गोंय विद्यापीठ
ताळगांव पठार,
गोंय – ४०३ २०६
फोन : +९१-८६६९६०९०४८

(Accredited by NAAC)

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GU/Acad –PG/BoS -NEP/2025-26/177 Date: 26.06.2025

CIRCULAR

The Academic Council & Executive Council of the University has approved Ordinance OA-35A relating to PG Programmes offered at the University campus and its affiliated Colleges based on UGC 'Curriculum and Credit Framework for Postgraduate Programmes'. Accordingly, the University has proposed introduction of Ordinance OA-35A from the Academic year 2025-2026 onwards.

The Programme structure and syllabus of Semester I and II of the **Master of Arts in Economics** Programme approved by the Academic Council in its meeting held on 13th & 14th June 2025 is attached.

The Dean & Vice-Dean (Academic) of the Goa Business School and the Principals of the affiliated Colleges offering the **Master of Arts in Economics** Programme are requested to take note of the above and bring the contents of the Circular to the notice of all concerned**.**

ASHWIN VYAS LAWANDE
Digitally signed by ASHWIN VYAS LAWANDE
Date: 2025.06.26 17:42:18 +05'30'

(Ashwin V. Lawande)
Deputy Registrar – Academic

To,
1. The Dean, Goa Business School, Goa University.
2. The Vice-Dean (Academic), Goa Business School, Goa University.
3. The Principals of the affiliated Colleges offering the Master of Arts in Economics Programme

Copy to:
1. Chairperson, BoS in Economics, Goa University.
2. Programme Director, M.A. Economics, Goa University.
3. Controller of Examinations, Goa University.
4. Assistant Registrar Examinations (PG), Goa University.
5. Director, Directorate of Internal Quality Assurance, Goa University for uploading the Syllabus on the University website.

GOA UNIVERSITY

Master of Arts in Economics

(Effective from the Academic Year 2025-26)

ABOUT THE PROGRAMME

The MA Programme in Economics is of two years (four semesters) in which students have to earn 80 credits as per the university rules to successfully complete the degree requirements. It blends modern and conventional areas of Economics with an emphasis on quantitative techniques. Students have the option of earning all credits through in-class courses or partial research and online courses.

The core teaching includes microeconomics, macroeconomics, statistics, mathematical economics, econometrics, public economics, international economics, and development economics.

OBJECTIVES OF THE PROGRAMME

The M.A. Programme aims to provide a strong theoretical overview of the subject domain with an emphasis on quantitative techniques. In order to give a flavour of different areas of economic studies, students are offered a wide range of elective courses including Econometrics, Environmental Economics, Financial Economics and Human Resource Development, Labour Economics, Regional Integration, Indian Economic Thought and the Goan Economy. The programme is designed to empower students to join the academic world of teaching and research, the financial and banking sector, or the administrative apparatus.

Approved by: Academic Council on 13th & 14th June 2025

PROGRAMME SPECIFIC OUTCOMES (PSO)	
PSO 1.	Understand how to allocate resources optimally using economic tools
PSO 2.	Use mathematical and statistical methods to aid economic decision-making
PSO 3.	Analyse economic problems faced by developing economies
PSO 4.	Critically evaluate existing domestic and global economic policies
PSO 5.	Predict behavioural response to changes in price, market conditions, policy and external conditions
PSO 6	Design policies for growth, development and welfare outcomes

PROGRAMME STRUCTURE

MA Economics Effective from Academic Year 2025-26

Bridge Course			
Sr. No.	**Course Code**	**Title of the Course**	**Credits**
1	ECO-1000	Basic Calculus for Economics	1
2	ECO-1001	Basic Matrix Algebra for Economics	1
3	ECO-1002	Basic Probability	1
4	ECO-1003	Fundamentals of Econometrics	1

SEMESTER I				
Discipline Specific Core (DSC) Courses (16 credits)				
Sr. No.	**Course Code**	**Title of the Course**	**Credits**	**Level**
1	ECO-5000	Microeconomics	4	400
2	ECO-5001	Macroeconomics	4	400
3	ECO-5002	Public Economics and Public Policy	4	400
4	ECO-5003	Statistics For Economic Analysis	4	400
Total Credits for DSC Courses in Semester I			**16**	
Discipline Specific Elective (DSE) Course (4 credits)				
Sr. No.	**Course Code**	**Title of the Course**	**Credits**	**Level**
1	ECO-5201	Indian Economy	4	400
2	ECO-5202	Indian Public Finance	4	400
3	ECO-5203	Human Resource Development	4	400
Total Credits for DSE Courses in Semester I			**4**	
Total Credits in Semester I			**20**	

SEMESTER II				
Discipline Specific Core (DSC) Courses				
Sr. No.	**Course Code**	**Title of the Course**	**Credits**	**Level**
1	ECO-5004	Mathematics for Economic Analysis	4	500
2	ECO-5005	Economic Growth and Development	4	500
3	ECO-5006	International Trade and Finance	4	500
4	ECO-5007	Introduction to Econometrics	4	500
Total Credits for DSC Courses in Semester II			**16**	
Discipline Specific Elective (DSE) Courses (4 credits)				
Sr. No.	**Course Code**	**Title of the Course**	**Credits**	**Level**
1	ECO-5204	Labour Economics	4	400
2	ECO-5205	Goan Economy	4	400
3	ECO-5206	Indian Economic Thought	4	400
Total Credits for DSE Courses in Semester II			**4**	
Total Credits in Semester II			**20**	

BRIDGE COURSES

Title of the Course	Basic Calculus for Economics
Course Code	ECO-1000
Number of Credits	01
Theory/Practical	Theory
Level	300
Effective from AY	2025-26
New Course	Yes
Bridge Course/ Value added Course	Bridge Course
Course for advanced learners	No

Pre-requisites for the Course:	Nil	
Course Objectives:	To provide students with a foundational understanding of basic calculus concepts and their applications in economic reasoning and problem-solving.	
Course Outcomes:		**Mapped to PSO**
	CO 1. Identify and interpret basic functions and graphs used in economic analysis.	PSO1, PSO2
	CO 2. Understand the concept of limits, continuity, and basic rules of differentiation.	
	CO 3. Apply differentiation techniques to calculate marginal values and elasticities in economics.	
	CO 4. Analyse simple economic problems involving optimisation using first derivatives.	

Content:		No of hours	Mapped to CO	Cognitive Level
Module 1:	**Understanding Functions and Differentiation:** Concept of a function with economic illustrations (demand, cost, revenue), Graphical interpretation and slope, Concept of a limit and continuity, Rules of differentiation (polynomial, power rule, constant, sum rule), Marginal concepts: marginal cost, marginal utility, marginal revenue; **Applications of Derivatives in Economics:** Elasticity of demand, Maxima and minima in economic problems (profit maximisation, cost minimisation), Sketching curves using first derivative, Brief introduction to multivariable functions and partial derivatives, Common mistakes and how to avoid them in economic problem-solving	**15**	CO1, CO2, CO3, CO4	K1, K2, K3, K4
Pedagogy:	• Chalk and talk aided by ICT enabled lectures • Flipped Classroom • PC lab exercises • Assignments and presentations • Group activity • MOOC (or similar) Component			
Texts:	Core reading 1. Sydsaeter, K., Hammond, P., Strom, A., & Carvajal, A. (2018). *Essentials of Mathematics for Economic Analysis*, Pearson			
References/ Readings:	Supplementary reading 1. Simon, Carl P. & L. Blume (2018) Mathematics for Economists W.W. Norton, New York 2. A.C. Chiang and K. Wainwright (2017) Fundamental Methods in Mathematical Economic McGraw Hill, New York			

Title of the Course	Basic Matrix Algebra for Economics
Course Code	ECO-1001
Number of Credits	01
Theory/Practical	Theory
Level	300
Effective from AY	2025-26
New Course	Yes
Bridge Course/ Value added Course	Bridge Course
Course for advanced learners	No

Pre-requisites for the Course:	Nil			
Course Objectives:	To introduce the fundamental concepts of matrix algebra and develop basic computational skills required for interpreting economic data and models using matrix methods.			
Course Outcomes:			**Mapped to PSO**	
	CO 1. Identify and describe basic elements of matrices and vectors used in economics.		PSO1, PSO2	
	CO 2. Perform elementary operations such as matrix addition, scalar multiplication, and transposition.			
	CO 3. Solve basic systems of linear equations using matrix notation.			
	CO 4. Recognise how matrices are used in simplified economic models (e.g., input-output tables).			
Content:		**No of**	**Mapped**	**Cognitive**

		hours	to CO	Level
Module 1:	**Introduction to Matrices:** Concept of a matrix and vector, Types of matrices, Basic operations: addition, scalar multiplication, transposition, Matrix representation of simple data; **Matrix Applications in Economics:** Solving small systems of equations (2×2), Introduction to input-output tables and Leontief's idea, Interpretation of matrix results in basic economic settings	**15**	CO1, CO2, CO3, CO4	K1, K2, K3, K4
Pedagogy:	• Chalk and talk aided by ICT enabled lectures • Flipped Classroom • PC lab exercises • Assignments and presentations • Group activity • MOOC (or similar) Component			
Texts:	Core reading 1. Sydsaeter, K., Hammond, P., Strom, A., & Carvajal, A. (2018). *Essentials of Mathematics for Economic Analysis*, Pearson			
References/ Readings:	Supplementary reading 1. Simon, Carl P. & L. Blume (2018) Mathematics for Economists W.W. Norton, New York 2. A.C. Chiang and K. Wainwright (2017) Fundamental Methods in Mathematical Economic McGraw Hill, New York			

Title of the Course	Basic Probability
Course Code	ECO-1002
Number of Credits	01
Theory/Practical	Theory
Level	300
Effective from AY	2025-26
New Course	Yes
Bridge Course/ Value added Course	Bridge Course
Course for advanced learners	No

Pre-requisites for the Course:	Nil			
Course Objectives:	To introduce fundamental concepts of probability theory and develop basic skills necessary for understanding economic data and decision-making under uncertainty.			
Course Outcomes:			**Mapped to PSO**	
	CO 1. Identify and define key probability terms, including sample space, event, and outcome		PSO 2	
	CO 2. Apply basic probability rules to compute the probability of events			
	CO 3. Understand and interpret conditional probability and independence			
	CO 4. Use counting principles to determine the number of possible outcomes in simple experiments			
Content:		**No of hours**	**Mapped to CO**	**Cognitive Level**

Module 1:	**Probability Fundamentals:** Experiment, outcome, and sample space, Defining events: mutually exclusive, independent, complementary, Classical, empirical, and subjective approaches to probability, Basic rules: Addition rule and Multiplication rule; **Conditional Probability and Counting Rules:** Marginal and conditional probability, Independence of events, Tree diagrams and simple applications, Counting principles: factorials, combinations, and permutations	**15**	CO1, CO2, CO3, CO4	K1, K2, K3
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom ● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component			
Texts:	**Core Reading:** 1. Mann, Prem S. (2016). Introductory Statistics, Latest Edition, Wiley. 2. Grimmett, G., & Welsh, D. (2014). Probability: An introduction (2nd ed.). Oxford University Press.			
References/ Readings:	1. David Spiegelhalter (2020) The Art of Statistics: Learning from Data, Pelican Books, UK 2. David Freedman, Robert Pisani, Roger Purves (2007) Statistics, W.W. Norton, New York			

Title of the Course	Fundamentals of Econometrics
Course Code	ECO-1003
Number of Credits	01
Theory/Practical	Theory
Level	300
Effective from AY	2025-26
New Course	Yes
Bridge Course/ Value added Course	Bridge Course
Course for advanced learners	No

Pre-requisites for the Course:	Nil		
Course Objectives:	Introduce students to basic applied knowledge of introductory econometrics		
Course Outcomes:		**Mapped to PSO**	
	CO 1. To understand the basic concepts of econometrics		
	CO 2. To comprehend the assumptions of classical linear regression		
	CO 3. To familiarize the students with simple and multiple regression model.		
Content:		**Mapped to CO**	**Cognitive Level**
Module 1:	Introduction to Econometrics and an overview of its applications; Simple Regression with Classical Assumptions; Least Squares Estimation and BLUE, Properties of estimators,	CO 1, CO 2,	K1, K2, K3

	Multiple Regression Model	CO 3	
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom ● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component		
Texts:	1. Gujarati, N. Damodar. Basic Econometrics. New Delhi: McGraw-Hill. (Latest edition) 2. Gujarati, N. Damodar. Econometrics by Examples. New Delhi: McGraw-Hill. (Latest edition)		
Web Resources:	1. https://www.youtube.com/@SpartacanUsuals/playlists 2. https://www.burkeyacademy.com/statistics-econometrics 3. https://www.youtube.com/@EconometricsWithJan 4. https://www.youtube.com/@NickHuntingtonKlein		

SEMESTER I

Discipline Specific Core Courses

Title of the Course	Microeconomics
Course Code	ECO-5000
Number of Credits	04
Theory/Practical	Theory
Level	400
Effective from AY	2025-26
New Course	No
Bridge Course/ Value added Course	No
Course for advanced learners	No

Pre-requisites for the Course:	Nil	
Course Objectives:	The objective of the course is to expose the students the applications of modern theories demand, production and the complex decision making problems faced by the firms.	
Course Outcomes:		**Mapped to PSO**
	CO 1. Analyze and solve practical problems related to consumer choices and equilibrium.	PSO1, PSO2, PSO5
	CO 2. Describe methods of production and techniques of resource allocation.	PSO1, PSO2, PSO5

	CO 3. Describe the different market structures and their consequences on equilibrium outcomes.		PSO1, PSO2, PSO3, PSO5	
	CO 4. Explain the principles of economic welfare and the role of information in decision-making.		PSO1, PSO2, PSO3, PSO5	
Content:		**No of hours**	**Mapped to CO**	**Cognitive Level**
Module 1:	Theory of Consumer Behaviour Consumer's tastes. Indifference Curves-Consumer's choice and equilibriumIncome and substitution effects- Derivation of demand curve Applications of Indifference curves - Revealed preference theorem-market demand models-constant elasticity and distributed lag models. Developments in the theory demand- Constant elasticity demand function-Dynamic versions of demand functions-Nerlove, Houthakker and Taylor-Linear expenditure system.	**15**	CO1	K1, K2, K3, K4, K5
Module 2:	Theory of Production and Costs Technology of production. Production function: short run and long runisoquants-Elasticity of substitution, Homogenous and Homothetic -Cobb Douglas Production function - CES,VES production functions-Recent developments-Technical progress and production function- Returns to scale - Choice of least cost combination of inputs. Costs- Short and long run-The L shaped cost curve. Derivation of cost function -Duality of cost and production function	**15**	CO2	K1, K2, K3, K4, K5
Module 3:	Introduction to perfect and imperfect markets. Chamberlin's model of monopolistic competition.Oligopoly Market Structure Uncertainty and interdependence- Non Collusive Oligopoly models - Cournot, Bertrand, Chamberlin, Sweezy and Stackelberg models-Collusive models-Cartels and Price leadership models-Managerial Theories of Firm ; Baumol's sales revenue maximisation- Marris maximum rate of growth and profits hypothesisWilliamson's discretion model -Behavioural model of Cyert and March Firm's demand for factors in the short run and long runfactor shares-Technological progress and factor sharesProduct Exhaustion theorems	**15**	CO3	K1, K2, K3, K4, K5, K6

Module 4:	General Equilibrium- General equilibrium in production and exchange -Walrasian Model- Existence, uniqueness and stability of General Equilibrium. Information Economics-Adverse Selection and Moral hazards-Market for Lemons-Pooling and separating equilibrium-signaling and screening-Principal-agent Problem.	**15**	CO4	K1, K2, K3, K4, K5, K6
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom ● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component			
Texts:	Core Readings 1. Koutsoyannis,A(2023),Modern Microeconomics Macmillan, London. 2. Varian, H.R.(2020), Intermediate Microeconomics: A Modern Approach, W.W. Norton, New York.			
References/ Readings:	Additional readings 1. Zerloff.J.M.(2020), Microeconomics, Theory and Applications with Calculus, Pearson Education. 2. Pindyck, Robert, Daniel .Rubinfeld (2017) Microeconomics, Pearson Education 3. Timothy Taylor, Steven A. Greenlaw, Eric Dodge (2014), Principles of Microeconomics, Publisher: OpenStax, ISBN 13: 9781938168246			
Web Resources:	1. https://ocw.mit.edu/courses/14-121-microeconomic-theory-i-fall-2015/ 2. https://www.core-econ.org/the-economy/ 3. https://openstax.org/details/books/principles-microeconomics-2e 4. https://www.youtube.com/watch?v=1UxA6JzoT-4			

Title of the Course	Macroeconomics
Course Code	ECO-5001
Number of Credits	04
Theory/Practical	Theory
Level	400
Effective from AY	2025-26
New Course	No
Bridge Course/ Value added Course	No
Course for advanced learners	No

Pre-requisites for the Course:	Nil	
Course Objectives:	To understand the role of effective demand in determining employment, output, prices and interest rates.	
Course Outcomes:		**Mapped to PSO**
	1. Explain the national accounts system and its sectoral implications	PSO 1, PSO 2, PSO 3, PSO 4, PSO 5
	2. Analyse causes of unemployment under classical and Keynesian systems	PSO 1, PSO 2, PSO 3, PSO 4, PSO 5
	3. Describe the Monetarist challenge to Keynes and emergence of New Keynesian ideas.	PSO 1, PSO 2, PSO 3, PSO 4, PSO 5
	4. Explain monetary policy, goals and targets.	PSO 1, PSO 2, PSO

			3, PSO 4, PSO 5	
Content:		**No of hours**	**Mapped to CO**	**Cognitive Level**
Module 1:	National Accounts System: UN system of accounts, India's Accounting system, Green Accounting Classical System: Classical model introduction – Employment, labour, supply – Equilibrium output and employment Money prices and interest under classical system, quantity theory of money (Fisher and Cambridge)	**15**	CO1, CO2	K1,2,3,4,5
Module 2:	Keynesian system: Simple Keynesian Model – Equilibrium income and changes in equilibrium income. Consumption function &. Investment function; IS-LM model: Fiscal and Monetary Policy effects on IS-LM model. Open economy macroeconomics under fixed and flexible exchange rate (Mundell-Fleming model)	**15**	CO 1, CO 2	K1,2,3,4,5
Module 3:	Monetarists, New Classical Economics and New Keynesian: Friedman's restatement of quantity theory, National Rate of Unemployment Theory-- Philips Curve – short run and long run, Rational Expectations Theory. New Keynesian Model – Sticky price, efficiency wage and Insider – Outsider model.	**15**	CO 3, CO 4	K1,2,3,4,5
Module 4:	Monetary Policy Goals and targets-strategies for monetary policy Targeting monetary aggregates-Interest rate targeting Intermediate targeting- Money stock versus interest rates. Money supply in India, Money multiplier-model of money supply determination-	**15**	CO 3, CO 4	K1,2,3,4,5
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom ● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component			
Texts:	Core Readings 1. R.T. Froyen (2014) Macroeconomics: Theories and Policies, Pearson, New Delhi			

References/ Readings:	Additional Readings 1. N. Gregory Mankiw, 2015, Macroeconomics , Macmillan, New Delhi 2. R. Dornbusch, S. Fishser, R.Startz, 2020, Macroeconomics, Mcgraw Hill, New Delhi 3. Frederic S. Mishkin, 2016,Macroeconomics: Policy & Practice. Pearson, New Delhi 4. Mankiw, N. Gregory & Mark P. Taylor (2023) Macroeconomics, Cengage Publications, India

Title of the Course	Public Economics and Public Policy
Course Code	ECO-5002
Number of Credits	04
Theory/Practical	Theory
Level	400
Effective from AY	2025-26
New Course	No
Bridge Course/ Value added Course	No
Course for advanced learners	No

Pre-requisites for the Course:	Nil	
Course Objectives:	This course will provide students a basic understanding of welfare economics, market failure, tax, and public expenditure	
Course Outcomes:		**Mapped to PSO**
	CO 1. Explain the role of the government in resource allocation and the foundational concepts of welfare, efficiency, and public intervention.	PSO 1, PSO 2, PSO 3, PSO 4, PSO 5
	CO 2. Analyze market failures such as externalities, public goods, and information asymmetries, and evaluate policy mechanisms to address them.	PSO 1, PSO 2, PSO 3, PSO 4, PSO 5
	CO 3. Apply principles of taxation and expenditure to assess their efficiency, equity, and behavioural implications.	PSO 1, PSO 2, PSO 3, PSO 4, PSO 5
	CO 4. Evaluate models of fiscal federalism and intergovernmental transfers in the Indian	PSO 1, PSO 2, PSO 3,

	context to understand growth and equity implications.		PSO 4, PSO 5	
	CO 5. Use economic frameworks to critically assess contemporary policy debates on health, education, and social security.		PSO 1, PSO 2, PSO 3, PSO 4, PSO 5	
Content:		**No of hours**	**Mapped to CO**	**Cognitive Level**
Module 1:	Public Economics- Nature and need. Role of Government – effect of the intervention. Policy Debates over Social Security, Health Care, and Education. Fundamental theorems of welfare. Social Welfare Functions. Economic efficiency, and Pareto optimality, Dalton's Principle of maximum social advantage, Pigou's concept of welfare.	**15**	CO1, CO5	K1,2,3,4,5
Module 2:	Market Failure - causes, Externalities – types, Private-Sector Solutions to Negative Externalities, Public-Sector Remedies for Externalities, information asymmetry and Third Best Policies. Optimal Provision of Public and private Goods, Free rider Problem, Voting – majority voting, Arrow's	**15**	CO2	K1,2,3,4,5
Module 3:	Principles of Taxation –Principle of Fiscal Neutrality, Excess Burden, Doctrine Principle of Equity, Benefit Principle, Bowen and Lindhal Models, Ability to pay Principle. Meaning, types and Measurements of Tax Capacity, Incidence of Tax-Issues in Efficiency and	**15**	CO3	K1,2,3,4,5
Module 4:	Nature and composition of public expenditure, Criterion for Public Expenditure-Social Cost-Benefit Analysis. Wagners Law of Expanding state activity, The Tiebout Model. Fiscal Federalism in India -Devolution of resources and grants	**15**	CO4, CO5	K1,2,3,4,5
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom ● PC lab exercises			

	● Assignments and presentations ● Group activity ● MOOC (or similar) Component
Texts:	Core Readings 1. Gruber, J. (2005). Public Finance and Public Policy. Worth Publishers. 2. Musgrave, Richard & Peggy Musgrave (2024) Public Finance in Theory and Practice, McGrawHill, NY
References/ Readings:	Additional References 1. Sarma, J. V. M. (2018). Public Finance: Principles and Practices. Oxford University Press, New Delhi 2. Jha, Raghbendra (1998) Modern Public Economics, Routledge, London 3. Myles, Gareth D. (1995) Public Economics, Cambridge University Press, Cambridge 4. Hyman, David N. (Latest edition) Public Finance: A Contemporary Application of Theory to Policy, South-Western Cengage Learning, USA

Title of the Course	Statistics For Economic Analysis
Course Code	ECO-5003
Number of Credits	04
Theory/Practical	Theory
Level	400
Effective from AY	2025-26
New Course	No
Bridge Course/ Value added Course	No
Course for advanced learners	No

Pre-requisites for the Course:	Nil			
Course Objectives:	To learn the statistical techniques and concepts that aid economic analysis and prepare the base for undertsiang econometric applications.			
Course Outcomes:			**Mapped to PSO**	
	CO 1. Solve problems relating to discrete and continuous probability distributions.		PSO 2	
	CO 2. Explain random sampling and its importance in sample selection		PSO 2	
	CO 3. Connect statistical analysis with economic decision making		PSO 2	
	CO 4. Have the necessary base to study econometrics and its applications		PSO 2	
Content:		**No of hours**	**Mapped to CO**	**Cognitive Level**

Module 1:	Probability Sampling methods, Sample Space, Random Variable, Addition and multiplication theorem-Conditional Probability, Bayes Theorem, Distribution Function, Mathematical Expectation, Exploratory Data analysis: Measures of central tendency and variance. Skewness and Kurtosis.	**15**	CO1, CO2	K1,2,3,4,5
Module 2:	Probability Distributions : Discrete, Continuous and Sampling Distributions: Binomial, Poisson, Normal, Standard Normal, Student-t, Chi-Square, F distribution.	**15**	CO1, CO2	K1,2,3,4,5
Module 3:	Testing of Hypotheses: Concepts & Applications Testing of Hypothesis; Null and Alternative Hypothesis, Type I & II errors. Levels of Significance. Testing mean, proportion single and two populations. Testing t, z, F, chi-square test.	**15**	CO 3, CO 4	K1,2,3,4,5
Module 4:	Correlation & Regression: Covariance, Pearson's Correlation, Rank Correlation. Introduction to Two Variable Regression.	**15**	CO 3, CO 4	K1,2,3,4,5
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom ● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component			
Texts:	Core Readings 1. Mark L. Berenson, David M. Levine, Kathryn A. Szabat (2015), Basic Business Statistics, Pearson publication 2. David M. Levine, David F. Stephan, Kathryn A. Szabat, (2017) Statistics For Managers Using Ms Excel, Pearson			
References/ Readings:	Additional References 1. David Spiegelhalter (2020) The Art of Statistics: Learning from Data, Pelican Books, UK 2. David Freedman, Robert Pisani, Roger Purves (2007) Statistics, W.W. Norton, New York			

Discipline Specific Elective Courses

Title of the Course	Indian Economy
Course Code	ECO-5201
Number of Credits	04
Theory/Practical	Theory
Level	400
Effective from AY	2025-26
New Course	No
Bridge Course/ Value added Course	No
Course for advanced learners	No

Pre-requisites for the Course:	Nil	
Course Objectives:	To provide students a comprehensive understanding of India's economic development in recent years and to familiarize them with the growth, development, and contribution of various sectors to the Indian economy.	
Course Outcomes:		**Mapped to PSO**
	CO 1. Recall major phases and reforms in India's post-independence economy.	PSO 3, 4
	CO 2. Analyze trends and policies in agriculture, industry, and services.	PSO 3, 4
	CO 3. Evaluate India's trade structure and balance of payments.	PSO 3, 4
	CO 4. Assess debates on poverty, employment, inequality, and sustainability.	PSO 3, 4
	CO 5. Apply economic data to interpret India's development outcomes.	PSO 3, 4, 5

Content:		No of hours	Mapped to CO	Cognitive Level
Module 1:	Indian economy since independence (1947 -1990), New Economic Policy (1991) – stabilization and structural adjustment packages: fiscal reforms, financial sector reforms, and trade reforms; Role of Planning Commission and NITI Aayog, Demonetisation, GST.	**15**	CO1	K1, K2
Module 2:	Agricultural sector - Gross Value Added (GVA) trends, Allied Sectors: Animal Husbandry, Dairying, and Fisheries; Agricultural Research & Education; Food Management. Industrial sector – Gross Value Added (GVA) trends, Index of Industrial Production (IIP), Credit in Industry, FDI in Industries, Performance of Central Public Sector Enterprises, Sector Wise Performance and Issues in Industry	**15**	CO2, CO5	K3, K4
Module 3:	Services – Gross Value Added (GVA) trends, Services Sector share at the State and UT level, FDI Inflows into Services Sector, Major Services: Sub-Sector Wise Performance and Recent Policies. Developments in India's Merchandise Trade, Trade in Services, Developments In India's Balance of Payment (BOP), Initiatives Taken By Government To Boost Exports	**15**	CO3, CO5	K3, K4, K5
Module 4:	Current Debates on India's development process. Demographic dividend, Employment, Inequality, Poverty, Inflation, Sustainable Development Goals, and Climate Change.	**15**	CO4	K4, K5
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom ● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component			
Texts:	Core Reading 1. Banerjee, A., Gopinath, G., Rajan, R., & Sharma, M. S. (2019). What the Economy Needs Now. Juggernaut Books, New Delhi			

	2. Economic Survey, Government of India, Ministryvof Finance, New Delhi (various issues) 3. Annual Reports and Monthly Bulletins, Reserve Bank of India, Mumbai
References/ Readings:	Additional References 1. Acharya Sankar and Rakesh Roshna (2010), India's Economy: Performance and Challenges, Oxford University Press, New Delhi. 2. Balakrishnan Pulapre (2010), Economic Growth in India: History and Prospect, Oxford University Press, New Delhi. 3. Ghate, C. (2012). The Oxford Handbook of the Indian economy. Oxford Univ. Press. New Delhi 4. Panagariya, Arvind (2010), India the emerging Giant, Oxford University Press, New Delhi 5. India Development Report, Oxford University Press, New Delhi

Title of the Course	Indian Public Finance
Course Code	ECO-5202
Number of Credits	04
Theory/Practical	Theory
Level	400
Effective from AY	2025-26
New Course	No
Bridge Course/ Value added Course	No
Course for advanced learners	No

Pre-requisites for the Course:	Nil	
Course Objectives:	To familiarise the students with the budgetary process, documents and analyse Government's fiscal policy	
Course Outcomes:		**Mapped to PSO**
	CO 1. To understand the key components of the Government of India's annual budget, and analyze the implications of recent Union Budgets.	PSO 1, PSO 3, PSO 4, PSO 5
	CO 2. To Evaluate the principles of fiscal federalism in India, including the division of functions and finances	PSO 1, PSO 3, PSO 4, PSO 5
	CO 3. To evaluate tax and non-tax revenues and issues like tax evasion in India	PSO 1, PSO 3, PSO 4, PSO 5
	CO 4. To examine the types, trends, and effects of public expenditure in India	PSO 1, PSO 3, PSO 4, PSO 5
	CO 5. To assess deficit financing and public debt trends and their economic impact.	PSO 1, PSO 3, PSO 4, PSO 5

	CO 6. To understand the causes, size, and consequences of the black economy in India, and evaluate the policy measures undertaken to curb it.		PSO 1, PSO 3, PSO 4, PSO 5	
Content:		**No of hours**	**Mapped to CO**	**Cognitive Level**
Module 1:	Government Budget – Meaning and steps involved in the budget formation, Assessment of the Recent Central Government Budget. Fiscal federalism in India - division of function and resources, vertical and horizontal imbalance, devolution of resources from centre to state government, criteria for transfer of resources, and the role of the finance commission. Emerging challenges in India's fiscal federalism	**15**	CO1, CO2	K1,2,3,4,5
Module 2:	Non-tax sources of revenue – types and trends, Taxes – Direct and Indirect taxes, Impact of taxation & tax evasion, Assessment of Indian tax system. Types of public expenditure and its trends, Effects of public expenditure.	**15**	CO 3, CO 4	K1,2,3,4,5
Module 3:	Deficit Financing - Meaning and Objectives, effects of deficit financing, Trends in different types of deficit finance in India. Public debt - Classifications of public debt, sources and effects of government borrowings, burden and management of public debt.	**15**	CO 5	K1,2,3,4,5
Module 4:	Black Economy – meaning, Measurement, the macroeconomic linkages, causes and consequences of the black economy, and measures undertaken by the government to curb the black economy. Estimates of the black economy in India.	**15**	CO 6	K1,2,3,4,5
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom ● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component			

Texts:	Core Readings 1. Rao, M. G., & Rao, M. G. (2022). *Studies in Indian Public Finance*. Oxford University Press. 2. Kumar, A. (2017). The Black Economy in India (Updated Edition). Penguin Random House India, New Delhi
References/ Readings:	Additional References 1. Economic Survey of India (Various years), Ministry of Finance, Government of India 2. Reports of the 15th Finance Commission 3. Reports of the 14th Finance Commission 4. Reports of State Finance Commissions

Title of the Course	Human Resource Development
Course Code	ECO-5203
Number of Credits	04
Theory/Practical	Theory
Level	400
Effective from AY	2025-26
New Course	No
Bridge Course/ Value added Course	No
Course for advanced learners	No

Pre-requisites for the Course:	Nil			
Course Objectives:	To familiarise students with designing, implementation and evaluation of HRD programmes in a corporate setting			
Course Outcomes:			**Mapped to PSO**	
	CO 1. Be able to Assess HRD needs and develop HRD programme		PSO 1, PSO 2	
	CO 2. Implement and evaluate HRD programmes		PSO 1, PSO 2	
	CO 3. Use HRD Applications		PSO 1, PSO 2	
	CO 4. Implement skills and technical training.		PSO 1, PSO 2	
Content:		**No of hours**	**Mapped to CO**	**Cognitive Level**

Module 1:	Introduction to Human Resource Development The evolution of HRD - The relationship between HRD and HRM - HRD functions - Roles of an HRD Professional - Challenges to HRD Influence on Employee Behaviour External influences on Employee Behaviour - Motivation: An Internal influence on Employee Behaviour - Other Internal Factors that Influence Employee Behaviour -Environmental Influences on Employee Behaviour.	**15**	CO1, CO2	K1,2,3,4,5
Module 2:	HRD needs and HRD Programs: Their Assessment HRD Needs: Definition and Purposes of Needs Assessment - Organisational Analysis - Task Analysis - Person Analysis - Prioritising HRD needs. Designing HRD Programs: Defining Program Objectives - Purchasing HRD Programs - Selecting the Trainer - Preparing a Lesson Plan - Selecting Training Methods	**15**	CO1, CO2	K1,2,3,4,5
Module 3:	Implementation and Evaluation of HRD Programs Implementation of HRD Programs: Training Delivery Methods – On-the-Job Training Methods - Classroom Training Methods - Scheduling the Training Program - Implementing the Training Program. Evaluation of HRD Programs: The purpose of HRD Evaluation - Models of Evaluation - Data Collection for HRD Evaluation - Research Design - Ethical Issues of Evaluation research.	**15**	CO3, CO4	K1,2,3,4,5
Module 4:	HRD Applications and Trainings HRD Applications: Introduction to Onboarding: Employee Socialization and Orientation- Socialization: The Process of Becoming an Insider-Various Perspectives on the Socialization Process -The Realistic Job Preview HRD Skills and Technical Training: Introduction - Basic Workplace Competencies- Basic Skills/Literacy ProgramsTechnical Training-Interpersonal Skills Training	**15**	CO3, CO4	K1,2,3,4,5
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom ● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component			

Texts:	1. Eugene Sadler-Smith (2021) Human Resource Development: From Theory into Practice, Sage Publications, UK 2. DeSimone R.L. & Harris D.M. (2012), Human Resource Development, Cengage Learning, U.S.A.
References/ Readings:	Additional References 1. Chalofsky, Neal E., Tonette S. Rocco, Michael Lane Morris (Eds) (2014) Handbook of Human Resource Development, John Wiley & Sons, Inc., Hoboken, New Jersey 2. Deb Tapomay (2012), Human Resource Development, Ane Books Pvt. Ltd., Mumbai. 3. Haldar U.K. (2009), Human Resource Development, OUP, New Delhi. 4. Mankin David (2009), Human Resource Development, OUP, New York. 5. Megginson D., (2001), Human resource Development, OUP, USA. 6. Rao T.V. (2010), Human Resource Development, Oxford and IBH Publishing Co.Pvt. Ltd., A6. Werner J.M., (2007), Human Resource Development,

SEMESTER II

Discipline Specific Core Courses

Title of the Course	Mathematics for Economic Analysis
Course Code	ECO-5004
Number of Credits	04
Theory/Practical	Theory
Level	500
Effective from AY	2025-26
New Course	No
Bridge Course/ Value added Course	No
Course for advanced learners	No

Pre-requisites for the Course:	Graduate in any discipline	
Course Objectives:	To learn the mathematical tools and concepts that aid in analysing economic optimisation.	
Course Outcomes:	On successful completion, students will be able to:	**Mapped to PSO**
	CO 1. Understand the foundational concepts of vectors, matrices, and set theory relevant to economic applications.	PSO2
	CO 2. Apply concepts of functions, limits, and continuity to interpret mathematical	PSO2

	relationships in economics.			
	CO 3. Solve problems involving differentiation and integration with reference to firm theory and economic growth.		PSO1, PSO2, PSO5	
	CO 4. Use mathematical optimisation techniques to analyse consumer and producer behaviour under various market structures.		PSO1, PSO2, PSO5	
Content:		**No of hours**	**Mapped to CO**	**Cognitive Level**
Module 1:	**Vectors and Matrices** Vectors, Vector Spaces, Linear Dependence, Basis. Elementary operations with Matrices, Equivalence, Determinants, Inverse of Matrix, Rank of a Matrix, Cramer's Rule. Introduction to Input-Output techniques.	**15**	CO1	K1, K2, K3, K4, K5
Module 2:	**Set Theory:** Sets, Set operations, Finite and Infinite Sets, Non denumerable sets, Cartesian Product, Relations, Functions, Ordered Sets, Linear Point Sets. **Functions & Limits:** Limit of a function, continuity, Necessary and sufficient conditions.	**15**	CO1, CO2	K1, K2, K3, K4, K5
Module 3:	**Differentiation:** Rules of differentiation: Total derivatives and Partial derivatives. Maxima and minima, points of inflexion. **Integration:** Reimann integral, Fundamental Theorem of the calculus, Techniques of integration and Definite integrals. Applications in economics: Theory of the firm (cost) & Growth	**15**	CO3	K1, K2, K3, K4, K5
Module 4:	**Optimisation:** Unconstrained & Constrained Application to economics: cost curves, demand curves, Theory of the consumer and Theory of the Firm under Perfect and Imperfect Competition.	**15**	CO4	K1, K2, K3, K4, K5

Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom ● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component
Texts:	Core reading 1. K. Sydsaeter, P. Hammond, Strom and Carvajal (2018), Essentials of Mathematics for Economics Analysis, Pearson. Fifth Edition 2. Yu, Kam (2019) Mathematical Economics: Prelude to the Neoclassical Model, Springer, Switzerland
References/ Readings:	Additional References 1. Simon, Carl P. & L. Blume (2018) Mathematics for Economists W.W. Norton, New York 2. Chiang, A.C. and K. Wainwright (2017) Fundamental Methods in Mathematical Economic McGraw Hill, New York 3. Quandt,R. & Dusan Triska (2020) Optimal Decisions in Markets and Planned Economies, Routledge 4. Varian, Hal R. (2019) Intermediate Microeconomics With Calculus - a Modern Approach, WW Norton, NY

Title of the Course	Economic Growth and Development
Course Code	ECO-5005
Number of Credits	04
Theory/Practical	Theory
Level	500
Effective from AY	2025-26
New Course	No
Bridge Course/ Value added Course	No
Course for advanced learners	No

Pre-requisites for the Course:	Graduate in any discipline	
Course Objectives:	To introduce students to the theories and empirics of growth and development and to enhance the students' knowledge of economic problems facing developing countries.	
Course Outcomes:		**Mapped to PSO**
	CO 1. Explain the concepts and indicators of economic growth and human development, and analyze inequality using various statistical measures	PSO 1, PSO 2, PSO 3,
	CO 2. Examine classical and structuralist growth theories and assess their relevance to the development process in different contexts	PSO3
	CO 3. Apply and compare different growth models	PSO 3, PSO 5
	CO 4. Analyze and critically evaluate endogenous growth models and the role of innovation and international linkages.	PSO 3

Content:		No of hours	Mapped to CO	Cognitive Level
Module 1:	Economic growth and Development – meaning and criteria, Measurements of development - GDP; Human development index, Per Capita Income and human development. Structural characteristics of developing countries – demographic, occupational and production, rural urban migration. Agrarian change and industrial transformation, Post-industrial society Economic inequality – meaning, Criteria for inequality measurement - Anonymity principle, Population principle, Relative income principle and the Dalton principle, The Lorenz curve, Complete measures of inequality - the range, the Kuznets ratios, the mean absolute deviation, the coefficient of variation and the Gini coefficient.	**15**	CO1	K1, K2, K3, K4, K5
Module 2:	Rostow's Stages of Growth- Big Push- Balanced and Unbalanced Growth- Critical Minimal Effort- Ranis Fei, Joan Robinson golden age theory.	**15**	CO2	K1, K2, K3, K4, K5
Module 3:	Growth models Keyneisian model: Harrod – Domar growth model, Neo-claisscal model: Solow's model of economic growth, Convergence – Conditional and Unconditional. Convergence and explaining differences in growth rates	**15**	CO3	K1, K2, K3, K4, K5
Module 4:	New growth theories Romer Model, The Final-Goods Sector, The Intermediate-Goods Sector, The Research Sector Basic Elements of the Schumpeterian Model, Growth in the Schumpeterian Model, The "AK" Model, Externalities and AK Models, Evaluating Endogenous Growth Models Role of international Trade in growth and development	**15**	CO4	K1, K2, K3, K4, K5
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom			

	● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component
Texts:	1. Ray, Debraj, (2010), Development Economics, OUP, Delhi. 2. de Janvry, Alain & Elisabeth Sadoulet (2021) Development Economics: Theory and Practice, Routledge, London
References/ Readings:	1. Cypher, J. M., & Dietz, J. L. (2009). The process of Economic Development,Routledge, London 2. Charles I. Jones and Dietrich Vollrath, (2013) 3. Introduction To Economic Growth, Viva Books Pvt. Ltd., New Delhi 4. Jujiro,Hayami & Godo Yoshihisa (2023) Development Economics, OUP, New Delhi Indian edition 5. Wydick, Bruce (2007) Games in Economic Development, Cambridge University Press 6. Acemoglu,Daron & James A. Robinson (2012) Why Nations Fail: The Origins of Power, Prosperity, and Poverty, Penguin Random House, NY

Title of the Course	International Trade and Finance
Course Code	ECO-5006
Number of Credits	04
Theory/Practical	Theory
Level	500
Effective from AY	2025-26
New Course	No
Bridge Course/ Value added Course	No
Course for advanced learners	No

Pre-requisites for the Course:	Nil	
Course Objectives:	The Objectives of the course are 1. to provide the students with a theoretical and analytical understanding of international trade and finance 2. to expose the students to the factors affecting international trade, investment, exchange rate and regional trading blocs and critically evaluate their significance in the economy. 3. to provide skill sets to the students to understand the complexities involved in formulating and implementing international trade policies.	
Course Outcomes:	Upon successful completion of the course, students will be Outcomes able to:	**Mapped to PSO**
	CO 1. Understand the structure and pattern of trade based on the theories of international trade	PSO1, PSO 3, PSO 4, PSO 5
	CO 2. Understand the role of international trade in economic development	PSO1, PSO 3, PSO 4, PSO 5
	CO 3. Know the functioning of the international financial system	PSO1, PSO 3, PSO 4, PSO 5

	CO 4. Role and function of international institutions shaping international trade and finance.		PSO1, PSO 3, PSO 4, PSO 5	
Content:		**No of hours**	**Mapped to CO**	**Cognitive Level**
Module 1:	**Theories of International Trade** Classical and Neo-Classical Models: Smith, Ricardo, Heckscher-Ohlin, Specific factors model, Stolper-Samuelson, Rybczynski theorem,and Factor Price Equalization Theorems; Empirical Evidence - the Leontief Paradox. New Theories: Economies of scale, Imperfect competition trade based on product differentiation and intra-industry trade, dynamic technological differences-product cycle model and Technology-Gap Models.	**15**	CO1, CO2, CO3, CO4	K1, K2, K3, K4, K5
Module 2:	**Trade Policy Free trade and protection;** Trade restriction-Tariffs (Partial and general equilibrium analysis), optimum tariff; Non –tariff barriers: Quotas, Voluntary export restraints, international cartels, dumping, export subsidies. Free Trade Areas versus Customs Union, Trade Creation and Trade Diversion under custom union; Static and dynamic benefit of regional integration, WTO and trade policy reforms in India	**15**	CO1, CO2, CO3, CO4	K1, K2, K3, K4, K5
Module 3:	**Balance of Payments** The balance of payments: concepts and measurement – balance of trade and transfers, current and capital accounts – deficits and surpluses – national income and balance of payments. Balance of payments adjustments: types and causes of disequilibrium income approach, foreign trade multiplier, price approach, exchange rate changes, Marshall–Lerner condition of devaluation, empirical measurement of import and export demand elasticities, elasticity and absorption approaches, monetary approach and the terms of trade	**15**	CO1, CO2, CO3, CO4	K1, K2, K3, K4, K5
Module 4:	**International money and foreign exchange market** Spot and forward market, demand and supply of foreign exchange, purchasing power parity theory, exchange rates (nominal, effective, real and	**15**	CO1, CO2, CO3, CO4	K1, K2, K3, K4, K5

	shadow) The international capital market: nature and characteristics, Eurocurrency markets, international financial risk management, international capital movements, commercial borrowings of developing countries, external debt management, transfer problem.			
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom ● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component			
Texts:	1. Salvatore, Dominick, International Economics, PrenticeHall, 13th Edition (2019), John Wiley & Sons.(Latest Edition) 2. Robert C. Feenstra & Alan M. Taylor (2021), Fifth Edition, International Trade, Worth Publishers.(Latest Edition)			
References/ Readings:	1. Paul R. Krugman, Maurice Obstfeld, and Marc Melitz (2017), International Finance: Theory and Policy, 11th Edition, Pearson. 2. E. Helpman (2011) Understanding Global Trade, Harvard Univesity Press, MA 3. Giancarlo Gandolfo (2014) International Trade Theory and Policy, Springer-Verlag International Edition. 4. Keith Pilbeam (2013) International Finance, Palgrave Macmillan, Fourth Edition.			
Web Resources:	1. https://www.learning.wto.org/ 2. https://tradecouncil.org/further-education/ 3. https://www.uclaextension.edu/business-management/international-trade-commerce/course/fundamentals-international-trade-mgmt-x 4. https://learn.saylor.org/course/view.php?id=795 5. https://www.iif.com/			

Title of the Course	Introduction to Econometrics
Course Code	ECO-5007
Number of Credits	04
Theory/Practical	Theory
Level	500
Effective from AY	2025-26
New Course	No
Bridge Course/ Value added Course	No
Course for advanced learners	No

Pre-requisites for the Course:	Basic knowledge of Statistics and preferably an exposure to Mathematical methods in Economics	
Course Objectives:	To provide students exposure to regression analysis with crosssection data.	
Course Outcomes:		**Mapped to PSO**
	CO 1. Develop econometric models using cross-section data	PSO 1, PSO 2, PSO 3, PSO 4, PSO 5
	CO 2. Differentiate between functional forms and their implications of econometric estimates	PSO 1, PSO 2, PSO 3, PSO 4, PSO 5
	CO 3. Explain the limitations of simple and multiple linear regression models	PSO 1, PSO 2, PSO 3, PSO 4, PSO 5
	CO 4. Draw policy implications to help decision makers.	PSO 1, PSO 2, PSO 3, PSO

			4, PSO 5	
Content:		**No of hours**	**Mapped to CO**	**Cognitive Level**
Module 1:	Econometrics and Economic Data The Structure of Economic Data; Cross-Sectional Data; Time Series Data; Pooled Cross Sections; Panel or Longitudinal Data; Causality in Econometric Analysis The Simple Regression Model Ordinary Least Squares Estimates and Properties, Goodness-of-Fit, Functional Form; Incorporating Nonlinearities, Expected Values and Variances of Estimators; Unbiasedness, Estimating the Error Variance	**15**	CO1, CO2	K1,2,3,4,5
Module 2:	Multiple Regression Analysis: Estimation The Model with Two or more Independent Variables, Interpretation Comparison of Simple and Multiple Regression, Omitted Variable Bias, Multicollinearity; Variances in Misspecified Models, Efficiency of OLS: The Gauss-Markov Theorem Multiple Regression Analysis: Inference Testing Hypotheses of single and Multiple Linear Restrictions: The F Test; Testing Exclusion Restrictions; Relationship between F and t Statistics; The F Statistic for Overall Significance of a Regression, Reporting Regression Results	**15**	CO1, CO2	K1,2,3,4,5
Module 3:	Multiple Regression Analysis: OLS Asymptotics Consistency; Deriving the Inconsistency in OLS; Asymptotic Normality and Large Sample Inference; Other Large Sample Tests: The Lagrange Multiplier Statistic; Asymptotic Efficiency of OLS Multiple Regression Analysis: Further Issues More on Functional Form; Models with Interaction Terms; Adjusted R-Squared; Prediction and Residual Analysis; Confidence Intervals for Predictions; Residual Analysis Multiple Regression Analysis with Qualitative Information: Binary (or Dummy) Variables Describing Qualitative Information; A Single Dummy Independent Variable; Interactions among Dummy Variables; Allowing for Different Slopes; Binary Dependent Variable: The Linear Probability Model; More on Policy Analysis and Program Evaluation; Interpreting Regression Results with Discrete	**15**	CO3, CO4	K1,2,3,4,5

	Dependent Variables			
Module 4:	Heteroskedasticity Consequences of Heteroskedasticity for OLS; Heteroskedasticity-Robust Inference, Testing for Heteroskedasticity; Feasible GLS More on Specification and Data Issues Functional Form Misspecification; RESET as a General Test Using Lagged Dependent Variables as Proxy Variables; Measurement Error in an Explanatory Variable; Missing Data, Nonrandom Samples, and Outlying Observations; Missing Data; Nonrandom Samples; Outliers and Influential Observations; Least Absolute Deviations Estimation	**15**	CO3, CO4	K1,2,3,4,5
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom ● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component			
Texts:	Core Readings 1. Wooldridge (2019), Introductory Econometrics, 7th edition, South Western College Publishing, Singapore. Additional References			
References/ Readings:	1. Florian Heiss (2020) Using R for Introductory Econometrics, 2nd edition; Germany, ISBN: 979-8648424364 2. Florian Heiss and Daniel Brunner (2020) Using Python for Introductory Econometrics, 1st edition, Germany, ISBN: 9798648436763 3. Angrist,,Joshua D. & Jörn-Steffen Pischke (2009) Mostly Harmless Econometrics, Princeton University Press, Princeton			

SEMESTER II

Discipline Specific Elective Courses

Title of the Course	Labour Economics
Course Code	ECO-5204
Number of Credits	04
Theory/Practical	Theory
Level	400
Effective from AY	2025-26
New Course	No
Bridge Course/ Value added Course	No
Course for advanced learners	No

Pre-requisites for the Course:	Nil	
Course Objectives:	To develop students' abilities in acquiring a better understanding of the functioning of labour market.	
Course Outcomes:		**Mapped to PSO**
	CO 1. Understand various issues related to labour demand and supply	PSO 1, PSO 2, PSO 3, PSO 4, PSO 5
	CO 2. Explain various theories of labour market functioning.	PSO 1, PSO 2, PSO 3,

			PSO 4, PSO 5	
	CO 3. Explain Labour productivity and impact of technology		PSO 1, PSO 2, PSO 3, PSO 4, PSO 5	
	CO 4. Understand the role of institutions on wage determination		PSO 1, PSO 2, PSO 3, PSO 4, PSO 5	
Content:		**No of hours**	**Mapped to CO**	**Cognitive Level**
Module 1:	The Supply of Labour and Demand for Labour Supply of labour by an individual, by a household to an economy – A Household model of labour supply – A bargaining model of family labour supply – Changes in work participation over time: Labour force growth during recessions: The Added Worker Effect-The Discouraged Worker Effect - Classical Theory of Job Choice - Modern Theory in terms of investment in Human Capital - Migration. The Demand for Labour in the short run and long run - Elasticity of demand for labour	**15**	CO1, CO2	K1,2,3,4,5
Module 2:	The Labour Market and Theories of Labour Market Discrimination Definition of the labour market – Differences between Labour Markets and Commodity Markets - Labour Market Structure: Structured Labour markets- Unstructured Labour Markets-Internal and External Labour markets; Primary and Secondary Labour Markets. Theories of Labour Market Discrimination: Types of discrimination – Taste-for- discrimination model. Market Power: The Monopsony model – Theory of Statistical discrimination – The Crowding model.	**15**	CO1, CO2	K1,2,3,4,5
Module 3:	Employment Employment- Concept; Types of unemployment – The measurement of unemployment – Causes of unemployment: Job Search (The Stigler model, The McCall model)-Rigid Wages, Efficiency wages. Present Employment Scenario at the National and International level.	**15**	CO3, CO4	K1,2,3,4,5
Module 4:	Wage Determination and Productivity Concept Wage determination in a perfectly competitive market and Monopsony market – Minimum wage: Minimum wage in a perfectly competitive market and in a monopsony market. The minimum wage	**15**	CO3, CO4	K1,2,3,4,5

	and efficiency wage theory. Segmentation and Dual Labour Market Theory. Productivity Concept - Measurement – Importance of productivity increases - Factors influencing labour productivity - Productivity and inflation - Productivity and employment.			
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom ● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component			
Texts:	1. Borjas G.J. (2015), Labour Economics, McGraw-Hill, New York. 2. McConnell, C.R, S.L.Brue and Macpherson, (2010), Contemporary Labour Economics, McGraw Hill Irwin, New York.			
References/ Readings:	1. Cahuc Pierre, Zylberberg A., (2014), Labour Economics, Mit Press, USA. 2. Ehrenberg R., (2017), Modern Labour Economics Theory and Public Policy, Routledge, U.S.A. 3. Jacobson J., Skillman G., (2002), Labour Markets and Employment Relationships: A Comprehensive Approach. 4. Kaufman B.E. and Hotchkiss J.L. (2006), Labour Market Economics, Cengage Learning, India. 5. Smith S.W. (2003), Labour Economics, Routledge, London. 6. Bauder Harold (2006), Labour Movement: How Migration Regulates Labour Markets? OUP, USA			

Title of the Course	Goan Economy
Course Code	ECO-5205
Number of Credits	04
Theory/Practical	Theory
Level	400
Effective from AY	2025-26
New Course	Yes
Bridge Course/ Value added Course	No
Course for advanced learners	No

Pre-requisites for the Course:	NIL	
Course Objectives:	To provide the students with a comprehensive knowledge of the demographic features, sectoral dynamics and development challenges of the Goan Economy.	
Course Outcomes:		**Mapped to PSO**
	CO 1. Analyse the demographic features, human development indicators and income structure of Goa	PSO 1, PSO 3
	CO 2. Interpret Goa's SDG performance and assess its progress towards inclusive and sustainable development.	PSO 3, PSO 5
	CO 3. Analyze agricultural productivity, land use patterns, and the impact of credit and schemes on Goa's agricultural sector.	PSO 2, PSO 3, PSO 5
	CO 4. Assess Goa's Industrial sector with a focus on MSMEs, emerging industries, and	PSO 2, PSO 3, PSO 5

	industrial finance.			
	CO 5. Evaluate the structural composition and growth of Goa's services sector and the role of institutional frameworks.		PSO 2, PSO 3, PSO 5	
	CO 6. Understand the trends in Goa's public finance, including centre-state transfers, local governance, and fiscal indicators.		PSO 2, PSO 3, PSO 5	
Content:		**No of hours**	**Mapped to CO**	**Cognitive Level**
Module 1:	**Overview of the Goan Economy** Demographic features: population growth, density, age structure, migration patterns. Human Development and Quality of Life Indicators: literacy, life expectancy, infant mortality, Gender ratio State Income: GSDP/NSDP, GSVA by sector (Primary, Secondary, Tertiary), PCI, Issues of Employment Environment: forest cover, rivers, biodiversity, coastline, (key environmental issues and resource challenges) Challenges: mining-related degradation, coastal erosion, pollution Goa's performance in SDG India Index	**15**	CO1, CO2	K1, K2
Module 2:	**Agriculture, allied sectors and Industry** Land Use and Cropping Patterns, Agricultural Productivity and Inputs, Agricultural Credit, Challenges in Agriculture**,** Agricultural Policies and Schemes. Horticulture, Forestry, Fishing. Schemes for Rural Development- National Rural Livelihood Mission **Industry** Sectoral Composition and Trends, Emerging sectors: IT, electronics, biotechnology. Micro, Small and Medium Enterprises (MSMEs)- Growth and challenges, Industrial Finance, Industrial Policy, Infrastructure pressures and land use conflicts	**15**	CO3, CO4	K2, K3, K4
Module 3:	**Services**	**15**	CO5	K3, K5

	Growth and Structural composition of the service sector-Tourism, Banking and Finance, Health, Education and Skill Development, Real Estate and Urban Services. Institutional and Policy Framework, Challenges in the Service Sector.			
Module 4:	**State Public Finance** Centre-State financial devolution, Major sources of revenue: tax and non-tax revenues, Expenditure Patterns and Development Priorities, Goa's Public Debt, Fiscal deficit, revenue deficit, primary deficit trends, Trends in grants-in-aid from the Centre, State Finance Commissions, Overview of Local Governance in Goa, Own revenue sources of panchayats and ULBs	**15**	CO6	K4, K5
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom ● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component			
Texts:	1. Government of India. (2011). *'Goa Development Report.'* Academic Foundation, Planning Commission. 2. *Economic Survey* (Various Issues) Directorate of Planning, Statistics & Evaluation. Government of Goa 3. NCAER (1962) Techno-economic survey of Goa, Daman and Diu, NCAER, New Delhi			
References/ Readings:	1. GoG. (2008, September). *Goa At Glance*. Directorate of Planning, Statistics and Evaluation. 2. Rajan,S. Irudaya & K. C. Zachariah (2011) Impact of Emigration and Remittances on Goan Economy, in India Migration Report 2011, edited by S. Irudaya Rajan, Routledge India 3. CAG (2024) Performance Audit on Public Health infrastructure and Management of Health Services in Goa, Comptroller and Auditor General of India, Government of India https://cag.gov.in/en/audit-report/details/120344 4. GoG (2024) State finances audit report of the Comptroller and Auditor General of India for the year ended 31 march 2023, Comptroller and Auditor General of India, Government of India, https://cag.gov.in/ag/goa/en/audit-report/details/120334 5. Alvares, Claude (2002) Fish Curry And Rice, Goa Foundation, Mapusa, https://goafoundation.org/publications/			

Title of the Course	Indian Economic Thought
Course Code	ECO-5206
Number of Credits	04
Theory/Practical	Theory
Level	400
Effective from AY	2025-26
New Course	Yes
Bridge Course/ Value added Course	No
Course for advanced learners	No

Pre-requisites for the Course:	Nil	
Course Objectives:	Provide a synoptic view of the contributions of Indian economists in important areas of economics.	
Course Outcomes:		**Mapped to PSO**
	CO 1. Recognise the important contributions of Indian economists to the domain of knowledge	PSO 1, PSO 3, PSO 4
	CO 2. Understand the intellectual contributions of economists to public policy.	PSO 1, PSO 3, PSO 4
	CO 3. Assess the linkage between Indian developmental challenges and potential alternative solutions as conceived by Indian economists	PSO 1, PSO 3, PSO 4
	CO 4. Critically analyse the similarities and differences between Indian and Western Knowledge systems in the field of Economics	PSO 1, PSO 3, PSO 4

Content:		No of hours	Mapped to CO	Cognitive Level
Module 1:	**Ethics, Equity and Welfare** Early contributions – Vedic ideas, Buddha, Bhagwan Mahavir; Early and mid-twentieth Century debates – Gandhi, Ambedkar, Dandekar, Gadgil, Ranade, Gokhale; Late-Twentieth century and early 21st century-Amartya Sen, Partha Dasgupta, Abhijit Banerjee	**15**	CO1, CO2, CO3, CO4	KO1,2,3,4, 5
Module 2:	**Economy and Public Policy** Early contributions – Kautilya; Early and mid-twentieth Century debates – VKRV Rao, KN Raj, P.R. Brahmananda; M.L. Dantwala Late-Twentieth century and early 21st century– Sukhomoy Chakravarty, Manmohan Singh, Dreze,	**15**	CO1, CO2, CO3, CO4	KO1,2,3,4, 5
Module 3:	**Industrialization and Development** Early contributions – Kautilya; Early and mid-twentieth Century debates – Gandhi, Mahalanobis, Gadgil, Ranade, Dada Bhai Nauroji, Bombay Plan; Late-Twentieth century and early 21st century– Amit Bhaduri, Krishna Bharadwaj, Ashok Rudra	**15**	CO1, CO2, CO3, CO4	KO1,2,3,4, 5
Module 4:	**International Trade** Early contributions – Kautilya; Early and mid-twentieth Century debates – Ambedkar; Gandhi, JC Kumarappa Late-Twentieth century and early 21st century– Bhagwati, TN Srinivasan, Avinash Dixit, Prabhat Patnaik	**15**	CO1, CO2, CO3, CO4	KO1,2,3,4, 5
Pedagogy:	● Chalk and talk aided by ICT enabled lectures ● Flipped Classroom			

	● PC lab exercises ● Assignments and presentations ● Group activity ● MOOC (or similar) Component
Texts:	1. Dasgupta, Ajit Kumar. 2002. *History of Indian Economic Thought*. The Routledge History of Economic Thought. London New York: Routledge.
References/ Readings:	1. Ambedkar, B. R. 1923. *The Problem of the Rupee*. Westminster: P. S. King & Son Ltd. https://archive.org/details/in.ernet.dli.2015.84521/page/n3/mode/2up. 2. Ambirajan, S. 1999. "Ambedkar's Contributions to Indian Economics." *Economic and Political Weekly* 34 (46/47): 3280–85. https://www.jstor.org/stable/4408623. 3. Barua, Ankur. 2019. "Revisiting the Gandhi–Ambedkar Debates over 'Caste': The Multiple Resonances of Varṇa." *Journal of Human Values* 25 (1): 25–40. https://doi.org/10.1177/0971685818805328. 4. Bhaduri, Amit. 2005. *Development with Dignity: A Case for Full Employment*. 1. edition. Popular Social Science. New Delhi: National Book Trust, India. 5. Bharadwaj, Krishna. 1986. *Classical Political Economy and Rise to Dominance of Supply and Demand Theories*. 2., rev. Ed. London: Sangam Books. 6. Brahmananda, P.R. 1973. *Explorations in the New Classical Theory of Political Economy and A Connected Critique of Economic Theory*. Mumbai: Allied Publishers. 7. Cassan, Guilhem. 2024. "The Economics of Caste." In *The Oxford Handbook of Caste*, edited by Surinder S. Jodhka and Jules Naudet, 1st ed., 573–85. Oxford University Press. https://doi.org/10.1093/oxfordhb/9780198896715.013.39. 8. Dandekar. 1994. "Role of Economic Planning in India in the 1990s and Beyond." *Economic and Political Weekly* 29 (24). https://www.epw.in/journal/1994/24/special-articles/role-economic-planning-india-1990s-and-beyond.html. 9. ———. 2003. *Gandhi's Economic Thought*. London: Routledge, Taylor & Francis Group. https://www.routledge.com/Gandhis-Economic-Thought/Dasgupta/p/book/9781138006799. 10. Dixit, Avinash, and Victor Norman. 1980. *Theory of International Trade: A Dual, General Equilibrium Approach*. 1st ed. Cambridge University Press. https://doi.org/10.1017/CBO9780511628627. 11. Gadgil, D.R. 1961. "An Approach to Indian Planning." *Economic and Political Weekly* 13 (27-28–29). 12. Gandhi, Rajmohan. 2015. "Independence and Social Justice: The Ambedkar–Gandhi Debate." *Economic and Political Weekly* 50 (15): 35–44. https://www.jstor.org/stable/24481885.

	13. Ghate, Chetan, Pawan Gopalakrishnan, and Srishti Grover. 2022. *The Mahalanobis Growth Model: A Macrodynamics Approach*. Singapore: Springer Nature. https://doi.org/10.1007/978-981-16-8980-2. 14. Manne, Alan S., Ashok Rudra, Pushpam Paul Koola, Vinod Prakash, A. V. Ramsunder, V. C. Sabherwal, M. R. Saluja, and H. C. Sharma. 1965. "A Consistency Model of India's Fourth Plan." *Sankhyā: The Indian Journal of Statistics, Series B (1960-2002)* 27 (1/2): 57–144. https://www.jstor.org/stable/25051534. 15. Nayak, Pulin B. 2017. "A K Dasgupta on Gandhi and the Economies of Austerity." *Economic and Political Weekly* 52 (50): 40–45. https://www.jstor.org/stable/45132598. 16. Patnaik, Prabhat. 2018. "Gandhi, Technology and Employment." *Social Scientist* 46 (11–12): 27–36. https://www.jstor.org/stable/26599996. 17. Puri, Bindu. 2022. *The Ambedkar–Gandhi Debate: On Identity, Community and Justice*. Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-16-8686-3. 18. Raj, K.N. 1973. "The Politics and Economics of 'Intermediate Regimes.'" *Economic and Political Weekly* 8 (27): 198–198. 19. Rao, Jaithirth. 2021. *Economist Gandhi: The Roots and the Relevance of the Political Economy of the Mahatma*. Gurugram, Haryana: Portpolio/Penguin, an imprint of Penguin Random House. 20. Rao, V. K. R. V. 1952. "Investment, Income and the Multiplier in an Under-Developed Economy." *Indian Economic Review* 1 (1): 55–67. https://www.jstor.org/stable/45149597. 21. Rao, V.K.R.V. 1940. *THE NATIONAL INCOME OF BRITISH INDIA, 1931-1932*. London: Macmillan. https://archive.org/details/in.ernet.dli.2015.50060/page/n5/mode/2up?view=theater. 22. Rudra, Ashok. 1991. "Privatisation and Deregulation." *Economic and Political Weekly* 26 (51): 2933–36. https://www.jstor.org/stable/41625455.