



DHANAMANJURI
UNIVERSITY

विद्ययामृतं शुद्धयावहेत

DHANAMANJURI UNIVERSITY

MANIPUR

[Estd. under The Dhanamanjuri University Act, 2017, enacted by the Government of Manipur]

Curriculum Framework

for

Master of Arts in Economics

[As per the National Higher Education Qualification Framework (NHEQF)]



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M.A. in Economics – Curriculum Structure

General Note

The postgraduate programmes are designed in accordance with the Curriculum and Credit Framework for Postgraduate Programmes. Depending on the entry qualification and duration of study, students may pursue a **1-Year Postgraduate Programme**, **2-Semester Postgraduate Diploma**, or **2-Year Postgraduate Programme**. The programmes consist of course work and research work as prescribed under the National Higher Education Qualification Framework (NHEQF).

Programme Structure

1. One-Year Postgraduate Programme (2 Semesters)

Eligibility: Four-Year Undergraduate Degree (Honours/Honours with Research) with a minimum of 160 credits

Duration: 1 Year (2 Semesters)

NHEQF Level: 6.5

Semester	Curricular Component	Minimum Credits
Semester I	Course Work	20
Semester II	Course Work & Research Work	22
Total	—	42

Credit Points: 273

2. Postgraduate Diploma (2 Semesters)

Eligibility:

- Three-Year Undergraduate Degree with a minimum of 120 credits, **or**
- Four-Year Undergraduate Degree (Honours/Honours with Research) with a minimum of 160 credits

Duration: 1 Year (2 Semesters)

NHEQF Level: 6

Semester	Curricular Component	Minimum Credits
Semester I	Course Work	24
Semester II	Course Work	18
Total	—	42

Credit Points: 252

3. Two-Year Postgraduate Programme (4 Semesters)

Eligibility:

- Three-Year Undergraduate Degree with a minimum of 120 credits, **or**
- Four-Year Undergraduate Degree (Honours/Honours with Research) with a minimum of 160 credits

Duration: 2 Years (4 Semesters)

NHEQF Level: 6.5

Semester	Curricular Component	Minimum Credits
Semester I	Course Work	24
Semester II	Course Work	18
Semester III	Course Work	20
Semester IV	Course Work & Research Work	20
Total	—	82

Credit Points: 273 (for students entering after a 3-year UG programme) / 260 (for students entering after a 4-year UG programme)

Evaluation Scheme

Component	Weightage
End-Semester Examination	80 (4 credit paper); 40 (2 credit paper)
Internal Assessment	20 (4 credit paper); 10 (2 credit paper)
Research Work/Dissertation	150 (6 credit)

- Each semester concludes with university examinations.
- Internal assessment may include assignments, presentations, seminars, class tests, and attendance.
- Research work shall be undertaken in the final semester.

Exit Option

Students who exit at the end of the **first year of a Two-Year Postgraduate Programme** shall be awarded a **Postgraduate Diploma**, subject to the successful completion of the prescribed credit requirements.

Programme Objectives

The postgraduate programmes aim to:

- Provide advanced disciplinary knowledge and specialized academic training.
- Develop analytical, research, and problem-solving skills.
- Promote independent learning and research capabilities.
- Prepare students for higher studies, research, academia, public service, and professional careers.
- Foster interdisciplinary understanding and application of knowledge to contemporary social and economic issues.

COURSE STRUCTURE OF M.A. ECONOMICS (1-YEAR PROGRAMME)

Total Credits: 42
Total Marks: 1050

Semester I

Paper Code	Paper Type	Paper Title	IA Marks	End-Sem Marks	Total Marks	Credits
ECO-001	Discipline Specific Core	International Economics	20	80	100	4
ECO-002	Discipline Specific Core	Development Economics	20	80	100	4
ECO-003 (A/B)	Discipline Specific Elective	To be selected from Group I of Annexure	20	80	100	4
ECO-004 (A/B)	Discipline Specific Elective	To be selected from Group II of Annexure	20	80	100	4
ECO-005 (A/B)	Discipline Specific Elective	To be selected from Group III of Annexure	20	80	100	4
Total					500	20

Semester II

Paper Code	Paper Type	Paper Title	IA Marks	End-Sem Marks	Total Marks	Credits
ECO-006	Discipline Specific Core	Indian Economic Policies	20	80	100	4
ECO-007	Discipline Specific Core	Environmental Economics	20	80	100	4
ECO-008 (A/B)	Discipline Specific Elective	To be selected from Group IV of Annexure	20	80	100	4
ECO-009	Research Methodology	Research Methodology	10	40	50	2
ECO-010	Research	Dissertation/Thesis	–	150	150	6
ECO-011	VAC/AEC		-	50	50	2
Total					550	22

Annexure: Discipline Specific Elective

Group I	Group II	Group III	Group IV
Problems of Indian Agriculture (A)	Introduction to Population Studies (A)	Rural Economics (A)	Policy Analysis: Tools and Evidence (A)
Econometrics-I (B)	Institutional Economics (B)	Components of Population Change (B)	Econometrics-II (B)

SEMESTER - I

ECO -001: International Economics

Learning Objectives

- The course reviews classical and modern theories of international trade, including the Heckscher-Ohlin model, empirical anomalies such as the Leontief Paradox, and theoretical developments like the factor price equalization theorem.
- It explores trade under conditions of economies of scale and imperfect competition, and examines the roles of international factor mobility, tariffs, quotas, and related theorems in trade policy.
- The course analyzes trade policy and welfare implications for developing countries, the functioning of international trade institutions like the WTO, and the influence of regional trade blocs, FDI, and MNCs on globalization.
- It reviews national income and balance of payments accounting, examines exchange rate determination in open economies, and explores the macroeconomic framework for analyzing international transactions.
- The course addresses macroeconomic policy in an open economy, exchange rate regimes, foreign exchange markets, and the roles of international monetary institutions in dealing with crises and financial stability.

Learning Outcomes

- Students will be able to understand and apply classical and modern trade theories to analyze patterns and effects of international trade and factor movements.
- Students will be able to evaluate trade policies and institutions affecting developing countries, and assess the role of globalization, trade blocs, and multinational corporations in international economics.
- Students will be able to analyze exchange rate dynamics, balance of payments, and macroeconomic policies in open economies, and interpret the function and impact of global financial institutions and contemporary economic crises.

Syllabus

Unit I: Review of Classical Theories of trade, Heckscher-Ohlin models, Leontief Paradox, Factor Price equalization theorem, terms of trade, Stolper-Samuelson theorem, Rybczynski theorem, and immiserising growth theory.

Unit II: International factor movements, Labour migration and foreign investment, Intra industry trade model, Rationale of tariffs, quotas and subsidies, infant industry argument.

Unit III: Trade policy and Welfare with special reference to developing countries, the international trading system, WTO and preferential trading arguments, Tariff retaliation and the WTO, Custom Unions, Trade and FDI, Trade and MNCs, Regional Trading blocs and the globalization of trade.

Unit IV: Review of national income and Balance of Payments accounting, BOP adjustments- Absorption and Monetary Approaches, the foreign exchange market- Spot and Forward markets, Fixed and Floating exchange rate, the exchange rate determination -Purchasing Power Parity and Interest Rate Parity Theory.

Unit V: Issues of policy instruments in an open economy - Tinbergen on Targets and Instruments, Swan diagram, Flexible exchange rate and problems in maintenance of monetary and fiscal policies, International monetary institutions - IMF and World Bank, currency crisis, stabilization and other contemporary issues including global financial crisis.

Readings:

- Sodersten, Bo & Geoffrey Reed (1994): *International Economics*, London: Macmillan
- Paul R. Krugman & Maurice Obstfeld: *International Economics: Theory and Policy*, Pearson
- Dixit, Avinash and Victor Norman (1980): *Theory of International Trade: A Dual General Equilibrium Approach*, Cambridge, UK: Cambridge Univ. Press
- Feenstra, Robert (2003): *Advanced International Trade: Theory and Evidence*, Princeton, NJ: Princeton Univ. Press
- Grossman, Gene and Kenneth Rogoff (1991): *Handbook of International Economics*, Vol. 3, New York, NY: Elsevier
- Bhagwati & srinivasan (1983): *Lectures on International Trade*, The MIT Press.
- Bhagwati, Jagdish (1964): *The Pure Theory of International Trade*, Economic Journal, Vol.74

ECO-002: Development Economics

Learning Objectives

- The course introduces key distinctions between economic growth and development, focusing on the roles of capital, labor, and technology and examining major growth models such as Harrod-Domar and Solow.
- It explores the measurement and interlinkages between poverty, inequality, and development, incorporating classical and contemporary development indices and theories like Kuznets' curve and Prebisch-Singer thesis.
- The course examines real-world experiences such as the East Asian economic miracle, analyzing macroeconomic stability, equity, and growth strategies.
- It investigates the demographic dimension of development, including theories of population growth, labor supply models, and the impact of migration on urbanization and employment.
- The course evaluates the role of the state in economic development, addressing issues like market failure, corruption, and the choice of appropriate production techniques in underdeveloped economies.

Learning Outcomes

- Students will be able to distinguish between economic growth and development and apply classical and modern growth theories to analyze country-level growth trends.
- Students will be able to assess the causes and consequences of poverty and inequality and interpret various development indicators and theoretical approaches.
- Students will be able to critically evaluate demographic, institutional, and policy-related factors influencing development, with attention to real-world development experiences and challenges.

Syllabus

Unit I: Growth and Development: Difference between Growth and Development; factors affecting economic growth- capital, labour and technology; Growth models- Harrod-Domar model, Solow model and its application to convergence of country's growth rates.

Unit II: Poverty, Inequality and Development: Measurement of poverty and inequality and their relationship with economic growth, Lorenz curve, Gini coefficient and aggregate measure of inequality, Ahluwalia-Chenary welfare index, Kuznet's inverted U curve; inequality as constraint to growth (Kalecki); Prebisch-Singer thesis on unequal exchange; HDI and other indices of development and quality of life- food security, health and nutrition.

Unit III: East Asian Economic Miracle: Growth, equity and economic change; macroeconomic stability and export growth; strategies for rapid accumulation of productive assets.

Unit IV: Population and Development: The cost and benefits of population growth, Malthusian population trap; Lewis's supply of labour model, Renis-Fei model, Impact of migration on urbanization and urban unemployment.

Unit V: Role of state and choice of technique: The market mechanism and market failure; Role of state; Corruption; The capital intensity techniques in underdeveloped countries, Conflict between employment and output; wages and capital intensity of production.

Readings:

1. Micheal P. Todaro & Stephen C. Smith: *Economic Development*, Pearson
2. A.P. Thirwall: *Growth and Development: With Special Reference to Developing Economies*, Palgrave Macmillan
3. Hayami, Yujiro: *Development Economics: From Poverty to the Wealth of Nations*, Clarendon Press
4. World Bank (1996): *The East Asian Miracle: Economic Growth and Public Policy*, Oxford University Press
5. Ray, Debraj (1998): *Development Economics*, Oxford University Press
6. Bardhan, P. & C. Udry (1999): *Development Microeconomics*, Oxford University Press
7. Basu, K. (2003): *Analytical Development Economics: The Less Developed Economy Revisited*, The MIT Press

N.B. ECO-003 (A/B), ECO-004 (A/B) and ECO-005 (A/B) are papers offered under optional streams and their syllabus is attached in the Discipline Specific Elective section.

SEMESTER-II

ECO-006: Indian Economic Policies

Learning Objectives

- The course explores the objectives, achievements, and limitations of economic planning in India, emphasizing the interface between planning and policy, decentralized planning, and the role of civil society in development.
- It critically examines India's economic reforms, including structural adjustments, financial sector transformations, and the evolving roles of institutions like the RBI, SEBI, and WTO in shaping economic outcomes.
- The course analyzes agricultural and industrial policies in India, including pricing mechanisms, food security strategies, the role of public sector enterprises, and debates around privatization and SME development.
- It reviews the evolution of India's foreign trade policy, changes in trade composition and direction, trade reforms since 1991, and the role of foreign capital and exchange rate policy.
- The course addresses key issues of food security in India, focusing on public distribution systems, nutrition schemes, and policy debates such as cash versus food transfers.

Learning Outcomes

- Students will be able to critically analyze the trajectory of India's planning and policy frameworks, including their socio-economic impacts and institutional dimensions.
- Students will be able to evaluate major reform measures and sectoral policies in agriculture, industry, trade, and finance, assessing their implications for growth, equity, and sustainability.
- Students will be able to assess India's food security landscape, understand policy mechanisms like the PDS and welfare schemes, and engage with contemporary policy debates affecting vulnerable populations.

Syllabus

Unit I: Economic Planning and Policy: Objectives and Strategies of Planning; Failures and Achievements of Planning; Planning and Policy interface; Decentralized Planning; Fiscal federalism in India; 73rd & 74th amendments to the constitution; role of civil society as third sector in planning.

Unit II: India's Economic Reforms: Structural adjustment programme- a critical appraisal; overall impact on growth and distribution; Financial sector reforms- role of RBI and SEBI, new financial reforms for banking system, performance of financial institutions since reforms; WTO and its impact on the economy; Monetary and Fiscal Policy reforms.

Unit III: Agricultural and Industrial Policies: India's Agricultural Policy since Independence- agricultural pricing behavior; Terms of trade between agriculture and Industry; Agricultural finance; Issues in food security and public distribution system- policies for sustainable agriculture.

Growth and pattern of Industrialization; Industrial Policy; Public sector enterprises and their performance; Privatization and disinvestment debate; Small and Medium Enterprises.

Unit IV: Evolution of India's Foreign Trade Policy: India's Trade problems; recent changes in the direction and composition of trade and their implications; Rationale and Impact of trade reforms since 1991 on BOP, employment and growth; Exchange Rate policy; Foreign Capital and MNCs in India; Instruments and export promotion and recent import and export policies and agenda for future.

Unit V: Food Security Issues: Public Distribution System in India- historical background and performances, Targeted Public Distribution System (TPDS) in India; Integrated Child Development and Mid-Day Meal Programme; Issues related to diversion of food grain, Cash Transfer vs. Food Transfer debate.

Readings:

- Ahluwalia, I.J., and I.M.D. Little (eds) (1999): *India's Economic Reforms and Development (Essays in honour of Manmohan Singh)*. New Delhi: Oxford University Press
- Bardhan, P.K. (1999): *The Political Development in India*, New Delhi: Oxford University Press
- Brahmananda, P.R., and V.R. Panchmukhi (eds) (2001): *Development Experience in the Indian Economy: Inter-State Perspectives*, Delhi: Bookwell
- Chakravarty, S. (1987): *Development Planning: The Indian Experience*, New Delhi: Oxford University Press.
- Dantwala, M.L. (1996): *Dilemmas of Growth: The Indian Experience*, New Delhi, Sage Publications.
- Dreze, Jean, and Amartya Sen (1995): *India- Economic Development and Social Opportunity*, Oxford University Press
- Jalan, Bimal. (1996): *Indian Economic Policy: Preparing for Twenty First Century*, Viking.
- Joshi, V., and I.M.D. Little (1999): *India: Macroeconomics and Political Economy, 1964-1991*, Oxford University Press.
- Kapila, Uma (2007): *Indian Economy- Performance and Policies*, Academic Foundation
- Kapila, Uma: *Indian Economy Since Independence*, Academic Foundation
- Rangarajan, C. (2000): *Perspectives on Indian Economy*, UBSPD
- Sandsara, J.C. (1992): *Industrial Policy and Planning, 1947-1991: Tendencies, Interpretation and Issues*, Sage Publication
- Srinivasan, T.N., and S.D. Tendulkar (2001): *India in the World Economy*, Oxford University Press.

ECO - 007: Environmental Economics

Learning Objectives

- The course introduces foundational theories of externalities, public goods, and the economic treatment of environmental resources, distinguishing between pure, mixed, and common property goods.
- It explores the design and implementation of environmental policies, analyzing market-based instruments like Pigovian taxes, subsidies, and Coasean bargaining under conditions of market imperfections and institutional constraints.
- The course examines the economics of exhaustible and renewable resources, using models to analyze extraction and exploitation strategies under various market structures.
- It introduces methods for valuing environmental goods and services, covering both market-based and non-market valuation techniques, including hedonic pricing and contingent valuation.
- The course discusses the concept of sustainable development, contrasting ecological and economic perspectives, and examines global environmental challenges and indicators of sustainability.

Learning Outcomes

- Students will be able to analyze externalities, public goods, and resource allocation problems from an economic perspective, particularly in environmental contexts.
- Students will be able to evaluate the effectiveness of various environmental policy instruments and apply appropriate valuation methods to measure environmental costs and benefits.
- Students will be able to assess sustainability challenges and global environmental issues through economic models and policy frameworks, with an understanding of resource conservation and long-term development strategies.

Syllabus

Unit I: Review of the Theories of Externalities, Pareto Optimal provision of public goods, Lindahl's equilibrium; preference revelation problem; types of public goods, common property resources, pure and mixed public goods and environmental resources.

Unit II: Design of Environmental Policy: Environmental externalities, Pigovian taxes and subsidies, prices vs quantity instruments; mixed instruments; imperfect markets and the design of economic instruments; Coase's bargaining solution and collective action; Institution and enforcement.

Unit III: Exhaustible and Renewable resources:

Exhaustible Resources- socially optimum extraction under perfect competition and monopoly; role of government and non-renewable resource extraction.

Renewable Resources- Static and dynamic models of fisheries, forestry and mining under perfect competition and monopoly; exploitation of renewable resources under endogenous prices.

Unit IV: Valuation of environmental benefits and damages:

Environmental benefits; concept of environmental value, classification, use values, option values and non-use values; non essentiality and weak complementary; environmental demand theory.

Valuation methods: For observed market behavior- Hedonic model, Property Pricing; For hypothetical market - Contingent Valuation method.

Unit V: Sustainable Development & Global Environmental Issues:

Sustainability paradigms, the ecological paradigm vs. neoclassical paradigm; economics of conservation, the safe minimum standard, co-evolutionary development, population pressure, resource scarcity; Sustainable indicators & evidence.

Readings:

- Boumol, W.J., and O.E. Oates (1988): Theory of Environmental Policy, Oxford University Press
- Bromley, D.W. (ed). (1995): The Handbook of Environmental Economics, Basil and Blackwell
- Cornelius, G., Van Kooten, and Erwin H. Bulte (2000): The Economics of Nature: Managing Biological Assets, Blackwell
- Goulder, L.H., and William A. Pizer (2006): The Economics of Climate Change, NBER Working Paper No. 11923
- Hanley, N., J.F. Shogren and Ben White (1997): Environmental Economics in Theory and Practice, Macmillan
- Hartwick, J.M., and N.D. Olewiler (1998): The Economics of Natural Resources Use, Addison-Wesley
- Kolstad, C.D. (2000): Environmental Economics, Oxford University Press
- Perman, R., Y. Ma and J. McGilvray (1996): Natural Resources and Environmental Economics, Longman.

ECO-009: Research Methodology and Data Analysis

Learning Objectives

- Introduce students to the concepts, philosophy, and process of scientific research.
- Develop the ability to identify research problems and design a structured research study.
- Equip students with skills in literature review, dissertation writing, and academic referencing.
- Familiarize students with sampling methods, data collection techniques, and research ethics.
- Enable students to analyze and interpret data using statistical and computer-based tools.

Learning Outcomes

- Students will be able to formulate research problems, objectives, and hypotheses.
- Students will be able to design and conduct research studies using appropriate methodologies.
- Students will be able to prepare a structured dissertation/research report following academic standards.
- Students will be able to collect, process, analyze, and interpret research data.
- Students will be able to use statistical software and digital tools for research and data analysis.

Syllabus

Unit I: Foundations of Research and Research Planning

Meaning, objectives, and characteristics of research; Research philosophy and interdisciplinary approaches; Types of research: Fundamental, Applied, Qualitative, Quantitative, Exploratory, Descriptive, and Experimental; Identification and formulation of research problems; Research objectives, research questions, and hypotheses; Review of literature and identification of research gaps; Conceptual and theoretical frameworks.

Unit II: Research Design and Dissertation Writing

Meaning and types of research design; Sampling techniques: Probability and Non-probability sampling; Sources and methods of data collection; Questionnaire and interview schedule design; Structure of research proposal and dissertation; Academic writing and presentation of research; Citation and bibliography: APA, MLA, and Chicago styles; Research ethics, plagiarism, and academic integrity.

Unit III: Data Analysis Methods and Techniques

Measurement scales: Nominal, Ordinal, Interval, and Ratio; Data processing: Editing, coding, classification, and tabulation; Graphical and diagrammatic presentation of data; Descriptive statistics: Measures of central tendency and dispersion; Hypothesis testing: Z-test, t-test, Chi-square test, and ANOVA; Use of computer applications and statistical software (MS Excel, SPSS, R, STATA) for data analysis and interpretation.

Readings

- Creswell, J.W. & Creswell, J.D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th ed.). Sage Publications.
- Kothari, C.R. & Garg, G. *Research Methodology: Methods and Techniques*. New Age International Publishers.
- Chawla, D. & Sondhi, N. *Research Methodology: Concepts and Cases*. Vikas Publishing House.
- Bryman, A. *Social Research Methods*. Oxford University Press.
- Gupta, M. & Gupta, D. *Research Methodology*. PHI Learning Pvt. Ltd.

N.B. ECO-008 (A/B) is offered under optional streams and their syllabus is attached in the Discipline Specific Elective section.

Discipline Specific Elective

GROUP - I

ECO-003(A): Problems of Indian Agriculture

Learning Objectives

- The course aims to examine the structure and dynamics of Indian agriculture, focusing on land use and cropping patterns,
- It seeks to analyze key issues related to agricultural productivity, pricing, marketing, land reforms, and the impact of policy changes like the Green Revolution and WTO and the role of FAO.
- The course explores challenges in agricultural finance, rural indebtedness, and labor conditions, along with policy measures for food security and the welfare of farmers and laborers.

Learning Outcomes

- Students will be able to critically assess the structural and policy-related problems facing Indian agriculture and propose informed solutions.
- Students will be able to evaluate the effectiveness of government interventions in agricultural marketing, finance, and labour welfare.

Syllabus

Unit I: Significance of Agriculture in the Indian Economy. Land utilization, Land use planning and optimal land use pattern. Cropping pattern: Changes and determinants of cropping pattern.

Unit II: Trends in Agricultural production in Indian Causes of low productivity in Indian agriculture, Agricultural price policy - Instruments of Agricultural price policy, Land Reforms and its effects on Indian Agriculture, Green Revolution, WTO and Indian Agriculture. Role of FAO in Agriculture

Unit III: Agricultural marketing: Efficiency criteria and problems of Agricultural Marketing in India, Government measures to improve agricultural marketing in India, Marketable surplus, factors affecting marketable surplus in India.

Unit IV: Agricultural finance - Need for agricultural finance, Sources and problems of agricultural finance, Role of Money Lenders, Rural Indebtedness, Causes of Rural Indebtedness and Government Measures to reduce Rural Indebtedness.

Unit V: Problems of agricultural labor in India, Measures to improve the position of agricultural labourers in India, Women farmers, Food problem - different aspects, Policy measures, Food Security, Buffer stocks - objectives and benefits.

Readings:

- Bruce L. Gardener and Gordon C. (eds): *Handbook of Agricultural economics* Vol. 1A (*Agricultural Production*); Vol. 1B (*Marketing, Distribution and Consumption*); Vol. 2A (*Agricultural and Its External Linkages*); Vol. 2b (*Agriculture and Policy*), Amsterdam, Elsevier Science B.V.

- Echer Karl and Lawrence Witt (eds): *Agriculture and economic development*, New York, McGraw Hill Co.
- Ghatak, S., and Ken INgersent (1984): *Agriculture and Rural Development*, Harvester Press Ltd., London
- Southworth Herman and Bruce Johnston (eds): *Agricultural Development and Economic Growth*, Cornell University Press, New York.
- Tsakok, Isabelle (2011): *Success in Agricultural Transformation: What It Means and What It Happen*, Cambridge University Press, New York.
- Capstic, M. (1970): *The Economics of Agriculture*, London: George Allen and Unwin
- Johnston, B.F., and J.W. Mellor (1961): *The Role of Agriculture in Economic Development*, AER
- Goodwin, H.G. (1977): *Economics of Agriculture*, Reston Publishing Co.
- Halecrow, H.G. (1952): *Economics of Agriculture*, McGraw Hill.
- Government of India: *National Agricultural Policy*, Ministry of Agriculture, Govt. of India, New Delhi (latest)
- World Bank (2006): *Rejuvenating Indian Agriculture*, Washington, World Bank
- Vasant, Desai (1988):, *Rural Development* , Vol. I-VI, Himalaya Publishing House
- Laxman, T.K., and B.K. narayan (1987): *Rural Development in India- A Multi Dimensional Analysis*, Himalaya Publishing House
- Besley, Timothy (1994): “How Do Market Failures Justify Interventions in Rural Credit Markets?” *The World Bank Research Observer*, Vol.9, No.1

ECO-003(B): Econometrics-I

Learning Objectives

- To introduce the methodology of econometrics and the classical regression framework.
- To develop the ability to estimate, test and interpret simple and multiple regression models, including models with dummy variables.
- To train students to detect the violations of classical assumptions and apply appropriate remedies.

Learning Outcomes

On completion, students will be able to:

- Explain the nature and methodology of econometrics, and estimate and interpret the two-variable regression model.
- Specify and interpret multiple regression models with appropriate functional forms, and test individual and joint significance.
- Use dummy variables for qualitative factors and test structural stability.
- Detect and remedy multicollinearity, heteroscedasticity and autocorrelation.
- Recognise model specification errors.

Syllabus

Unit I: Introduction and the Two-Variable Regression Model (13 hours)

Meaning, scope and methodology of econometrics. Types of data: time series, cross-section, pooled and panel data. Concept of regression; population regression function vs. sample regression function; the stochastic error term and its sources. The method of Ordinary Least Squares: logic and intuition; assumptions of the Classical Linear Regression Model; properties of OLS estimators; the Gauss–Markov theorem (statement and meaning only). Standard errors; coefficient of determination (r^2); testing the significance of regression coefficients (t -test); reporting regression results.

Unit II: Multiple Regression Analysis (13 hours)

The three-variable model: meaning and interpretation of partial regression coefficients; multiple R^2 and adjusted R^2 . Hypothesis testing: individual significance (t -test) and overall significance (F -test). Functional forms and their interpretation: log–log (constant elasticity) and semi-log (growth) models; choice of functional form.

Unit III: Dummy Variable Regression Models (10 hours)

Nature of dummy variables; ANOVA and ANCOVA models. Intercept and slope dummies; interaction effects; the dummy variable trap. Use of dummy variables in seasonal analysis. Testing structural stability: the Chow test and its dummy variable alternative.

Unit IV: Violations of Assumptions (14 hours)

Multicollinearity: nature and sources; consequences for estimation and inference; detection - pairwise correlations, Variance Inflation Factor; remedial measures.

Heteroscedasticity: nature and common causes; consequences for OLS; detection - graphical inspection of residuals, Breusch–Pagan and White tests; remedies - Weighted Least Squares, robust standard errors (concept only), log transformation.

Autocorrelation: nature and causes; consequences for OLS; detection - graphical method, Durbin–Watson d test, Breusch–Godfrey test; remedies - generalised differencing (Cochrane–Orcutt in brief).

Unit V: Model Specification (10 hours)

Consequences of omitting a relevant variable and including an irrelevant variable; Ramsey RESET test (in brief); criteria for model selection - adjusted R^2 , information criteria (basic concepts).

Readings

- Gujarati, D. N., Porter, D. C. & Gunasekar, S., *Basic Econometrics* (latest ed.), McGraw-Hill Education.
- Wooldridge, J. M., *Introductory Econometrics: A Modern Approach* (latest ed.), Cengage.
- Koutsoyiannis, A., *Theory of Econometrics*, Palgrave Macmillan.
- Maddala, G. S. & Lahiri, K., *Introduction to Econometrics*, Wiley.

- Dougherty, C., *Introduction to Econometrics* (latest ed.), Oxford University Press.

GROUP - II

ECO- 004(A): Introduction to Population Studies

Learning Objectives

- To introduce the scope, nature, and inter-disciplinary relevance of population studies and examine global and national population trends.
- To familiarize students with major sources of population data in India and their methodological strengths and limitations.
- To understand population composition and structure, and evaluate classical and modern population theories in the context of demographic change.

Learning Outcomes

- Students will be able to interpret demographic data and assess key indicators such as fertility, mortality, migration, and sex ratio across regions.
- Students will be able to explain theoretical approaches to population change and apply them to real-world demographic patterns, especially in India.

Syllabus

Unit I: Introduction

Nature and Scope of Population Studies; Interrelationship between Population Studies and other Disciplines; Components of Population Change – Fertility, Mortality and Migration; World Population Size and Growth; Indian Population Size, Growth and Distribution.

Unit II: Sources of Population Data

Demographic Events; Population Census – History of Census taking in India, Salient Features of Census; Civil Registration System; Sample Registration System; National Sample Survey; National Family Health Survey; Importance and Limitations of Population Data.

Unit III: Composition and Structure

Age and Sex, Economic, Educational, Religious and Marital Composition; Age and Sex Structure; Factors Affecting Age and Sex Structure; Population Pyramid; Demographic Window of Opportunity; Population Sex Ratios and its Variation – Child Sex Ratio, Sex Ratio at Birth, Sex Ratio of Elderly; Changing Patterns of Sex Ratio in India – North-South Divide and ‘Missing Women’.

Unit IV: Population Theories

Malthusian Theory; Optimum Population Theory; Biological Theories; Theory of Demographic Transition.

Readings

- Asha A. Bhende and Tara Kanitkar, 2010, *Principles of Population Studies*, Himalaya Publishing House, Mumbai.
- Patra, Aditya Kumar and Panigrahy, Rajib Lochan, (eds), 2010, *Population and Health*, Discovery.

- Ranganathan, C.R., 2006, *A First Course in Mathematical Models of Population Growth* (With MATLAB Programs), Associated Pub.
- Hans Raj, 2003. *Fundamentals of Demography*. Surjeet Publications, Delhi.
- Malthus, *An Essay on the Principle of Population*, 7th Edition, 1872, Book 1, Chapter1.
- K. Srinivasan, 2011, *Training Manual on Demographic Techniques*, UNFPA and Census of India, Registrar General and Census Commissioner, Office of Registrar General, India, Ministry of Home Affair, Government of India.
- Government of India, *National Population Policy 2000*, New Delhi: Department of Family Welfare, Ministry of Health and Family Welfare, February 2000.
- Premi, M.K and Dipendra Nath Das, 2011, *Population of India 2011*, R.R Publishing Corporation.
- ORGI, 2019, *Population projections for India and states 2011 – 2036*: Report of the technical group on population projections, MHA, GoI.
- Tim Dyson, 2018, *A Population History of India*. Oxford Univ Press.
- K. Srinivasan, 2017, *Population-Concerns in India: Shifting Trends, Policies and Programmes*. Sage Publications India Pvt. Ltd.
- Tim Dyson, 2010), *Population and Development: The Demographic Transition*. Rawat Publications.
- Siegel, Jacob, and David Swanson, (eds.), 2004, *Methods and Materials of Demography*. California: Elsevier Academic Press.
- Nancy Birdshall, Allen C. Kelley and Steven W. Sinding, (eds), 2001, *Population Matters: Demographic Change, Population Growth, and Poverty in the Developing World*, Oxford University Press.
- Thomas McKeown, 1976, *The Modern Rise of Population*, Edward Arnold, London.
- John Bongaarts, 1978, A Framework for Analyzing the Proximate Determinants of Fertility, *Population and Development Review*, Vol 4 (1), pp. 105-132.
- Davis, K and Judith Blake, 1956, Social Structure and Fertility: An Analytic Framework, *Economic Development and Cultural Change*, Vol 4 (3), pp. 211-235.
- Gould, W.T.S, 2009, *Population and Development*, Taylor and Francis Routledge.

ECO- 004(B): Institutional Economics

Learning Objectives

- Distinguish between the Old and New Institutional Economics and critically evaluate their analytical contributions.
- Apply transaction cost theory to understand the boundaries of firms and the structure of contracts.
- Analyse property rights regimes and their implications for resource allocation and externalities.
- Examine collective action problems and the conditions under which communities govern common pool resources effectively.
- Evaluate theories of institutional change and apply them to the experience of contemporary developing economies, including India.

Learning Outcomes

- Articulate the core claims of OIE and NIE and situate them within the broader history of economic thought.
- Use transaction cost reasoning to explain why certain transactions are organised within firms rather than through markets.
- Apply Ostrom's design principles to evaluate the sustainability of common property resource governance.
- Analyse the role of formal and informal institutions in shaping long-run growth and development outcomes.
- Produce an institutional analysis of a real-world arrangement — market, organisation, or commons — drawing on concepts from across the course.

Unit 1 Foundations: Old and New Institutional Economics *Weeks 1–4*

Institutional economics as a departure from neoclassical and Marxian traditions; Old Institutional Economics: Veblen, Commons, Mitchell, Galbraith, Myrdal; New Institutional Economics: Coase, North, Williamson — core claims and distinctions; Institutions as rules: formal vs. informal, enforcement, and stability; Bounded rationality, opportunism, and incomplete contracts; Path dependence and the persistence of inefficient institutions.

Unit 2 Transaction Costs, Property Rights, and Contracts *Weeks 5–8*

Transaction costs: types, determinants, and measurement; Why firms exist: Coase's theory and the boundaries of the firm; Asset specificity, governance modes, and contractual arrangements; Principal-agent problems, moral hazard, and mechanisms to minimise agency costs; The Coase Theorem: efficiency, bargaining, and limits in developing economies; Property rights regimes: private, state, common, open access — incentive effects.

Unit 3 Commons, Collective Action, and Polycentric Governance *Weeks 9–11*

Hardin's tragedy of the commons and its assumptions; Prisoner's dilemma, assurance problem, and the logic of collective action; Ostrom's design principles for sustainable common pool resource governance; Polycentric governance, social capital, and nested institutional arrangements; Empirical cases: forests, irrigation, fisheries, and grazing lands; Commons governance in India: Joint Forest Management and watershed institutions.

Unit 4 Institutional Change, the State, and Development *Weeks 12–15*

Institutional equilibrium, stability, and sources of change; Path dependence and lock-in: evolutionary and selection arguments; The state as an institution: contractual and predatory theories; Corruption, rent-seeking, and collusion: a principal-agent perspective; Institutions and long-run growth: colonial origins and comparative development; Institutional change in contemporary India: reforms, land rights, labour regulation

Reading List

Unit 1

- North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge University Press. [Chs. 1–5]
- Williamson, O. E. (2000). The new institutional economics: Taking stock, looking ahead. *Journal of Economic Literature*, 38(3), 595–613.
- Rutherford, M. (1996). *Institutions in economics: The old and the new institutionalism*. Cambridge University Press. [Chs. 1–3]
- Commons, J. R. (1931). Institutional economics. *American Economic Review*, 21(4), 648–657.
- Hodgson, G. M. (1998). The approach of institutional economics. *Journal of Economic Literature*, 36(1), 166–192.

Unit 2

- Coase, R. H. (1937). The nature of the firm. *Economica*, 4(16), 386–405.
- Coase, R. H. (1960). The problem of social cost. *Journal of Law and Economics*, 3, 1–44.
- Williamson, O. E. (1985). *The economic institutions of capitalism*. Free Press. [Chs. 1–3]
- Alchian, A. A., & Demsetz, H. (1973). The property rights paradigm. *Journal of Economic History*, 33(1), 16–27.
- Eggertsson, T. (1990). *Economic behaviour and institutions*. Cambridge University Press. [Chs. 3–5]

Unit 3

- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press. [Chs. 1–3, 6]
- Hardin, G. (1968). The tragedy of the commons. *Science*, 162(3859), 1243–1248.
- Agrawal, A. (2001). Common property institutions and sustainable governance of resources. *World Development*, 29(10), 1649–1672.
- Dietz, T., Ostrom, E., & Stern, P. C. (2003). The struggle to govern the commons. *Science*, 302(5652), 1907–1912.
- Baland, J.-M., & Platteau, J.-P. (1996). *Halting degradation of natural resources*. Oxford University Press. [Chs. 1–2]

Unit 4

- Acemoglu, D., Johnson, S., & Robinson, J. A. (2001). The colonial origins of comparative development. *American Economic Review*, 91(5), 1369–1401.
- North, D. C. (2005). *Understanding the process of institutional change*. Princeton University Press. [Chs. 1–3]
- Acemoglu, D., & Robinson, J. A. (2012). *Why nations fail*. Crown Business. [Chs. 1–3]
- Olken, B. A., & Pande, R. (2012). Corruption in developing countries. *Annual Review of Economics*, 4, 479–509.
- Rodrik, D. (2000). Institutions for high-quality growth. *Studies in Comparative International Development*, 35(3), 3–31.

GROUP - III

ECO-005(A): Rural Economics

Learning Objectives

- The course aims to provide a comprehensive understanding of rural economic issues such as inequality, poverty, unemployment, and the rural-urban nexus.

- It examines the socio-economic structure of rural India and explores the challenges related to asset distribution, infrastructure, and market participation.
- The course introduces various rural development strategies and the role of institutions like Panchayats, cooperatives, SHGs, and NGOs in shaping rural transformation.

Learning Outcomes

- Students will be able to critically evaluate rural economic problems and development strategies in the Indian context.
- Students will gain an understanding of institutional roles and agrarian social structures in driving inclusive and sustainable rural development.

Syllabus

Unit I: (Meaning and Contents of Rural Economics Rural inequality, Rural unemployment and Rural poverty-Rural Urban nexus- Need for integrated and holistic approach

Unit II: Rural India Socio-Economic Structure Issues of inequitable distribution of assets particularly land. Lack of social and economic infrastructure-Low absorbing capacity-Rural indebtedness and Low market interaction

Unit III: (Strategy for Rural Development in India From Community development block to integrated rural development program and Sway and Gram Swarozgar Yojana

Unit IV: Rural Development Institutions (Panchayat and Co-operative Self Help Group and Non-Governmental Organisations -Their roles in preparation of rural development plan and projects.

Unit V: Agrarian Social structure Paths of agrarian change and liberation.

Readings

- Vasant, Desai (1988), Rural Development, Vol. 1-VI, Himalaya Publishing House
- Laxman, TK., and B.K. narayan (1987): Rural Development in India- A Multi Dimensional Analysis, Himalaya Publishing House
- Chambers, R., R.Longhurst, and A. Pacey (eds.) (1981) Seasonal Dimensions in Rural Poverty. London:Frances Pinter.
- Dak TM. (1982). Social Inequality and Rural Development. National Publishing House.
- Haris, John (ed) (1982) Rural Development - Theories of Peasant Economy and Agrarian Change. Hutchinson University Library
- Lea, David A.M., and D.P. Chaudhuri (eds) (1983). Rural Development and the State. London: Methuen Co Pvt.
- Lele, Uma (1975). Design of Rural Development Lessons from Africa. London: John Hopkin's University Press.
- Sundaram, K.V., S.N.Misra and Taherul Islam (1985). Rural Development - Capitalist and Socialist Paths, Vol I-IV, United Nations Centre For Regional Development Nagoya, Japan.
- Beteilla, Andre (1974) Studies in Agrarian Social Structure. Delhi: Oxford University

ECO-005(B): Components of Population Change

Learning Objectives

- To understand and apply demographic concepts and measures related to mortality, fertility, nuptiality, migration, and urbanization.
- To analyze the trends, differentials, and determinants of population changes with special reference to India and global contexts.
- To familiarize students with theories and methods for explaining and projecting population dynamics.

Learning Outcomes

- Students will be able to interpret and use demographic indicators and frameworks to assess population trends and implications.
- Students will be able to critically evaluate population change components and their relevance to planning and policy-making.

Syllabus

Unit 1: Mortality and Morbidity

Definition and Basic Concepts of Mortality; Measures of Mortality – Crude Death Rate, Age Specific Death Rate, Standardised Death Rate, Infant Mortality Rate, Maternal Mortality Ratio, Cause Specific Mortality Rate; Levels, Trends and Differentials of Mortality in Developed and Developing Countries with Special Reference to India; Determinants of Mortality; Life Tables – Concepts and Definitions, Types and Forms, Methods of Construction.

Definition of Morbidity; Incidence and Prevalence of Disease; Global Burden of Disease

Unit 2: Fertility and Nuptiality

Definition and Basic Concepts of Fertility – Fecundity, live births, still births, sterility, Conception, Contraception, Abortion, Menarche and menopause; Measures of Fertility – Crude Birth Rate, General Fertility Rate, Age Specific Fertility Rate, Total Fertility Rate, Gross Reproduction Rate, Net Reproduction Rate; Levels, Trends and Differentials of Fertility in Developed and Developing Countries with Special Reference to India; Determinants of Fertility; Theories of Fertility – Leibenstein's Theory, Spencer's Biological Theory, Cultural Theories, Economic Theories; Davis-Blake Intermediate Variable Framework; Bongaart's Proximate Determinants.

Concept of Nuptiality; Trends in Age at Marriage and its Significance; Factors Affecting Nuptiality.

Unit 3: Migration and Urbanisation

Basic Concepts of Migration; Types of Migration; Internal and External Migration; Lee's Theory of Migration and Ravenstein's Law of Migration; Trends and Differential of Internal Migration in India; Causes and Consequences of Migration with Reference to India.

Urbanisation – Classification, Stages and Models; Issues in Urbanisation and Urban Problems in developing countries with focus in India.

Unit 4: Population Projection

Importance of population projections, Issues and principles; Methods of population projections – Component method of population projection

Readings

- Asha A. Bhende and Tara Kanitkar, 2010, *Principles of Population Studies*, Himalaya Publishing House, Mumbai.

- Patra, Aditya Kumar and Panigrahy, Rajib Lochan, (eds), 2010, *Population and Health*, Discovery.
- Ranganathan, C.R., 2006, *A First Course in Mathematical Models of Population Growth* (With MATLAB Programs), Associated Pub.
- Hans Raj, 2003. *Fundamentals of Demography*. Surjeet Publications, Delhi.
- Malthus, *An Essay on the Principle of Population*, 7th Edition, 1872, Book 1, Chapter1.
- K. Srinivasan, 2011, *Training Manual on Demographic Techniques*, UNFPA and Census of India, Registrar General and Census Commissioner, Office of Registrar General, India, Ministry of Home Affair, Government of India.
- Government of India, *National Population Policy 2000*, New Delhi: Department of Family Welfare, Ministry of Health and Family Welfare, February 2000.
- Premi, M.K and Dipendra Nath Das, 2011, *Population of India 2011*, R.R Publishing Corporation.
- ORGI, 2019, *Population projections for India and states 2011 – 2036*: Report of the technical group on population projections, MHA, GoI.
- Tim Dyson, 2018, *A Population History of India*. Oxford University Press.
- K. Srinivasan, 2017, *Population-Concerns in India: Shifting Trends, Policies and Programmes*. Sage Publications India Pvt. Ltd.
- Tim Dyson, 2010), *Population and Development: The Demographic Transition*. Rawat Publications.
- Siegel, Jacob, and David Swanson, (eds.), 2004, *Methods and Materials of Demography*. California: Elsevier Academic Press.
- Nancy Birdshall, Allen C. Kelley and Steven W. Sinding, (eds), 2001, *Population Matters: Demographic Change, Population Growth, and Poverty in the Developing World*, Oxford University Press.
- Thomas McKeown, 1976, *The Modern Rise of Population*, Edward Arnold, London.
- John Bongaarts, 1978, A Framework for Analyzing the Proximate Determinants of Fertility, *Population and Development Review*, Vol 4 (1), pp. 105-132.
- Davis, K and Judith Blake, 1956, Social Structure and Fertility: An Analytic Framework, *Economic Development and Cultural Change*, Vol 4 (3), pp. 211-235.
- Gould, W.T.S, 2009, *Population and Development*, Taylor and Francis Routledge

GROUP - IV

ECO-008(A): Policy Analysis: Tools and Evidence

About the Course

This course offers a critical and interdisciplinary examination of the multifaceted processes of globalization and their implications for development. Contrasting conventional economic orthodoxy—which equates globalization with unfettered market expansion and automatic developmental gains—this course interrogates such assumptions through heterodox economic theories and grounded empirical analyses. Drawing from structuralist, institutionalist, post-Keynesian, and Marxian traditions, the course explores the deepening interconnections of trade, finance, production networks, labour, and knowledge flows across borders, alongside the

growing structural inequalities and institutional asymmetries within the global capitalist system. Particular attention is paid to the experiences of the Global South and the crises of development under neoliberal globalization.

Course Objectives

- Develop proficiency in structuring policy problems and appraising alternative interventions.
- Apply cost-benefit and cost-effectiveness analysis to public expenditure and regulatory decisions.
- Use experimental and quasi-experimental methods to evaluate policy impacts.
- Incorporate distributional, behavioural, and political economy considerations into policy design.
- Communicate policy analysis effectively through memos, briefs, and evaluation reports.

Learning Outcomes

- Frame a policy problem, map stakeholders, and identify trade-offs between competing objectives.
- Conduct a cost-benefit or cost-effectiveness analysis for a public programme or regulation.
- Read and critically evaluate impact evaluation studies using experimental and quasi-experimental designs.
- Apply behavioural insights to identify barriers to policy uptake and design corrective interventions.
- Produce a policy memo and an evaluation summary to professional standards.

Course Outline

Unit I: **Problem Structuring and Policy Design** *Weeks 1–4*

This unit establishes the foundations of the policy analysis process. It moves from normative principles — what goals should policy pursue and why — to practical tools for problem diagnosis, stakeholder mapping, and the structured comparison of policy options. Students learn to translate diffuse social concerns into analytically tractable policy questions.

Topics covered:

The policy cycle: agenda-setting, formulation, implementation, evaluation; Normative criteria: efficiency, equity, Pareto and Kaldor-Hicks principles; Social welfare functions and distributional judgements; Problem structuring techniques: causal mapping, systems thinking, boundary analysis; Stakeholder analysis and political feasibility; Typology of policy instruments: regulation, taxation, subsidies, information; Policy design under administrative and fiscal constraints in developing countries; Regulatory impact assessment and policy appraisal frameworks

Essential Readings

- Weimer, D. L., & Vining, A. R. (2017). *Policy analysis: Concepts and practice* (6th ed.). Routledge. [Chapters 1–5]
- Dunn, W. N. (2018). *Public policy analysis: An integrated approach* (6th ed.). Routledge. [Chapters 2–4]
- Stone, D. (2012). *Policy paradox: The art of political decision making* (3rd ed.). W. W. Norton. [Chapters 1–4]
- Duflo, E. (2017). The economist as plumber. *American Economic Review*, 107(5), 1–26.

Further Readings

- Bardach, E., & Patashnik, E. (2019). *A practical guide for policy analysis: The eightfold path to more effective problem solving* (6th ed.). CQ Press.
- Howlett, M., Ramesh, M., & Perl, A. (2009). *Studying public policy: Policy cycles and policy subsystems* (3rd ed.). Oxford University Press. [Chapters 1–3]
- Andrews, M., Pritchett, L., & Woolcock, M. (2017). *Building state capability: Evidence, analysis, action*. Oxford University Press. [Chapter 2: PDIA framework]
- Mookherjee, D. (2006). Decentralisation, hierarchies, and incentives: A mechanism design perspective. *Journal of Economic Literature*, 44(2), 367–390.
- Jalan, J., & Murgai, R. (2011). How effective is social pension in reaching the elderly poor? Lessons from India. World Bank Policy Research Working Paper No. 5779.

Unit II: Welfare Economics and Appraisal Methods Weeks 5–8

This unit develops the microeconomic and welfare-theoretic foundations that underpin systematic policy appraisal. Students learn the analytical logic of market failure and government intervention, and acquire hands-on competency in cost-benefit analysis, cost-effectiveness analysis, and distributional incidence studies — the workhorses of applied policy appraisal in development settings.

Topics covered:

- Market failure: public goods, externalities, natural monopoly, asymmetric information
- Government failure: rent-seeking, public choice, and implementation deficits
- Consumer and producer surplus; deadweight loss; second-best theory
- Cost-benefit analysis (CBA): principles, shadow pricing, and the social discount rate
- Cost-effectiveness and cost-utility analysis in social sector programmes
- Benefit transfer and willingness-to-pay in low-income contexts
- Distributional weights and social CBA: valuing equity
- Fiscal incidence analysis: who bears the burden and who receives the benefit?
- Appraisal of subsidies, taxes, and public expenditure in developing economies

Essential Readings

- Stokey, E., & Zeckhauser, R. (1978). *A primer for policy analysis*. W. W. Norton. [Chapters 5–9]

- Boardman, A. E., Greenberg, D. H., Vining, A. R., & Weimer, D. L. (2018). *Cost-benefit analysis: Concepts and practice* (5th ed.). Cambridge University Press. [Chapters 1–4, 8]
- Dahlby, B. (2008). *The marginal cost of public funds: Theory and applications*. MIT Press. [Chapter 2]
- Lal, D., & Rajapatirana, S. (1987). Foreign trade regimes and economic growth in developing countries. *World Bank Research Observer*, 2(2), 189–217.

Further Readings

- Harberger, A. C. (1971). Three basic postulates for applied welfare economics. *Journal of Economic Literature*, 9(3), 785–797.
- Atkinson, A. B. (1970). On the measurement of inequality. *Journal of Economic Theory*, 2(3), 244–263.
- Younger, S. D., Myamba, F., & Mdadila, K. (2016). Fiscal incidence in Tanzania. *African Development Review*, 28(3), 264–276.
- Inchauste, G., & Lustig, N. (Eds.). (2017). *The distributional impact of fiscal policy: Evidence from developing countries*. World Bank Publications. [Selected country chapters]
- World Bank. (2010). *Handbook on economic analysis of investment operations*. World Bank. [Chapters 3–5]
- Gertler, P., Martinez, S., Premand, P., Rawlings, L., & Vermeersch, C. (2016). *Impact evaluation in practice* (2nd ed.). World Bank Publications. [Chapters 1–3]

Unit III: Causal Inference and Policy Evaluation Weeks 9–11

Effective policy analysis requires not just good design but credible evaluation. This unit covers the theory and practice of causal inference as applied to development programmes. Students engage with both experimental and quasi-experimental designs, and develop the capacity to read, critique, and commission impact evaluations — including an understanding of their limits and the conditions for generalising findings.

Topics covered:

- The evaluation problem: causality, counterfactuals, and selection bias
- Randomised controlled trials (RCTs): design, randomisation, attrition, and ethics
- Difference-in-differences: parallel trends, event studies, and recent refinements
- Regression discontinuity design: sharp and fuzzy variants
- Instrumental variables: relevance, exclusion, and weak instruments
- Matching methods: propensity score matching and its limitations
- Heterogeneous treatment effects and sub-group analysis
- External validity, generalisation, and evidence aggregation across contexts
- Monitoring and evaluation frameworks: log-frames, theories of change, MIS
- Evaluating government programmes: MGNREGA, PM-KISAN, and cash transfer schemes

Essential Readings

- Angrist, J. D., & Pischke, J. S. (2015). *Mastering 'metrics: The path from cause to effect*. Princeton University Press. [Chapters 1–5]
- Glennerster, R., & Takavarasha, K. (2013). *Running randomized evaluations: A practical guide*. Princeton University Press. [Chapters 3–6]
- Gertler, P., Martinez, S., Premand, P., Rawlings, L., & Vermeersch, C. (2016). *Impact evaluation in practice* (2nd ed.). World Bank Publications. [Chapters 4–9]
- Deaton, A., & Cartwright, N. (2018). Understanding and misunderstanding randomised controlled trials. *Social Science & Medicine*, 210, 2–21.

Further Readings

- Callaway, B., & Sant'Anna, P. H. C. (2021). Difference-in-differences with multiple time periods. *Journal of Econometrics*, 225(2), 200–230.
- Vivalt, E. (2020). How much can we generalise from impact evaluations? *Journal of the European Economic Association*, 18(6), 3045–3089.
- Muralidharan, K., & Niehaus, P. (2017). Experimentation at scale. *Journal of Economic Perspectives*, 31(4), 103–124.
- Heckman, J. J., & Smith, J. A. (1995). Assessing the case for social experiments. *Journal of Economic Perspectives*, 9(2), 85–110.
- Duflo, E., Glennerster, R., & Kremer, M. (2007). Using randomization in development economics research: A toolkit. *Handbook of Development Economics*, 4, 3895–3962.
- Ravi, S., Kapoor, M., & Ahluwalia, S. (2012). The impact of MGNREGS on India's rural poor. *Brookings India Working Paper*.

Unit IV: Behavioural Insights and Contemporary Policy Frontiers *Weeks 12–15*

The final unit extends the policy analyst's toolkit in two directions. First, it integrates behavioural economics into policy design — examining how cognitive biases and social norms shape behaviour in ways that conventional incentive-based tools miss. Second, it surveys the most pressing contemporary policy challenges in development contexts: the design of social protection in the digital age, climate policy under fiscal constraint, and the governance of data and digital public infrastructure.

Topics covered:

- Behavioural economics foundations: bounded rationality, heuristics, and present bias
- Nudge theory and choice architecture: design principles and field applications
- Behavioural barriers to programme uptake: last-mile delivery failures
- Social protection policy: CCTs, universal basic income, and in-kind versus cash
- Digital public infrastructure and policy delivery: Aadhaar, DBT, and UPI
- Climate policy instruments: carbon pricing, subsidies, and co-benefits in developing economies
- Health and education policy appraisal: supply-side versus demand-side interventions
- Policy communication, political messaging, and the credibility of commitments
- AI, algorithmic decision-making, and the future of evidence-based governance

Essential Readings

- Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press. [Chapters 1–4]
- Chetty, R. (2015). Behavioral economics and public policy: A pragmatic perspective. *American Economic Review*, 105(5), 1–33.
- Banerjee, A. V., & Duflo, E. (2011). *Poor economics: A radical rethinking of the way to fight global poverty*. PublicAffairs. [Selected chapters]
- Muralidharan, K., Niehaus, P., & Sukhtankar, S. (2023). General equilibrium effects of (improving) public employment programs. *Econometrica*, 91(4), 1261–1295.

Further Readings

- Kahneman, D. (2011). *Thinking, fast and slow*. Farrar, Straus and Giroux. [Parts I & II]
- Haushofer, J., & Fehr, E. (2014). On the psychology of poverty. *Science*, 344(6186), 862–867.
- Banerjee, A., Hanna, R., Kreindler, G., & Olken, B. A. (2017). Debunking the stereotype of the lazy welfare recipient: Evidence from cash transfer programs worldwide. *World Bank Research Observer*, 32(2), 155–184.
- Kleven, H. J., Knudsen, M. B., Kreiner, C. T., Pedersen, S., & Saez, E. (2011). Unwilling or unable to cheat? Evidence from a tax audit experiment in Denmark. *Econometrica*, 79(3), 651–692.
- Muralidharan, K. (2017). Field experiments in education in developing countries. In A. V. Banerjee & E. Duflo (Eds.), *Handbook of Field Experiments* (Vol. 2). North-Holland.
- Jain, R., & Lamba, R. (2023). Can digital payments improve welfare? Evidence from India's direct benefit transfers. *Journal of Development Economics*, 161, 102997.
- IMF. (2023). *Fiscal Monitor: Climate and the IMF*. IMF Publications. [Chapter 2]
- Duflo, E. (2012). *Human values and the design of the fight against poverty*. Tanner Lectures on Human Values, Harvard University.

SUPPLEMENTARY RESOURCES

Key Journals

- American Economic Review | Journal of Economic Perspectives
- Journal of Development Economics | World Development
- Journal of Public Economics | Review of Economics and Statistics
- Economic and Political Weekly (EPW) — for India-focused policy analysis

Policy Portals and Data

- J-PAL Policy Insights — povertyactionlab.org
- IDEAs for India — ideasforindia.in
- VoxDev — voxdev.org
- IGC — International Growth Centre, theigc.org
- World Bank Open Data / NSSO / NFHS / CMIE Prowess

PRS Legislative Research — prsindia.org

ECO-008(B): Econometrics-II

Course Objectives

- To extend regression analysis to qualitative (binary) dependent variables used in survey-based research.
- To equip students with the essential tools of time series econometrics - stationarity, unit roots, cointegration, ARDL and forecasting.
- To introduce panel data methods and the treatment of endogeneity, preparing students to select appropriate methods for doctoral research.

Course Learning Outcomes

On completion, students will be able to:

- Estimate and interpret logit and probit models, including odds ratios and marginal effects.
- Test for unit roots and cointegration, and interpret error-correction and ARDL models.
- Explain ARIMA modelling and forecasting, and conduct Granger causality tests.
- Estimate fixed- and random-effects panel models and choose between them using the Hausman test.
- Recognise endogeneity, explain instrumental variable estimation, and describe the basic logic of difference-in-differences.

Syllabus

Unit I: Qualitative Dependent Variable Models (11 hours)

Nature and importance of qualitative response models in survey-based research. The Linear Probability Model and its limitations. Logit model: interpretation of coefficients, odds ratios and marginal effects. Probit model; comparison of logit and probit. Goodness of fit: McFadden pseudo- R^2 . A brief idea of ordered and multinomial models. Applications.

Unit II: Stationarity, Unit Roots and Cointegration (13 hours)

Stochastic processes; stationarity (intuitive treatment); white noise; random walk with and without drift; trend-stationary vs. difference-stationary processes; order of integration. The problem of spurious regression. Unit root testing: Dickey–Fuller and Augmented Dickey–Fuller tests. Cointegration as long-run equilibrium: the Engle–Granger two-step method. Error Correction Mechanism: short-run and long-run dynamics. The ARDL bounds testing approach: when to use it and interpretation of long-run and short-run coefficients.

Unit III: Univariate Time Series Modelling and Forecasting (12 hours)

AR, MA, ARMA and ARIMA processes. The Box–Jenkins methodology: identification using ACF/PACF and the correlogram; estimation; diagnostic checking;

forecasting. Measures of forecast accuracy (in brief). Granger causality testing: logic, procedure and pitfalls.

Unit IV: Panel Data Models (12 hours)

Why panel data: advantages over pure cross-section and pure time series; balanced vs. unbalanced panels. Pooled OLS and its limitations. The Fixed Effects model: Least Squares Dummy Variable and within-group approaches; time effects. The Random Effects model. Choosing among models: Breusch–Pagan LM test and the Hausman test. Interpreting and reporting panel results.

Unit V: Simultaneity, Instrumental Variables and Causal Inference (12 hours)

Endogeneity and its sources: simultaneity, omitted variables, measurement error; simultaneous-equation bias. Identification problem: under, exact and over-identification; the order condition. Estimation: Indirect Least Squares and Two-Stage Least Squares; the logic of instrumental variables - relevance and validity. Introduction to causal inference: the counterfactual idea and the Difference-in-Differences method (conceptual). Major data sources for empirical research (in brief).

Readings

1. Gujarati, D. N., Porter, D. C. & Gunasekar, S., *Basic Econometrics* (latest ed.), McGraw-Hill Education.
2. Wooldridge, J. M., *Introductory Econometrics: A Modern Approach* (latest ed.), Cengage.
3. Asteriou, D. & Hall, S. G., *Applied Econometrics* (latest ed.), Palgrave Macmillan.
4. Enders, W., *Applied Econometric Time Series*, Wiley.
5. Baltagi, B. H., *Econometric Analysis of Panel Data*, Springer.

COURSE STRUCTURE OF M.A. ECONOMICS (2-YEAR PROGRAMME)

Total Credits: 82

Total Marks: 2050

Semester I

Paper Code	Paper Type	Paper Title	IA Marks	End-Sem Marks	Total Marks	Credits
ECO-001	Discipline Specific Core	Microeconomics - I	20	80	100	4
ECO-002	Discipline Specific Core	Macroeconomics - I	20	80	100	4
ECO-003	Discipline Specific Core	Quantitative Methods for Economic Analysis	20	80	100	4
ECO-004	Discipline Specific Core	Public Economics	20	80	100	4
ECO-005	Discipline Specific Core	Money & Banking	20	80	100	4
ECO-006	Discipline Specific Core	Principles of Agricultural Economics	20	80	100	4
Total					600	24

Semester II

Paper Code	Paper Type	Paper Title	IA Marks	End-Sem Marks	Total Marks	Credits
ECO-007	Discipline Specific Core	Microeconomics - II	20	80	100	4
ECO-008	Discipline Specific Core	Macroeconomics - II	20	80	100	4
ECO-009	Discipline Specific Core	Economics of Social Sector	20	80	100	4
ECO-010	Discipline Specific Core	Economy of North-East India	20	80	100	4
ECO-011	VAC/AEC		-	50	50	2
Total					450	18

Semester III

Paper Code	Paper Type	Paper Title	IA Marks	End-Sem Marks	Total Marks	Credits
ECO-012	Discipline Specific Core	International Economics	20	80	100	4
ECO-013	Discipline Specific Core	Development Economics	20	80	100	4
ECO-014	Discipline Specific Elective	To be selected from Group I of Annexure	20	80	100	4
ECO-015	Discipline Specific Elective	To be selected from Group II of Annexure	20	80	100	4
ECO-016	Discipline Specific Elective	To be selected from Group III of Annexure	20	80	100	4
Total					500	20

Semester IV

Paper Code	Paper Type	Paper Title	IA Marks	End-Sem Marks	Total Marks	Credits
ECO-017	Discipline Specific Core	Indian Economic Policies	20	80	100	4
ECO-018	Discipline Specific Core	Environmental Economics	20	80	100	4
ECO-019	Discipline Specific Elective	To be selected from Group IV of Annexure	20	80	100	4
ECO-020	Research Methodology	Research Methodology	10	40	50	2
ECO-021	Research	Dissertation/Thesis	–	150	150	6
Total					500	20

Annexure: Discipline Specific Elective

Group I	Group II	Group III	Group IV
Problems of Indian Agriculture (A)	Introduction to Population Studies (A)	Rural Economics (A)	Policy Analysis: Tools and Evidence (A)
Econometrics-I (B)	Institutional Economics (B)	Components of Population Change (B)	Econometrics-II (B)

SEMESTER – I

ECO -001: Microeconomics – I

Learning Objectives

- The course introduces the foundational concepts of consumer behaviour using both cardinal and ordinal utility analysis, along with budget constraints and demand theory.
- It explains production theory, including isoquants, cost functions, and the optimization behaviour of firms under various technological assumptions.
- The course examines price and output determination under perfect competition and monopoly, including the effects of taxation and subsidies.
- It analyzes imperfect competition through models of monopolistic competition and oligopoly, covering both non-collusive and collusive behaviours.
- The course explores the pricing of factor inputs in different market structures, including scenarios where monopoly or monopsony power is present.

Learning Outcomes

- Students will be able to analyze consumer behaviour, derive demand functions, and apply key concepts such as utility maximization and revealed preferences.
- Students will understand and evaluate production and cost structures, firm behaviour, and market outcomes under various competitive and non-competitive market forms.
- Students will be able to assess pricing of goods and factor inputs, and interpret the impact of policy measures, market power, and institutional settings on economic decisions.

Syllabus

Unit I: Consumer Behaviour

Cardinal and Ordinal Utility functions, Indifference curves, Budget Constraints, Utility Maximisation and Derivation of demand functions. Indirect Utility function and its properties, Inverse Demand functions. Hicksian and Slutsky Equation, labour leisure trade off, consumer's surplus and revealed preference theory.

Unit II: Theory of Production and Cost

Technology of production, Isoquant and its different forms, PPC, elasticity of substitution, Optimizing behavior of a firm, Constrained output maximization, production function of multiproduct firm.

Cost function, Derivation of cost functions from production function, traditional theory of cost- short run and long run, modern theory of cost- short run and long run, L-Shaped cost curve.

Homogenous and Homothetic production functions, Returns to scale, Cobb-Douglas production function, Euler's theorem, CES.

Unit III: Theory of Market I

Perfect competition: Price and Output determination, Short run and Long Run equilibrium of the firm, impact of a tax or subsidy.

Monopoly: Monopoly power, equilibrium- short run and long run, price discrimination- types and effects.

Unit IV: Theory of Market II

Imperfect Competition: Monopolistic competition, non-collusive oligopoly- Cournot's, Bertrand's, Chamberlin's, Stackelberg's, Kinked demand models; Collusive oligopoly, cartels and price leadership.

Unit V: Market for Factor Inputs

Factor pricing in perfectly Competitive and imperfectly competitive market, product market with monopoly power and factor market with monopsonistic power.

Readings:

- Gravelle, Hume and Ray Rees: *Microeconomics*, Pearson
- A. Koutsoyiannis: *Modern Microeconomics*, Macmillan
- Robert S. Pindyck & Daniel L. Rubinfeld: *Microeconomics*, Pearson
- H. Varian: *Microeconomic Analysis*, Viva Books Pvt Ltd.
- Henderson, J.M. & R.E. Quandt: *Microeconomic Theory: A Mathematical Approach*, Tata McGraw Hill International Book Company
- Kreps, D.M. (1992): *A Course in Microeconomic Theory*, Prentice Hall of India
- Mas-Colell, A., M.D. Whinston, and J.R. Green (2006): *Microeconomic Theory*, Oxford University Press

ECO-002: Macroeconomics – I

Learning Objectives

- The course aims to provide a rigorous understanding of Classical and Keynesian macroeconomic theories, covering Say's Law, the Classical Dichotomy, Keynes' theory of effective demand, and comparative analysis of output, employment, and interest rate determination in both frameworks.
- It examines the IS-LM and AD-AS models as foundational tools for macroeconomic analysis, exploring equilibrium conditions, policy effectiveness, and the interplay between fiscal and monetary policies in different economic scenarios.
- The course delves into behavioral foundations of macroeconomics, including consumption theories (FRR-MIT model, wealth effect), investment analysis (present value criterion, marginal efficiency of investment), and money demand/supply dynamics (Friedman, Tobin, Boumol, endogenous vs. exogenous money).

Learning Outcomes

- Students will be able to critically analyze and contrast Classical and Keynesian macroeconomic models, evaluating their implications for employment, output, and policy-making in real-world economies.

- Students will gain proficiency in applying IS-LM and AD-AS frameworks to assess the impact of fiscal and monetary policies, while also understanding the behavioral determinants of consumption, investment, and money demand in macroeconomic stability.

Syllabus

Unit I: Classical and Keynesian Economics

Classical Economics- Say's Law, real and monetary sectors, Classical Dichotomy and neutrality of money, policy implications Keynesian Economics: Theory of effective demand, output and employment determination, theory of interest. Keynes versus the Classics; Keynes's Model and Falling Money Wages.

Unit II: General Framework for Macroeconomics Analysis

IS-LM framework- IS curve and goods market equilibrium, LM curve and money market equilibrium, General equilibrium. AD-AS framework: AD curve, its derivation and shifting; AS curve, its derivation and shifting, Equilibrium; Effectiveness of macroeconomic policies in IS-LM and AD-AS frameworks

Unit III: Behavioral foundation: Consumption and Investment

Theories of the Consumption Function; FRR-MIT Model; Wealth Effect; Implications for Stabilization Policy; Present Value Criterion for Investment; Marginal Efficiency of Investment; Investment Demand and Output Growth; User Cost and Liquidity Effects; Lags in Investment Demand; Investment in the Static Model; Stability and the Slope of the IS Curve; Policy Implications

Unit IV: Demand for Money & Supply of Money

The Classical Approach; the Keynesian approach; real balance effect and Patinkin's theory; Friedman's contribution; Tobin's portfolio and Boumol's inventory approach; Determinants of Money Stock; The money multiplier- High Powered money- budget deficit and money supply; Endogenous and exogenous money supply, instruments of monetary control, equilibrium in the money market, accommodating monetary policy- interest rate or money supply targets; monetary planning and credit planning.

Readings:

- Ackley, G. (1978): *Macroeconomics: Theory and Policy*, Macmillan
- William H. Branson: *Macroeconomic Theory and Policy*, East West Press Private Limited
- Dornbusch, R., S. Fischer & R. Startz: *Macroeconomics*, Tata McGraw Hill
- G. Mankiw: *Macroeconomics*, Worth Publishers
- Andrew B. Abel, Ben S. Bernanke & Dean Croushore: *Macroeconomics*, Pearson
- Raghbendra Jha: *Contemporary Macroeconomic Theory and Policy*, New Age International Publishers
- Paul A. Samuelson & William D. Nordhaus: *Economics*, McGraw Hill
- Snowden, Brian, and Howard R. Vane: *Modern Macroeconomics: Its Origins, Development and Current State*, Edward Elgar

- D. Patinkin: *Money, Interest and Prices*, 2nd edition, London, Harper and Row

ECO-003: Quantitative Methods for Economic Analysis

Learning Objectives

- To build mathematical tools like functions, matrices and calculus which are used throughout economic theory and econometrics.
- To develop a working command of probability, random variables and the standard sampling distributions.
- To train students in estimation and hypothesis testing as direct preparation for the Econometrics papers.

Course Learning Outcomes

On completion, students will be able to:

- Use functions - including exponential and logarithmic - to represent and solve economic relationships.
- Apply matrix algebra to solve systems of linear economic equations.
- Apply differentiation, optimisation (including the Lagrange method) and basic integration to problems of marginal analysis.
- Work with probability rules, random variables, correlation and the normal, t , chi-square and F distributions.
- Construct confidence intervals and conduct standard hypothesis tests, interpreting the results correctly.

Syllabus

Unit I: Functions and Economic Relationships (10 hours)

Concept of a function and its graph. Linear and quadratic functions; simultaneous equations, economic applications. Exponential and logarithmic functions: rules of indices and logarithms; the number e ; growth rates, compounding and present value (in brief). Why logarithms matter in economics: elasticities and growth rates as preparation for log-linear models in econometrics.

Unit II: Matrix Algebra for Economists (12 hours)

Matrices and vectors: types and operations. Determinants and their basic properties. Inverse of a matrix; rank. Solving systems of linear equations: the matrix inversion method and Cramer's rule; economic applications: multi-market equilibrium and national-income models. Input-output analysis; economic applications.

Unit III: Calculus and Optimisation (14 hours)

Differentiation: rules of differentiation; derivatives of exponential and logarithmic functions. Economic interpretation: marginal cost, marginal revenue and marginal product; point elasticity using derivatives. Higher-order derivatives; partial derivatives

and their economic meaning. Unconstrained optimisation: maxima and minima, with applications to profit maximisation and cost minimisation. Constrained optimisation: Lagrange multiplier method; application to utility maximisation. Integration: basic rules; the definite integral; consumer's and producer's surplus.

Unit IV: Probability and Probability Distributions (10 hours)

Random variables - discrete and continuous; probability distributions; expectation, variance and standard deviation; covariance and correlation (Karl Pearson's coefficient and its interpretation). Theoretical distributions: binomial and Poisson (in brief); the normal distribution - properties, the standard normal variable and use of the z-table.

Unit V: Sampling, Estimation and Hypothesis Testing (14 hours)

Population and sample; methods of random sampling — simple, stratified and systematic. The sampling distribution of the mean; standard error; the Central Limit Theorem (statement and importance, intuitive treatment).

Estimation: point and interval estimation; confidence intervals for the mean (large and small samples) and for a proportion; desirable properties of estimators.

Hypothesis testing: null and alternative hypotheses; Type I and Type II errors; level of significance and the p -value approach. Standard tests: z and t tests; test of a proportion (in brief); chi-square tests of goodness of fit and independence; F -test for equality of variances (in brief).

Readings

1. Chiang, A. C. & Wainwright, K., *Fundamental Methods of Mathematical Economics* (latest ed.), McGraw-Hill Education.
2. Sydsaeter, K. & Hammond, P., *Essential Mathematics for Economic Analysis*, Pearson.
3. Gupta, S. C. & Kapoor, V. K., *Fundamentals of Mathematical Statistics*, Sultan Chand & Sons.

ECO-004: Public Economics

Learning Objectives

- To understand the allocation, distribution, and stabilization functions of the government and the rationale for public intervention in the presence of market failure, public goods, and externalities.
- To study theories and trends of public expenditure and apply cost-benefit and investment evaluation techniques.
- To analyze the sources and principles of public revenue, including taxation, elasticity, buoyancy, and equity-efficiency trade-offs.

- To examine the nature, burden, and management of public debt, and the role of fiscal policy in developing economies.
- To interpret and analyze government budgets, classifications, budgetary deficits, and fiscal indicators.
- To understand the framework of fiscal federalism in India, focusing on Centre-State financial relations, fiscal decentralization, and the role of the Finance Commission.

Learning Outcomes

- Students will be able to explain the economic rationale behind government intervention, including the provision of public goods and the growth of public expenditure.
- Students will be able to analyze taxation principles, assess tax incidence, and evaluate the efficiency and equity implications of different revenue systems.
- Students will be able to interpret fiscal policies, analyze government budgets and deficits, and critically assess fiscal federalism and intergovernmental financial relations in India.

Syllabus

Unit I: Role of the Government in Economic activity and Public Goods:

Allocation, distribution and stabilization functions of the government; the nature of public goods and its types, public goods and market failure, the efficient provision of public goods, externalities and public goods;

Unit II: Public Expenditure and Public Revenue:

Public Expenditure – Wagner’s Law, Wiseman-Peacock Hypothesis; Criteria for public investment, Cost-Benefit analysis

Public Revenue: Tax and non-tax revenue, Impact, Incidence and Shifting of taxation; Elasticity and Buoyancy of taxation; Trade-off between equity and efficiency; Principles of taxation – Ability to pay principle, Benefit principle.

Unit III: Public Debt, Fiscal Policy and Public Budget

Public Debt: types, sources, burden, effects and debt management

Fiscal Policy: objectives, instruments and its role in the developing economies

Budget: classification and their significance, budgetary deficits, budget multiplier; the analysis and interpretation of government budget

Unit IV: Fiscal Federalism in India

Principles of division of financial resources; inter-governmental resource transfers, problems of Centre-State financial relations; fiscal decentralization in India; role of Finance Commission in vertical and horizontal distribution of resources; Tax structure in India

Readings:

- R.A. Musgrave & P.B. Musgrave: *Public Finance in Theory and Practice*, McGraw Hill Education
- Jha, R. (1987): *Modern Theory of Public Finance*, Wiley Eastern Ltd.
- Buchanan, J.M. (1970): *The Public Finance*, Homewood, Richard D. Irwin
- Chelliah, R.J (1969): *Fiscal Policy in Underdeveloped Countries: With Special Reference to India*, Reprint: 2010, Routledge
- Dalton, H. (1995): *Principles of Public Finance*, Aallied Publishers Ltd.

- Stiglitz, J. (1986): *Economics of Public Sector*, New York: Norton
- Mundle, S. (1997): *Public Finance Policy Issues for India*, Oxford Univ. Press

ECO-005: Money and Banking

Learning Objectives

- The course provides students with an in-depth understanding of the concepts, functions, measurement of money, and theories of money supply determination.
- It examines the structure and functioning of financial institutions, financial markets, instruments, and innovations, with special reference to India.
- The course analyzes interest rate determination, sources of interest rate differentials, and theories of the term structure of interest rates.
- It explores the changing role, structure, and reforms of the Indian banking system, including balance sheet management and portfolio practices.
- The course familiarizes students with the role, functions, and policy instruments of central banking and critically evaluates India's monetary policy framework.

Learning Outcomes

- Students will be able to explain the concepts, functions, measurement of money, and major theories of money supply determination.
- Students will be able to analyze the structure and functioning of financial institutions, markets, instruments, and financial innovations in India.
- Students will be able to evaluate theories of interest rate determination and term structure, and interpret trends in Indian interest rates.
- Students will be able to assess the functioning, reforms, and portfolio management practices of the Indian banking system.
- Students will be able to examine the functions and instruments of central banking and critically analyze India's monetary policy and monetary management framework.

Syllabus Outline

Unit I: Money

Concept and functions of money; Measurement of money; Theories of money supply determination.

Unit II: Financial Institutions, Markets, Instruments and Financial Innovations

Role of financial markets and institutions; Problem of asymmetric information: adverse selection and moral hazard; Financial crises; Money and capital markets: organization, structure, and reforms in India; Role of financial derivatives and other financial innovations; Financial markets and institutions in India: Organization, structure and reforms in India.

Unit III: Interest Rates

Determination of interest rates; Sources of interest rate differentials; Theories of term structure of interest rates; Interest rates in India.

Unit IV: Banking System

Balance sheet and portfolio management; Indian banking system: changing role and structure; Banking sector reforms in India.

Unit V: Central Banking and Monetary Policy

Functions and balance sheet of central banks; Goals, targets, indicators, and instruments of monetary control; Monetary management in an open economy; Current monetary policy of India; Digital Currency: Implications and emerging issues in Indian Economy.

Readings

- Mishkin, F.S. & Eakins, S.G. (2009). *Financial Markets and Institutions* (6th ed.). Pearson Education.
- Fabozzi, F.J., Modigliani, F., Jones, F.J., & Ferri, M.G. (2009). *Foundations of Financial Markets and Institutions* (3rd ed.). Pearson Education.
- Bhole, L.M. & Mahukud, J. (2011). *Financial Institutions and Markets* (5th ed.). Tata McGraw-Hill.
- Khan, M.Y. (2011). *Indian Financial System* (7th ed.). Tata McGraw-Hill.
- Various latest issues of *RBI Bulletin*, *Annual Reports*, *Reports on Currency and Finance*, *Reports of Working Groups*, and *IMF Staff Papers*.

ECO-006: Principles of Agricultural Economics

Learning Objectives

- The course aims to provide an understanding of the nature, scope, and significance of agricultural economics and its interlinkages with other sectors of the economy.
- It introduces key production theories and models related to agricultural development, including debates on farm size, productivity, and structural challenges.
- The course analyzes the nature of demand and supply in the agricultural sector, focusing on price determination and also the risk and uncertainties involved in agricultural production.
- The course explores the impact of technological advancements such as biotechnology and mechanisation on agricultural production and also provides an understanding on the significance of sustainable agriculture.

Learning Outcomes

- Students will be able to explain the role of agriculture in economic development and analyze farm organization and inter-sectoral linkages.
- Students will be able to apply production functions and development theories to assess agricultural productivity and barriers to growth.
- Students will be able to evaluate the behaviour of demand and supply for farm products including risk and uncertainties involved in Agricultural production.
- Students will be able to analyse the effects of technological and market related changes both at farm and policy levels.

Syllabus

Unit I: Introduction, Nature, Scope and Significance of Agricultural Economics, Inter-sectoral Linkages of Agriculture (Backward and Forward Linkages and Feedback Effects), Significance of Farm Organisation and Agricultural Production

Unit II: Production function in Agriculture, Cobb-Douglas Production Function, Productivity and Returns to Scale, Large scale and Small Scale farming and their relative Advantages and Disadvantages, Sen's Farm size and Productivity debate

Unit III: Theories about the role of Agriculture in economic development-Dual Economy Model, Lewis model, Fei and Ranis Model

Theories of Agricultural Development-Schultz theory of transformation of traditional Agriculture, Mellor's model, Boserup's Model

Unit IV: Nature of demand for Agricultural products, Price determination of Agricultural products, Factors affecting the demand for farm products.

Nature of supply of farm products, Factors affecting supply of farm products, Backward bending supply curve, Risk and Uncertainties in Agriculture, Measures to overcome Uncertainties in Agriculture.

Unit V: Technology in Agricultural Production, Biotechnology and Mechanical Technology, Case for and Against Farm Mechanisation, Sustainable Agriculture-Features and Significance

Readings

- Barkley , Andrew and Paul Barkley(2023), "Principles of Agricultural Economics", Routledge
- Penson, John B., Jr. Oral Capps, C.ParrRosson III and Richard T.Woodward (2016) Introduction to Agricultural Economics, Pearson
- R.N.Soni and SangeetaMalhotra (2022): Leading Issues in Agricultural Economics, 13th Edition, Vishal Publishing Co. New Delhi
- Subba Reddy S, P.Raghu Ram, T.V. NeelakantaSastry and I.Bhavani Devi(2019), Agricultural Economics, 2nd Edition, Oxford and IBH Publishing Co., New Delhi
- V.T, Raju and D.V.S Rao, "Economics of Farm Production and Management" Oxford and IBH Publishing Co., New Delhi

SEMESTER – II

ECO 007: Microeconomics-II

Learning Objectives

- The course introduces general equilibrium analysis, contrasting it with partial equilibrium, and explores models such as the Robinson Crusoe economy and the Walrasian framework, with a focus on existence, uniqueness, and stability of equilibrium.
- It explains core concepts in welfare economics, including criteria for efficiency and equity, the divergence between private and social welfare, and the limitations of welfare aggregation.

- The course analyzes decision-making under uncertainty, addressing different measures of risk, risk preferences, portfolio selection, and insurance choices.
- It explores the field of information economics, examining problems arising from asymmetric information such as adverse selection, moral hazard, and principal-agent issues, along with models like Akerlof's lemons and Spence's signalling.

Learning Outcomes

- Students will be able to analyze general equilibrium models and evaluate resource allocation, price determination, and efficiency conditions in a multi-market framework.
- Students will be able to assess welfare outcomes using various efficiency and compensation criteria and critically examine the challenges of aggregating individual preferences into a social welfare function.
- Students will be able to evaluate economic behavior under uncertainty and asymmetric information, and apply theoretical models to real-world issues like insurance, labour markets, and investment choices.

Syllabus

Unit I: General Equilibrium Analysis:

Partial equilibrium vis-à-vis general equilibrium approach. An elementary general equilibrium model – the Robinson Crusoe economy, Walrasian General Equilibrium Model, $2 \times 2 \times 2$ General Equilibrium, Existence, Uniqueness and Stability, Static Properties of General Equilibrium state, General Equilibrium and the allocation of resources, prices of commodities and factors.

Unit II: Welfare Economics:

Divergence between social and private welfare, Pigouvian welfare economics, Kaldor-Hicks Compensation Criteria, Scitovsky's Paradox, Scitovsky's Double Criterion, Pareto optimality, Bergson Social Welfare function, Arrow's Impossibility Theorem, , Theory of Second Best

Unit III: Choice under uncertainty:

Measures of risk -- Domar-Musgrave index, Roy's safety index, Attitude towards risk, risk averter and risk lover, risk lover and gambling, risk pooling and risk spreading, mean-variance analysis and portfolio selection, Mini-max regret, Lotteries, preference relation over lotteries, Risk aversion and insurance, Markowitz Hypothesis.

Unit IV: Information economics:

Adverse Selection, Market signalling and screening, Akerlof's lemons model, Spence's labour market signalling model, the principal agent problem: Hidden Actions (Moral Hazard) and Hidden information. The Principal- Agent Problem.

Reading

- Varian, Hal R. (1992), Microeconomic Analysis, 3rd Edition, International Student Edition, W. W. Norton and Company.

References

- Broadway, R. W. and Bruce, N. (1984), Welfare Economics, Basil Blackwell, London.

- Debreu, G. (1959), Theory of Value, An Axiomatic Analysis Of Economic Equilibrium, John Wiley & Sons.
- Ellickson, Bryan (1993) Competitive Equilibrium; Theory and Applications, Cambridge University Press. d.Green, H. and Walsh, V. (1975), Classical and Neo-Classical Theories of General Equilibrium, Oxford University Press, London.
- Hansen, B. (1970), A Survey of General Equilibrium Systems, McGraw Hill, New York.
- Hilderbrand, W. and Kirman, A. P. (1988), Equilibrium Analysis; Variations on Themes by Edgeworth and Walras, North- Holland.
- Kreps, David (1988), Notes on theory of choice, Westview Press.
- Martin, J. Osborne and Ariel Rubinstein (1994), A course in game theory, MIT Press.
- Quirk, J. and Saposnik, R. (1968), Introduction to General Equilibrium Theory and Welfare Economics, McGraw Hill, New York.
- Starr, Ross M. (1997), General equilibrium theory; An introduction, Cambridge University Press. k.Weintrub, E. R. (1974), General Equilibrium Theory, Macmillan, London.
- Borch, K. H. (1968), The Economics of Uncertainty, Princeton University Press, Princeton.
- Diamond and Rothschild (Eds.) (1978), Uncertainty in Economics, Academic Press, New York. Fudenberg, D. and Tirole, J. (1996), Game Theory, MIT Press.
- Pindyck, Robert S. and Rubinfeld, Daniel L. (1998), Microeconomics, Prentice Hall

ECO - 008: Macroeconomics-II

Learning Objectives

- The course aims to provide an advanced understanding of inflation-unemployment dynamics through Keynesian, Neoclassical, and New Classical perspectives, including the Phillips Curve, Natural Rate Hypothesis, and Rational Expectations theories.
- It examines Neo-Keynesian reformulations of macroeconomic theory, including reinterpretations of Keynes' employment theory through Walrasian frameworks, Clower's Dual-Decision Hypothesis, and Leijonhufvud's contributions to understanding Keynesian vs. Classical unemployment.
- The course explores open-economy macroeconomics, covering balance of payments analysis, exchange rate determination, and the Mundell-Fleming model's policy implications under different exchange rate regimes.

Learning Outcomes

- Students will be able to critically evaluate competing theories of inflation and unemployment, analyzing their policy implications and empirical relevance in different economic contexts.
- Students will gain proficiency in open-economy macroeconomic modeling, enabling them to analyze balance of payments dynamics and evaluate the effectiveness of fiscal/monetary policies under fixed vs. flexible exchange rate systems.

Syllabus

Unit I: Inflation and Unemployment

Keynesian/Phillips Model of Inflation and the Keynesian–Neoclassical Synthesis; Friedman’s Model of Inflation; Natural Rate of Unemployment; Money in Friedman’s Model; Fiscal Policy in Friedman’s Model; Rational Expectations and the New Classical Propositions; Tools of the New Classical Macroeconomics

Unit II: The Keynesian Counter-Attack: Neo-Keynesians

Reinterpretation of Keynes’s Theory of Employment: Walras’s Law; Clower’s Dual-Decision Hypothesis; Leijonhufvud’s Defense of Keynes; Keynesian and Classical Unemployment

Unit III: Balance of Payments and Exchange rate

Balance of Payments: Current account and capital account; Balance of Trade and Balance of payments; Balance of payments determination; Forex market; Exchange rate; Exchange rate determination

Unit IV: Macroeconomic Equilibrium in Open Economy

Short-run Open Economy Models: Mundell – Fleming Model with fixed exchange rate; Mundell – Fleming Model with flexible exchange rate; Assets market and exchange rate expectations.

Readings:

- Ackley, G. (1978): Macroeconomics: Theory and Policy, Macmillan
- William H. Branson: Macroeconomic Theory and Policy, East West Press Private Limited
- Dornbusch, R., S. Fischer & R. Startz: Macroeconomics, Tata Mcgraw Hill
- Wendy Carlin and David Soskice (1996) - Macroeconomics and The Wage Bargain; Oxford University Press
- G. Mankiw: Macroeconomics, Worth Publishers
- Andrew B. Abel, Ben S. Bernanke & Dean Croushore: Macroeconomics, Pearson
- Raghbendra Jha: Contemporary Macroeconomic Theory and Policy, New Age International Publishers
- Paul A. Samuelson & William D. Nordhaus: Economics, McGraw Hill
- Snowdon, Brian, and Howard R. Vane: Modern Macroeconomics: Its Origins, Development and Current State, Edward Elgar
- D. Patinkin: Money, Interest and Prices, 2nd edition, London, Harper and Row
- Romer, David (1996), Advanced Macroeconomics, New York: Mcgraw-Hill.

ECO-009: Economics of Social Sector

Learning Objectives

- The course introduces the economics of education, examining education as both a consumption and investment good and exploring the development and components of human capital theory.
- It analyzes the costs and benefits of education from both private and social perspectives and evaluates education's role in employment, income distribution, and economic growth.

- The course explores educational planning and financing, focusing on strategies relevant to developing countries, with a special emphasis on India, and addressing issues like unemployment and brain drain.
- It introduces the economics of health by analyzing the role of health in economic development, the comparison between education and health, and the determinants of health outcomes.
- The course evaluates the financing and institutional structures of health care in India, focusing on resource allocation, equity and efficiency considerations, and the implications of international agreements like GATT.

Learning Outcomes

- Students will be able to assess the economic significance of education and health as components of human capital and their impact on development.
- Students will be able to evaluate the costs and benefits of education and health services, and understand the relationship between these sectors and broader socio-economic indicators such as poverty, employment, and income distribution.
- Students will be able to analyze planning, financing, and institutional challenges in the education and health sectors, with a particular focus on equity, efficiency, and policy implications in the Indian context.

Syllabus

Unit I: Introduction to the Economics of Education: Education as Consumption and Investment goods; Human Capital: concept, components of Human Capital, Historical development in the human capital theory; Human Capital and Human Development.

Unit II: Cost and Benefits of Education: Cost of Education- Expenditure on Education, private costs and social costs; Direct and indirect/opportunity costs; Benefits of Education- Direct and Indirect Benefits; Private and Social benefits; Problems in the measurement of costs and benefits in education; Education, Employment and Income; Contribution of Education to economic growth; Education, Poverty and Income Distribution.

Unit III: Educational Planning and Financing: Approaches to educational planning; Economics of Educational Planning in Developing Countries with special reference to India; Educational Planning and the problem of educated Unemployment and brain drain; Role of financing in the development of education; Equity and Efficiency effects of financing education in India; Implications of GATT on Indian Education and financing.

Unit IV: Introduction to the Economics of Health: The concept of health and health care; Life expectancy and mortality rates, morbidity; Health as Consumption and the Investment goods; The role of health in economic development; Comparison of education and health; Health as Human Capital; Determinants of Health- Poverty, Malnutrition; Economic dimensions of health care; demand and supply of health care.

Unit V: Financing and Institutional Issues in Health Care: Resource mobilization and utilization of health care in India; Pricing and Subsidies to Health sector; Equity and Efficiency effects of health care financing; Health Care and Resource Constraints; Inequalities in Health and

Health Care in India; Institutional Issues in Health Care Delivery; Implications for GATT for Health Sector and Financing.

Readings:

- Becker, G.S. (1974): *Human Capital*, NBER, New York
- Blaug, Mark (1972): *Introduction to Economics of Education*, London: Penguin
- Culyer, A.J., and J.P. Newhouse (eds): *Handbook of Health Economics*, Amsterdam: Elsevier
- Folland, S., A.C. Goodman and M. Stano (2001): *The Economics of Health and Health Care*, New Jersey: Prentice Hall
- Klarman, H.E. (1995): *The Economics of Health*, New York: Columbia University Press

ECO -010: Economy of Northeast India

Learning Objectives

- To familiarize students with the structure, characteristics, and development issues of the economy of the North Eastern Region, with special reference to Manipur.
- To examine the resource base, sectoral composition, and economic potential of Manipur within the broader regional context.
- To analyze the role of institutions, governance, and development policies in shaping economic development in the North Eastern Region and Manipur.
- To understand the historical evolution and contemporary challenges of regional development.
- To evaluate strategies for sustainable and inclusive development in Manipur and the North Eastern Region.

Learning Outcomes

- Students will be able to explain the economic structure and development characteristics of the North Eastern Region, particularly Manipur.
- Students will be able to assess the contribution of natural, human, and institutional resources to regional development.
- Students will be able to analyze the role of markets, governance, and development institutions in the economic growth of Manipur.
- Students will be able to evaluate historical and contemporary development issues affecting the state and the region.
- Students will be able to critically examine policies and strategies for sustainable regional development.

Syllabus

Unit I: Local Economy and Development Potential of the North Eastern Region with Special Reference to Manipur

- Concept and significance of local and regional economy.
- Salient features of the North Eastern Regional Economy.

- Economic structure of Manipur.
- Regional development and economic disparities.
- Development potential of: Primary Sector: Agriculture, horticulture, fisheries, livestock, and forestry; Secondary Sector: Handloom, handicrafts, food processing, cottage and small-scale industries; Tertiary Sector: Trade, transport, tourism, education, health, and financial services; Quaternary Sector: Information technology, innovation, entrepreneurship, and knowledge-based services; Opportunities and constraints for economic development in Manipur.

Unit II: Resource Base and Economic Development in Manipur

- Resource endowment and regional development.
- Land resources and land-use patterns.
- Forest resources, biodiversity, flora, and fauna.
- Water resources and their economic significance.
- Climatic and geographical resources.
- Mineral resources and development potential.
- Human resources: Population characteristics; Human capital formation; Education, health, and skill development.
- Sustainable utilization of resources in Manipur.

Unit III: Institutions, Governance, and Regional Development

- Institutions and economic development.
- Characteristics and uniqueness of markets in Manipur.
- Market failures and government interventions.
- Governance and development planning.
- Local self-government and decentralization.
- Customary laws and traditional institutions in Manipur.
- Role of North Eastern Council (NEC).
- Role of Ministry of Development of North Eastern Region (DoNER).
- Border trade and the strategic importance of Manipur.
- Look East Policy and Act East Policy: implications for Manipur and the North Eastern Region.

Unit IV: Historical Dimensions of Regional Economic Development

- Historical evolution of the economy of the North Eastern Region.
- Historical development of the economy of Manipur.
- Traditional economic institutions and indigenous production systems.
- Colonial and post-colonial economic transformation.
- Development planning and economic change in Manipur.
- Poverty, unemployment, migration, and regional disparities.
- Infrastructure and connectivity challenges.
- Contemporary development issues and prospects for sustainable and inclusive growth.

Readings

- Bhattacharya, B. & De, P. *North East India: Development Challenges in a Remote Region*.
- Kar, B.K. (Ed.). *Development Issues in North East India*.
- Singh, L.RK. *India's Act East Policy: Prospects of Industrialisation in Manipur*.
- Singh, N. Sanajaoba. *Manipur: Past and Present*.

- Government of Manipur. *Economic Survey, Manipur* (Latest Issues).
- Government of Manipur. *Statistical Abstract of Manipur* (Latest Issues).
- North Eastern Council (NEC). *Annual Reports and Vision Documents*.
- Ministry of Development of North Eastern Region (DoNER). *Reports and Policy Documents*.
- Selected articles from *Economic and Political Weekly*, *Journal of North Eastern Development*, and other reputed journals.

SEMESTER - III

ECO -012: International Economics

Learning Objectives

- The course reviews classical and modern theories of international trade, including the Heckscher-Ohlin model, empirical anomalies such as the Leontief Paradox, and theoretical developments like the factor price equalization theorem.
- It explores trade under conditions of economies of scale and imperfect competition, and examines the roles of international factor mobility, tariffs, quotas, and related theorems in trade policy.
- The course analyzes trade policy and welfare implications for developing countries, the functioning of international trade institutions like the WTO, and the influence of regional trade blocs, FDI, and MNCs on globalization.
- It reviews national income and balance of payments accounting, examines exchange rate determination in open economies, and explores the macroeconomic framework for analyzing international transactions.
- The course addresses macroeconomic policy in an open economy, exchange rate regimes, foreign exchange markets, and the roles of international monetary institutions in dealing with crises and financial stability.

Learning Outcomes

- Students will be able to understand and apply classical and modern trade theories to analyze patterns and effects of international trade and factor movements.
- Students will be able to evaluate trade policies and institutions affecting developing countries, and assess the role of globalization, trade blocs, and multinational corporations in international economics.
- Students will be able to analyze exchange rate dynamics, balance of payments, and macroeconomic policies in open economies, and interpret the function and impact of global financial institutions and contemporary economic crises.

Syllabus

Unit I: Review of Classical Theories of trade, Heckscher-Ohlin models, Leontief Paradox, Factor Price equalization theorem, terms of trade, Stolper-Samuelson theorem, Rybczynski theorem, and immiserising growth theory.

Unit II: International factor movements, Labour migration and foreign investment, Intra industry trade model, Rationale of tariffs, quotas and subsidies, infant industry argument.

Unit III: Trade policy and Welfare with special reference to developing countries, the international trading system, WTO and preferential trading arguments, Tariff retaliation and the WTO, Custom Unions, Trade and FDI, Trade and MNCs, Regional Trading blocs and the globalization of trade.

Unit IV: Review of national income and Balance of Payments accounting, BOP adjustments- Absorption and Monetary Approaches, the foreign exchange market- Spot and Forward markets, Fixed and Floating exchange rate, the exchange rate determination -Purchasing Power Parity and Interest Rate Parity Theory.

Unit V: Issues of policy instruments in an open economy - Tinbergen on Targets and Instruments, Swan diagram, Flexible exchange rate and problems in maintenance of monetary and fiscal policies, International monetary institutions - IMF and World Bank, currency crisis, stabilization and other contemporary issues including global financial crisis.

Readings:

- Sodersten, Bo & Geoffrey Reed (1994): *International Economics*, London: Macmillan
- Paul R. Krugman & Maurice Obstfeld: *International Economics: Theory and Policy*, Pearson
- Dixit, Avinash and Victor Norman (1980): *Theory of International Trade: A Dual General Equilibrium Approach*, Cambridge, UK: Cambridge Univ. Press
- Feenstra, Robert (2003): *Advanced International Trade: Theory and Evidence*, Princeton, NJ: Princeton Univ. Press
- Grossman, Gene and Kenneth Rogoff (1991): *Handbook of International Economics*, Vol. 3, New York, NY: Elsevier
- Bhagwati & srinivasan (1983): *Lectures on International Trade*, The MIT Press.
- Bhagwati, Jagdish (1964): *The Pure Theory of International Trade*, Economic Journal, Vol.74

ECO-013: Development Economics

Learning Objectives

- The course introduces key distinctions between economic growth and development, focusing on the roles of capital, labor, and technology and examining major growth models such as Harrod-Domar and Solow.
- It explores the measurement and interlinkages between poverty, inequality, and development, incorporating classical and contemporary development indices and theories like Kuznets' curve and Prebisch-Singer thesis.
- The course examines real-world experiences such as the East Asian economic miracle, analyzing macroeconomic stability, equity, and growth strategies.

- It investigates the demographic dimension of development, including theories of population growth, labor supply models, and the impact of migration on urbanization and employment.
- The course evaluates the role of the state in economic development, addressing issues like market failure, corruption, and the choice of appropriate production techniques in underdeveloped economies.

Learning Outcomes

- Students will be able to distinguish between economic growth and development and apply classical and modern growth theories to analyze country-level growth trends.
- Students will be able to assess the causes and consequences of poverty and inequality and interpret various development indicators and theoretical approaches.
- Students will be able to critically evaluate demographic, institutional, and policy-related factors influencing development, with attention to real-world development experiences and challenges.

Syllabus

Unit I: Growth and Development: Difference between Growth and Development; factors affecting economic growth- capital, labour and technology; Growth models- Harrod-Domar model, Solow model and its application to convergence of country's growth rates.

Unit II: Poverty, Inequality and Development: Measurement of poverty and inequality and their relationship with economic growth, Lorenz curve, Gini coefficient and aggregate measure of inequality, Ahluwalia-Chenary welfare index, Kuznet's inverted U curve; inequality as constraint to growth (Kalecki); Prebisch-Singer thesis on unequal exchange; HDI and other indices of development and quality of life- food security, health and nutrition.

Unit III: East Asian Economic Miracle: Growth, equity and economic change; macroeconomic stability and export growth; strategies for rapid accumulation of productive assets.

Unit IV: Population and Development: The cost and benefits of population growth, Malthusian population trap; Lewis's supply of labour model, Renis-Fei model, Impact of migration on urbanization and urban unemployment.

Unit V: Role of state and choice of technique: The market mechanism and market failure; Role of state; Corruption; The capital intensity techniques in underdeveloped countries, Conflict between employment and output; wages and capital intensity of production.

Readings:

1. Micheal P. Todaro & Stephen C. Smith: *Economic Development*, Pearson
2. A.P. Thirwall: *Growth and Development: With Special Reference to Developing Economies*, Palgrave Macmillan
3. Hayami, Yujiro: *Development Economics: From Poverty to the Wealth of Nations*, Clarendon Press
4. World Bank (1996): *The East Asian Miracle: Econmic Growth and Public Policy*, Oxford University Press
5. Ray, Debraj (1998): *Development Economics*, Oxford University Press
6. Bardhan,P. & C. Udry (1999): *Development Microeconomics*, Oxford University Press

7. Basu, K. (2003): *Analytical Development Economics: The Less Developed Economy Revisited*, The MIT Press

N.B. ECO-014 (A/B), ECO-015 (A/B) and ECO-016 (A/B) are papers offered under optional streams and their syllabus is attached in the Discipline Specific Elective section.

SEMESTER-IV

ECO-017: Indian Economic Policies

Learning Objectives

- The course explores the objectives, achievements, and limitations of economic planning in India, emphasizing the interface between planning and policy, decentralized planning, and the role of civil society in development.
- It critically examines India's economic reforms, including structural adjustments, financial sector transformations, and the evolving roles of institutions like the RBI, SEBI, and WTO in shaping economic outcomes.
- The course analyzes agricultural and industrial policies in India, including pricing mechanisms, food security strategies, the role of public sector enterprises, and debates around privatization and SME development.
- It reviews the evolution of India's foreign trade policy, changes in trade composition and direction, trade reforms since 1991, and the role of foreign capital and exchange rate policy.
- The course addresses key issues of food security in India, focusing on public distribution systems, nutrition schemes, and policy debates such as cash versus food transfers.

Learning Outcomes

- Students will be able to critically analyze the trajectory of India's planning and policy frameworks, including their socio-economic impacts and institutional dimensions.
- Students will be able to evaluate major reform measures and sectoral policies in agriculture, industry, trade, and finance, assessing their implications for growth, equity, and sustainability.
- Students will be able to assess India's food security landscape, understand policy mechanisms like the PDS and welfare schemes, and engage with contemporary policy debates affecting vulnerable populations.

Syllabus

Unit I: Economic Planning and Policy: Objectives and Strategies of Planning; Failures and Achievements of Planning; Planning and Policy interface; Decentralized Planning; Fiscal federalism in India; 73rd & 74th amendments to the constitution; role of civil society as third sector in planning.

Unit II: India's Economic Reforms: Structural adjustment programme- a critical appraisal; overall impact on growth and distribution; Financial sector reforms- role of RBI and SEBI, new

financial reforms for banking system, performance of financial institutions since reforms; WTO and its impact on the economy; Monetary and Fiscal Policy reforms.

Unit III: Agricultural and Industrial Policies: India's Agricultural Policy since Independence-agricultural pricing behavior; Terms of trade between agriculture and Industry; Agricultural finance; Issues in food security and public distribution system- policies for sustainable agriculture.

Growth and pattern of Industrialization; Industrial Policy; Public sector enterprises and their performance; Privatization and disinvestment debate; Small and Medium Enterprises.

Unit IV: Evolution of India's Foreign Trade Policy: India's Trade problems; recent changes in the direction and composition of trade and their implications; Rationale and Impact of trade reforms since 1991 on BOP, employment and growth; Exchange Rate policy; Foreign Capital and MNCs in India; Instruments and export promotion and recent import and export policies and agenda for future.

Unit V: Food Security Issues: Public Distribution System in India- historical background and performances, Targeted Public Distribution System (TPDS) in India; Integrated Child Development and Mid-Day Meal Programme; Issues related to diversion of food grain, Cash Transfer vs. Food Transfer debate.

Readings:

- Ahluwalia, I.J., and I.M.D. Little (eds) (1999): *India's Economic Reforms and Development (Essays in honour of Manmohan Singh)*. New Delhi: Oxford University Press
- Bardhan, P.K. (1999): *The Political Development in India*, New Delhi: Oxford University Press
- Brahmananda, P.R., and V.R. Panchmukhi (eds) (2001): *Development Experience in the Indian Economy: Inter-State Perspectives*, Delhi: Bookwell
- Chakravarty, S. (1987): *Development Planning: The Indian Experience*, New Delhi: Oxford University Press.
- Dantwala, M.L. (1996): *Dilemmas of Growth: The Indian Experience*, New Delhi, Sage Publications.
- Dreze, Jean, and Amartya Sen (1995): *India- Economic Development and Social Opportunity*, Oxford University Press
- Jalan, Bimal. (1996): *Indian Economic Policy: Preparing for Twenty First Century*, Viking.
- Joshi, V., and I.M.D. Little (1999): *India: Macroeconomics and Political Economy, 1964-1991*, Oxford University Press.
- Kapila, Uma (2007): *Indian Economy- Performance and Policies*, Academic Foundation
- Kapila, Uma: *Indian Economy Since Independence*, Academic Foundation
- Rangarajan, C. (2000): *Perspectives on Indian Economy*, UBSPD
- Sandsara, J.C. (1992): *Industrial Policy and Planning, 1947-1991: Tendencies, Interpretation and Issues*, Sage Publication
- Srinivasan, T.N., and S.D. Tendulkar (2001): *India in the World Economy*, Oxford University Press.

ECO - 018: Environmental Economics

Learning Objectives

- The course introduces foundational theories of externalities, public goods, and the economic treatment of environmental resources, distinguishing between pure, mixed, and common property goods.
- It explores the design and implementation of environmental policies, analyzing market-based instruments like Pigovian taxes, subsidies, and Coasean bargaining under conditions of market imperfections and institutional constraints.
- The course examines the economics of exhaustible and renewable resources, using models to analyze extraction and exploitation strategies under various market structures.
- It introduces methods for valuing environmental goods and services, covering both market-based and non-market valuation techniques, including hedonic pricing and contingent valuation.
- The course discusses the concept of sustainable development, contrasting ecological and economic perspectives, and examines global environmental challenges and indicators of sustainability.

Learning Outcomes

- Students will be able to analyze externalities, public goods, and resource allocation problems from an economic perspective, particularly in environmental contexts.
- Students will be able to evaluate the effectiveness of various environmental policy instruments and apply appropriate valuation methods to measure environmental costs and benefits.
- Students will be able to assess sustainability challenges and global environmental issues through economic models and policy frameworks, with an understanding of resource conservation and long-term development strategies.

Syllabus

Unit I: Review of the Theories of Externalities, Pareto Optimal provision of public goods, Lindahl's equilibrium; preference revelation problem; types of public goods, common property resources, pure and mixed public goods and environmental resources.

Unit II: Design of Environmental Policy: Environmental externalities, Pigovian taxes and subsidies, prices vs quantity instruments; mixed instruments; imperfect markets and the design of economic instruments; Coase's bargaining solution and collective action; Institution and enforcement.

Unit III: Exhaustible and Renewable resources:

Exhaustible Resources- socially optimum extraction under perfect competition and monopoly; role of government and non-renewable resource extraction.

Renewable Resources- Static and dynamic models of fisheries, forestry and mining under perfect competition and monopoly; exploitation of renewable resources under endogenous prices.

Unit IV: Valuation of environmental benefits and damages:

Environmental benefits; concept of environmental value, classification, use values, option values and non-use values; non essentiality and weak complementary; environmental demand theory.

Valuation methods: For observed market behavior- Hedonic model, Property Pricing; For hypothetical market - Contingent Valuation method.

Unit V: Sustainable Development & Global Environmental Issues:

Sustainability paradigms, the ecological paradigm vs. neoclassical paradigm; economics of conservation, the safe minimum standard, co-evolutionary development, population pressure, resource scarcity; Sustainable indicators & evidence.

Readings:

- Boumol, W.J., and O.E. Oates (1988): Theory of Environmental Policy, Oxford University Press
- Bromley, D.W. (ed). (1995): The Handbook of Environmental Economics, Basil and Blackwell
- Cornelius, G., Van Kooten, and Erwin H. Bulte (2000): The Economics of Nature: Managing Biological Assets, Blackwell
- Goulder, L.H., and William A. Pizer (2006): The Economics of Climate Change, NBER Working Paper No. 11923
- Hanley, N., J.F. Shogren and Ben White (1997): Environmental Economics in Theory and Practice, Macmillan
- Hartwick, J.M., and N.D. Olewiler (1998): The Economics of Natural Resources Use, Addison-Wesley
- Kolstad, C.D. (2000): Environmental Economics, Oxford University Press
- Perman, R., Y. Ma and J. McGilvray (1996): Natural Resources and Environmental Economics, Longman.

N.B. ECO 623 and ECO 624 are papers offered under specialisation/optional streams and their syllabus is attached in the Discipline Specific Elective Section.

ECO-020: Research Methodology**Learning Objectives**

- Introduce students to the concepts, philosophy, and process of scientific research.
- Develop the ability to identify research problems and design a structured research study.
- Equip students with skills in literature review, dissertation writing, and academic referencing.
- Familiarize students with sampling methods, data collection techniques, and research ethics.
- Enable students to analyze and interpret data using statistical and computer-based tools.

Learning Outcomes

- Students will be able to formulate research problems, objectives, and hypotheses.
- Students will be able to design and conduct research studies using appropriate methodologies.
- Students will be able to prepare a structured dissertation/research report following academic standards.
- Students will be able to collect, process, analyze, and interpret research data.
- Students will be able to use statistical software and digital tools for research and data analysis.

Syllabus

Unit I: Foundations of Research and Research Planning

Meaning, objectives, and characteristics of research; Research philosophy and interdisciplinary approaches; Types of research: Fundamental, Applied, Qualitative, Quantitative, Exploratory, Descriptive, and Experimental; Identification and formulation of research problems; Research objectives, research questions, and hypotheses; Review of literature and identification of research gaps; Conceptual and theoretical frameworks.

Unit II: Research Design and Dissertation Writing

Meaning and types of research design; Sampling techniques: Probability and Non-probability sampling; Sources and methods of data collection; Questionnaire and interview schedule design; Structure of research proposal and dissertation; Academic writing and presentation of research; Citation and bibliography: APA, MLA, and Chicago styles; Research ethics, plagiarism, and academic integrity.

Unit III: Data Analysis Methods and Techniques

Measurement scales: Nominal, Ordinal, Interval, and Ratio; Data processing: Editing, coding, classification, and tabulation; Graphical and diagrammatic presentation of data; Descriptive statistics: Measures of central tendency and dispersion; Hypothesis testing: Z-test, t-test, Chi-square test, and ANOVA; Use of computer applications and statistical software (MS Excel, SPSS, R, STATA) for data analysis and interpretation.

Readings

- Creswell, J.W. & Creswell, J.D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th ed.). Sage Publications.
- Kothari, C.R. & Garg, G. *Research Methodology: Methods and Techniques*. New Age International Publishers.
- Chawla, D. & Sondhi, N. *Research Methodology: Concepts and Cases*. Vikas Publishing House.
- Bryman, A. *Social Research Methods*. Oxford University Press.
- Gupta, M. & Gupta, D. *Research Methodology*. PHI Learning Pvt. Ltd.

N.B. ECO-019 (A/B) is offered under optional streams and their syllabus is attached in the Discipline Specific Elective section.

Discipline Specific Elective

GROUP - I

ECO-014(A): Problems of Indian Agriculture

Learning Objectives

- The course aims to examine the structure and dynamics of Indian agriculture, focusing on land use and cropping patterns,
- It seeks to analyze key issues related to agricultural productivity, pricing, marketing, land reforms, and the impact of policy changes like the Green Revolution and WTO and the role of FAO.
- The course explores challenges in agricultural finance, rural indebtedness, and labor conditions, along with policy measures for food security and the welfare of farmers and laborers.

Learning Outcomes

- Students will be able to critically assess the structural and policy-related problems facing Indian agriculture and propose informed solutions.
- Students will be able to evaluate the effectiveness of government interventions in agricultural marketing, finance, and labour welfare.

Syllabus

Unit I: Significance of Agriculture in the Indian Economy. Land utilization, Land use planning and optimal land use pattern. Cropping pattern: Changes and determinants of cropping pattern.

Unit II: Trends in Agricultural production in Indian Causes of low productivity in Indian agriculture, Agricultural price policy - Instruments of Agricultural price policy, Land Reforms and its effects on Indian Agriculture, Green Revolution, WTO and Indian Agriculture. Role of FAO in Agriculture

Unit III: Agricultural marketing: Efficiency criteria and problems of Agricultural Marketing in India, Government measures to improve agricultural marketing in India, Marketable surplus, factors affecting marketable surplus in India.

Unit IV: Agricultural finance - Need for agricultural finance, Sources and problems of agricultural finance, Role of Money Lenders, Rural Indebtedness, Causes of Rural Indebtedness and Government Measures to reduce Rural Indebtedness.

Unit V: Problems of agricultural labor in India, Measures to improve the position of agricultural labourers in India, Women farmers, Food problem - different aspects, Policy measures, Food Security, Buffer stocks - objectives and benefits.

Readings:

- Bruce L. Gardener and Gordon C. (eds): *Handbook of Agricultural economics* Vol. 1A (*Agricultural Production*); Vol. 1B (*Marketing, Distribution and Consumption*); Vol. 2A (*Agricultural and Its External Linkages*); Vol. 2b (*Agriculture and Policy*), Amsterdam, Elsevier Science B.V.
- Echer Karl and Lawrence Witt (eds): *Agriculture and economic development*, New York, McGraw Hill Co.
- Ghatak, S., and Ken Ingersent (1984): *Agriculture and Rural Development*, Harvester Press Ltd., London
- Southworth Herman and Bruce Johnston (eds): *Agricultural Development and Economic Growth*, Cornell University Press, New York.
- Tsakok, Isabelle (2011): *Success in Agricultural Transformation: What It Means and What It Happen*, Cambridge University Press, New York.
- Capstic, M. (1970): *The Economics of Agriculture*, London: George Allen and Unwin
- Johnston, B.F., and J.W. Mellor (1961): *The Role of Agriculture in Economic Development*, AER
- Goodwin, H.G. (1977): *Economics of Agriculture*, Reston Publishing Co.
- Halecrow, H.G. (1952): *Economics of Agriculture*, McGraw Hill.
- Government of India: *National Agricultural Policy*, Ministry of Agriculture, Govt. of India, New Delhi (latest)
- World Bank (2006): *Rejuvenating Indian Agriculture*, Washington, World Bank
- Vasant, Desai (1988):, *Rural Development* , Vol. I-VI, Himalaya Publishing House
- Laxman, T.K., and B.K. narayan (1987): *Rural Development in India- A Multi Dimensional Analysis*, Himalaya Publishing House
- Besley, Timothy (1994): “How Do Market Failures Justify Interventions in Rural Credit Markets?” *The World Bank Research Observer*, Vol.9, No.1

ECO-014(B): Econometrics-I

Learning Objectives

- To introduce the methodology of econometrics and the classical regression framework.
- To develop the ability to estimate, test and interpret simple and multiple regression models, including models with dummy variables.
- To train students to detect the violations of classical assumptions and apply appropriate remedies.

Learning Outcomes

On completion, students will be able to:

- Explain the nature and methodology of econometrics, and estimate and interpret the two-variable regression model.

- Specify and interpret multiple regression models with appropriate functional forms, and test individual and joint significance.
- Use dummy variables for qualitative factors and test structural stability.
- Detect and remedy multicollinearity, heteroscedasticity and autocorrelation.
- Recognise model specification errors.

Syllabus

Unit I: Introduction and the Two-Variable Regression Model (13 hours)

Meaning, scope and methodology of econometrics. Types of data: time series, cross-section, pooled and panel data. Concept of regression; population regression function vs. sample regression function; the stochastic error term and its sources. The method of Ordinary Least Squares: logic and intuition; assumptions of the Classical Linear Regression Model; properties of OLS estimators; the Gauss–Markov theorem (statement and meaning only). Standard errors; coefficient of determination (r^2); testing the significance of regression coefficients (t -test); reporting regression results.

Unit II: Multiple Regression Analysis (13 hours)

The three-variable model: meaning and interpretation of partial regression coefficients; multiple R^2 and adjusted R^2 . Hypothesis testing: individual significance (t -test) and overall significance (F -test). Functional forms and their interpretation: log–log (constant elasticity) and semi-log (growth) models; choice of functional form.

Unit III: Dummy Variable Regression Models (10 hours)

Nature of dummy variables; ANOVA and ANCOVA models. Intercept and slope dummies; interaction effects; the dummy variable trap. Use of dummy variables in seasonal analysis. Testing structural stability: the Chow test and its dummy variable alternative.

Unit IV: Violations of Assumptions (14 hours)

Multicollinearity: nature and sources; consequences for estimation and inference; detection - pairwise correlations, Variance Inflation Factor; remedial measures.

Heteroscedasticity: nature and common causes; consequences for OLS; detection - graphical inspection of residuals, Breusch–Pagan and White tests; remedies - Weighted Least Squares, robust standard errors (concept only), log transformation.

Autocorrelation: nature and causes; consequences for OLS; detection - graphical method, Durbin–Watson d test, Breusch–Godfrey test; remedies - generalised differencing (Cochrane–Orcutt in brief).

Unit V: Model Specification (10 hours)

Consequences of omitting a relevant variable and including an irrelevant variable; Ramsey RESET test (in brief); criteria for model selection - adjusted R^2 , information criteria (basic concepts).

Readings

- Gujarati, D. N., Porter, D. C. & Gunasekar, S., *Basic Econometrics* (latest ed.), McGraw-Hill Education.
- Wooldridge, J. M., *Introductory Econometrics: A Modern Approach* (latest ed.), Cengage.
- Koutsoyiannis, A., *Theory of Econometrics*, Palgrave Macmillan.
- Maddala, G. S. & Lahiri, K., *Introduction to Econometrics*, Wiley.
- Dougherty, C., *Introduction to Econometrics* (latest ed.), Oxford University Press.

GROUP - II

ECO- 015(A): Introduction to Population Studies

Learning Objectives

- To introduce the scope, nature, and inter-disciplinary relevance of population studies and examine global and national population trends.
- To familiarize students with major sources of population data in India and their methodological strengths and limitations.
- To understand population composition and structure, and evaluate classical and modern population theories in the context of demographic change.

Learning Outcomes

- Students will be able to interpret demographic data and assess key indicators such as fertility, mortality, migration, and sex ratio across regions.
- Students will be able to explain theoretical approaches to population change and apply them to real-world demographic patterns, especially in India.

Syllabus

Unit I: Introduction

Nature and Scope of Population Studies; Interrelationship between Population Studies and other Disciplines; Components of Population Change – Fertility, Mortality and Migration; World Population Size and Growth; Indian Population Size, Growth and Distribution.

Unit II: Sources of Population Data

Demographic Events; Population Census – History of Census taking in India, Salient Features of Census; Civil Registration System; Sample Registration System; National Sample Survey; National Family Health Survey; Importance and Limitations of Population Data.

Unit III: Composition and Structure

Age and Sex, Economic, Educational, Religious and Marital Composition; Age and Sex Structure; Factors Affecting Age and Sex Structure; Population Pyramid; Demographic Window of

Opportunity; Population Sex Ratios and its Variation – Child Sex Ratio, Sex Ratio at Birth, Sex Ratio of Elderly; Changing Patterns of Sex Ratio in India – North-South Divide and ‘Missing Women’.

Unit IV: Population Theories

Malthusian Theory; Optimum Population Theory; Biological Theories; Theory of Demographic Transition.

Readings

- Asha A. Bhende and Tara Kanitkar, 2010, *Principles of Population Studies*, Himalaya Publishing House, Mumbai.
- Patra, Aditya Kumar and Panigrahy, Rajib Lochan, (eds), 2010, *Population and Health*, Discovery.
- Ranganathan, C.R., 2006, *A First Course in Mathematical Models of Population Growth* (With MATLAB Programs), Associated Pub.
- Hans Raj, 2003. *Fundamentals of Demography*. Surjeet Publications, Delhi.
- Malthus, *An Essay on the Principle of Population*, 7th Edition, 1872, Book 1, Chapter1.
- K. Srinivasan, 2011, *Training Manual on Demographic Techniques*, UNFPA and Census of India, Registrar General and Census Commissioner, Office of Registrar General, India, Ministry of Home Affair, Government of India.
- Government of India, *National Population Policy 2000*, New Delhi: Department of Family Welfare, Ministry of Health and Family Welfare, February 2000.
- Premi, M.K and Dipendra Nath Das, 2011, *Population of India 2011*, R.R Publishing Corporation.
- ORGI, 2019, *Population projections for India and states 2011 – 2036*: Report of the technical group on population projections, MHA, GoI.
- Tim Dyson, 2018, *A Population History of India*. Oxford Univ Press.
- K. Srinivasan, 2017, *Population-Concerns in India: Shifting Trends, Policies and Programmes*. Sage Publications India Pvt. Ltd.
- Tim Dyson, 2010), *Population and Development: The Demographic Transition*. Rawat Publications.
- Siegel, Jacob, and David Swanson, (eds.), 2004, *Methods and Materials of Demography*. California: Elsevier Academic Press.
- Nancy Birdshall, Allen C. Kelley and Steven W. Sinding, (eds), 2001, *Population Matters: Demographic Change, Population Growth, and Poverty in the Developing World*, Oxford University Press.
- Thomas McKeown, 1976, *The Modern Rise of Population*, Edward Arnold, London.
- John Bongaarts, 1978, A Framework for Analyzing the Proximate Determinants of Fertility, *Population and Development Review*, Vol 4 (1), pp. 105-132.

- Davis, K and Judith Blake, 1956, *Social Structure and Fertility: An Analytic Framework, Economic Development and Cultural Change*, Vol 4 (3), pp. 211-235.
- Gould, W.T.S, 2009, *Population and Development*, Taylor and Francis Routledge.

ECO- 015(B): Institutional Economics

Learning Objectives

- Distinguish between the Old and New Institutional Economics and critically evaluate their analytical contributions.
- Apply transaction cost theory to understand the boundaries of firms and the structure of contracts.
- Analyse property rights regimes and their implications for resource allocation and externalities.
- Examine collective action problems and the conditions under which communities govern common pool resources effectively.
- Evaluate theories of institutional change and apply them to the experience of contemporary developing economies, including India.

Learning Outcomes

- Articulate the core claims of OIE and NIE and situate them within the broader history of economic thought.
- Use transaction cost reasoning to explain why certain transactions are organised within firms rather than through markets.
- Apply Ostrom's design principles to evaluate the sustainability of common property resource governance.
- Analyse the role of formal and informal institutions in shaping long-run growth and development outcomes.
- Produce an institutional analysis of a real-world arrangement — market, organisation, or commons — drawing on concepts from across the course.

Unit 1 Foundations: Old and New Institutional Economics Weeks 1–4

Institutional economics as a departure from neoclassical and Marxian traditions; Old Institutional Economics: Veblen, Commons, Mitchell, Galbraith, Myrdal; New Institutional Economics: Coase, North, Williamson — core claims and distinctions; Institutions as rules: formal vs. informal, enforcement, and stability; Bounded rationality, opportunism, and incomplete contracts; Path dependence and the persistence of inefficient institutions.

Unit 2 Transaction Costs, Property Rights, and Contracts Weeks 5–8

Transaction costs: types, determinants, and measurement; Why firms exist: Coase's theory and the boundaries of the firm; Asset specificity, governance modes, and contractual arrangements; Principal-agent problems, moral hazard, and mechanisms to minimise agency

costs; The Coase Theorem: efficiency, bargaining, and limits in developing economies; Property rights regimes: private, state, common, open access — incentive effects.

Unit 3 Commons, Collective Action, and Polycentric Governance *Weeks 9–11*

Hardin's tragedy of the commons and its assumptions; Prisoner's dilemma, assurance problem, and the logic of collective action; Ostrom's design principles for sustainable common pool resource governance; Polycentric governance, social capital, and nested institutional arrangements; Empirical cases: forests, irrigation, fisheries, and grazing lands; Commons governance in India: Joint Forest Management and watershed institutions.

Unit 4 Institutional Change, the State, and Development *Weeks 12–15*

Institutional equilibrium, stability, and sources of change; Path dependence and lock-in: evolutionary and selection arguments; The state as an institution: contractual and predatory theories; Corruption, rent-seeking, and collusion: a principal-agent perspective; Institutions and long-run growth: colonial origins and comparative development; Institutional change in contemporary India: reforms, land rights, labour regulation

Reading List

Unit 1

- North, D. C. (1990). Institutions, institutional change and economic performance. Cambridge University Press. [Chs. 1–5]
- Williamson, O. E. (2000). The new institutional economics: Taking stock, looking ahead. *Journal of Economic Literature*, 38(3), 595–613.
- Rutherford, M. (1996). Institutions in economics: The old and the new institutionalism. Cambridge University Press. [Chs. 1–3]
- Commons, J. R. (1931). Institutional economics. *American Economic Review*, 21(4), 648–657.
- Hodgson, G. M. (1998). The approach of institutional economics. *Journal of Economic Literature*, 36(1), 166–192.

Unit 2

- Coase, R. H. (1937). The nature of the firm. *Economica*, 4(16), 386–405.
- Coase, R. H. (1960). The problem of social cost. *Journal of Law and Economics*, 3, 1–44.
- Williamson, O. E. (1985). The economic institutions of capitalism. Free Press. [Chs. 1–3]
- Alchian, A. A., & Demsetz, H. (1973). The property rights paradigm. *Journal of Economic History*, 33(1), 16–27.
- Eggertsson, T. (1990). Economic behaviour and institutions. Cambridge University Press. [Chs. 3–5]

Unit 3

- Ostrom, E. (1990). Governing the commons: The evolution of institutions for collective action. Cambridge University Press. [Chs. 1–3, 6]
- Hardin, G. (1968). The tragedy of the commons. *Science*, 162(3859), 1243–1248.
- Agrawal, A. (2001). Common property institutions and sustainable governance of resources. *World Development*, 29(10), 1649–1672.
- Dietz, T., Ostrom, E., & Stern, P. C. (2003). The struggle to govern the commons. *Science*, 302(5652), 1907–1912.

Baland, J.-M., & Platteau, J.-P. (1996). Halting degradation of natural resources. Oxford University Press. [Chs. 1–2]

Unit 4

Acemoglu, D., Johnson, S., & Robinson, J. A. (2001). The colonial origins of comparative development. *American Economic Review*, 91(5), 1369–1401.

North, D. C. (2005). Understanding the process of institutional change. Princeton University Press. [Chs. 1–3]

Acemoglu, D., & Robinson, J. A. (2012). Why nations fail. Crown Business. [Chs. 1–3]

Olken, B. A., & Pande, R. (2012). Corruption in developing countries. *Annual Review of Economics*, 4, 479–509.

Rodrik, D. (2000). Institutions for high-quality growth. *Studies in Comparative International Development*, 35(3), 3–31.

GROUP - III

ECO-016(A): Rural Economics

Learning Objectives

- The course aims to provide a comprehensive understanding of rural economic issues such as inequality, poverty, unemployment, and the rural-urban nexus.
- It examines the socio-economic structure of rural India and explores the challenges related to asset distribution, infrastructure, and market participation.
- The course introduces various rural development strategies and the role of institutions like Panchayats, cooperatives, SHGs, and NGOs in shaping rural transformation.

Learning Outcomes

- Students will be able to critically evaluate rural economic problems and development strategies in the Indian context.
- Students will gain an understanding of institutional roles and agrarian social structures in driving inclusive and sustainable rural development.

Syllabus

Unit I: (Meaning and Contents of Rural Economics Rural inequality, Rural unemployment and Rural poverty-Rural Urban nexus- Need for integrated and holistic approach

Unit II: Rural India Socio-Economic Structure Issues of inequitable distribution of assets particularly land. Lack of social and economic infrastructure-Low absorbing capacity-Rural indebtedness and Low market interaction

Unit III: (Strategy for Rural Development in India From Community development block to integrated rural development program and Sway and Gram Swarozgar Yojana

Unit IV: Rural Development Institutions (Panchayat and Co-operative Self Help Group and Non-Governmental Organisations -Their roles in preparation of rural development plan and projects.

Unit V: Agrarian Social structure Paths of agrarian change and liberation.

Readings

- Vasant, Desai (1988), Rural Development, Vol. 1-VI, Himalaya Publishing House
- Laxman, TK., and B.K. narayan (1987): Rural Development in India- A Multi Dimensional Analysis, Himalaya Publishing House
- Chambers, R., R.Longhurst, and A. Pacey (eds.) (1981) Seasonal Dimensions in Rural Poverty. London:Frances Pinter.
- Dak TM. (1982). Social Inequality and Rural Development. National Publishing House.
- Haris, John (ed) (1982) Rural Development - Theories of Peasant Economy and Agrarian Change. Hutchinson University Library
- Lea, David A.M., and D.P. Chaudhuri (eds) (1983). Rural Development and the State. London: Methuen Co Pvt.
- Lele, Uma (1975). Design of Rural Development Lessons from Africa. London: John Hopkin's University Press.
- Sundaram, K.V., S.N.Misra and Taherul Islam (1985). Rural Development - Capitalist and Socialist Paths, Vol I-IV, United Nations Centre For Regional Development Nagoya, Japan.
- Beteilla, Andre (1974) Studies in Agrarian Social Structure. Delhi: Oxford University

ECO-016(B): Components of Population Change

Learning Objectives

- To understand and apply demographic concepts and measures related to mortality, fertility, nuptiality, migration, and urbanization.
- To analyze the trends, differentials, and determinants of population changes with special reference to India and global contexts.
- To familiarize students with theories and methods for explaining and projecting population dynamics.

Learning Outcomes

- Students will be able to interpret and use demographic indicators and frameworks to assess population trends and implications.
- Students will be able to critically evaluate population change components and their relevance to planning and policy-making.

Syllabus

Unit 1: Mortality and Morbidity

Definition and Basic Concepts of Mortality; Measures of Mortality – Crude Death Rate, Age Specific Death Rate, Standardised Death Rate, Infant Mortality Rate, Maternal Mortality Ratio, Cause Specific Mortality Rate; Levels, Trends and Differentials of Mortality in Developed and Developing Countries with Special Reference to India; Determinants of Mortality; Life Tables – Concepts and Definitions, Types and Forms, Methods of Construction.

Definition of Morbidity; Incidence and Prevalence of Disease; Global Burden of Disease

Unit 2: Fertility and Nuptiality

Definition and Basic Concepts of Fertility – Fecundity, live births, still births, sterility, Conception, Contraception, Abortion, Menarche and menopause; Measures of Fertility – Crude Birth Rate, General Fertility Rate, Age Specific Fertility Rate, Total Fertility Rate, Gross Reproduction Rate, Net Reproduction Rate; Levels, Trends and Differentials of Fertility in Developed and Developing Countries with Special Reference to India; Determinants of Fertility; Theories of Fertility – Leibenstein’s Theory, Spencer’s Biological Theory, Cultural Theories, Economic Theories; Davis-Blake Intermediate Variable Framework; Bongaart’s Proximate Determinants. Concept of Nuptiality; Trends in Age at Marriage and its Significance; Factors Affecting Nuptiality.

Unit 3: Migration and Urbanisation

Basic Concepts of Migration; Types of Migration; Internal and External Migration; Lee’s Theory of Migration and Ravenstein’s Law of Migration; Trends and Differential of Internal Migration in India; Causes and Consequences of Migration with Reference to India.

Urbanisation – Classification, Stages and Models; Issues in Urbanisation and Urban Problems in developing countries with focus in India.

Unit 4: Population Projection

Importance of population projections, Issues and principles; Methods of population projections – Component method of population projection

Readings

- Asha A. Bhende and Tara Kanitkar, 2010, *Principles of Population Studies*, Himalaya Publishing House, Mumbai.
- Patra, Aditya Kumar and Panigrahy, Rajib Lochan, (eds), 2010, *Population and Health*, Discovery.
- Ranganathan, C.R., 2006, *A First Course in Mathematical Models of Population Growth* (With MATLAB Programs), Associated Pub.
- Hans Raj, 2003. *Fundamentals of Demography*. Surjeet Publications, Delhi.
- Malthus, *An Essay on the Principle of Population*, 7th Edition, 1872, Book 1, Chapter1.
- K. Srinivasan, 2011, *Training Manual on Demographic Techniques*, UNFPA and Census of India, Registrar General and Census Commissioner, Office of Registrar General, India, Ministry of Home Affair, Government of India.
- Government of India, *National Population Policy 2000*, New Delhi: Department of Family Welfare, Ministry of Health and Family Welfare, February 2000.
- Premi, M.K and Dipendra Nath Das, 2011, *Population of India 2011*, R.R Publishing Corporation.
- ORGI, 2019, *Population projections for India and states 2011 – 2036*: Report of the technical group on population projections, MHA, GoI.
- Tim Dyson, 2018, *A Population History of India*. Oxford University Press.
- K. Srinivasan, 2017, *Population-Concerns in India: Shifting Trends, Policies and Programmes*. Sage Publications India Pvt. Ltd.

- Tim Dyson, 2010), *Population and Development: The Demographic Transition*. Rawat Publications.
- Siegel, Jacob, and David Swanson, (eds.), 2004, *Methods and Materials of Demography*. California: Elsevier Academic Press.
- Nancy Birdshall, Allen C. Kelley and Steven W. Sinding, (eds), 2001, *Population Matters: Demographic Change, Population Growth, and Poverty in the Developing World*, Oxford University Press.
- Thomas McKeown, 1976, *The Modern Rise of Population*, Edward Arnold, London.
- John Bongaarts, 1978, A Framework for Analyzing the Proximate Determinants of Fertility, *Population and Development Review*, Vol 4 (1), pp. 105-132.
- Davis, K and Judith Blake, 1956, Social Structure and Fertility: An Analytic Framework, *Economic Development and Cultural Change*, Vol 4 (3), pp. 211-235.
- Gould, W.T.S, 2009, *Population and Development*, Taylor and Francis Routledge

GROUP - IV

ECO-019(A): Policy Analysis: Tools and Evidence

About the Course

This course offers a critical and interdisciplinary examination of the multifaceted processes of globalization and their implications for development. Contrasting conventional economic orthodoxy—which equates globalization with unfettered market expansion and automatic developmental gains—this course interrogates such assumptions through heterodox economic theories and grounded empirical analyses. Drawing from structuralist, institutionalist, post-Keynesian, and Marxian traditions, the course explores the deepening interconnections of trade, finance, production networks, labour, and knowledge flows across borders, alongside the growing structural inequalities and institutional asymmetries within the global capitalist system. Particular attention is paid to the experiences of the Global South and the crises of development under neoliberal globalization.

Course Objectives

- Develop proficiency in structuring policy problems and appraising alternative interventions.
- Apply cost-benefit and cost-effectiveness analysis to public expenditure and regulatory decisions.
- Use experimental and quasi-experimental methods to evaluate policy impacts.
- Incorporate distributional, behavioural, and political economy considerations into policy design.
- Communicate policy analysis effectively through memos, briefs, and evaluation reports.

Learning Outcomes

- Frame a policy problem, map stakeholders, and identify trade-offs between competing objectives.
- Conduct a cost-benefit or cost-effectiveness analysis for a public programme or regulation.
- Read and critically evaluate impact evaluation studies using experimental and quasi-experimental designs.
- Apply behavioural insights to identify barriers to policy uptake and design corrective interventions.
- Produce a policy memo and an evaluation summary to professional standards.

Course Outline

Unit I: **Problem Structuring and Policy Design** *Weeks 1–4*

This unit establishes the foundations of the policy analysis process. It moves from normative principles — what goals should policy pursue and why — to practical tools for problem diagnosis, stakeholder mapping, and the structured comparison of policy options. Students learn to translate diffuse social concerns into analytically tractable policy questions.

Topics covered:

The policy cycle: agenda-setting, formulation, implementation, evaluation; Normative criteria: efficiency, equity, Pareto and Kaldor-Hicks principles; Social welfare functions and distributional judgements; Problem structuring techniques: causal mapping, systems thinking, boundary analysis; Stakeholder analysis and political feasibility; Typology of policy instruments: regulation, taxation, subsidies, information; Policy design under administrative and fiscal constraints in developing countries; Regulatory impact assessment and policy appraisal frameworks

Essential Readings

- Weimer, D. L., & Vining, A. R. (2017). *Policy analysis: Concepts and practice* (6th ed.). Routledge. [Chapters 1–5]
- Dunn, W. N. (2018). *Public policy analysis: An integrated approach* (6th ed.). Routledge. [Chapters 2–4]
- Stone, D. (2012). *Policy paradox: The art of political decision making* (3rd ed.). W. W. Norton. [Chapters 1–4]
- Duflo, E. (2017). The economist as plumber. *American Economic Review*, 107(5), 1–26.

Further Readings

- Bardach, E., & Patashnik, E. (2019). *A practical guide for policy analysis: The eightfold path to more effective problem solving* (6th ed.). CQ Press.
- Howlett, M., Ramesh, M., & Perl, A. (2009). *Studying public policy: Policy cycles and policy subsystems* (3rd ed.). Oxford University Press. [Chapters 1–3]

- Andrews, M., Pritchett, L., & Woolcock, M. (2017). Building state capability: Evidence, analysis, action. Oxford University Press. [Chapter 2: PDIA framework]
- Mookherjee, D. (2006). Decentralisation, hierarchies, and incentives: A mechanism design perspective. *Journal of Economic Literature*, 44(2), 367–390.
- Jalan, J., & Murgai, R. (2011). How effective is social pension in reaching the elderly poor? Lessons from India. World Bank Policy Research Working Paper No. 5779.

Unit II: **Welfare Economics and Appraisal Methods** Weeks 5–8

This unit develops the microeconomic and welfare-theoretic foundations that underpin systematic policy appraisal. Students learn the analytical logic of market failure and government intervention, and acquire hands-on competency in cost-benefit analysis, cost-effectiveness analysis, and distributional incidence studies — the workhorses of applied policy appraisal in development settings.

Topics covered:

- Market failure: public goods, externalities, natural monopoly, asymmetric information
- Government failure: rent-seeking, public choice, and implementation deficits
- Consumer and producer surplus; deadweight loss; second-best theory
- Cost-benefit analysis (CBA): principles, shadow pricing, and the social discount rate
- Cost-effectiveness and cost-utility analysis in social sector programmes
- Benefit transfer and willingness-to-pay in low-income contexts
- Distributional weights and social CBA: valuing equity
- Fiscal incidence analysis: who bears the burden and who receives the benefit?
- Appraisal of subsidies, taxes, and public expenditure in developing economies

Essential Readings

- Stokey, E., & Zeckhauser, R. (1978). A primer for policy analysis. W. W. Norton. [Chapters 5–9]
- Boardman, A. E., Greenberg, D. H., Vining, A. R., & Weimer, D. L. (2018). Cost-benefit analysis: Concepts and practice (5th ed.). Cambridge University Press. [Chapters 1–4, 8]
- Dahlby, B. (2008). The marginal cost of public funds: Theory and applications. MIT Press. [Chapter 2]
- Lal, D., & Rajapatirana, S. (1987). Foreign trade regimes and economic growth in developing countries. *World Bank Research Observer*, 2(2), 189–217.

Further Readings

- Harberger, A. C. (1971). Three basic postulates for applied welfare economics. *Journal of Economic Literature*, 9(3), 785–797.
- Atkinson, A. B. (1970). On the measurement of inequality. *Journal of Economic Theory*, 2(3), 244–263.
- Younger, S. D., Myamba, F., & Mdadila, K. (2016). Fiscal incidence in Tanzania. *African Development Review*, 28(3), 264–276.

- Inchauste, G., & Lustig, N. (Eds.). (2017). The distributional impact of fiscal policy: Evidence from developing countries. World Bank Publications. [Selected country chapters]
- World Bank. (2010). Handbook on economic analysis of investment operations. World Bank. [Chapters 3–5]
- Gertler, P., Martinez, S., Premand, P., Rawlings, L., & Vermeersch, C. (2016). Impact evaluation in practice (2nd ed.). World Bank Publications. [Chapters 1–3]

Unit III: **Causal Inference and Policy Evaluation** Weeks 9–11

Effective policy analysis requires not just good design but credible evaluation. This unit covers the theory and practice of causal inference as applied to development programmes. Students engage with both experimental and quasi-experimental designs, and develop the capacity to read, critique, and commission impact evaluations — including an understanding of their limits and the conditions for generalising findings.

Topics covered:

- The evaluation problem: causality, counterfactuals, and selection bias
- Randomised controlled trials (RCTs): design, randomisation, attrition, and ethics
- Difference-in-differences: parallel trends, event studies, and recent refinements
- Regression discontinuity design: sharp and fuzzy variants
- Instrumental variables: relevance, exclusion, and weak instruments
- Matching methods: propensity score matching and its limitations
- Heterogeneous treatment effects and sub-group analysis
- External validity, generalisation, and evidence aggregation across contexts
- Monitoring and evaluation frameworks: log-frames, theories of change, MIS
- Evaluating government programmes: MGNREGA, PM-KISAN, and cash transfer schemes

Essential Readings

- Angrist, J. D., & Pischke, J. S. (2015). Mastering 'metrics: The path from cause to effect. Princeton University Press. [Chapters 1–5]
- Glennerster, R., & Takavarasha, K. (2013). Running randomized evaluations: A practical guide. Princeton University Press. [Chapters 3–6]
- Gertler, P., Martinez, S., Premand, P., Rawlings, L., & Vermeersch, C. (2016). Impact evaluation in practice (2nd ed.). World Bank Publications. [Chapters 4–9]
- Deaton, A., & Cartwright, N. (2018). Understanding and misunderstanding randomised controlled trials. *Social Science & Medicine*, 210, 2–21.

Further Readings

- Callaway, B., & Sant'Anna, P. H. C. (2021). Difference-in-differences with multiple time periods. *Journal of Econometrics*, 225(2), 200–230.
- Vivalt, E. (2020). How much can we generalise from impact evaluations? *Journal of the European Economic Association*, 18(6), 3045–3089.

- Muralidharan, K., & Niehaus, P. (2017). Experimentation at scale. *Journal of Economic Perspectives*, 31(4), 103–124.
- Heckman, J. J., & Smith, J. A. (1995). Assessing the case for social experiments. *Journal of Economic Perspectives*, 9(2), 85–110.
- Duflo, E., Glennerster, R., & Kremer, M. (2007). Using randomization in development economics research: A toolkit. *Handbook of Development Economics*, 4, 3895–3962.
- Ravi, S., Kapoor, M., & Ahluwalia, S. (2012). The impact of MGNREGS on India's rural poor. Brookings India Working Paper.

Unit IV: Behavioural Insights and Contemporary Policy Frontiers *Weeks 12–15*

The final unit extends the policy analyst's toolkit in two directions. First, it integrates behavioural economics into policy design — examining how cognitive biases and social norms shape behaviour in ways that conventional incentive-based tools miss. Second, it surveys the most pressing contemporary policy challenges in development contexts: the design of social protection in the digital age, climate policy under fiscal constraint, and the governance of data and digital public infrastructure.

Topics covered:

- Behavioural economics foundations: bounded rationality, heuristics, and present bias
- Nudge theory and choice architecture: design principles and field applications
- Behavioural barriers to programme uptake: last-mile delivery failures
- Social protection policy: CCTs, universal basic income, and in-kind versus cash
- Digital public infrastructure and policy delivery: Aadhaar, DBT, and UPI
- Climate policy instruments: carbon pricing, subsidies, and co-benefits in developing economies
- Health and education policy appraisal: supply-side versus demand-side interventions
- Policy communication, political messaging, and the credibility of commitments
- AI, algorithmic decision-making, and the future of evidence-based governance

Essential Readings

- Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press. [Chapters 1–4]
- Chetty, R. (2015). Behavioral economics and public policy: A pragmatic perspective. *American Economic Review*, 105(5), 1–33.
- Banerjee, A. V., & Duflo, E. (2011). *Poor economics: A radical rethinking of the way to fight global poverty*. PublicAffairs. [Selected chapters]
- Muralidharan, K., Niehaus, P., & Sukhtankar, S. (2023). General equilibrium effects of (improving) public employment programs. *Econometrica*, 91(4), 1261–1295.

Further Readings

- Kahneman, D. (2011). *Thinking, fast and slow*. Farrar, Straus and Giroux. [Parts I & II]

- Haushofer, J., & Fehr, E. (2014). On the psychology of poverty. *Science*, 344(6186), 862–867.
- Banerjee, A., Hanna, R., Kreindler, G., & Olken, B. A. (2017). Debunking the stereotype of the lazy welfare recipient: Evidence from cash transfer programs worldwide. *World Bank Research Observer*, 32(2), 155–184.
- Kleven, H. J., Knudsen, M. B., Kreiner, C. T., Pedersen, S., & Saez, E. (2011). Unwilling or unable to cheat? Evidence from a tax audit experiment in Denmark. *Econometrica*, 79(3), 651–692.
- Muralidharan, K. (2017). Field experiments in education in developing countries. In A. V. Banerjee & E. Duflo (Eds.), *Handbook of Field Experiments* (Vol. 2). North-Holland.
- Jain, R., & Lamba, R. (2023). Can digital payments improve welfare? Evidence from India's direct benefit transfers. *Journal of Development Economics*, 161, 102997.
- IMF. (2023). *Fiscal Monitor: Climate and the IMF*. IMF Publications. [Chapter 2]
- Duflo, E. (2012). Human values and the design of the fight against poverty. Tanner Lectures on Human Values, Harvard University.

SUPPLEMENTARY RESOURCES

Key Journals

- American Economic Review | Journal of Economic Perspectives
- Journal of Development Economics | World Development
- Journal of Public Economics | Review of Economics and Statistics
- Economic and Political Weekly (EPW) — for India-focused policy analysis

Policy Portals and Data

- J-PAL Policy Insights — povertyactionlab.org
- IDEAs for India — ideasforindia.in
- VoxDev — voxdev.org
- IGC — International Growth Centre, theigc.org
- World Bank Open Data / NSSO / NFHS / CMIE Prowess

PRS Legislative Research — prsindia.org

ECO-019(B): Econometrics-II

Course Objectives

- To extend regression analysis to qualitative (binary) dependent variables used in survey-based research.
- To equip students with the essential tools of time series econometrics - stationarity, unit roots, cointegration, ARDL and forecasting.
- To introduce panel data methods and the treatment of endogeneity, preparing students to select appropriate methods for doctoral research.

Course Learning Outcomes

On completion, students will be able to:

- Estimate and interpret logit and probit models, including odds ratios and marginal effects.
- Test for unit roots and cointegration, and interpret error-correction and ARDL models.
- Explain ARIMA modelling and forecasting, and conduct Granger causality tests.
- Estimate fixed- and random-effects panel models and choose between them using the Hausman test.
- Recognise endogeneity, explain instrumental variable estimation, and describe the basic logic of difference-in-differences.

Syllabus

Unit I: Qualitative Dependent Variable Models (11 hours)

Nature and importance of qualitative response models in survey-based research. The Linear Probability Model and its limitations. Logit model: interpretation of coefficients, odds ratios and marginal effects. Probit model; comparison of logit and probit. Goodness of fit: McFadden pseudo- R^2 . A brief idea of ordered and multinomial models. Applications.

Unit II: Stationarity, Unit Roots and Cointegration (13 hours)

Stochastic processes; stationarity (intuitive treatment); white noise; random walk with and without drift; trend-stationary vs. difference-stationary processes; order of integration. The problem of spurious regression. Unit root testing: Dickey–Fuller and Augmented Dickey–Fuller tests. Cointegration as long-run equilibrium: the Engle–Granger two-step method. Error Correction Mechanism: short-run and long-run dynamics. The ARDL bounds testing approach: when to use it and interpretation of long-run and short-run coefficients.

Unit III: Univariate Time Series Modelling and Forecasting (12 hours)

AR, MA, ARMA and ARIMA processes. The Box–Jenkins methodology: identification using ACF/PACF and the correlogram; estimation; diagnostic checking; forecasting. Measures of forecast accuracy (in brief). Granger causality testing: logic, procedure and pitfalls.

Unit IV: Panel Data Models (12 hours)

Why panel data: advantages over pure cross-section and pure time series; balanced vs. unbalanced panels. Pooled OLS and its limitations. The Fixed Effects model: Least Squares Dummy Variable and within-group approaches; time effects. The Random Effects model. Choosing among models: Breusch–Pagan LM test and the Hausman test. Interpreting and reporting panel results.

Unit V: Simultaneity, Instrumental Variables and Causal Inference (12 hours)

Endogeneity and its sources: simultaneity, omitted variables, measurement error; simultaneous-equation bias. Identification problem: under, exact and over-identification; the

order condition. Estimation: Indirect Least Squares and Two-Stage Least Squares; the logic of instrumental variables - relevance and validity. Introduction to causal inference: the counterfactual idea and the Difference-in-Differences method (conceptual). Major data sources for empirical research (in brief).

Readings

6. Gujarati, D. N., Porter, D. C. & Gunasekar, S., *Basic Econometrics* (latest ed.), McGraw-Hill Education.
7. Wooldridge, J. M., *Introductory Econometrics: A Modern Approach* (latest ed.), Cengage.
8. Asteriou, D. & Hall, S. G., *Applied Econometrics* (latest ed.), Palgrave Macmillan.
9. Enders, W., *Applied Econometric Time Series*, Wiley.
10. Baltagi, B. H., *Econometric Analysis of Panel Data*, Springer.