5th Edition, 2022)
3. Wooldridge, J. M. – *Econometric Analysis of Cross Section and Panel Data*, MIT Press.
   (Latest: 2nd Edition, 2010 – most recent available)
4. Greene, W. H. – *Econometric Analysis*, Pearson Education Inc.
   (Latest: 8th Edition, 2018)

Course Outcomes: At the end of the course, the students would be able to:

1. Gain expertise in modeling economic relationships using advanced econometric techniques.
2. Analyse Panel data, and time series models.
3. Prepares them for empirical research and policy evaluation using real-world data.

The practical Exam will be taken by outside examiner

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	
CO2	S	S	M	S
CO3	S	S	M	M

S = Strong, M = Medium, W = Weak

Semester-IV
Skill Enhancement Course (SEC)
Field Survey and Report Writing (option-I)
Course Code: U25SEC411P(i)

Maximum Marks: 50 **Total Credits: 02**
Internal Assessment: 15 **(Theory)**
External Assessment: 35 **Time Allowed: 02 Hours**

Course Objective: To develop practical skills in designing, conducting field surveys, and preparing structured analytical reports on socio-economic issues.

Unit-I

Designing and Conducting Field Surveys: Basics of survey research: purpose, scope, and relevance in economics, Types of surveys: household, enterprise, labour market, rural/urban, Questionnaire design: types of questions, Likert scales, sequencing, piloting, Sampling techniques: random, stratified, purposive, and snowball sampling, Fieldwork planning: team organization, ethics, consent, and data entry protocols

Practical Component: Design and test a structured questionnaire; develop a sampling frame and field schedule.

Unit-II

Data Analysis and Report Writing: Data coding, tabulation, and basic analysis (descriptive statistics and simple cross-tabulations), Structuring the report: executive summary, introduction, methodology, findings, conclusions, Use of tables, graphs, and charts in reports, Common errors in report writing; referencing and citation formats, Preparing policy briefs or presentation slides from survey reports.

Practical Component: Analyze collected data and write a short survey report (individual or group-based).

Suggested Readings:

1. Groves, R. M. et al. (2009). *Survey Methodology*. Wiley.
2. Blair, J., & Blair, E. A. (2015). *Applied Survey Sampling*. Sage.
3. Fowler, F. J. (2014). *Survey Research Methods*. Sage.
4. Goode, W. J., & Hatt, P. K. (2006). *Methods in Social Research*. McGraw-Hill.
5. Young, P. V. (2004). *Scientific Social Surveys and Research*. Prentice Hall.
6. NSSO & NFHS technical manuals (for reference to field methods and survey forms).

Course Outcomes: At the end of the course students would be able to:

1. Design and implement structured questionnaires for primary data collection.
2. Apply appropriate sampling and data collection techniques in the field.
3. Analyse field data and prepare concise, evidence-based reports.

The practical Exam will be taken by outside examiner

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	S	M
CO2	S	S	M	S
CO3	S	S	S	M

S = Strong, M = Medium, W = Weak

Semester-IV SEC
Basic of Data Visualization and Dashboard Creation (option-II)
Course Code: U25SEC411P(ii)

Maximum Marks: 50 **Total Credits: 02**
Internal Assessment: 15 **(Theory)**
External Assessment: 35 **Time Allowed: 02 Hours**

Course Objective: To provide foundational skills in data visualization and interactive dashboard creation for effective communication of economic data insights.

Unit-I

Fundamentals of Data Visualization: Principles of data visualization; clarity, accuracy, and aesthetics, Types of visualizations: bar, line, pie, histogram, scatterplot, heatmap, boxplot, Choosing the right chart: data types and purpose-based selection, Colour schemes, labels, and design practices for effective visuals.
Hands-on with tools: Excel / Google Sheets / Tableau.
Practical Component: Create a series of static visualizations using real economic datasets.

Unit-II

Basics of Dashboard Creation: Introduction to dashboards: purpose, audience, and layout design, Data linking and dynamic visuals (filters, slicers, drop-downs), Creating dashboards in Excel, Google Data Studio, combining multiple charts, KPIs, and maps into a single interface, Exporting and presenting dashboards.
Practical Component: Build an interactive dashboard for a selected socio-economic dataset (e.g., inflation, unemployment, public expenditure).

Suggested Readings and Resources:

1. Cairo, A. (2019). *How Charts Lie: Getting Smarter About Visual Information*. Norton.
2. Knaflic, C. N. (2015). *Storytelling with Data: A Data Visualization Guide for Business Professionals*. Wiley.
3. Few, S. (2012). *Show Me the Numbers: Designing Tables and Graphs to Enlighten*. Analytics Press.
4. Murray, D. (2016). *Tableau Your Data!*. Wiley.
5. Microsoft Excel Help Center & Google Data Studio Tutorials (online).

Course Outcomes:

1. Create clear and informative data visualizations using basic tools.
2. Develop interactive dashboards using spreadsheet and visualization software.
3. Interpret visual outputs and design layouts for data-driven storytelling.

The practical Exam will be taken by outside examiner

Mapping of CO with PO

Outcomes	PO1	PO2	PO3	PO4
CO1	S	M	M	S
CO2	S	S	M	S
CO3	S	M	S	M

S = Strong, M = Medium, W = Weak

Option B in IV Semester (Student can opt either Option A or Option B in Semester IV)

SEM-IV (Option B)	**Disciplinary Specific + Disciplinary Elective + Dissertation/Project Work @12 Credits (Students of IV Semester M.Sc. Economics can also opt Research Project in lieu of 03 Papers @12 credits)+SEC@2 Credits**	**SEC @ 2 Credits** **(U25SEC401P)(i)** **Field Survey and Report Writing** **Or** **Basics of Data Visualization and Dashboard Creation** **(U25SEC401P)(ii)** **Same as above in Option A**