

University of Lucknow
Master of Arts in Economics
Under Choice Based Credit System (CBCS)



Programme Brochure
(Effective from Academic Year 2025-26)

BRIEF HISTORY OF DEPARTMENT

The Department of Economics started functioning with the formation of the Lucknow University in 1921. Two other departments, Anthropology and Sociology, were created during mid-fifties respectively, which earlier used to be a part of Economics Department. Prof. Radha Kamal Mukherjee was the first Head of the Department. He remained Head until 1955. For a period of over two years during mid-fifties, he also remained the Vice-Chancellor of the Lucknow University. Subsequently, Department has had a good fortune of being shaped and developed under the Headship of academicians like Prof. D.P. Mukherjee (1955-57), Prof. Baljit Singh (1957-74), Prof. S.D. Mishra (1974-75), Prof. Prakash Chandra (1975-76), Prof. V.B. Singh (1976-78), Prof. N.N. Srivastava (1978-92) and Prof. Paritosh Banerjee (1992-96). Besides these academic luminaries the department consisted of many great teachers and scholars like Prof. B.B. Mukherjee (also conferred the title of Rai Bahadur by the British Government), Prof. D.N. Majumdar, Prof. M.D. Joshi, Prof. Naseer Ahmad Khan, Prof. P.L. Rawat, Prof. K.C. Seth, Prof. H.G.P. Srivastava, Prof. P.D. Srimali, Prof. Shailendra Singh, Prof. S.P. Dixit, Prof. R.S. Mathur, Prof. A.K. Singh, Prof. V.P. Bharadwaj, Prof. T.S. Papola, Prof. B.P.S. Bhadauria, Prof. I. D. Gupta, Prof. A K Sengupta, Prof A.K. Bajpai, Prof. Harsh Mohan, Prof. Muzamil (Former Vice Chancellor of Bareilly and Agra University), Prof. Y. Tyagi and Prof. Rakesh Kumar.

The Department supports Undergraduate and Postgraduate Programmes (BA, BA (Hons.), M. A., and Ph. D.) in Economics, which draw a huge number of applicants from all over the country. These programmes have a strong theoretical and quantitative focus with an emphasis on empirical applications. Current Faculty members of the department are contributing in the emerging areas of Economics in terms of teaching and research activities.

CHOICE BASED CREDIT SYSTEM

The Choice based credit system (CBCS) provides an opportunity for the students to choose courses from the prescribed courses comprising core, freeze elective, generic/open elective, value addition courses (SEC & AEC) and MOOCS. The courses can be evaluated following the grading system, which is considered to be better than the conventional marks system. Grading system provides uniformity in the evaluation and computation of the Cumulative Grade Point Average (CGPA) based on student's performance in examinations which enables the student to move across institutions of higher learning. The uniformity in the evaluation system also enables the potential employers to assess the performance of the candidates.

TERM DEFINITIONS

Academic Programme: It means the entire course of study comprising its structure, course details, evaluation schemes, etc.

Course: It means a segment of a subject that is part of an Academic Programme.

Programme Structure: Programme Structure means a list of courses (Core, Optional, Electives, value addition and MOOCS) that makes up an Academic Programme, specifying the syllabus, credits, hours of teaching, evaluation and examination schemes, minimum number of credits required for successful completion of the Programme, etc., prepared in conformity with Lucknow University rules.

Core Course: It means a course that a student admitted to the M. A. Economics programme must successfully complete to receive the degree and which cannot be substituted by any other course.

Freeze Elective Course: It means an optional course that is to be selected by a student out of a list of such courses offered by the department for the specialization.

Generic/ Open Elective: It means an elective course that is available for students of all programmes except Department of Economics. Students of other departments may opt for these courses, subject to fulfilment of eligibility criteria as laid down by the Department of Economics.

Value Addition Courses: Skill Enhancement Course (SEC & AEC) and Ability Enhancement Course is the part of Value Addition Courses along with course of Computer Application in Economics.

Credit: It means the value assigned to a course indicating the level and quantity of instruction as measured by instructor-student interaction.

Semester Grade Point Average (SGPA): SGPA means Semester Grade Point Average calculated for individual semester.

Cumulative Grade Points Average (CGPA): 'CGPA' is the Cumulative Grade Points Average calculated for all courses completed by the students at any point of time. CGPA is calculated each year for both the semesters clubbed together.

Grand CGPA: It is calculated in the last year of the course by clubbing together the CGPA

of two years, i.e., four semesters. Grand CGPA is given in Transcript form. A formula for conversion of Grand CGPA into percentage marks is given in the Transcript.

PROGRAMME OUTCOMES/ OBJECTIVES

Economics is long-established discipline whose relevance to the world of business, government, international relations and academia is widely acknowledged. The Master of Arts (M.A.) Programme in Economics reflects new developments in the Economics discipline. The curriculum has a strong theoretical and quantitative focus with all students being trained in the use of computers and statistical software that they find useful in their professional careers in academia, research institutions, government, and industry. The Programme is semester-based under CBCS and includes a large number of elective courses with specialization in different fields of choice. Entry into the Programme requires basic knowledge of analytical, mathematical, and quantitative skills. At the end of Master of Arts (M. A.) Programme in Economics, the student should be able to bring to bear these skills to the Modeling and analysis of a wide range of theoretical and applied problems in Economics and to the understanding and solution of real world economic and social problems.

PROGRAMME SPECIFIC OUTCOMES

It is expected that a student after successfully completing four semesters of Master of Art (M.A.) in Economics programme would be equipped to dwell deeper to generate knowledge as researcher, understand the advances in economics theories and application and the knowledge-based decision making. This programme have a strong theoretical and quantitative focus with an emphasis on empirical applications.

STRUCTURE OF THE PROGRAMME

The M. A. Economics Programme is spread over two years. Each year is divided into two semesters. The Programme requires students to take a combination of Core courses, Free Electives, Value Addition courses (Skill Enhancement Course & Ability Enhancement Course) and the inter-disciplinary Generic Electives courses/Open Elective courses along with the MOOCS. A student is required to complete a minimum of 96 credits for the completion of the Programme and the award of the M. A. Economics degree from the university.

Department of Economics
University of Lucknow
Syllabus for M.A. Economics Programme
(Proposed to be implemented from July 2025)

Course No.	Name of the Course	Credit	Remarks
Semester I			
ECOCC-101	Microeconomics	04	Core Course
ECOCC-102	International Economics	04	Core Course
ECOCC-103	Mathematics for Economics	04	Core Course
ECOCC-104	Environmental Economics	04	Core Course
ECOCC-105	Monetary Economics	02	Core Course
ECOIRA-106	Infrastructure Development in India	02	VAC (Credited) Intradepartmental Course
Semester Total		20	
Semester II			
ECOCC-201	Macro Economics	04	Core Course
ECOCC-202	Theories of Economic Growth	04	Core Course
ECOCC-203	Statistics and Econometrics	04	Core Course
ECOCC-204	Public Finance	04	Core Course
ECOCC-205	Resource Economics	02	Core Course
ECOIER-206	Economy of Uttar Pradesh	02	Interdepartmental Course
Semester Total		20	
Semester III			
ECOCC-301	Advanced Economic Theory	04	Core Course
ECOCC-302	International Macroeconomics	04	Core Course
ECOCC-303	Advanced Study of the Indian Economy	04	Core Course
ECOEL-304 A	Population Theory and Demographic Analysis	04	Elective
ECOEL-304 B	Economics of Agriculture	04	Elective
ECOEL-304 C	Advanced Econometrics Theory	04	Elective
ECOEL-305 A	Financial Economics	02	Elective
ECOEL-305 B	Gender Economics	02	Elective
ECOEL-305 C	Energy Economics (through MOOCs)	02	Elective
ECOIN-306	Internship Field Work	02	Internship
Semester Total		20	
Semester IV			
ECOCC-401	Development Theory & Practice	04	Core Course
ECOEL-402 A	History of Economic Analysis	04	Elective
ECOEL-402 B	Industrial Economics	04	Elective
ECOEL-402 C	Time Series Analysis	04	Elective
ECOEL-403 A	Financial Institutions & Markets	04	Elective
ECOEL-403 B	Research Methodology in Economics	04	Elective
ECOEL-403 C	Health Economics	04	Elective
ECOMT-404	Master Dissertation	08	Master Thesis
Semester Total		20	
GRAND TOTAL		80	

ECO- Economics (subject); ECOCC – Core Course; ECOEL – Elective; ECOIER – Interdepartmental Course, ECOIRA – Intradepartmental Course

MA ECONOMICS
SEMESTER-I
MICROECONOMICS

Course Code: ECOCC-101

Course Credit: 4

Course Objectives: This course aims to provide a deep understanding of microeconomic theories related to consumer behavior, production, market structures, general equilibrium, and welfare economics. It equips students with analytical tools for studying economic decision-making and market outcomes.

Unit I: Consumer Theory and Demand Analysis

Utility Maximization and Consumer Preferences, Indifference Curve Analysis and Budget Constraints, Ordinal vs. Cardinal Utility Theory, Hicksian and Slutsky Approaches to Demand Analysis, Revealed Preference Theory.

Unit II: Production, Cost, and Market Structures

Production Functions: Short-run and Long-run Analysis, Cobb-Douglas and CES Production Functions, Cost Functions: Short-run vs. Long-run Costs, Perfect Competition: Price and Output Determination, Monopoly, Monopolistic Competition, and Oligopoly, Game Theory: Nash Equilibrium, Prisoner's Dilemma, and Strategic Behavior.

Unit III: General Equilibrium and Welfare Economics

Partial vs. General Equilibrium Analysis, Walrasian Equilibrium and Stability, Efficiency in Exchange and Production (Pareto Efficiency), Fundamental Theorems of Welfare Economics, Market Failures: Asymmetric Information and Adverse Selection.

Unit IV: Advanced Topics in Microeconomics

Contract Theory and Principal-Agent Problem, Search and Matching Models in Labor Markets, Economics of Information and Market Signaling, Behavioral Economics and Prospect Theory, Auctions and Mechanism Design, Recent Advances in Microeconomic Theory.

Suggested Readings:

- Arrow, K.J., & Hahn, F.H. (1971). *General Competitive Analysis*. Holden-Day.
- Jehle, G.A., & Reny, P.J. (2011). *Advanced Microeconomic Theory*. Pearson.
- Kreps, D.M. (1990). *A Course in Microeconomic Theory*. Princeton University Press.
- Myerson, R. (1991). *Game Theory: Analysis of Conflict*. Harvard University Press.
- Nicholson, W., & Snyder, C. (2016). *Microeconomic Theory: Basic Principles and Extensions*. Cengage Learning.
- Shapiro, C., & Varian, H. (1998). *Information Rules: A Strategic Guide to the Network Economy*. Harvard Business School Press.
- Thaler, R.H. (2015). *Misbehaving: The Making of Behavioral Economics*. W.W. Norton.
- Varian, H.R. (2014). *Intermediate Microeconomics: A Modern Approach*. W.W. Norton.

MA ECONOMICS
SEMESTER-I
INTERNATIONAL ECONOMICS

Course Code: ECOCC-102

Course Credit: 4

Course Objectives: This course aims to provide students with a comprehensive understanding of the theoretical foundations, policy frameworks, and contemporary issues in international economics. This course is designed to enhance students' analytical skills and prepare them for careers in international trade, finance, policymaking, and research.

Unit I: Introduction and Theories of Trade

Concept of International Trade, PPF, Offer Curves, Edgeworth Box Diagram, Community Indifference curves. Classical Theories of International trade, Heckscher-Ohlin theory, Theorem of factor price equalization, Leontief's paradox, Rybczynski's Theorem, Stolper Samuelson theorem, Intra -Industry Trade Theories, Kravis and Linder theory, Imitation gap theory, Product cycle theory.

Unit II: Measurement and Gains from Trade

International trade and growth, Trade as an engine of growth. Measurement of gains from trade and their distribution, terms of trade, measures and factors affecting it. Hypothesis of secular deterioration of terms of trade, Technical Progress and international trade. Imesserising growth.

Unit III: International Trade Policies

Free trade and protection, Mill Bastable Test, Trade policy in developed and developing countries. Tariffs - The Theory of Tariff Structure, General Equilibrium Analysis of Tariff. The Optimum Tariff. Non-Tariff Trade Barriers and the New Protectionism, Trade Wars, GATT, WTO. International Capital Flows, FDI, Capital Controls.

Unit IV: Economic Integration

Forms of Economic integration, Customs union and Free Trade Area, Trade deflection in FTA, Trade Diversion Versus Trade Creation, Dynamic Benefits from Customs Union, History of Economic Integration - The European Economic Community – SAARC, UNCTAD, South-South Cooperation, NIEO. Problem of international debt and Balance of Payments Disequilibrium, IMF. Financial, BOP and Currency Crisis.

Suggested Readings:

- Caves, Jones and Frankel (1999), World Trade and Payments, 8th Edition, Addison Wesley.
- Copeland, L. (2014). Exchange Rates and International Finance. Pearson
- Krugman, P.R. and Obstfeld D. (1994), International Economics: Theory and Policy. Third Edition. Harper Collins. New York
- Salvatore, Dominick, International Economics, 6th Edition (1998) Prentice Hall, 7th and 8th Editions (2001 and 2004) John Wiley & Sons.
- Sodersten, Bo and Reed, G. (1994), International Economics, Macmillan Press Ltd.,
- London Sawyer, W.C. and Sprinkle R.L. (2003), International Economics, Prentice-Hall of India, New Delhi.

MA ECONOMICS
SEMESTER-I
MATHEMATICS FOR ECONOMICS

Course Code: ECOCC-103

Course Credit: 4

Course Objective: To learn the mathematical tools and concepts that aid in analysing economic optimization.

Unit-I: Matrix and Determinants

Determinants, Properties of determinant, Minors and Cofactors, Jacobian and Hessian determinants and their use. Matrices: Definitions, Addition, Subtraction and Multiplication of matrices; Inverse matrices; Rank of matrix; Solving matrix equations with inverse; Eigen values and Eigen vectors.

Unit-II: Differentiation

Differential Calculus: First order and Second order derivatives and its applications in Economics, Optimization- Constrained & Un-constrained, Lagrange Multiplier, Point of inflexion, Concavity and Convexity of Curve, Determination of Partial Derivates of first and higher order, Young's Theorem, Application of Partial Differentiation in Economics, Determination of Total Derivatives and its Application in Economics.

Unit-III: Integration and its Economic Application

Integral Calculus; Indefinite and definite integration; Rules of integration; Integration by Substitution; Integration by parts. Economic Applications: Investment, Cost Function, Area under curve, Consumer's surplus and Producer's surplus.

Unit-IV: Differential Equations & Difference Equations

First order differential equations- complementary function and particular integral, Introduction to Second Order Differential Equation. Differential equations and its applications in Economics, First Order Difference Equations, Application of Difference Equations in Economics- Cob-Web model.

Suggested Readings:

- Allen, R.G.D. Mathematical Analysis for Economists, Macmillan and Company Limited.
- Dowling, Edward, T. Introduction to Mathematical Economics, McGraw Hill International Edition.
- C. Chiang and K. Wainwright. Fundamental Methods of Mathematical Economics, McGraw Hill International Edition.
- T. Yamane. Mathematics for Economists, Prentice-Hall of India
- K. Sydsaeter and P. J. Hammond. Mathematics for Economic Analysis, Pearson Educational Asia

**MA ECONOMICS
SEMESTER-I
ENVIRONMENTAL ECONOMICS**

Course Code: ECOCC-104

Course Credit: 4

Course Objectives: This course introduces students to key environmental economic theories, policies, and analytical tools for sustainable development. It covers externalities, market failures, valuation techniques, and policy instruments for environmental conservation.

Unit I: Introduction to Environmental Economics

Scope and Importance of Environmental Economics, Relationship between Environment and Economy. Market Failure and Externalities. Public Goods and Common Property Resources.

Unit II: Valuation of Environmental Goods and Services

Need for Valuation of Environmental Goods, Use and Non-Use Values of Environment. Methods of Environmental Valuation: Market-Based Approaches, Hedonic Pricing Method, Travel Cost Method, Contingent Valuation Method. Cost-Benefit Analysis and Environmental Decision Making.

Unit III: Environmental Policy Instruments and Regulation

Command-and-Control Policies, Market-Based Instruments: Taxes, Subsidies, and Tradable Permits, The Polluter Pays Principle and Extended Producer Responsibility, International Environmental Agreements (Kyoto Protocol, Paris Agreement)

Unit IV: Environmental Issues and Sustainable Development

Climate Change and Economic Implications, Circular Economy and Green Growth, Energy Economics and Renewable Energy Policies, Biodiversity Conservation and Ecosystem Services, Sustainable Development Goals (SDGs) and Environmental Sustainability.

Suggested Readings:

- Baumol, W.J., & Oates, W.E. (1988). The Theory of Environmental Policy. Cambridge University Press.
- Dasgupta, P. (2021). The Economics of Biodiversity: The Dasgupta Review. UK Government.
- Freeman, A.M. (2003). The Measurement of Environmental and Resource Values: Theory and Methods. RFF Press.
- Hanley, N., Shogren, J., & White, B. (2013). Introduction to Environmental Economics. Oxford University Press.
- Kolstad, C. (2011). Environmental Economics. Oxford University Press.
- Nordhaus, W.D. (2019). The Climate Casino: Risk, Uncertainty, and Economics for a Warming World. Yale University Press.
- OECD. (2011). Towards Green Growth. OECD Publishing.
- Stern, N. (2006). The Stern Review on the Economics of Climate Change. UK Treasury.
- Tietenberg, T., & Lewis, L. (2018). Environmental and Natural Resource Economics. Routledge.
- UNEP. (2022). Global Environment Outlook (GEO-6). United Nations Environment Programme.

**MA ECONOMICS
SEMESTER - I
MONETARY ECONOMICS**

Course Code: ECOCC-105

Course Credit: 2

Course Objectives: Students after the completion of this course are expected to identify the intensive but diversified role of money and monetary policy in the process of economic transformation and development which is required to uplift the quality of life. They will also be able to take systematic policy decisions when required.

Unit I: Demand for Money

Classical and Neo-Classical theories of Money. Money in Keynesian Framework: Liquidity Preference (L-P) Theory and further developments in L-P Approach; Tobin, Baumol Models. Friedman, New Monetarism and its Critique.

Unit II: Supply of Money

Monetary Aggregates, Liquidity Aggregates. H-Theory of Money Supply, Money Multiplier process and Factors affecting H, Money Supply in India: its components and trends, RBI and Money Supply.

Unit III: Money Market in India

RBI, Commercial Banks, NBFIs: Types, growth and regulation, Investment Banking, Regional Rural Banks, Cooperative Banks, Call Money Market, Treasury bill market, Commercial Bill Market and Certificate of Deposit Market. NPAs, Hiving-off and other approaches to NPA settlement.

Unit IV: Monetary Policy

Monetary Policy in India. Instruments, Targets objectives and transmission mechanism Difficulties of controlling money supply in an open economy. Further Issues of Monetary Policy and Monetary Management in India.

Suggested Readings:

- Pierce D.G. and P.J. Tysome, Monetary Economics: Theories, Evidence and Policy, Butterworths, London, 1985.
- Jadhav N., Monetary Economics for India, Macmillan India Ltd., 1994.
- Gupta S.B., Monetary Economics: Institutions, Theory and Policy, 1982.
- Goldfeld S.M. and L.V. Chandler, the Economics of Money and Banking, Harper and Row, 1981.
- Handa J., Monetary Economics, Routledge, New York, 2000

MA ECONOMICS
SEMESTER-I
INFRASTRUCTURE DEVELOPMENT IN INDIA

Course Code: ECOIRA-106

Course Credit: 2

Course Objectives: This course is designed to introduce the role of infrastructure in economic development. The broad view of physical as well as social infrastructure will be dealt in depth, which will be help for students.

Unit I: Introduction

Infrastructure and Economic Development; Physical & Social Infrastructure; Infrastructure as a public good; The peak load, off – load problem; Issues & policies in financing of infrastructure; Subsidies for Infrastructure, free prices, quality and efficiency.

Unit II: Transportation and Digital Infrastructure

Significance of Transport: Road, Railways, Water, Airways; Transport and Economic Development; Congestion and demand for transport network; Pricing of transport services; Transport Externalities; Trip scheduling in urban transport; Transport Policy and Transport Regulations; Growth of Telecommunication and Digital Infrastructure in India; Private and Public Financing for Digital Infrastructure; Principle of decreasing cost in Telecom Industry; Reforms in the Telecom Sector.

Unit III: Energy and Other Physical Infrastructure

Energy Infrastructure and Development; Electricity, Gas and Water Supply; Bulk Supply and Pricing of Electricity; The relative economics of Thermal, Hydel and Nuclear power; The case for a National Power Grid; Solar Energy; Wind Energy; Hydrogen Energy; Drinking Water and Sanitation; Urban and Rural Water Supply; Uses and Exploitation of Natural Gas.

Unit IV: Social Infrastructure

Social Infrastructure and Economic Growth; Private vs. Public Sector financing for Health and Education; Pricing of social services; Education and Health Externalities; Issues related to quality of Education and Health; Public Health Care System in India; Progress on Universalization of Primary Education; Costs and efficiency of Higher Education.

Suggested Readings:

- Blaug, M. (Ed.). (1968). Economics of Education: selected readings. Penguin Books, England.
- Cowie, J. (2009). The Economics of Transport: A Theoretical and Applied Perspective. Routledge.
- Indian Council of Social Science Research (ICSSR). Economics of Infrastructure, Vol. IV. New Delhi.
- McMohan, W. W. (2000). Education and Development: Measuring the Social Benefit. Oxford University Press, New Delhi.
- National Council of Applied Economic Research (NCAER) (1996), India Infrastructure Report: Policy Implications for Growth and Welfare, NCAER, New Delhi.
- Parikh, K.S. (Ed). (1999), India Development Report 1999-2000, Oxford University Press, New Delhi.
- Psacharopoulos, G. (2014). Economics of Education: Research and Studies. Pergamon Press, Elsevier Science Ltd.

**MA ECONOMICS
SEMESTER-II
MACRO ECONOMICS**

Course Code: ECOCC-201

Course Credit:4

Course Objectives- This course provides an in-depth understanding of macroeconomic theories, including income determination, economic fluctuations, monetary and fiscal policies, and long-term economic growth. It integrates classical, Keynesian, and modern macroeconomic approaches.

Unit I: National Income, Employment, and Theories of Output Determination

National Income Accounting: Concepts and Measurement, Circular Flow of Income in Three, and Four-Sector Models, Classical Theory of Employment and Say's Law, Keynesian Theory of Employment and Effective Demand, Post-Keynesian Theories: Kalecki and Kaldor.

Unit II: Consumption, Investment, and Business Cycles

Consumption Theories: Absolute Income, Relative Income, Permanent Income, and Life Cycle Hypotheses, Investment Theories: Marginal Efficiency of Capital and Tobin's q-Theory, Business Cycles: Keynesian, Monetarist, and Real Business Cycle Theories, Phillips Curve: Inflation-Unemployment Trade-off.

Unit III: Money, Inflation, and Macroeconomic Policies

Classical and Keynesian Theories of Money, Monetarist and Post-Keynesian Views on Money Supply, Theories of Inflation: Demand-Pull and Cost-Push Inflation, Rational Expectations and Lucas Critique, Role of Monetary and Fiscal Policies in Economic Stabilization.

Unit IV: Economic Growth, Development, and Open Economy Macroeconomics

Harrod- Domar Growth Model, Solow Growth Model and Endogenous Growth Theories, Role of Technological Change in Economic Growth, Exchange Rate Theories: Fixed vs. Flexible Exchange Rates, Balance of Payments, IS-LM-BP Model, and Open Economy Macroeconomics

Suggested Readings:

- Blanchard, O. (2021). *Macroeconomics*. Pearson.
- Dornbusch, R., Fischer, S., & Startz, R. (2018). *Macroeconomics*. McGraw-Hill.
- Friedman, M. (1957). *A Theory of the Consumption Function*. Princeton University Press.
- Froyen, R.T. (2013). *Macroeconomics: Theories and Policies*. Pearson.
- Krugman, P.R., & Obstfeld, M. (2017). *International Economics: Theory and Policy*. Pearson.
- Laidler, D. (1997). *The Demand for Money: Theories, Evidence, and Problems*. HarperCollins.
- Mankiw, N.G. (2022). *Macroeconomics*. Worth Publishers.
- Mishkin, F.S. (2019). *The Economics of Money, Banking, and Financial Markets*. Pearson.
- Romer, D. (2018). *Advanced Macroeconomics*. McGraw-Hill.
- Woodford, M. (2003). *Interest and Prices: Foundations of a Theory of Monetary Policy*. Princeton University Press.

**MA ECONOMICS
SEMESTER-II
THEORIES OF ECONOMIC GROWTH**

Course Code: ECOCC-202

Course Credit: 4

Course Objective: To introduce students to the theories and empirics of economic growth.

UNIT-I: Economic Growth Theories

Economic growth- Meaning, Characteristics, Measurement and Factors of Economic Growth, Balanced and Unbalanced Economic Growth, Marx's Stages of Growth, Rostow's Stages of Economic Growth.

UNIT-II: Modern Theories of Economic Growth

Conceptual framework and methodology of modern growth theories; Harrod-Domar Growth model, contemporary growth theories of neo-classical, Solow, Meade, and Swan-Uzawa.

UNIT-III: Cambridge Theories of Economic Growth

Joan Robinson, Kaldor, Pasinetti, Money and Economic Growth-Tobin model; Optimal growth theory: Ramsay, Golden Rule of Accumulation; Endogenous growth models - AK model and Romer model.

UNIT-IV: Technological Progress and Economic Growth

Technological Progress embodied and disembodied; Neutral and Non-Neutral (Hicks and Harrod); Arrow's learning by doing approach to economic growth, Total factor productivity and growth accounting.

Suggested Readings:

- Ghatak, S. An Introduction to Development Economics, Allen and Unwin, London.
- Jones, Charles, I. Introduction to Economic Growth, W.W. Norton & Company Limited.
- Robert J. Barro Xavier & Sala-i-Martin. The MIT Press Cambridge, Massachusetts London, England.
- Gillis, M., D.H. Perkins, M. Romer and D.R. Snodgrass. Economics of Development, (3rd Edition), W.W. Norton, New York.
- Meier, G.M. and J. E. Rauch. Leading Issues in Economic Development, (8th Edition), Oxford University Press, New Delhi.
- Sen, A.K. Growth Economics, Penguin, Harmondsworth.
- Todaro, M.P. and S.C. Economic Development, Pearson Education, Delhi.
- Thirlwal, A.P. Growth and Development, Macmillan, U.K.

**MA ECONOMICS
SEMESTER-II
STATISTICS AND ECONOMETRICS**

Course Code: ECOCC-203

Course Credit: 4

Course Objective: To learn the statistical and basic econometric techniques and concepts that aid economic analysis.

Unit-I: Random Variables and Probability

Random Variables-Discrete and Continuous, Expected Value of a Random Variable. Multiple random variables, Basic concepts and definitions of probability, Laws of addition and multiplication, Conditional probability, Bay's theorem; Bi- Variate, marginal, conditional and joint distribution.

Unit-II: Probability Distributions

Probability Mass/ Density function, Binomial, Poisson and Normal distribution, Concept of an estimator and its desirable properties- Finite sample properties and large sample properties, Law of large numbers, Central Limit Theorem

Unit-IV: Sampling Methods & Testing of Hypothesis

Basic concepts of sampling- random and non-random sampling; determination of sample size, Sampling and non-sampling errors, concept of an estimator and its sampling distribution. Formulation of statistical hypothesis-Null and alternative, Type I and II errors, Testing of Hypothesis: z-test, t-test.

Unit-IV: Simple Regression Analysis

Classical Linear Regression Model, Assumptions, Ordinary Least Square Method, Properties (Gauss-Markov Theorem), p-value, R-Square, t-statistic & F-statistic, Violation of OLS Assumptions Heteroscedasticity and Autocorrelation - Causes, consequences, common tests and remedies.

Suggested Readings:

- Gupta S.C. and V.K. Kapoor, Fundamentals of Applied Statistics, S. Chand and Sons New Delhi.
- Speigal, M. R. Theory and Problems of Statistics, McGraw Hill Book, London.
- Gujarati D. Basic Econometric, McGraw-Hill.
- Kamenta J. Elements of Econometrics, Machmillan Publishing Co., Inc. New York.
- Johnston J. Econometric Methods, New York: McGraw Hill, 1971.
- Wooldridge, J.M. Introductory Econometrics-A Modern Approach, Cengage.

**MA ECONOMICS
SEMESTER-II
PUBLIC FINANCE**

Course Code: ECOCC-204

Course Credit: 4

Course Objective: This course aims to provide students with an understanding of public finance theories, government budgeting, taxation, public expenditure, fiscal policy, and public debt. It also examines contemporary issues in fiscal federalism and the role of government in economic stabilization and growth.

Unit I: Introduction to Public Finance and Public Expenditure

Nature, Scope, and Importance of Public Finance, Role of Government in a Mixed Economy, The Principle of Maximum Social Advantage, Theories of Public Expenditure: Wagner's Law, Peacock-Wiseman Hypothesis, Cost-Benefit Analysis in Public Expenditure.

Unit II: Taxation and Fiscal Policy

Principles of Taxation: Equity, Efficiency, and Optimal Taxation, Tax Incidence and Effects of Taxation on Income Distribution, Laffer Curve and Tax Evasion, Direct vs. Indirect Taxes: Comparative Analysis, Fiscal Policy and Economic Stabilization.

Unit III: Budget, Deficit, and Public Debt

Government Budgeting: Revenue and Capital Budget, Types of Deficits: Revenue Deficit, Fiscal Deficit, Primary Deficit, Theories of Public Debt: Classical, Keynesian, and Ricardian Equivalence, Debt Management and Sustainability, Fiscal Responsibility and Budget Management (FRBM) Act.

Unit IV: Fiscal Federalism and Contemporary Issues in Public Finance

Fiscal Federalism: Principles and Theories, Centre-State Financial Relations in India, Grants and Intergovernmental Transfers, Public-Private Partnerships (PPPs) and Public Sector Efficiency, Climate Finance and Sustainable Public Finance

Suggested Readings:

- Atkinson, A.B., & Stiglitz, J.E. (1980). Lectures on Public Economics. Princeton University Press.
- Buchanan, J.M. (1958). Public Principles of Public Debt. Homewood.
- Government of India. Economic Survey of India. Ministry of Finance.
- India Ministry of Finance. Union Budget Report. Government of India.
- International Monetary Fund (IMF). Fiscal Monitor Report.
- Mankiw, N.G., Weinzierl, M., & Yagan, D. (2009). Optimal Taxation in Theory and Practice. Journal of Economic Perspectives.
- Musgrave, R.A., & Musgrave, P.B. (1989). Public Finance in Theory and Practice. McGraw-Hill.
- Rao, M.G., & Singh, N. (2005). The Political Economy of Federalism in India. Oxford University Press.
- Rosen, H.S., & Gayer, T. (2014). Public Finance. McGraw-Hill.
- Stiglitz, J.E. (2000). Economics of the Public Sector. W.W. Norton.

MA ECONOMICS
SEMESTER-II
RESOURCE ECONOMICS

Course Code: ECOCC-205

Course Credit: 2

Course Objective: Students would come to know about market failure and learn to design regulations to correct this market failure. They would also learn how to regulate pollutants that travel across country boundaries and how environmental regulations affect trade flows.

Unit I: Externalities and Market Failure

The theory of Externality and Public Goods: Concepts, Market failure; Pigouvian Solution; Buchanan's Theory; Coase's theorem and its critique; Pigouvian vs. Coasian solution; Detrimental externality and non-convexities in the production set.

Unit II: Measurement of Environmental Values

Property rights; Collective action; Measurement of Environmental Values; Use values; Option value and non-use values; Techniques of Valuation: Market and Non-Market Valuation; Physical linkage methods; Abatement Cost Methods; Behaviour Linkage Method-Revealed and stated preference; Social Cost benefit Analysis.

Unit III: Environmental Impact Assessment

Hedonic property values and house hold production models (Travel cost method and household health production function); Methods based response to hypothetical Markets; Contingent Valuation Methods; Eco-labelling; Causes and Consequences of Ozone depletion and climate change; Rio and other than Rio Conference, Protocols and Treaties relating to climate change and Environmental degradation; Ozone depletion and Bio diversity.

Unit IV: Environmental and Natural Resource Policy and Strategies

Evolution of Environmental Policy, Protection and Conservation; Policy Instruments; Pigouvian Tax and Subsidies; Tradable permits and fees; Price vs. Quantity instruments, Mixed instruments; Monitoring and Enforcement Issues; India's Environmental Policy and Performance; International Environmental Policy; Environmental Planning and Management; Macroeconomic Policies and Environment; People's Participation.

Suggested Readings:

- C.D. Kolstad: Environmental Economics
- R.N. Bhattacharya: Environmental Economics
- U. Sankar: Environmental Economics
- N. Hanley, Shogren, B. White: Introduction to Environmental Economics
- Haab and White head: Environmental and Natural resource economics
- Haab and Huang: Preference data for Environmental valuation
- Tom Tietenberg and Lynne Lewis: Environmental and Natural Resource Economics
- David.A. Anderson: Environmental Economics and Natural Resource
- Down to Earth, Science and Environment Fortnightly
- Economic and Political Weekly

MA ECONOMICS
SEMESTER-II
ECONOMY OF UTTAR PRADESH

Course Code: ECOIER-206

Course Credit:2

Course Objective: This paper aims to introduce students to the economic features of Uttar Pradesh's economy. It also dealt with the growth pattern, agricultural, industrial and service sectors, sectoral growth and development in the economy of Uttar Pradesh.

Unit I: Historical Context of the Economy of Uttar Pradesh

Introduction of regions of Uttar Pradesh and their evolution: Nature and features; Economic and non-economic factors affecting the growth and development of Uttar Pradesh; Demographic Profile; Basic Human Development Issues; Status of Natural Resources; Infrastructure of Uttar Pradesh; Issues in Health and Education Sector.

Unit II: Economic Features of Uttar Pradesh Economy

Pattern of economic growth in Uttar Pradesh; Gross State Domestic Product and Per Capita Income; Interstate comparison of income and growth; Sectoral behaviour of the UP economy; Poverty, Unemployment and Income Inequalities; Employment Generation- State-specific Programs in Uttar Pradesh; State Finance: Tax Revenue and Public Debt in Uttar Pradesh.

Unit III: Agricultural and Rural Development in Uttar Pradesh

Growth and changing patterns of agriculture in Uttar Pradesh; Production and productivity in agriculture; Land reforms in U.P.; Irrigation; Farm inputs; Farm mechanization; Crop diversification; Agricultural credit; Policies and Strategies for agricultural development in Uttar Pradesh; Problems and prospects of rural development.

Unit IV: Industrial and Services Sector in Uttar Pradesh

Pattern of industrialization in Uttar Pradesh; Growth of large-scale industries; Industrial Policies in Uttar Pradesh; Growth and significance of MSMEs; Recent Policy Initiatives- One District One Product (ODOP), Growth pattern of services sector and its linkages to other sectors of UP economy.

Suggested Readings:

- A.N. Agarwal and M.K. Agarwal: Indian Economy, New Age International Pvt. Ltd, New Delhi (Latest Edition)
- M. K. Agarwal, Uttar Pradesh Ka Arthik Vikas, New Royal Book Company. Publications of the Government of Uttar Pradesh.
- Uttar Pradesh Human Development Report, UNDP, 2008.
- Uttar Pradesh State Development Report, Volume I & II, State Plan Division, Planning Commission, Government of India, 2014.
- Planning Commission of India: Various Five Year Plans.

**MA ECONOMICS
SEMESTER-III
ADVANCED ECONOMIC THEORY**

Course Code: ECOCC-301

Course Credit:4

Course Objective: This syllabus aims to provide a balanced and in-depth understanding of advanced economic theories, equipping students with the analytical tools necessary for research and policy analysis.

Unit I: Advanced Microeconomic Theory

Consumer Behavior: Indifference Curve Analysis, Revealed Preference Theory. Production Theory: Production Functions, Cost Functions. Market Structures: Perfect Competition, Monopoly, Monopolistic Competition, Oligopoly. Game Theory: Nash Equilibrium, Repeated Games, Evolutionary Game Theory

Unit II: Advanced Macroeconomic Theory

Economic Growth: Solow Model, Endogenous Growth Theories. Business Cycles: Real Business Cycle Theory, New Keynesian Models. Monetary Economics: Money Supply, Inflation Dynamics, Monetary Policy. Unemployment: Theories of Unemployment, Natural Rate Hypothesis

Unit III: General Equilibrium and Welfare Economics

General Equilibrium Theory: Existence, Uniqueness, and Stability. Welfare Economics: Pareto Efficiency, Social Welfare Functions. Market Failures: Externalities, Public Goods, Asymmetric Information

Unit IV: Contemporary Issues in Economic Theory

Behavioral Economics: Bounded Rationality, Prospect Theory. Experimental Economics: Design and Interpretation of Economic Experiments. Information Economics: Adverse Selection, Moral Hazard. Mechanism Design and Auction Theory

Suggested Readings:

- Kreps, D. M. (2012). Microeconomic Foundations I: Choice and Competitive Markets. Princeton University Press.
- Salanie, B. (2005). The Economics of Contracts: A Primer. MIT Press.
- Mas-Colell, A., Whinston, M. D., & Green, J. R. (1995). Microeconomic Theory. Oxford University Press.
- Romer, D. (2012). Advanced Macroeconomics. McGraw-Hill Education.
- Mas-Colell, A., Whinston, M. D., & Green, J. R. (1995). Microeconomic Theory. Oxford University Press.

MA ECONOMICS
SEMESTER - III
INTERNATIONAL MACROECONOMICS

Course Code: ECOCC-302

Course Credit: 4

Course Objectives: This course aims to provide an understanding of the macroeconomic theories and models in the context of open economies. It also develops understanding of the theoretical underpinnings of economic policy in open economies, such as monetary and fiscal policy, dynamic and stochastic versions of the Mundell-Fleming model, nominal and real exchange rate determination and models of currency crises.

Unit I: Introduction

Concept and constituents of Balance of Payments. Trade balance and Current account. Global Imbalances. Intertemporal approach to Current Account Balance. Exchange rate concept and measurements. REER and NEER, BOP under fixed and flexible exchange rates, National Income Accounting and Open Economy. Keynesian Goods market equilibrium and international trade. Equilibrium income and open economy multiplier. Devaluation, Marshall-Lerner Condition, Absorption and Laursen-Metzler effect. The J curve effect.

Unit II: Inflation and Unemployment in the Open Economy

Aggregate demand in an economy under fixed exchange rate and flexible exchange rate Equilibrium Rates of Unemployment and Sustainable Unemployment. Inflationary expectations and adjustments. Fiscal Expansion, Exchange Rate and inflation. Supply Side and Demand side in the Open Economy. Open Economy Equilibria.

Unit III: Asset Markets, The BOP and The Exchange Rate

The Assets market equilibrium the LM Curve. Implication of Capital Mobility for Macro Policy. The effect of Fiscal and Monetary Policy in an open economy. Mundell–Fleming Model in open economy. The Impossible Trinity. Interest-Rate Differentials. Portfolio choice in open economy, Growth, Inflation and the Money account. Elasticities, Absorption and Monetary approaches to the BOP. Monetary approach to Exchange rate. Law of one price. Deviations from Purchasing Power Parity and Exchange Rate. Exchange Risk and Portfolio Balance Approach.

Unit IV: International Monetary System and Further Topics

The Bretton Woods System, IMF, BIS, International Financial markets, Euro Dollar Markets, Floating Exchange Rates with Zero Capital Mobility. Floating Exchange Rates and Perfect Capital Mobility, Managed Float, Exchange Rate Expectations. Rational Exchange Rate Expectations; Dornbusch's Overshooting Model. Policy Interdependence in the world.

Suggested Readings:

- Wendy Carlin and David Soskice (2008) *Macroeconomics: Imperfections, Institutions & Policies*; Oxford University Press.
- Mankiw, N. Gregory (2000) – *Macroeconomics* (4th Ed, Macmillan-Worth).
- Rudiger Dornbusch, 1973, "Devaluation, Money and Nontraded Goods," *AER*, Dec., 71-80.
- Ariel Burstein, Martin Eichenbaum & Sergio Rebelo, 2005.
- Milton Friedman, 1953, "The Case for Flexible Exchange Rates," in *Essays in Positive Economics* (University of Chicago Press: Chicago), 157-203.
- Kenneth Rogoff and Maurice Obstfeld, 1995, "The Mirage of Fixed Exchange Rates," *Journal of Economic Perspectives* 9, Fall, 73-96.

- Stephanie Schmitt-Grohe, Martin Uribe, and Michael Woodford: International Macroeconomics, A Modern Approach, (2002).
- Giancarlo Gandolfo: International Finance and Open Economy Macroeconomics, (2018).
- Obstfeld, M and Rogoff, K “Foundations of International Macroeconomics”, MIT Press, 1996.

**MA ECONOMICS
SEMESTER-III
ADVANCED STUDY OF THE INDIAN ECONOMY**

Course Code: ECOCC-303

Course Credit: 04

Aim: To provide the students with a critical understanding of the Indian economy so that they may be able to engage meaningfully with the issues regarding the country’s economy. Moreover, student should be able to comprehend the issues at the macro level while using their theoretical understanding of the macroeconomics and development in the context of the Indian economy.

Unit 1: Structure of Indian Economy

Inter-Sectoral Relationships, their pattern and Growth, Changing Structure of Indian Economy; Economic Inequality, Regional and Sectoral dimensions in Poverty and Unemployment, Human Development, Major Policy Shifts.

Unit 2: Agriculture

Strategy of Development, Commercialization of Agriculture, Agricultural Price Policy, Food Security, Agriculture and Climate Change, Land Reforms, Rural Credit, Sustainable Agriculture, Technology and Agriculture.

Unit 3: Industry: Trends & Patterns of Industrial Growth; Industrial Policy, Capital goods industries, Manufacturing Sector-Growth & Productivity, MSMEs, Initiatives towards sectoral development.

Unit 4: Services Growth and Structure of Services Sector; Banking, Finance, Tourism, Science and Technology, Initiatives towards sectoral development.

Suggested Readings:

- Agarwal A. N and M.K. Indian Economy, New Age Publications.
- Agarwal M.K. *Uttar Pradesh Mein Arthik Vikas*, New Royal Book Company, Lucknow.
- Agarwal, MK. Modi Empowers Development, Sultan Chand and Co, New Delhi.
- Banerjee Abhijit, What the Economy Needs Now, Juggernaut Publication.
- Dereze Jean, Social Policy (EPW), Orient Blackswan.
- Economic Survey, Ministry of Finance, Government of India.
- Human Development Reports, UNDP.

- Kapila Uma, Indian Economy: Performance and Policies, Academic Foundation.
- Kumar Sanjeev, Crop Diversification and Food Security in India, Mittal Publications.
- Piketty Thomas, Economics of Inequality, Harvard University Press.
- Stiglitz Joseph, Globalization and its Discontents, Penguin .
- Relevant Government Publications.

**MA ECONOMICS
SEMESTER-III
POPULATION THEORY AND DEMOGRAPHIC ANALYSIS**

Course Code: ECOEL-304 A

Course Credit: 4

Course Objective: The main objective of this paper is to make the students aware of the importance of population in economic development and the various theories that explain the growth of population in a country. The paper also enlightens the students on the quantitative and the qualitative aspects and characteristics of the population through various demographic techniques.

Unit I: Introduction to Demography

Historical background of Population Studies in India, Nature and Scope and Importance of population Studies, Relation of population studies with other disciplines, Basic Demographic Concepts.

Unit II: Theories of Population

Malthusian and Neo-Malthusian, Optimum theory; Theory of Demographic Transition, Biological Theories and Sociological Theories of Population, Economic Theories of fertility: Easterlin, Leibenstein, Caldwell, Theories of Migration: Ravenstein, Lee's theory, Michal Todaro.

Unit III: Methods of Demographic Analysis

Fertility and Nuptiality, Mortality, Morbidity, Life table, complete and abridged and their construction, Population Pyramid, Demographic Dividend, Population Projection.

Unit IV: Population and Economic Development

Population as a resource and Population pressure on the resource, Population and Environment, Urbanization, Unemployment, Migration, Population Ageing, Population Policy of India, Sources of demographic data, World Population Conferences.

Suggested Readings

- Agarwala S.N. India's Population Problem, Tata McGraw-Hill Co., Bombay.
- Bhende, Asha A. and Tara Kanitkar, Principles of Population Studies, Himalaya Publishing House, Mumbai

- Bose, A., India's Basic Demographic Statistics, B.R. Publishing Corporation, New Delhi Bogue, D.J., Principles of Demography, John Wiley, New York
- Bose, Ashish: India's urbanization 1901 – 2001 – 2nd Ed New Delhi, Tata McGraw Hill, 1978
- Bougue, Donald J: Principles of demography – New York: John Wiley and Sons, 1969
- Chaubey, P.K., Population Policy in India, Kanishka Publications, New Delhi.
- Davis, Kingsley: The population of India and Pakistan – New Jersey; Princeton, 1951
- Different publications based on Census of India, published by Census Commissioner and Registrar General of India, New Delhi
- Family Welfare Programme in India, Year Book 2012, Government of India, New Delhi
- Hauser, Philip M and Otis Dudley Duncan, Ed: The study of population: An inventory and appraisal – Chicago: University of Chicago Press, 1951
- National Family Health Survey- reports for India and different States of India) Government of India and International Institute for Population Sciences, Mumbai
- National Population Policy 2000, Government of India, New Delhi
- Thompson, Warrens and David T Wewis: Population Problem – 5th ed – New Delhi: Tata McGraw Hill, 1965

MA ECONOMICS SEMESTER-III ECONOMICS OF AGRICULTURE

Course Code: ECOEL-304 B

Course Credit: 4

Course Objective: To provide detailed understanding regarding the issues in agricultural economics to those intending to specialize in this area. To familiarize students with policy issues that is relevant to agricultural economics and enables them to analyse these issues.

Unit I: Agriculture and Economic Development

Inter-relationship between Agriculture and Industry, Approaches to Agriculture Development- Lewis and Ranis –Fei, Schultz and Mellor, Inter-Regional Disparities in growth of production and productivity in Indian agriculture, Pattern and composition of change in Exports and imports of agricultural commodities, WTO and Agreement on Agriculture.

Unit II: Marketing Structure

Agricultural Marketing, APMC, Marketed and marketable Surplus, MSP, Inter-sectoral Terms of Trade and their impact on agriculture, Role of Subsidies, Agricultural Price Policy in India, E-NAM, Cobweb theorem.

Unit III: Issues in Agricultural Development

Green revolution, Land Reforms, Technical change in agriculture, Agricultural production function, farm size, Irrigation, Rural Wage differentials Rural Indebtedness, Sources of Agricultural finance, Capital formation in Indian Agriculture, Public and Private Investment, crop insurance.

Unit IV: Current issues in Indian Agriculture

Conventional farming and Sustainable farming, Approaches to Sustainable Agriculture, Diversification of agriculture: plantation and Horticultural Produce, livestock, Poultry and Fishery etc in India, Policies related to agriculture sector.

Suggested Readings:

- Alag Y.K. Globalisation and Agriculture Crisis in India, Deep and Deep Publications
- Bilgrami S. A.R. An Introduction to Agricultural Economics, Himalaya Publishing House
- Kumar. Sanjeev. Crop Diversification and Food Security in India, Mittal Publications
- Lekhi R.K., & Joginder Singh, Agricultural Economics, Kalyani Publishers
- Meier Gerald M. Leading Issues in Economic Development, Oxford University Press
- Mellor, John, Agricultural Development and Economic Transformation, Palgrave Macmillan
- Misra Roli. Agricultural Growth and Terms of Trade in India Since 1951 by Kunal Books
- Sadhu A.N and Singh Amarjit, Fundamentals of Agricultural Economics, Himalaya Publication House

**MA ECONOMICS
SEMESTER-III
ADVANCED ECONOMETRICS THEORY**

Course Code: ECOEL-304 C**Course Credit: 4**

Course Objective: The objective of the course is to familiarize the students with advanced econometric analysis using time series and panel data.

UNIT-I: Methodology of Econometrics

Functional Form of Regression Models: Log-log, Semi log, Reciprocal Transformation. General Linear Model (GLM): Assumptions; OLS and Maximum Likelihood (ML); Inference, Likelihood Ratio, Wald and LM Tests, GLS Model and estimation.

UNIT-II: Regression with Qualitative Variables

Dummy Variable- Meaning, Use of Dummy in Regression Model, Dummy Variable Trap, Estimation of Regression Model with Dummy Variable, Inferences and Significance. Nature of qualitative response models, Linear Probability Models, Estimation and Inference, Logit Model, its estimation and inference, Probit Model, Tobit Model.

UNIT-III: Simultaneous Equation Models

The nature and structure of simultaneous equation models; Simultaneous equation bias, Inconsistency of OLS Estimators; The identification problem, formal rules of identification, the order condition, the rank conditions, reduced form and identification, Indirect Least Squares (ILS) Method; Method of instrumental variables and two-stage least square methods, Recursive Models and its estimation.

UNIT-IV: Panel Data

Model Specification, Specification Errors, Pooled OLS, Introduction to Panel data, Panel data: Fixed Effects-Within and between Group effects, unbalanced Panel, Random Effects.

Suggested Readings:

- Gujarati D. Basic Econometric, McGraw-Hill
- A Koutsoyiannis. Theory of Econometrics, Publisher: Ane Books.
- D. M. Nachane. Econometrics: Theoretical Foundations and Empirical Perspectives, Oxford University Press
- Kamenta J. Elements of Econometrics, Macmillan Publishing Co., Inc. New York.
- Johnston J. Econometric Methods, New York: McGraw Hill, 1971
- Wooldridge, J.M. Introductory Econometrics-A Modern Approach, Cengage.
- G. S. Maddala, Econometrics, McGraw Hill

**MA ECONOMICS
SEMESTER - III
FINANCIAL ECONOMICS**

Course Code: ECOEL-305 A

Course Credit: 2

Course Objectives: To equip students with essential tools for understanding Finance and to enable students to develop necessary skill and knowledge for financial problem solving.

Unit I: Introduction

Assets and Real Assets, Financial Markets, Financial Institutions, Direct and Indirect Finance, Debt and Equity Instruments, Bonds, Debentures and Derivatives, Interest Rates, Exchange Rates, Types of Risks.

Unit II: Money Market and Concepts of Risk

Banks, Profitability and Efficiency of Banks, NBFIs, RBI, Time Value of Money, Annuity, Perpetuity and Consols, Return and Risks, Mathematical Expectations, Mean Variance Model and Utility Function.

Unit III: Capital Market and Theories of Valuation

Primary and Secondary Market, Valuation of Securities, Capital Asset Pricing Model and Arbitrage Pricing Theory, Portfolio Analysis- Portfolio Selection and Diversification, Bonds, Bond Price Theory, Valuation of Bonds.

Unit IV: Derivatives Market

Options- Call and Put, Risk Hedging, Interest Rate Derivatives, Futures and Forwards Market, Mortgage Based, Commodity Based and Contra Derivatives.

Suggested Readings:

- L. M. Bhole and J. Mahukud, Financial Institutions and Markets, Tata McGraw Hill, 5th edition, 2011.
- Hull, John C., Options, Futures and Other Derivatives, Pearson Education, 6th edition, 2005.
- David G. Luenberger, Investment Science, Oxford University Press, USA, 1997.
- Thomas E. Copeland, J. Fred Weston and Kuldeep Shastri, Financial Theory and Corporate Policy, Prentice Hall, 4th edition, 2003.
- Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance, McGraw Hill, 7th edition, 2002.
- Stephen A. Ross, Randolph W. Westerfield and Bradford D. Jordan, Fundamentals of Corporate Finance. McGraw-Hill, 7th edition, 2005.

**MA ECONOMICS
SEMESTER-III
GENDER ECONOMICS**

Course Code: ECOEL-305 B

Course Credit: 2

Course Objective: The objective of the paper is to provide an analysis of gender issues in the process of development and to highlight its centrality in the entire process. The purpose is put to familiarize the students with the rich empirical literature on various dimensions of gender and development issues.

Unit I: Introduction to Gender Economics

Understanding Gender, Waves of feminism, Patriarchy, Gender Stereotypes, Gender discrimination, Intersectionality, From Women in Development to Gender and Development, Empowerment, Gender effects on macroeconomic theory and instability, Gender Indices like GII, GDI.

Unit II: Conceptualizing Women's Work

Gender inequality in Labour market, Factors in wage disparity, Glass ceiling, Neo-classical theory, Gary Becker's Model of allocation of time, Time Use Survey.

Unit III: Gender, Agriculture and Environment

Gender and property rights, Boserup's thesis on gender and agricultural change and its criticisms, Feminization of agriculture, Feminization of poverty Gender, Environment and development, Eco-Feminism, Impact of climate change on Gender.

Unit IV: Gender and Policy Perspective: Gender mainstreaming, Gender budgeting, Gender Policies; National and International, Inclusive Growth and Development of Women, Women in Planning and Social Policy, Role of international bodies.

Suggested Readings:

- Agarwal, B. (1994): A Field of One's Own: Gender and land right South Asia, Cambridge University Press.
- Boserup, E (1970): Women's Role in Economic Development, London
- Eswaran Mukesh (2020): Why Gender Matters in Economics, Princeton University Press
- Joyce P. Jacobsen (1994): The Economics of Gender, Wiley-Blackwell
- Lourdes Beneria (2019): Gender Development and Globalization, Routledge
- Maria Mies and Vandana Shiva (1993): Ecofeminism, Rawat Publication, Jaipur
- Misra Roli (2014): Rethinking Gender', Rawat Publications, Jaipur
- ILO (1998): Women's Participation in the Economic Activity of Asian Countries, Geneva.
- Routledge Studies in Gender and Economics (2024), Taylor and Francis
- U. Kalpagam (2011): Gender and Development in India: Current Issues, Rawat Publication

MA ECONOMICS SEMESTER-III ENERGY ECONOMICS

Course Code: ECOEL-305 C

Course Credit: 2

Course Objectives: This course is designed to understand the fundamentals of energy economics and also illustrate the practical challenges and solutions in this sector.

Unit I: Introduction to Energy Economics

Energy Economics: Origin, meaning and definition; Energy resources and energy commodities: Properties and classification; Concept of energy conservation and energy efficiency; Energy statistics; Energy flows; Energy accounting: Components of energy account, commodity accounts and overall energy balance; Law of Thermodynamics; Energy, economy and environment interactions; Role of energy in development and growth.

Unit II: Demand and Supply of Energy

Demand for energy as a derived demand; Determinants and elasticity of demand; Consumer and producer demand for energy; The increasing global demand for energy; Causes and impact of increase in demand for energy; Trends and patterns of global energy consumption and energy crisis; Demand

substitution and energy use; Global variations in energy use; Classifications of energy supplies: renewable and non-renewable; Fossil fuels (coal, oil, natural gas); Renewable energy (hydro, Marine, wind, solar, geothermal, bio); Nuclear power; Trend and patterns of energy production; Socio-economic and environmental impacts of energy production.

Unit III: Energy Pricing and Taxation

Production cost vs. return on investment; Basic pricing models; Market Failure; Pricing structure of different energy sources; Energy pricing in Indian context (Coal, Gas and Electricity) and different energy markets; Regulated vs. market price; Peak and off-peak pricing; Time of Day (ToD), seasonal, and block pricing; Energy taxes and subsidies; Principles of optimal indirect taxation; Equity considerations; The role of regulatory bodies; Energy financing; Green finance initiatives.

Unit IV: Issues and Policies Related to Energy Sector

Energy access and poverty; Energy security; Energy resources and environmental interactions; Energy and climate change; Energy efficiency and carbon emissions; Economic approach to control the greenhouse effect; Energy policy instruments; Strategies for modelling exhaustible resources; Emissions Trading System (ETS); Energy and sustainable development; Concept of green accounting.

Suggested Readings:

- Bhattacharya S. C., Energy Economics, Springer.
- Carol A. Dahl, International Energy Markets: Understanding Pricing, Policies and Profits, 2nd Edition, Pennwell.
- Kaplan S., Energy Economics: Quantitative Methods for Energy and Environmental Decisions, McGraw- Hill College.
- Peter Zweifel, Aaron Praktiknjo, George Erdmann, Energy Economics: Theory and Applications, Springer.
- Peter M. Schwarz, Energy Economics.

MA ECONOMICS SEMESTER-IV DEVELOPMENT THEORY AND PRACTICE

Course Code: ECOCC-401

Course Credit: 4

Course Objective: This course aims to introduce the students to know and understand the theoretical concepts of economic development, different indices of the measurement of development. Students will have the tools to understand current policy debates they will also learn how to conduct independent research in these areas.

Unit I: Economic Development

Evolution of Development Economics, Development Paradigms, Factors in the development Process, Obstacles to economic development, Justice- Concept, John Rawls theory of Justice, Capability approach of Amartya Sen and Martha Nussbaum

Unit II: Poverty, Inequality and Development

Development gap—concept and measurement. Poverty- Absolute and relative; Measurement of poverty—Head count ratio, poverty gap ratio, income gap ratio, Foster-Greer Thorbecke index, Human poverty index, Multidimensional Poverty Index, Economic inequality- concept and measurement, Lorenz curve, Gini coefficient, Kuznets's Inverted-U Hypothesis.

Unit III: Contemporary Models of Development and Underdevelopment

Dualism-Geographical, Financial and Technical Dualism, Underdevelopment as a coordination failure, Multiple Equilibria, Kremer's O-ring theory of economic development, Human capital and growth, Conditional convergence, Technological progress- Externalities, technical progress, and growth.

Unit IV: Issues of Development

Population Growth, Migration, Todaro Model, Urbanization, Informal Sector, Sustainable Development, Gender and Development

Suggested Readings:

- Barro, R. J. and Sala-i-Martin, X. 2007. *Economic Growth* (2nd Edition). Prentice-Hall of India, New Delhi. Basu, K. *Analytical Development Economics: The Less Developed Economy Revisited*. Oxford University Press, 2003.
- Chakarvarti, S (1981): *Development Planning: the Indian Experience*. Oxford University Press, New Delhi.
- Chakarvarti, S. (1982): *Alternative Approaches to A Theory of Economic Growth*, Oxford University Press, New Delhi.
- Chenery et al (1987): *Handbook of Development Economic V 01.1 and II*. North Holland.
- *Economic Development* (4th Edition). McGraw Hill Book Company
- Grabowski, R. and Shields, M. P. 1996. *Development*. Blackwell Publishers, Cambridge.
- Hamberg, D. *Models of Economic Growth*. Harper and Row Publishers. New York
- Haq, M.: *Reflection on Human Development*, Oxford University Press. New Delhi.
- Hayami, Y. 2001. *Development Economics*. (2nd Edition). Oxford University Press
- Herrick, B. and Kindleberger, C. P. 1984.
- Lipsey, R. G. and K. A. Chrystal, *Economics*. Oxford University Press, 2007.
- Meir, G. M. and Rauch, J. E. 2000. *Leading Issues in Economic Development*. (7th Edition). Oxford University Press. New York.
- Myrdal, G (1968): *Asian-Drama: an Enquiry Into The Poverty of Nations*, Pelican, London.
- Sen, A.K. (1970): *Growth Economics*, Penguin.
- Ray Debraj, 2007. *Development Economics* (12th Edition), Oxford University Press, London
- Sen, A.K. (1981): *Poverty and Famines*, Allied Publishers, New Delhi.
- Sen, S.K. (1984): *Resources, Values & Development*, Basil Blackwell. London.
- Thirwal, A. P. 1999. *Growth and Development*. (6th Edition). Macmillan. U.K.
- Todaro, M. P. 1996. *Economic Development* (6th Edition). Longman, London.

**MA ECONOMICS
SEMESTER-IV
HISTORY OF ECONOMIC ANALYSIS**

Course Code: ECOEL-402 A

Course Credit: 4

Course Objectives: This course introduces the students to ideas of different schools of economic thoughts such as classical thoughts, marginalist thoughts and Indian economic thoughts.

Unit I: Pre-Classical Thoughts

Mercantilism & Physiocracy: Economic ideas, Classical thoughts: Adam Smith: division of labour, theory of value, capital accumulation, David Ricardo: value, theory of rent, distribution, ideas of economic development, Thomas R. Malthus: theory of population, theory of gluts; Karl Marx: dynamics of social change, surplus value, profit and crisis of capitalism, Economic ideas of J.B. Say, J.S. Mill.

Unit II: Marginalist Thoughts

Jevons: marginal utility theory & paradox, Walrus: general equilibrium theory, Menger: derived demand. Extension of new theory: Wieser, Bohm- Bawerk, Wicksteed: distribution, Edgeworth and Schumpeter, Marshall: Fusion of Demand and Supply, value theory, Keynesian Thought.

Unit III: Ancient Indian Economic Thoughts

Valluvar: The idea of wealth, welfare state and public finance. Kautilya: The Idea of Welfare State, Interest & Profit, Trade, Agriculture, Wage Policy, Price Regulation. M.G. Ranade: Political Economy, Industrial development, R.C. Dutt: De-industrialization, Land Revenue Policies, taxation, poverty.

Unit IV: Modern Indian Economic Thoughts

Dadabhai Naoroji: Theory of Economic Drain, G.K. Gokhale: Indian Finance and Surplus budget, Mahatma Gandhi: Swadeshi, Trusteeship, Cottage Industries, B.R. Ambedkar: Economic policies for social equality, J.K. Mehta: Theory of Wantlessness, M.S. Swaminathan: Green Revolution and Sustainable agriculture. Economic Ideas of Amartya Sen and Abhijit Banerjee.

Suggested Readings:

- Dobb, Maurice. Theories of Value and Distribution since Adam Smith.
- Gide and Rist. A History of Economic Doctrines.
- Stigler, G J. Essay in the History of Economics.
- Schumpeter, Joseph. History of Economic Analysis.
- Ajit, K, Dasgupta. A History of Indian economic thought, Routledge, London.
- Ghos & Ghos. Concise History of Economic Thought, Himalaya Publication House.
- T.N. Hajela. A History of Economic Thought, Ane Books Pvt.

- Shiva Chandra. A History of Indian economic thought, Firma, KLM.
- Singh and Thakur, Economic Thoughts of Amartya Sen, Regal Publications.
- Banerjee Abhijit V. and Duflo Esther. Good Economics for Hard Times, Juggernaut.

MA ECONOMICS SEMESTER-IV INDUSTRIAL ECONOMICS

Course Code: ECOEL-402 B

Course Credit: 4

Course Objectives: This course provides a foundation for the study of theoretical models of industrial organisation and Industrial development.

Unit I: Framework of Industrial Economics

Industrialization – Patterns and Stage, Advantages and Problems of Industrialization, Concept of firm-Ownership control and Objectives of a firm, Passive and Active behavior of firm, Size, growth and profitability of a firm, Productivity and Capacity Utilization- Concept and measurement.

Unit II: Industrial location and Regional Development

Determinants of Industrial location – Technical, Economic, Infrastructural and other factors, Theories of Industrial location – Weber, August Losch, Sargent Florence, Development of Backward Regions, Govt. Policy and Approach for the development of Backward Regions.

Unit III: Industrial Structure and Project Appraisal

Alternative Patterns of Industrialization – Hoffman’s Hypothesis, Siman Kuznet’s Interpretation, Industrialization and Planned Economics- Chenery’s Patterns of Industrial Changes, Mergers, Amalgamation and Acquisitions, Project Appraisal Techniques – CBA, NPV and IRR.

Unit IV: Industrialization and Contemporary Issues in India

Industrial Growth and Pattern in India, Changing Trends in Public and Private Sector, Role of MSMES in Indian Context, Industrial Policy, Sources of Industrial Finance, Industrial Relations and Labour, Industrial Proliferation and Environmental Protection.

Suggested Readings:

- Ahluwalia, I.J: Industrial Growth in India (Oxford University Press, New Delhi, 1985)
- Barthwal, R.R: Industrial Economics (Wiley Eastern Ltd, New Delhi, 1985)
- Cherunilam F: Industrial Economics: Indian Perspective (3rd Edition) (Himalaya Publishing House, Mumbai, 1994)
- Desai B: Industrial Economy in India (3rd Edition) (Himalaya Publishing House, Mumbai, 1999)
- Divine P.J & R.M Jones et. Al: An Introduction to Industrial Economics (George Allen and Unwin Ltd, London, 1976)
- Hay D and D J Morris: Industrial Economics: Theory and Evidence (Oxford University Press, New Delhi, 1979)
- Kuchhal S.C.: Industrial Economy of India (5th Edition) (Chaitanya Publishing House, Allahabad, 1980)
- Singh. A and A. N. Sadhu: Industrial Economics (Himalaya Publishing House, Bombay, 1988).

**MA ECONOMICS
SEMESTER-IV
TIME SERIES ANALYSIS**

Course Code: ECOEL-402 C

Course Credit: 4

Course Objective: The objective of the course is to familiarize the students with analysis of Univariate and Multivariate time series data.

UNIT I: Univariate Time Series Modelling

Concept of Time-series - Univariate Time Series, Autoregressive and Moving averages processes-properties, Lag operator, ARMA Modelling, Stationarity, Random Walk model, testing for stationarity: Unit Root Test - Dickey- Fuller test, Augmented Dickey -Fuller test, Mackinnon critical values, Trend Stationary vs Difference Stationary Time Series, Identification, estimation, testing of ARIMA models & forecasting, Box-Jenkins Methodology.

UNIT II: Dynamic Econometric Models

Introduction to Autoregressive Distributed Lag Relationship, Rationale for lags, estimation of distributed lag models, Koyck's Approach, Almon approach to Distributed Lag Models.

UNIT III: Bivariate & Multivariate Time Series Analysis

Cointegration and VAR Model: Meaning of Cointegration, Cointegrating regression, estimation of parameters, Error Correction Model, Granger Causality test, Vector Autoregression: estimation of VAR model, Impulse Response Function & Forecasting through VAR Models.

UNIT IV: Financial Time Series

Measuring volatility in financial time series, ARCH Models, GARCH Model and its types, ARCH processes and estimation, ARCH-M and GARCH-M Models.

Suggested Readings

- Box, G. Jenkins, G.M. and Reinsel, G.C. Time Series Analysis: Forecasting and Control, 4th Edition, John Wiley
- Enders, W. Applied Econometric Time Series, 4th Edition, John Wiley.
- Greene, W. Econometric Analysis, 8th Edition, Pearson.
- Pesaran, M. H. Time Series and Panel Data Econometrics, Oxford University Press.
- Hamilton, James D. Time Series Analysis, Princeton University Press.

**MA ECONOMICS
SEMESTER IV
FINANCIAL INSTITUTIONS AND MARKETS**

Course Code: ECOEL-403 A

Course Credit: 4

Course Objectives: The objective of this paper is to introduce students to the role and functioning of financial markets, financial products that are traded in such financial markets and institutions associated with financial markets. Various conceptual issues related to risk and return, types of securities and the role of regulatory bodies are explained. This will enable them to take rational decisions in financial

environment.

Unit I: Introduction

Financial and non-financial Assets Financial intermediation and role of financial intermediaries. The structure and function of financial system. Indicators of financial development, Financial development and economic development, Globalization of financial system.

Unit II: Money Market and Indian Regulatory Institutions

Central Bank, Aims and effectiveness of monetary policy. Transmission of monetary policy. Monetary policy reforms. Commercial Banks. Profitability Vs liquidity Credit creation and Limitations. Term structure of interest rates Yield Curve, Resolution of NPAs, BASEL norms, Banking sector reforms. NBFIs definition and types Their growth and impact on economic development in India. Systemically important NBFIs. Regulation of NBFIs, SEBI, IRDA, PFRDA.

Unit III: Securities and Bond Market

Primary and Secondary Market, Equity, Bonds, Debentures and Derivatives, IPO, Underwriting, Portfolio Analysis, Types of Risks, Risk Return Trade Off, Valuation of Securities and Bonds, Derivatives, Commodity and Mortgage Based Derivatives, Call and Put Options, Futures and Forwards Market, Closed Ended and Open-Ended Funds. Investment Banking, Infrastructure financing, escrow account, Special Purpose Vehicle and Take out financing.

Unit IV: Foreign exchange market

Nature and Organization of Foreign Exchange Market, Exchange rate determination. REER and NEER, Fixed and floating exchange rate system, Working of Floating exchange rate system since 1973 Currency Convertibility: The Indian experience. Risk hedging and futures in exchange rates. International liquidity. International Financial Flows form and volume. IMF, IBRD, European investment Bank (EIB), ADB, IFC, BIS (Bank for international settlement) BRICs bank.

Suggested Readings:

- Avadhani, V.A. (2012): Financial Services and Markets, Himalaya Publishing House, India
- Auerbach, Robert D, Money, Banking and Financial Markets; Macmillan Publishing Co; New York and Collier MacMillan Publisher; London.
- Bhole, L. M. (2015): Indian Financial System, Chugh Publications, Allahabad, India
- Bhole, L. M. (2016): Financial Institutions and Markets, Tata McGraw Hill Company Ltd., New Delhi, India
- Fabozzi J. F., Modigliani F, Jones F. J. And Ferri M. G.: Foundations of Financial Markets and Institutions, Pearson Education Ltd.(2001)
- Gordon and Natarajan (2012): Financial markets and services, Himalaya Publishing House, India
- Gupta, Shashi K. & Agrawal, Nisha (2013): Financial services, Kalyani Publishers, India
- Houthakker, H. S. & Williamson, P. J. (1996): Economics of Financial Markets, Oxford University Press.
- Khan, M. Y. (2016): Indian Financial System, Tata McGraw Hill, New York
- Mishkin, Frederics, S., The Economics of Money Banking and Financial Markets; Harper Collins Publisher; New York. 4

MA ECONOMICS
SEMESTER-IV
RESEARCH METHODOLOGY IN ECONOMICS

Course Code: ECOEL-403 B

Course Credit: 4

Course Objective: The objective of this course is to introduce the concept of research, the methods of conducting research and various statistical tools of data analysis.

Unit I: Introduction to Research

Research: Concept, Need, and Purpose, Types of research: Introduction to Descriptive, Analytical, Fundamental, Quantitative and Qualitative, Inductive and Deductive Research Approaches, Research Process, Research Design – Quantitative, Qualitative and Mixed.

Unit II: Formulation of a Research Problem

Sources for generating research ideas, Review of literature, Origin of Research Problem, Aim/ Objective, Hypothesis/Research Questions. Review of Literature and Citation. The Steps Involved, Writing a Research Synopsis,

Unit III: Data Collection and Sampling

Probability & non probability sampling methods and its types, Determination of the size of sample, Methods of Data Collection, Preparation of Questionnaire/Schedule, Pilot survey.

Unit IV: Statistics and its Applications

Descriptive Statistics - Measures of Central Tendency: Mean, Median, Mode, Measures of Dispersion, Formulation of statistical hypothesis-Null and alternative, Type I and II errors, Testing of Hypothesis: Standard Error Test, t-test, Confidence intervals and level of significance.

Suggested Readings:

- Cooper, D. R., Schindler, P. S., & Sun, J. (2006). Business research methods (Vol. 9, pp. 1-744). New York: McGraw-Hill.
- Ethridge, D. (2004). Research methodology in applied economics: organizing, planning, and conducting economic research (No. BOOK). Blackwell publishing.
- Goode, W. J., & Hatt, P. K. (1952). Methods in social research.
- Bryman, A. (2016). Social research methods. Oxford university press.
- Jackson, S. L. (2015). Research methods and statistics: A critical thinking approach. Cengage Learning.
- Panneerselvam, R. (2011). Research Methodology PHI Learning Private Limited New Delhi.
- Sarangi, P. (2010). Research Methodology, Taxman Publications Private Limited, New Delhi.
- Kumar, R. (2018). Research methodology: A step-by-step guide for beginners. Sage.

MA ECONOMICS
SEMESTER-IV
HEALTH ECONOMICS

Course Code: ECOEL-403 C

Course Credit: 4

Course Objectives: This course provides a foundation for the study of importance and various dimensions of health care system and introduces basic concepts regarding maximization of the health benefits to the population.

Unit I: Introduction to Health Economics

Health Economics - Definition and Scope, Human Capital and Health, Health as a Social Indicator, Interlinkages between Health and Economic Development, Determinants of Health- Poverty, Malnutrition and Environmental Quality, Components of Economic Appraisal of Health Programs, Demand and Supply of Healthcare.

Unit II: Cost and Benefits of Health Services

Private benefits and cost of providing health services, The failure of the market to provide essential health services, The provision of health Care services by the government, Application of cost benefit analysis to public health and family planning projects, Benefits and Costs (both private and social) of training to professional manpower in health sector.

Unit III: Health Financing and Health Insurance

Per capita expenditure on health, Out-of-pocket expenditure (OOPE) on health, Sources of public finance for health, financial, Financial health services through specific (health cess) and general (direct and indirect taxes) local government revenue, Public - Private Partnership in financing health care services, Health Insurance and risk adjustment, Demand and Supply of Health Insurance, The need for a General Health Insurance, The need for social Health Insurance for the Poor, Disabled and the Aged.

Unit IV: Valuing Health Outcomes and Health Damage

Human Capital Approach: Measurement of Mortality, Value of life, Years of life lost, Morbidity Valuation, Cost of illness, Burden of disease, DALY: Components and Postulates, DALY and QALY, the GBD assessment, BD and DALY: A Critical Appreciation, Health Accounting - National Health Accounts, from SNA to NHA, Health Expenditure Efforts.

Suggested Readings:

- Phelps, Charles E. (2010). Health Economics. 4th edition, Prentice Hall.
- Folland, Goodman & Stano (1997), The Economic of Health and Health Care, Prentice Hall, New Jersey.
- Zweifel, P., Health Economics, Oxford University Press, 1997

