

**Learning Outcomes Based Curriculum Framework
(LOCF)**

For

**Postgraduate Programme in Economics
2020**

**Submitted By:-
Department of Economics
Manipur University.**

Structure of M.A. Course in Economics

1. Credit Distribution for MA Course in Economics

Sl. No	Nature of Papers	Total No of Paper	Credit in each Paper	Total Credits
1	Core Course	14	4	56
2	DSE- (Discipline Specific Elective)	4	4	16
3	GE (Generic Elective/ Interdisciplinary)	2	4	8
4	AEC (Ability Enhancement Course)	0		
5	SEC (Skill Enhancement Course)	1	2	2
6	MOOCs (Compulsory Audit Course)	0		
	Total	21		82

2. Paper Distribution for PG Programme in Economics

Semester	Core Papers (14)	DSE- (4)	GE (2)	AEC	SEC (1)
I	MEC--101				
	MEC-102				
	MEC-103				
	MEC-104				
	MEC--105				
II	MEC-201				
	MEC-202				
	MEC-203				
	MEC-204				
	MEC-205				
III	MEC-301	DSE-1	GE1		
	MEC-302	DSE-2			
IV	MEC-401	DSE-3	GE2		SEC1
	MEC-402	DSE-4			

3. Semester-wise Paper and Credit Distribution

Semester	Paper Code	Name of the Paper	Credit
I	MEC--101	Microeconomics-1	4
	MEC-102	Macroeconomics-1	4
	MEC-103	Mathematical Economics	4
	MEC-104	Public Economics	4
	MEC-105	International Trade Theories and Policies	4
Total Papers/Credit		5	20
II	MEC-201	Microeconomics-2	4
	MEC-202	Macroeconomics-2	4
	MEC-203	Statistics and Econometrics	4
	MEC-204	Environmental Economics	4
	MEC-205	International Finance	4
Total Papers/Credit		5	20
III	MEC-301	Development Economics	4
	MEC-302	Austrian Economics	4
	ECOSE-1	One from the list	4
	ECOSE-2	One from the list	4
	ECOG-1	Environmental Problems of India	4
Total Papers/Credit		5	20
IV	MEC-401	Indian Economic Policies	4
	MEC-402	Computer Application in Economic Analysis	4
	ECOSE-3	One from the list	4
	ECOSE-4	One from the list	4
	ECOG-2	Economics of Social Sector	4
	ECOSEC	Field Survey and Report Writing	2
Total Papers/Credit		6	22
Grand total		21	82

4. Specialisation Papers for PG Programme in Economics

	Group-A	Group-B	Group-C	Group-D
	Agriculture	Demography	Development Economics	Econometrics
ECOSE1	Principles of Agricultural Economics-1	Principles of Demography-1	Development Economics-1 (Economics of Growth and Development)	Econometric Methods-1
ECOSE 2	Problems of Indian Agriculture	Interface of Population and Development	Development Economics-2 (Strategies and Policies)	Econometric Methods-2
ECOSE3	Principles of Agricultural Economics-2	Principles of Demography-2	East and South East Asian Development	Econometric Methods-3
ECOSE4	Rural Economics	Population Problem in India	Regional Issues in India	Applied Econometrics

Contents for MA Course in Economics

I-Core Papers

Semester I

MEC--101	Microeconomics-1
MEC-102	Macroeconomics-1
MEC-103	Mathematical Economics
MEC-104	Public Economics
MEC-105	International Trade Theories and Policies

Semester II

MEC-201	Microeconomics-2
MEC-202	Macroeconomics-2
MEC-203	Statistics and Econometrics
MEC-204	Environmental Economics
MEC-205	International Finance

Semester III

MEC-301	Development Economics
MEC-302	Austrian Economics

Semester IV

MEC-401	Indian Economic Policies
MEC-402	Computer Application in Economic Analysis

II-Discipline Specific Elective Papers

Semester III

ECOSE-1(A)	Principles of Agricultural Economics-1
ECOSE-2(A)	Problems of Indian Agriculture
ECOSE-1(B)	Principles of Demography-1

ECOSE-2(B)	Interface of Population and Development
ECOSE-1(C)	Development Economics-1 (Economics of Growth and Development)
ECOSE-2(C)	Development Economics-2 (Strategies and Policies)
ECOSE-1(D)	Econometric Methods-1
ECOSE-2(D)	Econometric Methods-2

Semester IV

ECOSE-3(A)	Principles of Agricultural Economics-2
ECOSE-4(A)	Rural Economics
ECOSE-3(B)	Principles of Demography-2
ECOSE-4(B)	Population Problem in India
ECOSE-3(C)	East and South East Asian Development
ECOSE-4(C)	Regional Issues in India
ECOSE-3(D)	Econometric Methods-3
ECOSE-4(D)	Applied Econometrics

III-Generic/Inter-disciplinary Course

ECOGE-1	Environmental Problems of India
ECOGE-2	Economics of Social Sector

IV-Skill Enhancement Course

ECOSEC	Field Survey and Report Writing
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CORE PAPERS

MEC 101: MICROECONOMICS-1

1. CONSUMER THEORY

Introduction to Preference Based Approach and Choice based approach - Preference and Utilities: Consumer Preference Assumptions, Properties of Indifference Curves, Utility Function, Marginal Utility, Marginal Rate of Substitution - Budget Constraints: Constrained Utility Maximisation - Deriving Demand Curves - Duality in Consumer theory: Primal and Dual Problem, Marshallian demand, properties of Indirect Utility Function, Hicksian Demand, Properties of Expenditure Function - Application of consumer theory: labour, Price effects and Substitution effects

2. PRODUCTION THEORY

Production function, Short Run production and Diminishing Marginal Product, Long Run Production and Marginal Rate of Technical Substitution, Isoquant, Elasticity of Substitution, (Linear, Fixed, Cobb-Douglas, CES), Returns to Scale, Euler's Theorem, Introduction to cost, Short run cost and Long Run Cost, Long Run Expansion Path, Cost minimizing input choice, profit maximization and input demand

3. PERFECT COMPETITION AND MONOPOLY:

Competitive markets: aggregate demand and supply, market equilibrium, free entry and long run competitive equilibria, efficiency property, **comparative statics**. Monopoly: pricing behavior, **comparative statics**, efficiency property, quality choice, types and effects of price discrimination.

4. Models of Imperfect Competition: Monopolistic competition; Non collusive oligopoly: Bertrand, Cournot, Stackelberg models, price leadership; Collusive oligopoly: cartels.

5. FACTOR MARKET:

Pricing of factors of production in perfectly competitive and imperfectly competitive markets- the demand for and supply of labour in perfectly competitive markets, monopolistic power in the product market and monopsonistic power in the factor market, bilateral monopoly.

Learning outcome

1. The students will gain a broader understanding of microeconomic theory and model
2. The exposition to the three-pronged approaches namely mathematical, theoretical and graphical used for explaining core concepts will enhance their analytical skills
3. They will understand relevance of assumptions for economic model
4. They will be able to solve optimization problem related to consumer and producer
5. Students will learn about the different market structures and how producers make decisions about pricing and output in these different market structures.
6. They will learn about the efficiency properties of perfectly competitive and monopolistic market structures, and about the effects of changes in exogenous parameters.
7. They will also learn about factor pricing in perfect and imperfect markets

Reading list: same as for MEC 201(to attach next)

MEC 102: MACROECONOMICS – I

1. Origin, Scope and Subject Matter of Macroeconomics; Micro foundations of Macroeconomics
2. National Income Determination: The static equilibrium model: the basic Keynesian model-equilibrium in the product and money markets. Adjustment towards equilibrium- fiscal policy effects on demand – taxes as automatic stabilizers. The balance budget theorem. The full employment budget surplus – monetary policy effects on demand – portfolio disequilibrium and the transmission mechanism. The liquidity trap. The basic classical model – the demand and supply of money; wage, unemployment and wage rigidity – overall equilibrium in the basic static model (goods, money, and labour market)

3. Sectoral Demand functions: Consumption demand – the relative income hypothesis, the permanent income hypothesis, the life cycle hypothesis and random walk. The wealth effect-front loaded fiscal policy. The dynamics of adjustment. Investment Demand: the Keynesian approach, the Neo-Keynesian approach, Neo-classical approach, Financial theory and Tobin's Q; lags in investment demand, stability and slope of IS curve and consequences for policy

4. Demand for Money: The Classical Approach, The Keynesian Approach, Friedman's Approach, The approaches of Baumol and Tobin, The portfolio balance approach. The shifting money demand functions – velocity and the demand for money velocity, interest rates and expected inflations

5. The Supply of Money: Definitions of money supply, inside and outside money. The neutrality of money. The money multiplier – High Powered money – budget deficits and money supply – money supply: Endogenous or Exogenous. The instruments of monetary control, equilibrium in the money market, accommodating monetary policy – interest rate or money supply targets. Monetary planning and credit planning.

Learning Outcome

Students will be able to understand the subject matter of Macroeconomics and how it is different from Microeconomics

1. Students will be able to describe the basic tenets of Classical Macroeconomics, its building blocks and policy outcomes relating to income and employment
2. Students will be able to understand the major departure of Keynesian macroeconomics from classical macroeconomics and their synthesis
3. Students will be able to understand the impacts of policies: fiscal & monetary on output, employment, interest, wage etc in the IS-LM framework
4. Students will be able to understand the various theoretical explanations of important components of GDP and other macroeconomic parameters: consumption, investment, demand and supply of money

MEC 103: MATHEMATICAL ECONOMICS

1. Vectors, Matrices, inverse, rank, determinants, Cramer's rule for solving system of linear equations; Input Output models, static and dynamic, open and closed models, Samuelson substitution theorem, Hawkins Simon conditions, Quadratic equation, characteristic (eigen) roots and vectors.
2. Applications of differential and integral calculus in theories of consumer behaviour, production and pricing under different market conditions, unconstrained optimization, optimization with equality constraints, Hessian and Jacobian matrices, comparative statics analysis.
3. Linear programming; formulation, primal and dual, the duality and complementary slackness theorem, solutions using the simplex method, combined optimization with inequality and non-negativity constraints and Kuhn Tucker conditions.

4. Linear difference equation: models of growth and fluctuation; Ordinary linear differential equations, neo-classical growth models.
5. Theory of Games: classification and description of Games, two person zero sum game, maximin and minimax strategies, Nash equilibrium.

Learning outcome

1. The students will learn the basic concepts and attributes of matrices used in economic analysis, also about basic techniques of differentiation and integration and their application in comparative statics analysis, consumer and producer behavior and market analysis and finally in optimization problems.
2. They will learn about terms and concepts in linear programming problems and their solutions. Concepts of linear difference equation and linear differential equations and techniques of solving them and some growth models are introduced to the students. The particular growth models are not the ends but the means for illustrating the method of applying mathematical techniques to economic theory in general.
3. Finally they will also learn about concept, structure and solutions of non-cooperative games. They will learn how to conceptualize and analyze an economic situation in the game theory framework.

Reading List

1. Baumol, W.J. (1980), Economic Theory and Operation Analysis, 4th edition, Prentice Hall of India Pvt. Ltd.
2. Chiang A.C. (1984), Fundamental Methods of Mathematical Economics, McGraw-Hill Book Co.
3. Dorfman, R., P.A. Samuelson and R.M. Solow (1958), Linear Programming and Economic Analysis, New York: McGraw-Hill Book Co.
4. Luce, R. D., and H. Raiffa (1957), Games and Decisions, Wiley.
5. Sydsaeter, Knut and Peter Hammond (2002), Mathematics for Economic Analysis, Pearson Education Asia.
6. Greene, William H., (2016), Econometric Analysis, 5th edition, Pearson

MEC 104: PUBLIC ECONOMICS

1. Role of the Government in Economic activity: Allocation, distribution and stabilization functions; Private, public and merit goods; Theories of growth of public expenditure - Wiseman & Peacock, Wagner.
2. Public revenue. Tax and Non-tax revenue. Impact, shifting and incidence of tax; Elasticity and buoyancy; Principles of taxation - Ability to pay principle, Benefit principle.
3. Public utilities and public enterprises, Public investment criteria: shadow pricing, cost benefit analysis, impact assessment.
4. Fiscal policy in underdeveloped countries including India; Value Added Tax (VAT), Goods & Services Tax (GST); The analysis and interpretation of government budget in India, Budget classifications and their significance, different concepts of budget deficits.
5. Fiscal federalism in India; Leviathan hypothesis, Oates' decentralization theorem.

Learning outcome

- 1 The students will understand the different roles of government in any country & the types of goods and services that government should be providing to the public.
- 2 Different types of taxes of both the central and the state governments including new ones like VAT and GST shall be studied which will be of immense knowledge to the students.
- 3 Unlike private investments, public investments should be based on different criteria. Social cost benefit analysis will impart this knowledge.
- 4 Government budget and the different components of it. This will enable them to read the budget and analyze it.
- 5 India is a federal country and students will learn the dynamics of centre-state financial relations. Decentralization is being done increasingly all over the world. Some theories on decentralization will be studied.

READING LIST

1. Brennan, J. and James Buchanan (1980): *The power to tax: Analytical foundations of the fiscal constitution*. Cambridge University Press.
2. Chelliah, R.J. (1969). *Fiscal Policy in Underdeveloped Countries: With Special Reference to India*. Reprint: 2010, Routledge.
3. Dalton, H.(1995). *Principles of Public Finance*. Allied Publishers Ltd.
4. David, P. Lawrence (2013). *Impact Assessment: Practical solutions to recurrent problems and contemporary challenges*, New Jersey: Wiley.
5. Ebrill, L. P. (2001). *The Modern VAT*. Washington: International Monetary Fund.
6. Jha, R. (2017). *Modern Theory of Public Finance*. New Age International Ltd.
7. Musgrave, R. and Peggy Musgrave (1995). *Public Finance*. McGraw Hill.
8. Rao, H. (2006). *Fiscal Federalism: Issues and Policies*. Delhi: New Century Publications.

MEC 105: INTERNATIONAL TRADE THEORIES AND POLICIES

1. Pre doctrinal contribution to International Trade Thought: Ancient Greek, Mercantilism, Physiocracy
2. Development of International Trade Theory: Adam Smith's Theory of Absolute Advantage, David Ricardo's Theory of Comparative Advantage , John Stuart Mill's Theory of International Value, Haberler's Theory of Opportunity Cost, Heckscher Ohlin Theory of Factor-Endowment , Leontief Paradox
3. Modern Trade Theories: Balassa –Samuelson Effect, Stopler Samuelson Theorem, Paul Krugman's New Trade Theory
4. Theories of Foreign Direct Investment, Role of technologies in the Theory of International trade

5. Trade Policy and Welfare with special reference to developing countries, Trade and Foreign Direct Investment, Trade and MNCs

Learning outcome

1. The students will be able to understand the core economic concepts of International Economics.
2. They will be able to explain the basis of trade between the countries and how the gains from trade are measured.
3. They will be able to examine the theoretical and practical aspects of international economics applied to both developed and less developed countries.
4. The exposition to different trade theories will help in developing the analytical bent of mind

READING LIST

1. Dixit, Avinash, and Victor Norman (1980). *Theory of International Trade: A Dual, General Equilibrium Approach*. Cambridge, UK: Cambridge University Press
2. Feenstra, Robert (2003). *Advanced International Trade: Theory and Evidence*. Princeton, NJ: Princeton University Press
3. Grossman, Gene, and Elhanan Helpman (1991). *Innovation and Growth in the Global Economy*. Cambridge, MA: MIT Press
4. Grossman, Gene, and Kenneth Rogoff (1995). *Handbook of International Economics*. Vol. 3. New York, NY: Elsevier.
5. Helpman, Elhanan, and Paul R. Krugman (1987). *Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition, and the International Economy*. Cambridge, MA: MIT Press
6. Jones, Ronald, and Peter Kenen (1984). *Handbook of International Economics*. Vol. 1. New York; Elsevier.
7. Rodrick, Dani (1995). 'Trade and industrial policy reform', in Jere Behman, and T.N. Srinivasan (eds), *Handbook of Development Economics*. Vol.3 B, North Holland.
8. Salvatore, Dominick (2002). *International Economics*. Singapore: John Wiley and Sons.
9. Sodersten, Bo, and Geoffrey Reed (1994). *International Economics*. London: Macmillan.
10. John H. Dunning and Sarinna M. Lunda (2008). *Multinational Enterprises and the Global Economy*. (2nd Edition). Edward Elgar Publishing, UK
11. Linder, S. (1961). *An Essay on Trade and Transformation*. John Wiley and Sons, New York
12. John H. Dunning (1997). *Alliance Capitalism and Global Business*. Routledge, London, UK
13. Paul Krugman and Robin Wells (2015). *Microeconomics*. (4th Edition). Worth Publishers, New York

MEC 201: MICROECONOMIC ANALYSIS

1. **General Equilibrium:** Walrasian General Equilibrium Model, 2×2×2 General Equilibrium, Existence, Uniqueness and Stability, Static Properties of General Equilibrium state, General Equilibrium and the allocation of resources, prices of commodities and factors.
2. **Welfare Economics:** Kaldor-Hicks Compensation Criteria, Pareto optimality, Bergson Social Welfare function, Arrow's Impossibility Theorem, Fundamental Theorems of Welfare, Theory of Second Best
3. **Choice under uncertainty:** Expected Utility Theory, risk attitude, risk aversion and its measure, gambling and insurance, risk pooling and risk spreading, mean-variance analysis and portfolio selection, state dependent utility, Subjective Probability theory, risk bearing optimum of the individual, market equilibrium under uncertainty.
4. **Information economics:** Adverse Selection, Market signalling and screening, Akerloff's lemons model, Spence's labour market signalling model, the principal agent problem: Hidden Actions (Moral Hazard) and Hidden information, Introduction to the mechanism design problem.

Learning outcome

1. They will understand the distinction between Partial equilibrium and general equilibrium
2. Walrasian general equilibrium model will broaden their knowledge about microeconomic model
3. The students will recognize the role of ethical values in economic decisions
4. The students will be able to explain the implications of neoclassical welfare analysis
5. Students will learn about individual behaviour under conditions of uncertainty; why some people do not like risk and the various methods they will adopt to reduce risk
6. They will study how people make tradeoffs between risk and return to choose an optimum portfolio.
7. They will be learning about consumption optimum and market equilibrium under uncertainty.
8. Students will learn about asymmetric information, the problems it creates and the solutions.
9. They will learn about the basics of mechanism design, an objectives first approach to designing economic mechanisms or incentives to achieve desired objectives.

READING LIST

1. Sushil Bikhchandani, Jack Hirshleifer and John G. Riley (2013) *"The Analytics of Uncertainty and Information"*, Second edition, Cambridge.
2. Hal R Varian (1992) *"Microeconomic Analysis"*. W.W. Norton and Company Third edition.
3. Hal R Varian (2010) *"Intermediate Microeconomics"*. W W Norton and Company

4. Andrew Mascolel, Michael D. Whinston and Jerry R. Green (1995) "*Microeconomic Theory*", Oxford University Press.
5. Gravell, Hugh and Ray Rees (2004), "*Microeconomics*", Singapore: Pearson Education
6. Kreps, D.M (1992). "*A Course in Microeconomic Theory*", Prentice Hall of India.
7. Christopher Snyder and Walter Nicholson (2012) "*Microeconomic Theory Basic Principles and Extensions*", South Western, Cengage Learning.
8. Robert S. Pindyck and Daniel L. Rubinfeld (2001) "*Microeconomics*". Fifth edition. Pearson Education.
9. Anindya Sen (2007) "*Microeconomics Theory and Applications*". Oxford University Press, Second Edition.
10. Koutsoyiannis, A (1982) *Modern Microeconomics*, Macmillan
11. Paul Krugman and Robin Wells (2015). *Microeconomics*. (4th Edition). Worth Publishers, New York

MEC 202: Macroeconomics – II

1. **Equilibrium and Disequilibrium Analysis:** The real balance effect and Patinkin's rehabilitation of classical theory. Effective demand, notional demand and involuntary unemployment – price and quantity flexibility – sources of non-instantaneous price adjustment. Reinterpretation of Keynes.
2. Monetarism, Supply Side Economics and Rational Expectations, New-Keynesian Economics, New Classical Economics
3. **Money and Theory of Interest rates:** Classical, neo-classical and Keynesian. Term Structure of Interest rates
4. **Stabilization Policy:** Lags in effects of policy. The role of expectation-uncertainty in economic policy – rules vs discretion. Phillips Curve – theoretical explanations of Lipsey, Friedman-Phelps. Short run and long run Philips curve, natural rate of unemployment and NAIRU; fiscal policy, monetary policy and income policy.
5. **Macroeconomics in the Open economy:** International flow of capital and goods; saving and investment in an open economy; exchange rates; Mundel-Fleming Model; floating and fixed exchange rates; Mundel-Fleming model with a changing price level
6. **The New political macroeconomics:** Role of Government, Politico-economic models, Political business cycles, The Nordhaus Opportunistic Model, The Hibbs Partisan Model; Policy Implications of Politico-Economic Models.

Learning outcome

1. Students will be able understand both equilibrium and disequilibrium models in macroeconomics
2. Students will be able to understand the various school of thought on macroeconomics beyond Classical and Keynesian

3. Students will be able to understand the various aspects on macroeconomic policies with special focus on policy debates surrounding inflation and unemployment
4. Student will be able to understand the how macroeconomic parameters and variables are played out in an open economy
5. Students will be able to understand the interface between politics and macro economy

Reading List

1. Abel, Andrew, Ben Bernanke and Dean Croushore (2011). Macroeconomics. 7th Edition. Prentice Hall, New Delhi
2. Ackley, G. (1978). Macroeconomics Theory and Policy. London: Macmillan
3. Alesina, A. (1988), 'Macroeconomics and Politics', NBER Macroeconomics Annual
4. Bain, Keith and Peter Howells (2003). Monetary Economics: Policy and Its Theoretical Basis. New York: Palgrave
5. Blanchard, O.J. (2003), Macroeconomics, 3rd edn, New Jersey: Prentice-Hall.
6. Branson, W. H.(2007). Macroeconomics Theory and Policy. East West Press Private Ltd.
7. Clower, R. W. (1969). Monetary Theory. Harmondsworth: Penguin
8. Dornbusch, Rudiger, Stanley Fischer, Richard Startz (2011). Macroeconomics 11th Edition New York: McGraw Hill
9. Edgmand, M. R. (1985). Macroeconomics Theory and Policy. New Delhi: Prentice Hall
10. Friedman, Milton & Walter W. Heller (1969). Monetary vs Fiscal Policy. New York: WW Norton and Company
11. Froyen, Richard T. (2013) Macroeconomics Theory and Policies 10th Edition. New Delhi: Pearson
12. Farmer, Roger E. A. (2009). Macroeconomics in the Small and the Large: Essays on Microfoundations, Macroeconomic Applications and Economic History in Honor of Axel Leijonhufvud. Massachusetts:Edward Elgar Publishing
13. Garrison, Roger W (2000) Time and money: The macroeconomics of capital structure 1 ed. London: Routledge
- 14 Hall, Robert E. and J.B Taylor (1986) Macroeconomics. New York: W. W. Norton
15. Heijdra, Ben (2017) Foundations of Modern Macroeconomics. OUP: New York
16. Jha, Raghbendra (2008). Contemporary Macroeconomic Theory and Policy. New Delhi: New Age International
17. Kellison, Stephen G. (2008) Theory of Interest 3 ed. New York: McGraw Hill
18. Mankiw, N. Gregory. (2009) Macroeconomics. 7th Edition New York: Worth Publishers

19. Patinkin, D. (1965). Money, Interest and Prices. 2nd Edition. London: Harper and Row
20. Snowdon, Brian and Howard R. Vane (2005). Modern macroeconomics: its origins, development and current state. Massachusetts:Edward Elgar Publishing
21. Snowdon, Brian and Howard R. Vane (1997). A Macroeconomics Reader. Massachusetts: Edward Elgar Publishing
22. Walsh, Carl E. (2010). Monetary Theory and Policy. Cambridge: The MIT Press

MEC 203: STATISTICS AND ECONOMETRICS

1. Set, Sample space, Algebra of sets, methods of enumeration, Concept of Probability, basic probability theorems, conditional probability and Bayes theorem, random variables, probability density and distribution functions, expectation and moments of a random variable, Joint distributions, marginal and conditional distributions, Binomial , Normal, Lognormal , Pareto distribution.
2. Sampling methods and sampling distributions; simple random sampling, systematic sampling, stratified sampling, cluster sampling, non-probability sampling, statistic and sampling moments, sampling distributions- Student's t-distribution, chi-square and F-distribution.
3. Estimators, desirable properties of estimators, small sample properties and asymptotic properties; concept of confidence interval, types of hypotheses, hypothesis testing and level of significance of the test, p-value and power of a test.
4. The two variable linear regression model, Gauss-Markov theorem (proof not required), Multicollinearity, Autocorrelation, Heteroscedasticity, Distributed lags and Errors in variables- Causes and consequences only.
5. Simultaneous equation models, Structural and reduced form. The problem of identification, rank and order condition (proof not required).

Learning outcome

1. The students will revisit the basic concepts and terms which are fundamental in statistics. The notion of probability is developed along with the very important concept of random variable, its types and their distribution and of joint distribution.
2. They will learn about sampling methods and sampling distributions which will help in inference exercises.
3. After introduction to concept of estimators and their desirable properties, concepts of hypothesis and techniques of hypothesis testing are taken up.
4. They will also learn about the basic concepts of two variable linear model and Gauss Markov theorem, causes and consequences of various forms of violations of the classical linear model structure.
5. Finally the paper ends by introducing the basic concepts and terms in simultaneous equation models.

READING LIST

1. Aggarwal, B. L. (1996), Basic Statistics. New Age International Publishers.
2. Gujarati, Damodar N. (2004). Basic Econometrics. Tata McGraw Hill.
3. Kmenta, Jan (1971), Elements of Econometrics. Macmillan Publishing Co. Inc.
4. Maddala, G.S. (1987), Econometrics. 4th edition. McGraw-Hill International Editions.
5. Ramanathan, R. (2002). Introductory Econometrics with Applications. Thomson South-Western,
6. Greene, William H., (2016), Econometric Analysis, 5th edition, Pearson
7. Blalock, Jr., Hubert M., (1987), Social Statistics, McGraw-Hill International Editions

MEC 204: ENVIRONMENTAL ECONOMICS

1. Definition, linkages between economy, ecology and environment, social choice mechanisms, Arrow's impossibility theorem; Theory of Externalities, Public goods and its types, Pure and mixed public goods and environmental resources, Public goods and market failure, property rights and externalities, competitive equilibrium externality and inefficiency, optimal provision of public goods, Lindahl's equilibrium, Common property resources.
2. **Design of Environmental Policy:** Environmental externalities, Pigouvian taxes and subsidies, price vs quantity instruments. Mixed instruments, imperfect markets and the design of economic instruments, Coase's bargaining solution and collective action, Institutions and enforcement.
3. **Economics of Resource Management**
 - I. Exhaustible Resources-socially optimum extraction under different market structures, role of government and its extraction.
 - II. Renewable Resources- static and dynamic models of fisheries, forestry and mining under different market structures, exploitation of renewable resources under endogenous prices.
4. **Environmental Valuation**
 - I. Environmental and resource values- use values, option values and non-use values; Valuations based on market behaviour- direct and indirect methods, travel cost method and hedonic pricing; Valuations based on hypothetical markets- direct and indirect methods.
 - II. Environmental impact assessment –criteria and methods and its application
5. **Sustainability**
 - I. Sustainable Development the concept, Sustainability paradigms- the ecological paradigm vs the neo-classical paradigm; related concepts- economics of conservation, the safe minimum standard, co-evolutionary development, population pressure, resource scarcity, sustainability indicators and evidence, the Environmental Kuznets curve;
 - II. Sustainability Assessment- criteria and processes.

Learning outcome

1. The students will learn firstly the subject matter of the environmental economics. The market failure in case of environmental goods in its production and distribution sphere is explained from the perspective of its being a public good.

2. The students will learn the application of economic principles in designing solutions to environmental problems. In particular the use of economic incentives and creation of appropriate institutions are seen as means of addressing environmental problems. Economic implications of environmental problems are also addressed.
3. Unit 3 is about economics of resource management. The case of exhaustible and renewable resources are dealt separately given the different issues which crop up in their respective management.
4. The importance of knowing the right/correct value of environmental goods can't be overemphasized as it will lead to its wise use/protection. This unit addresses the valuation of environmental qualities, quantification of environmental damages etc. The unit also includes the topic of environmental impact assessment, a mandatory step to be undertaken often before any development project is approved.
5. The last unit deals with the concept of sustainability, its relevance in today's world; the viewpoints of the two differing schools of thought with regard to it namely the neo-classical school and the ecological school. Again for any developmental program, its sustainability has to be first assessed before approval. The criteria and the procedure of assessing the sustainability has been dealt here.

Reading list

- Baumol, W. J., and O.E. Oates (1988), *The Theory of Environmental Policy*, Oxford University Press.
- Bromley, D.W. (ed) (1995), *The Handbook of Environmental Economics*, Basil Blackwell.
- Cornelius, G., Van Kooten and Erwin H. Bulte (2000), *The Economics of Nature: Managing Biological Assets*, Blackwell.
- 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.
- Kolstad, C.D. (2011), *Intermediate Environmental Economics*, Oxford University Press.
- Perman. R., Y. Ma and J. McGilvray (1996), *Natural Resources and Environmental Economics*, Longman.
- Bhattacharya, Rabindra N. (ed) (2001), *Environmental Economics-an Indian Perspective*, Oxford University Press.
- Morris, P. and R. Therivel (ed) (2009), *Methods of Environmental Impact Assessment*, 3rd edition, Routledge, Taylor and Francis group.
- Glasson, John, Ricki Therivel and Andrew Chadwick (2005), *Introduction to Environmental Assessment*, 3rd edition, Routledge.
- Eccleston, Charles H. (2011), *Environmental Impact Assessment; A Guide to Best Professional Practices*, CRC Press, Taylor and Francis Group.
- Gibson, Robert B., Selma Hassan, Susan Holtz, Jamesa Tansey and Graham Whitelaw (2005), *Sustainability Assessment; criteria and processes*, Earthscan, London. Sterling, VA.

MEC 205: International Finance

1. **International Capital Flows and financial crises:** Classification of International Capital Flows-Direct and Portfolio Investment, Government, Institutional and Private Capital, Short term and Long term Capital. Factors Affecting International Capital Movements; Capital flight. The causes and consequences of currency crises. Prospects for contagion. Capital flows and global financial crises

2. **International Financial market:** foreign exchange markets. forex market participants, exchange rates determination, international arbitrage, foreign exchange risks and its management and international capital market. Foreign exchange derivatives (futures, options, swaps, carry trade). Options market.

3. **International Financial Institutions:** Institutions for International Relations and Liquidity-Evolutionary and operational developments in international institutions- IMF, IBRD, IDA, UNCTAD, ADB, WTO. Problems and prospects of WTO Agreement in present Global trading- India and International institutions

4. **Regionalism & Trade Policy and Reforms:** Theory of Regionalism, major trading economic groupings– Collapse of Bretton – Wood System – recent developments in monetary system, Trade Policy and Reforms in India.

5. **Macroeconomics of an open economy** Balance of payment and Keynesian analysis - Internal and External Equilibrium- Money and Capital Flows and Equilibrium in an Open Economy– Mundel-Fleming model- Fixed and Flexible Exchange Rate with Capital Mobility – Monetary and fiscal policy under fixed and flexible exchange of capital mobility- the Impossible Trinity -Monetary Approach to Balance of Payment.

Learning outcome

The aim of the course is to keep the student an understanding of the macroeconomic and monetary side of international economics. The student will be able to understand international capital flows and their implication for economic policy for individual nations and the world as a whole. It will explore the effectiveness of monetary and fiscal policy in an open economy and the nature and causes of currency crisis. It will discuss the macroeconomic model of open economies and apply this to contemporary policy issues. The course will investigate the effectiveness of macroeconomic policy and find that it depends heavily on the exchange rate regime. Discussion of macroeconomic policy will lead naturally to discussion of the variety of exchange rate regime, the evolution of that crisis and the causes of currency crisis.

Reading List

1. Mankiw, G. (2011), Macro Economics, Worth Publishers, New York
2. Rudiger Dornbusch, Stanley Fischer and Richard Startz (2006), Macroeconomics, McGraw-Hill.
3. Levacic, R. and A. Rebman (2006), Macro Economics, Mac Millen Press Ltd.
4. Froyen, R.(2008). Macroeconomics, Pearson India
5. Snowdon, B. H. Vane and P. Wynarezyk (2002), A Modern Guide to Macro Economics: An Introduction to Competing Schools of Thought, Edward Elgar.

6. Kamran Dadkhah (2010), *Evolution of Macro Economic Theory and Policy*, Springer
7. David Romar (2011), *Advanced Macro Economics*, McGra-Hill, 4th Edition
8. Andre B.Abel and Ben S. Bernanke (2010), *Macro Economics*, 4th Edition, Pearson
9. G.K.Shaw, Michael J, Mc Croshie and David Greenway, *Macro economics, Theory and Practice*, Blackwell.

MEC 301: DEVELOPMENT ECONOMICS

1. **Growth and Development:** Characteristics of underdeveloped countries; Difference between growth and development; Factors affecting economic growth: capital, labour and technology; Growth models: Harrod-Domar, Solow, Endogenous growth.
2. **Poverty and inequality:** Measurements of poverty and inequality and their relationship with economic growth; Kuznets inverted U curve; Human development index and other indices of development and quality of life.
3. **East Asian Economic Growth:** Common characteristics of high performing Asian economies, Economic reforms in China, Education in East Asia, Burmese way to Socialism.
4. **Population and Development:** The cost and benefits of Population growth; Malthusian population trap; Impact of migration on urbanisation and urban unemployment.
5. **The market mechanism and market failure;** Role of state; the capital intensity techniques in underdeveloped countries.

Learning outcome

- 1 The students will learn some growth theories which is very important in developmental studies.
- 2 Measures of poverty and inequality. Changes in these measures along with growth of the economy.
- 3 Characteristics of economic growth in East Asia. How they managed high economic growth in a very short period of time will be examined. Special focus will be given in human capital formation.
- 4 Phases of population growth along with theories on urbanization.
- 5 The students will learn why underdeveloped countries are using capital intensive technologies despite the abundance of labour force.

READING LIST

1. Hayami, Yujiro (1990). *Development Economics: From the Poverty to the Wealth of Nations*. Clarendon Press.
2. Hung, Ho-Fung (ed.). (2009). *China and the Transformation of Global Capitalism*. Johns Hopkins.
3. Ray, Debraj (1998). *Development Economics*. Oxford University Press.
4. Rowen, Henry S.(ed.). (1998). *Behind East Asian Growth: The Political and Social Foundations of Prosperity*. Routledge.
5. Thirwall, A.P. (2006). *Growth and Development: With Special Reference to*

Developing Economies. Palgrave MacMillan.

6. Todaro, Michael P., and Stephen C. Smith (2004): *Economic Development*. Pearson.
7. World Bank (1996): *The East Asian Miracle: Economic Growth and Public Policy*. Oxford University Press.
8. Thein, M (2004). *Economic Development of Myanmar*. The Institute of South East Asian Studies.

MEC 302: Austrian Economics

- A. Praxeology – task and scope of human action historicisms and empiricism – scope and meaning of a priori theorem
- B. Austrian vs Neoclassical Action vs decisions entrepreneur vs homo economicus entrepreneurial error vs a posteriori rationalization
- C. Human mind knowledge and entrepreneurship activist Basic of knowledge, knowledge and entrepreneurship
- D. Capital market and time Bohm Bowerk, exchange, money and capital, capitalization of rent, theory and time value, fixed and increasable capital savings production and rate of interest
- E. Prices and determination, marginal utility welfare and ultimate satisfaction of consumer

Learning Outcome

1. Students will be able to understand the origins and orientations of Austrian economics
2. Students will be able to understand the methodological differences between Austrian and Neoclassical economics
3. Students will be able to comprehend the Austrian understanding of knowledge and entrepreneurship
4. Students will be able to understand the important aspects of Austrian macroeconomics and microeconomics

READING LIST

1. Rothbard, Murray N., *Man, Economy, and State: A Treatise on Economic Principles with Power and Market* (2009), by Ludwig von Mises Institute, Scholar's Edition.
2. Von Mises, Ludwig, *The Ultimate Foundation of Economic Science: An Essay on Method*, ed. Bettina Bien Greaves (2006), Liberty Fund, Indianapolis.
3. Peter Lewin, *Capital in Disequilibrium: The Role of Capital in a Changing World*, Second Edition (2011), Ludwig von Mises Institute.

4. De Soto, Jes'us Huerta, *The Austruan School: Market Order and Entrepreneurial Creativity* (2008), Edward Edgar.
5. Fetter, Frank A., *The Principles of Economics With Applications to Practical Problems*, Cornell University, The Century Co. New York, 1905 (Online edition by the Ludwig von Mises Insittute, 2003).
6. Menger. Carl, *Principles of Economics*, Foreword by Peter G. Klein, Introduction by F.A Hayek, Translated by James Dingwall and Bert F. Hoselitz, 1976, the Ludwig von Mises Insittute, Albama.

MEC 304 and MEC 305 are papers offered under specialisation/optional streams and their syllabus is attached in the specialised papers offered.

MEC 401: INDIAN ECONOMIC POLICIES

1. **Evolution of the strategy of Indian planning** – Achievements with reference to growth, self- reliance and social justice – Role of the state vis-à-vis market. Rational of internal and external reforms; Globalisation of Indian Economy; W.T.O. and its impact on different sectors of the economy; Need for and issues in good governance; Issues in competition and safety nets in Indian economy.
2. **Evolution of Indian Agricultural Policy** – land reforms in India; Technological change in agriculture – pricing of agricultural inputs and outputs; Terms of trade between agriculture and industry; Agricultural finance policy; Agricultural Marketing and Warehousing; Issues in food security – policies for sustainable agriculture.
3. **Evolution of Industrial Policy in India.** Public sector enterprises and their performance; Problems of sick units in India; Privatisation and disinvestment debate; Growth and pattern of industrialisation; Small –scale sector; Productivity in industrial sector; Exit policy – issues in labour market reforms; Approaches for employment generation.
4. **Evolution of India's foreign trade policy** – Trade problems and trade policies in India during the last six decades; Recent changes in the direction and composition of trade and their implications; Rationale and impact of trade reforms since 1991 on balance of payments, employment and growth – Exchange rate policy – Foreign capital and MNCs in India – Working and regulations of MNCs in India; Instruments of export promotion and recent import and export policies and agenda for future.
5. **Poverty and Inequality** – Broad demographic features of Indian population; Rural urban migration; Urbanization and civic amenities; Informal sector; Poverty and unemployment – Evolution of policies for removal of poverty and unemployment.

Learning outcome

1. The students will be able to understand the core economic concepts of International Economics.
2. They will be able to explain the basis of trade between the countries and how the gains from trade are measured.
3. They will be able to examine the theoretical and practical aspects of international economics applied to both developed and less developed countries.
4. The exposition to different trade theories will help in developing the analytical bent of mind

READING LIST

1. Ahluwalia, I.J., and I.M.D. Little (eds.) (1999). *India's Economic Reform and Development (Essays in honour of Manmohan Singh)*. New Delhi: Oxford University Press
2. Bardhan, P.K. (1999). *The Political Economy of Development in India. 9th Edition*, New Delhi: Oxford University Press.
3. Brahmananda, P.R., and V.R. Panchmukhi (eds.) (2001). *Development Experience in the Indian Economy: Inter-State Perspective*. Delhi: Bookwell.
4. Chakravarty, S.(1987). *Developing Planning: The Indian Experience*. New Delhi: Oxford University Press.
5. Dantwala, M.L. (1996). *Dilemmas of Growth: The Indian Experience*. New Delhi: Sage Publications.
6. Dreze, Jean, and Amartya Sen (1995). *India – Economic Development and Social Opportunity*. Oxford University Press.
7. Jalan, Bimal. (1996). *Indian Economic Policy: Preparing for Twenty First Century*. Viking.
8. Joshi, V., and I.M.D. Little (1999). *India: Macroeconomics and Political Economy, 1964-1991*. Oxford University Press.
9. Kapila, Uma (2007). *Indian Economy – Performance and Policies*. Academic Foundation.
10. Rangarajan , C. (2000). *Perspectives on Indian Economy*. UBSPD.
11. Sandesara, J.C. (1992). *Industrial Policy and Planning, 1947 – 91. Tendencies, Interpretation and Issues*. Sage.
12. Srinivasan, T.N., and S.D. Tendulkar (2001). *India in the World Economy*. Oxford.
13. Tendulkar, S.D., and T.A. Bhavani (2007). *Understanding Reforms – Post 1991 India*. Oxford University Press.
14. Nagaraj, R., and Motiram, S. (Eds.). (2016). *Political Economy of Contemporary India*. Cambridge: Cambridge University Press.
15. Nagaraj, R. (Eds.). (2012). *Growth, Inequality and Social Development in India: Is Inclusive Growth Possible?*. Palgrave Macmillan
16. Ahluwalia, I.J., Kanbur, R., and Mohanty, P.K. (Eds.). (2014). *Urbanisation in India: Challenges, Opportunities and the Way Forward*. Sage.

17. Nayyar, D. (2013). *Catch Up: Developing Countries in the World Economy*. Oxford University Press.
18. Nayyar, D. (Eds.). (2019). *Asian Transformation: An Inquiry into the Development of Nations*. Oxford University Press.
19. Basu, K. (2018). *A short history of India's economy: A chapter in the Asian drama*. WIDER Working Paper 2018/124. Helsinki: UNU-WIDER.
20. Subramaniam, A. (2008). *India's Turn: Understanding the Economic Transformation*. New Delhi: Oxford University Press.
21. Bhagwati, J., and Calomiris, C. (Eds.). (2008). *Sustaining India's Growth Miracle*. Columbia University Press.
22. Bhagwati, J., and Panagariya, A. (Eds.) (2013). *Reforms and Economic Transformation in India*. Oxford University Press.
23. Bardhan, P. (2010). *Awakening Giants, Feet of Clay: Assessing the Economic Rise of China and India*. Princeton University Press.
24. Jha, R. (Eds.). (2008). *The Indian Economy Sixty Years After Independence*. Palgrave Macmillan.
25. Anne O. KRUEGER, 2008. "[The Role of Trade and International Economic Policy in Indian Economic Performance](#)," [Asian Economic Policy Review](#), Japan Center for Economic Research, vol. 3(2), pages 266-285, December.

MEC 402: Computer Application in Economics Analysis

Unit 1: Computer in Economics: Historical Background, Contribution of Tinbergen, Koopmans and Wassily Leontief; Present trends; Importance of Computer in learning Economics

Unit 2: Hardware: Input & Output Devices & Software and its types; C language; Operating Systems; ICT: Basics of the Internet, Intranet, E-mail, Audio and Video-conferencing. World Wide Web: Search Engines, Web address, downloading and data storage

Unit 3: Data Source; Data source on Global Economy: WB, IMF, FAO, OECD, WTO. Data base of the Indian economy: NSSO, RBI, EPW. Big Data and data mining (concept only).

Unit 4: Data Presentation: Graphs, Charts: Columns, Line, Pie, Bar, Scatter, Area through Excel and R.

Unit 5: STATA and Its Application: Overview of STATA, Basics of Data Analysis - Data Entry in STATA - Computing with STATA - command description for STATA. Preparation of Graphs with STATA - Descriptive Statistics, Compare Means, Correlation and Regression Models - Simple and Multiple Linear regression - Estimation and interpretation.

Learning Outcome

1. Students will be able to understand the genesis of economic analysis through computer.
2. Students will be able to understand various aspects of computer and internet

3. Students will be able to understand the sources of various economic data and how to access them
4. Students will be able to understand the various ways in which data can be analysed and presented
5. Students will be able to understand the applications of STATA

Reading List:

1. Shelly, Gary B., Misty E. Vermaat (2010) *Discovering Computers: Fundamentals: Your Interactive Guide to the Digital World*. Course Technology: Boston
2. Balagurusamy, E. (2009) *Fundamentals of Computers*. McGraw Hill India: Delhi
3. Backhouse, Roger E. and Beatrice Cherrier (2016) "It's computers, stupid!" The spread of computers and the changing roles of theoretical and applied economics" *SSRN Electronic Journal October Issue*.
4. Koopmans, Tjalling C. (1950) "Statistical Inference in Dynamic Economic Models" *Cowles Commission for Research in Economics Monograph 10*. John Wiley & Sons : London
5. Gregory C. Chow (1977) "The Computer and Economics" *Proceedings of the American Philosophical Society, Vol. 121, No. 5* pp. 350-354.
6. McNertney, Edward M. And C.Richard Waits (1985) "The Role of Computer Software in the Teaching of Economics". *The American Economist*
7. Mark Henry & David Ramsett (2014) "The Effects of Computer-aided Instruction on Learning and Attitudes in Economic Principles Courses" *The Journal of Economic Education 10:1, 26-34*
8. G. L. Bach and Allen C. Kelley (1984) "Improving the Teaching of Economics: Achievements and Aspirations" *The American Economic Review, Vol. 74, No. 2, Papers and Proceedings of the Ninety-Sixth Annual Meeting of the American Economic Association, May, pp. 12-18*
9. Baum, Christopher F. (2006) *An Introduction to Modern Econometrics Using STATA*. STATA Press

Specialized/optional streams being offered in the department:

AGRICULTURE

ECOSE 1(A): Principles of Agricultural Economics I

1. Nature and scope of Agricultural Economics. Agriculture and economy. **Role of Agriculture in the Structural Transformation**; Industry-agriculture relationship. Agricultural industry.
2. Theories about role of agriculture in economic development-dual economy models, models of Lewis, **The Jorgenson Model**, Fei and Ranis; **The Nichols Model**, **The Gutman-Enke Controversy**.
3. Theories of agricultural development: Schultz, **Johnstone**, Mellor, Boserup, **Hayami**, Ruttan, & **Timmer**.
4. Factors and Resources use in agriculture, natural resources, **water resources** and land in agriculture, labour and capital in agriculture. Economics of farm size and productivity and efficiency; Return to scale, types of farming.
5. Economics of Agricultural supplies and supply behaviour in agriculture. Nature of supply response of agricultural commodities, backward bending supply curve.
6. The theory of demand for agricultural products, price determination for agricultural products. Market mechanism, Price and income elasticities of demand.

Learning Outcome

1. Students will be able to understand the nature, scope and importance of agricultural economics
2. Students will be able to understand both the theories on role of agriculture in development and theories of agricultural development
3. Students will be able to understand the various factors and resources that drives agriculture
4. Students will be able to understand the theories of demand and supply operating in the agricultural sectors

Combined Reading List of ECOSE 1(A) AND ECOSE 3(A) attached below the syllabus of ECOSE 3(A) later on.

ECOSE 2(A): Problems of Indian Agriculture

Unit I: Characteristics & Significance of Indian Agriculture; Agriculture and Its Relation with other sectors; Structural Transformation: India's Experience

Unit II: Agrarian Structure: Mode of Production debate, land relations, land reforms and its effect on Indian agriculture; Farm Size & productivity, regional variation in growth and productivity

Unit III: Land Use in India: Patterns & Trends; Cropping Pattern in India and regional variation; features in North East India: shifting culture

Unit IV: Food Security: Present trends and Challenges; Demand and Supply: Trends, determinants and estimation; Pricing policy, Marketing, Agriculture trade, agro-processing industry, value chain

Unit V: Agriculture Input and Cost: Irrigation, Seeds, Fertilizer, credit; Agriculture Labour; Mechanization, Investment: Public & Private; R&D, agricultural hazards

Unit VI: Diversification of Agriculture: recent trends; commercial crops, High value crops, livestock; Risk and Uncertainty and farmer response. NITI Aayog & Doubling of Farmers Income

Learning Outcome

Students will be able to understand the importance of agriculture in India economy and its role in economic transformation of India

1. Students will be able to understand the agrarian structure, land relations, land reforms, land use patterns and farm size that have been taking shape in recent times
2. Students will be able to understand the important aspects of food security in India: demand and supply of food grains, marketing, pricing, value chain, etc.
3. Students will be able to understand the various issues surrounding agriculture inputs and costs: irrigation, fertilizers, seeds, mechanization, labour, R&D, etc
4. Students will be able to understand the nature and aspects of agricultural diversification in India and the role of NITI Aayog in development of agriculture in India.

Reading List

1. Vaidyanathan, A. (2010): *Agricultural Growth in India: Role of Technology, Incentives, and Institutions*, OUP, New Delhi
2. Mahendra Dev, S. and Syed Saifullah (2013) *Investment in Indian Agriculture: Macro and Micro Evidences*, OUP, New Delhi
3. Hanumantha Rao, C. H. (2005) *Agricultural Growth, Farm Size, and Rural Poverty Alleviation in India: Selected Papers*. Academic Foundation, New Delhi
4. Ramesh Chand and S. S. Raju (2009) *Agricultural Risk and Insurance in India: Problems and Prospects*. Academic Foundation, New Delhi
5. Joshi, P. K., Ashok Gulati & Ralph Cummings Jr. (2007) *Agricultural Diversification and Smallholders in South Asia*, Academic Foundation, New Delhi
6. Bharadwaj, Krishna (1975). *Production Conditions in India Agriculture*. Cambridge University Press
7. Rudra, Ashok (1992). *Political Economy of India Agriculture*. Calcutta: K.P Bagchi and Company
8. Acharya, SS. (2019). *Agricultural Marketing In India*. Oxford & IBH Publishing Co Pvt.Ltd., New Delhi
9. ICAR (2011) *Handbook of Agriculture 6th Edition*. Ministry of Agriculture and Farmers Welfare, GOI

10. Alagh, Yogindra K. (2014). *The Future of Indian Agriculture*. National Book Trust, New Delhi
11. Brouwer, Floor and PK Joshi (2016) *International Trade and Food Security The Future of Indian Agriculture*. CABI, Oxfordshire
12. Paroda, R.S. (2018). *Reorienting Indian agriculture : challenges and opportunities*. CABI, Oxfordshire
13. Bathla, Seema and Amaresh Dubey (2017) *Changing Contours of Indian Agriculture Investment, Income and Non-farm Employment*. Springer, Singapore
14. NITI Aayog (2018) "Demand & Supply Projections Towards 2033 Crops, Livestock, Fisheries And Agricultural Inputs". *The Working Group Report* February, GOI
15. Bhalla, GS (2017) . *Indian Agriculture Since Independence*, National Book Trust, New Delhi
16. Relevant Special Articles from EPW, Indian Journal of Agricultural Economics and others will be made available to the students from time to time by the course coordinator

ECOSE 3(A): Principles of Agricultural Economics II

1. **Technology in agriculture:** Biotechnology and Mechanical technology. Production response to technological change. **Research & Extension** in Agriculture
2. **Marketable and Marketed surplus in agriculture:** Price stimuli and Marketable surplus, Mobilization of agricultural surplus. **Food Security & Nutrition**
3. **Economics of Market Efficiency:** Market levels and structure, price spreads and Marketing margins. **Storage and Price Stabilization**
4. **The theory of risk and uncertainties in Agriculture:** types of uncertainties, adjustments against risk and uncertainties; **Climate Change and its impact on agriculture**
5. **Farm management:** concepts, subject matter and objectives. Farm planning and Budgeting. Theory of production; Factor-Product model, Factor-Factor model, product - product model.
6. **World Agriculture:** International trade in agriculture, commercial policies in the trade of agricultural commodities; Role of FAO and **IFPRI** in agriculture. State intervention in agriculture, intervention in production and distribution.

Learning Outcome

1. Students will be able to understand the critical role of technology in agricultural development and also the role of research and extension
2. Students will be able to understand the unique aspects of agriculture - marketable surplus, food security, price stabilization, market efficiency
3. Students will be able to understand the nature and theories of risk and uncertainty in agriculture and also the impact of climate change on it.
4. Students will be able to understand the various aspects of farm management

5. Students will be able to understand the contemporary issues of world agriculture and important role being played by FAO and IFPRI

Reading List

1. American Journal of Agricultural Economics (2010) *Special Issue Commemorating the Centennial of the AAEA*. Volume 92, No. 2, April.
2. Andreosso-O'Callaghan, Bernadette (2003) *The Economics of European Agriculture*. Palgrave Macmillan: New York
3. Capstic, M. (1970). *The Economics of Agriculture*. London: George Allen and Unwin.
4. Debertin, David L. (2002) *Agricultural Production Economics*. MacMillan: New York
5. Ellis, Frank (1994) *Peasant Economics: Farm Households in Agrarian Development*. Cambridge University Press
6. Ghatak, S., and Ken Ingersent (1984). *Agriculture and Economic Development*. New Delhi: Select Book Syndicate.
7. Halecrow, H.G. (1981). *Economics of Agriculture*. McGraw Hill.
8. *Handbook of Agricultural Economics*, All Volumes, North Holland.
9. Hill, Berkeley and Derek Ray (1987) *Economics for Agriculture Food, Farming And The Rural Economy*. Macmillan: London
10. Johnston, B.F., and J.W. Mellor (1961). The Role of Agriculture in Economic Development. AER.
11. Kutznets, Simon (1965). *Economic Growth and Structure*. New Delhi: Oxford & IBH.
12. Mellor, John W. (1969). *The Economics of Agricultural Development*. Bombay: Vora & Co.
13. Mellor, John W. (2017). *Agricultural Development and Economic Transformation: Promoting Growth with Poverty Reduction*. Palgrave Macmillan: Gewerbestrasse
14. Mendelsohn, Robert O. and Ariel Dinar (2009) *Climate Change and Agriculture An Economic Analysis of Global Impacts, Adaptation and Distributional Effects*. Edward Elgar: Cheltenham
15. Otsaka, Keijiro and C. Ford Runge (2011). *Can Economic Growth Be Sustained? The Collected Papers of Vernon W. Ruttan and Yujiro Hayami*. OUP: New York
16. Timmer, C. Peter (2006) *A world without agriculture: the structural transformation in historical perspective*. The AEI Press: Washington
17. Timmer, C. Peter (2015). *Food security and scarcity: why ending hunger is so hard*. University of Pennsylvania Press: Pennsylvania
18. World Bank. (2007). *World Development Report 2008: Agriculture for Development*. Washington, DC.
19. Wreford, Anita Dominic Moran and Neil Adger (2010) *Climate Change and Agriculture Impacts, Adaptation and Mitigation*. OECD Publishing

ECOSE 4(A): Rural Economics

- **Unit I: Meaning & Content of Rural Economics;** Importance of Rural economy in India; rural inequality, rural unemployment and rural poverty; Rural-Urban nexus
Need for integrated and holistic approach
- **Unit II: Social and Economic Infrastructure in Rural India;** Inequitable distribution of Rural Asset, low absorption capacity - Rural Indebtedness, low market interaction, rural industrialization, rural-urban migration
- **Unit III: Evolutions of Rural development themes;** Strategy of rural development in India: Historical and Present Scenario; MGNREGA and Its impact on Rural India
- **Unit IV: Rural Development Institutions:** Panchayats and Cooperatives, Self Help Groups, and Non-Governmental Organizations – their roles in preparation of rural development plan and projects
- **Unit V: Agrarian Social Structure in India:** Concept & Classification; Pre and Post-Green revolution Scenario; Rural Society and Government
- **Unit VI: Paths of Agrarian Change;** Agrarian Distress; Rural Livelihoods

Learning Outcome

Students will be able understand the concept and content of rural economics and how it is different from agricultural economics

1. Students will be able to understand the importance of rural economy in India and also the problems surrounding it: unemployment, inequality, poverty, indebtedness, migration, etc.
2. Students will be able to understand the evolution of rural development programmes and its present scenario in India
3. Students will be able to understand the role of Panchayati Raj, NGOs, SHGs, and Cooperatives in rural development
4. Student will be able to understand the complex relations among economic agents, politicians, state machineries, and village institutions in the contemporary rural society of India.

Reading List:

1. Beteille, Andre (1974). *Studies in Agrarian Social Structures*. OUP Delhi
2. Harris, John (2017) *Rural Development: Theories of Peasant Economy and Agrarian Change*. Rawat Publication, Jaipur
3. Barik, B.C. and U.C. Sahoo (2009) *Panchayati Raj Institutions And Rural Development: Narratives On Inclusion Of Excluded*. Rawat Publication, Jaipur
4. Gupta, Dipankar (1993) *Social Stratification*. OUP Delhi
5. Ellis, Frank (2005) *Rural Livelihoods and Poverty Reduction Policies*. Routledge, London
6. Kapoor, A. K., Mohammad M. Hussinat (1997) *Rural Development Through NGOs*. Rawat Publication, Jaipur

7. Basu, Priya (2006) *Improving Access to Finance for India's Rural Poor*. The World Bank, Washington
8. Green, Gary Paul (2013) *Handbook of Rural Development*. Edward Elgar, Massachusetts
9. Harris-White, Barbara (2003). *Indian Working Essays on Society and Economy*. Cambridge University Press, New York
10. Bhagwati, Jagdish and Arvind Panagariya (2013) *Reforms and Economic Transformation in India*. OUP, New York
11. Varshney, Ashutosh (1998) *Democracy, development, and the countryside Urban-rural struggles in India*. Cambridge University Press, New York
12. Kapila, Uma (2019) *Indian Economy Since Independence (30th Edition) A comprehensive and critical analysis of India's economy, 1947-2019*. Academic Foundation, New Delhi
13. Vaidyanathan, A. (2003). *India's Economic Reforms and Development: Collection of Essays*. Academic Foundation, New Delhi
14. Corbridge, Stuart et. al. (2009) *Seeing the State Governance and Governmentality in India*. Cambridge University Press, New York
15. Relevant Special Articles from journals will be made available to the students from time to time by the course coordinator

DEMOGRAPHY

Course outcome: Demography is an integral part of understanding the economic situation of any country. The main thrust of the course is to make the students familiar with the size, composition and distribution of population in the country, and local areas. It also will enable to appreciate how world population has grown over time since early days. Demographic study will also make the students understand the composition of population in different ages and sexes which become the backbone of the economy in terms of number of dependents and number of workers. Demographic study will enable the students understand how to make/ draw a plan of country keeping in mind different sections of society, communities. It also teaches the different methods of collecting data pertaining to population and related attributes such as education, religion, languages spoken, economic activities etc.

ECOSE-1 (B). PRINCIPLES OF DEMOGRAPHY-I

1. Population as a field of study; its nature and scope.
2. **Theories of population**; Pre-Modern Population Doctrines, Malthus, Marx, Post Malthusian Theories; biological, special and economic theories. Theory of optimum population. Theory of Demographic Transition.
3. **World Population Growth**. History, differential growth in different regions of world.
4. **Population composition**. Age and sex composition, Economic and educational composition, Racial Ethnic, Religious and marital composition. Age and sex structure: the population pyramid. Effects of structure on population process. Effects of population process on structure, Age and Sex Structure differentials in MDC's and LDCs.

5. Study of urban population from the point of view of spatial patterning, mobility and effects on national economy, components of urban population change. Urbanisation and Urban Change – changing distribution of world's urban population, principles and causes of urban growth, urban hierarchy (rank size rule), characteristics of primate city.

Learning Outcome

1. The students will be equipped how population has grown over time and its distribution around the world.
2. It will also give theories of population which explain the phenomenon of growth of population.
3. They will appreciate to learn the composition of population not only size and distribution of population in different parts of the world and local areas.
4. In the process of economic growth and changing economic dynamics how population has associated with urbanization process.

ECOSE-2 (B). Interface of Population and Development

1. Population Growth and distribution in less developed countries. Effect of General Fertility, Mortality and Migration trends.
3. The comparative statistics of population growth and the economy. Relationship between growth, size, density and rate of growth. Views of Enke, Julian Simon and Easter Boserup on interrelationship of population and development.
2. Age structure – demographic dividend and problems of young and old (ageing) populations. Population Ageing and its impact on economic development – labour, living arrangement and health
3. Interrelationship between population growth: Effects Population Growth on Environment, in the context of development.
4. Effects of population growth on agriculture and food availability. Industrialisation, savings, investment output and employment in LDCs. Simulations of the effects of population growth on the economic development of LDCs.
5. The effect of Economic-Development on fertility (long run and short run) Dimensions of gender on fertility - women's access to economic resources, entitlements, inheritance laws, access to credit, measurements of women's work, working condition in formal and informal sector. Policies on fertility in developed and less developed countries. (Case studies, developed and developing countries).

Learning Outcome

Students are expected to learn:

1. The problems associated with population growth and challenges posed by population growth on ageing process and environment.
2. Various theoretical position such as Malthusian proposition, contribution of Easter Boserup and Julian Simon on relationship between population and development.

3. Relationship between consumption and savings in light of current debate on population dividend.

Role of fertility to have an impact on development process along with population growth.

READING LIST FOR ECOSE 1/2/ 3.

1. Tim Dyson. (2010). Population and Development: The Demographic Transition. Rawat Publications.
2. Bhende, Asha A., and Tara Kanitkar. Principles of Population Studies. Mumbai: Himalaya Publishing House. (latest Edition).
3. Bogue, Donald (1969). Principles of Demography. New York: John Wiley and Sons Ltd.
4. Coale, A.J., and E.M. Hoover (1958). Population Growth and Economic Development in Low Income Countries. Princeton: Princeton University Press.
5. Gould, W. T. S. (2009). Population and Development. London: Taylor & Francis Routledge.
6. Hauser, Philip M., and Otis Dudley Duncan (eds). (1959). The Study of Population. The University of Chicago Press.
7. Jain, S.P. (1977). Indian Population and Development. New Delhi: NCERT.
8. Malthus, R. (1936). An Essay on the Principle of Population. London: Macmillan.
9. Siegel, Jacob, and David Swanson (eds.). (2004). Methods and Materials of Demography. California: Elsevier Academic Press.
10. United Nations (1973). 'The Determinants and Consequences of Population Trends', Vol. I, Population Studies No. 50, New York.
11. Weeks, John R. (2012). Population: An Introduction to Concepts and Issues. California: Wadsworth Publishing Company.
12. Yaukey, David (1985). Demography. New York: St. Martins Press.
13. Dudley L. Poston and Leon F. Bouvier. (2017). Population and Society: An Introduction to Demography. Cambridge University Press
14. Dudley L. Poston and Michael Micklin (eds.). (2005). Handbook of Population. Kluwer Academic/Plenum
15. Nancy Birdsall, Allen C. Kelley and Steven W. Sinding. (2001). Population Matters: Demographic Change, Economic Growth, and Poverty in the Developing World. Oxford University Press
16. Ozzie G. Simmons. (1988). Perspectives on Development and Population Growth in the Third World. Plenum Press

ECOSE-3 (B). PRINCIPLES OF DEMOGRAPHY-II

1. Sources of population statistics - census, registration and surveys. General principles of census operations and registration of vital statistics and Surveys. Evaluation of data-Whipple's Index, Myer's Index and UN Joint Score, Concepts of Rates, Ratio, Proportion and Person Years, Incidence and Prevalence and measurement of population growth- crude rate of natural increase and vital index.

2. Mortality: Concepts. Mortality and its determinants, Mortality trends, levels and differentials in MDCs and LDCs. Mortality problems. Measurement of Mortality-crude death rate, age specific death rate, standardised death rate, Infant mortality rate, maternal mortality ratio. Reproductive health concepts and issues. Life tables - methods of construction, different forms of model life tables.

3. Fertility & Reproduction: Concepts Fertility and its determinants, the Blake Davis Model and Bongaart's proximate determinants. Fertility trends levels and differentials in MDS and LDCs. Fertility problems. Theories of Fertility - social capillarity, diffusion-cultural lag, change and response: Becker and Leibinstien's Theory, Easterlin's Socio-economic theory, Caldwell's Intergenerational income flow theory, and UN's threshold Hypothesis. Measurement of fertility- crude death rate, general fertility rate, age specific fertility rate, total fertility rate, gross reproduction rate, net reproduction rate.

4. Migration. Concepts. Migration and its determinants. Internal and external migration, trends and differentials. Consequences of Migration.

Internal and external migration - net migration, backward and forward survival ratio methods. Urbanization as a process for migration: classification, stages and models, measures of urbanization.

5. Population estimation and projection: mathematical and component methods.

Learning Outcome

This paper will sharpen the students having equipped with the measures of population dynamics.

1. It will reveal how accurate our data of age in terms of sex.
2. It provides how to assess mortality and fertility in terms of different measures appropriate.
3. It also will get acquainted with life table concepts and construction.
4. It also give the migration concepts and measurement along with the type of questions incorporated in the censuses and surveys. This will be followed by concepts and techniques of population projection.

ECOSE-4 (B). POPULATION PROBLEM IN INDIA

- 1 Review of India's population 1850-1950. Population studies after independence. Source of Demographic Data, Population, Growth, Size, Structure, Composition and Density, Population Projections.
- 2 Birth rate in India: Factors influencing fertility, regional differences, rural urban differentials. Education and fertility, Age at marriage and fertility, Age specific fertility and age-sex structure; Death rate in India: Declining death rate and its causes and implication, regional variations, age specific death rates infant mortality, expectation of life at birth..
- 3 Status of Women: Broad tests of the status of women. Age at marriage by religion cultural, social and economic characteristics. Changing pattern of sex ratio and its implication, literacy and employment of women.

4 Migration: internal and external.

Indian Population Policy: History of family planning programme. Family planning during the plans, strategy, objective organisations structure and evaluation. Paradigm shift in family welfare and health policies. Comparative policy issues of demographic situation in the south-east and east Asian countries: Case studies.

Learning Outcome

Students will learn:

1. The counts of population in India and the characteristics of population in India.
2. It will instil the behaviour of fertility, mortality and migration in Indian context.
3. While doing this how inequalities between the sexes, level of urbanisation in India impacted on rapid growth of population putting sociological concern on board.
4. It will also discuss the issues and challenges of demographic situation to develop a comprehensive population policy in India.

Reading List

- 1 Tim Dyson. (2018). *A Population History of India*. Oxford Univ Press.
- 2 K. Srinivasan. (2017). *Population-Concerns in India: Shifting Trends, Policies and Programmes*. Sage Publications India Pvt. Ltd.
3. Bhende, Asha A., and Tara Kanitkar. *Principles of Population Studies*. Mumbai: Himalaya Publishing House. (latest Edition).
4. Coale, A.J., and E.M. Hoover (1958). *Population Growth and Economic Development in Low Income Countries*. Princeton: Princeton University Press.
5. Gould, W. T. S. (2009). *Population and Development*. London: Taylor & Francis Routledge.
6. Siegel, Jacob, and David Swanson (eds.).(2004). *Methods and Materials of Demography*. California: Elsevier Academic Press.
7. Weeks, John R. (1989). *Population*. California: Wadsworth Publishing Company.
8. Yaukey, David (1985). *Demography*. New York: St. Martins Press.
- 9 K. Srinivasan. (2017). *Training Manual on Demographic Techniques*. Office of Registrar General of India and United Nations Fund for Population.

DEVELOPMENT ECONOMICS

ECOSE 1(C) ECONOMICS OF GROWTH AND DEVELOPMENT.

1. Basic features of modern growth; Investment and savings.
2. Theories of economic growth - Harrod-Domar model, Solow-Swan model, one sector and two sector models of endogenous growth.
3. Innovation, Entrepreneurship and Knowledge Economy - international, national and regional.
4. Geography and Economic Development- trade and agglomeration; breakdown of the price mechanism; Von Thunen and land rent formation.
5. Institutions and Economic Development - transaction costs, contracts and property rights.

Learning outcomes

- 1 Economic growth very much depends on investment which in turn depends on savings. The students will learn the inter relationship between the three variables.
- 2 Harrod-Domar, Solo-Swan and some Endogenous growth models will be studied.
- 3 The students will learn how skill enhancement, innovation and entrepreneurship leads to economic growth.
- 4 Countries which are near to each other in terms of geographical location reap certain benefits. This will be studied under geography and development.
- 5 Institutions matter in development. How it matters will be studied.

READING LIST

1. Aghion, Philippe, and Peter Howitt (1998). *Endogenous Growth Theory*. MIT.
2. Barro, Robert, and Xavier Sala-i-Martin (1995). *Economic Growth*. Mc. Graw-Hill.
3. Brakman, Steven, Harry Garretsen, and Charles van Marrewijk (2001). *An Introduction to Geographical Economics: Trade, Location and Growth*. Cambridge University Press.
4. Chavance, Bernard (2007). *Institutional Economics*. Routledge.
5. Congregado, Emilio (ed.). (2008). *Measuring Entrepreneurship: Building a Statistical System*. Springer.
6. Fujita, Mahasita, and Jacques-Francois Thisse (2002). *Economics of Agglomeration: Cities, Industrial Location and Regional Growth*. Cambridge University Press.
7. Gradstein, Mark and Kai A. Konrad (eds.). (2006). *Institutions and Norms in Economic Development*. MIT.
8. Hayami, Yujiro (1990). *Development Economics: From the Poverty to the Wealth of Nations*. Clarendon Press.
9. Kourtit, Karima, Peter Nijkamp, and Roger R. Stough (eds.). (2011). *Drivers of Innovation, Entrepreneurship and Regional Dynamic*. Springer.
10. Krugman, P.R. (1995). *Development, Geography and Economic Theory*. Bradford Books.
11. Loasby, Brian J. (1999). *Knowledge, Institutions and Evolution in Economics*. Routledge.
12. Nijkamp, Peter, and Iulia Siedschlag (eds.). (2011). *Innovation, Growth and Competitiveness: Dynamic Regions in the Knowledge-Based World Economy*. Springer.
13. Novales, Alfonso, Esther Fernández, and Jesús Ruiz (2009). *Economic Growth: Theory and Numerical Solution Methods*. Springer.
14. Parker, Simon C. (2005). 'The Economics of Entrepreneurship: What we Know and What We Don't', *Foundations and Trends in Entrepreneurship*. 1(1).
15. Ray, Debraj (1999). *Development Economics*. Oxford University Press.
16. White, Colin (2009). *Understanding Economic Development: A Global Transition from Poverty to Prosperity*. Edward Elgar.
17. Yang, Xiaokai (2003). *Economic Development and the Division of Labour*. Blackwell.

ECOSE 2(C): STRATEGIES AND POLICIES

1. Markets, States and Institutions in the era of globalization
2. Economic liberalisation, case study of select countries
3. Role of community in economic modernization-economic functions of community, social, rural organisation in developing economics, community failures.
4. Inequality, poverty and development, Role of Micro-finance in poverty alleviation.
5. Corruption, consequences and remedy.

Learning outcome

- 1 Changing role government with respect to time. Economic liberation in countries like India, Russia and China will be studied.
- 3 The students will study role of community as well as when community failures can take place. Case studies will be examined.
- 4 Inequality and poverty are two important problems in any country. Theories relating to them. Measures of irradiating them including microfinance.
- 5 Corruption is a problem confronting many countries. Students will learn how it occurs as well as the consequence in the society. Its remedy will be given importance.

READING LIST

1. Bagchi, Amiya Kumar (1995). *Democracy and Development*. Macmillan/St. Martins.
2. Basu, Kaushik (1996). *Analytical Development Economics*. Oxford University Press.
3. Bell, Stephen, and Andrew Hindmoor (2009). *Rethinking Governance: The Centrality of the State in Modern Society*. Cambridge University Press.
4. Bhargava, Vinay, and Emil Bolongaita (2004). *Challenging Corruption in Asia Case Studies and a Framework for Action*. World Bank.
5. Broner, silvio aymo Brunetti, and Beatrice Weder (1995). *Political Credibility and Economic Development*. ST. Martin's Press.
6. Chakravarty, Satya R. (2009). *Inequality, Polarization and Poverty: Advances in Distributional Analysis*. Springer.
7. Hayami, Yujiro (1990). *Development Economics: From the Poverty to the Wealth of Nations*. Clarendon Press.
8. Pellegrini, Lorenzo (2011). *Corruption, Development and the Environment*. Springer.
9. Stiglitz, Joseph (2003). Globalization and the economic role of the state in the new millennium. *Industrial and Corporate Change*, 12(1):3-26.

10. Stiglitz, Joseph E. (2017). Markets, States and Institutions. Roosevelt Institute Working Paper, June.

ECOSE 3(C): EAST AND SOUTH EAST ASIAN DEVELOPMENT

1. East Asia's High Growth - the strategies and the dynamics
2. Competition and Development
3. Rise of China and India - comparatives and global implications
4. Economy of Myanmar - governance and challenges
5. Asia in the 21st century

Learning outcome

- 1 The students will learn the economic miracle witnessed by East Asian countries as well as the development strategies adopted by them. Case studies of Japan, South Korea, Singapore and China may be studied.
- 2 China and India witnessed economic growth but the speed/rapidity has been quite different. The causes for this will be examined.
- 3 Myanmar has done well in terms of economic reforms and growth since the coming of democratic government. Challenges still remain. The students will also learn economic policy during the military rule which has been described as "The Burmese way of socialism".
- 4 Given the present conditions in Asian countries, the students will learn what will be the scenario in 2030 and 2050 or even more in the future.

READING LIST

1. ADB (2011). *Asia 2050: Realizing the Asian Century*. Asian Development Bank.
2. Campos, Jose Edgardo, and Hilton L. Root (1996). *The Key to the Asian Miracle : Making Shared Growth Credible*. Brookings.
3. Cao, Tian Yu (ed.). (2005). *The Chinese Model of Modern Development*. Routledge.
4. ERIA (2010). *Comprehensive Asia Development Plan*. Economic Research Institute for ASEAN and East Asia.
5. Gill, Indermit, Yukon Huang, and Homi Kharas (eds.). (2007). *East Asian Visions : Perspectives on Economic Development*. World Bank.
6. Hung, Ho-Fung (ed.). (2009). *China and the Transformation of Global Capitalism*. Johns Hopkins.
7. Medalla, Erlinda M.(ed.) (2005). *Competition Policy in East Asia*. Routledge.
8. Rowen, Henry S.(ed.). (1998). *Behind East Asian Growth: The Political and Social Foundations of Prosperity*. Routledge.
9. Sornarajah, Muthucumaraswamy, and Jiangyu Wang (eds.). (2010). *China, India and the International Economic Order*. Cambridge University Press.
10. World Bank (1996): *The East Asian Miracle: Economic Growth and Public Policy*. Oxford University Press.

ECOSE 4(C): REGIONAL ISSUES IN INDIA

1. Concept of region-Economic Regionalisation of India, regional disparities, measurement, causes, policy implications-pre 1991 and post 1991 issues
2. Sector-wise regional disparities in India, poverty- pre 1991 and post 1991 issues

3. Process of urbanisation-causes, problems, policy options
4. North Eastern Region as an economic region-sectoral structure, property rights issues
5. Levels of development of the units in the Region; Development strategies and options for the Region

Learning Outcome

The subject makes the student acquainted with the fundamentals of regional economics its apparatus and their impact on regional growth. It focuses specially on socio economic condition in northeast economy. Besides dealing with regional development and policy, changes during post reform decade are emphasized. After completing the course the student should be able to

- i) Know the concept and theories concerning regional economic geography and regional disparity in the context of India.
- ii) Understand of how globalization and reform processes impact upon development on a regional/local level.
- iii) Assess and discuss different perspective and strategies regarding regional economic development that are expected to be extremely useful in the present scenario of India's Act East policy, economic liberalization and globalization.

READING LIST

1. Cheshire, Paul C., and Gilles Duranton (2004). *Recent Development in Urban and Regional Economics*. Edward Elgar Publishing Ltd.
2. Friedman, John, and William Alonso (eds.).(1975). *Regional Policy: Readings in theory and Applications*. MIT Press
3. Friedmann, J. and Alonso W.(eds).(1964). *Regional Development and Planning: A. Reader*. M.I.T. Press.
4. Hewings, Geoffrey (1986). *Regional Input Output Analysis*. Sage Publications.
5. Richardson, H.W.(1973). *Regional Growth Theory*. London: Macmillan.

NB. References for the Indian and NER issues shall be provided from time to time.

ECONOMETRICS

ECOSE-1 (D). ECONOMETRIC METHODS-I

1. Gauss-Markov Theorem: Proof-Testing linear hypothesis about parameter - analysis of variance and covariance.
2. Autocorrelation: Durbin- Watson test, Breusch - Godfrey test, Durbin test; Remedial measure when the structure of autocorrelation is known and not known; Difference method, Cochrane - Orcutt iterative method, Durbin's Two step method.
3. Heteroscedasticity: Goldfeld - Quandt test, Breusch-Pagan, White test -Remedial measures when error variance is known and not known; ARCH and GARCH.
4. Multicollinearity: Belsley- Kuh- Welsch/ Farar- Glauber test- Remedial measure. Ridge regression, using ratios or first differences, using Principal Components.

5. Distributed Lag models: Almon scheme and Koyck Scheme; Errors in variables . Wald, Bartlett and Durbin; Stochastic Coefficient model: Hildreth-Houck, CooleyPrescot.

Learning outcome

It intends to impart the student with the knowledge of Gauss-Markov theorem, the basic building block of Econometrics.

The student will learn the causes and consequences of the violation of the assumptions of the theorem along with the common tests for detecting such violations and the appropriate remedial measures.

ECOSE-2 (D). ECONOMETRIC METHODS-II

1. Specification Errors- consequences of Omitting a relevant variable and including an irrelevant variable,- Non linear models. Newton Raphson, Gauss-Newton methods for estimation; Test for incorrect functional form. RESET, LM
2. Models with unobservable qualitative variables. Probit, Logit and Tobit models - estimation of Logit models; Models for duration data-survival function, models of the hazard function.
3. Simultaneous Equation model - Rank and order conditions for identification-ILS, 2SLS, IV, 3SLS - their asymptotic properties.
4. Exogeneity - Weak and Strong Exogeneity- Granger Causality and its test; LM test and Wu Hausman test; VARs -testing the order of the VAR and its estimation.
5. Strategies for model selection - Leamer, Hendry- Nested vs non - nested models - Mallow's Cp Criterion, Akaike Information Criterion, Davidson-Mackinnon J Test, Mizon-Richard encompassing test.

Learning outcome

It intends to impart the student with the knowledge of model specification both single equation models and simultaneous equation models along with strategies for model selection. The student will learn about nonlinearity and models with unobservable qualitative variables.

ECOSE-3 (D). ECONOMETRIC METHODS-III

1. Stationary Time series models- unit root, the Dickey-Fuller test; ARIMA (p, d, q) and Box-Jenkins technique- Cointegration. a general cointegrated system, two variable model. Engle-Granger method, system estimation method – Johansen procedure; error correction model and tests for cointegration; vector autoregression and Granger causality.
2. Forecasting: Approaches to Economic forecasting- Exponential Smoothing , first order exponential smoother, forecasting time series data from the constant and linear trend processes-forecasting ARIMA processes – specification of transfer function-noise model and forecasting

3. Other forecasting method – forecasting regression model, multivariate Time series models and forecasting simultaneous equation model and state space models
4. Models for panel data-fixed effects: testing the significance of the group effects, the Within and Between Group estimators, Fixed Time and Group Effects; Random effects, GLS, Hausman's specification test.
5. Structural change: Testing equality of two regression coefficients – restricted least square - testing for structural changes - Chow test - concept and use of dummy variables as alternatives to chow test - CUSUM & CUSUMSQ test., Bai-Perron test

Learning outcome

It intends to impart the student with the knowledge of time series analysis and forecasting. The student will learn about recent developments in econometrics such as panel data analysis and structural change analysis.

ECOSE-4 (D). APPLIED ECONOMETRICS

1. Issues in the estimation of demand - Demand for durable goods- linear expenditure system- application of complete demand system in demand projection.
2. Applied production analysis: Estimation of Cobb-Douglas, CES and VES production functions- Agricultural production function, Total factor productivity and Technical progress.
3. Pattern of International trade- Heckscher-Ohlin theory and its test-Determinants of comparative advantage-Revealed Comparative advantage-the Gravity model- Foreign direct investment; its determinants and impact on growth.
4. Economic growth: Sources and determinants - β and $\bar{\sigma}$ convergence.-Determinants of economic growth in India at national and subnational level
5. . Macro-econometric modelling - the evolution of macro econometric modelling in India-the current analytical issues - India LINK model & RBI-MSE model.

Learning outcome

It intends to impart the student with the knowledge of rapidly growing empirical work in Econometrics. The student will learn, through work published in reputed journals, the application of Econometric tools in demand analysis, production function analysis, international trade, economic growth and macro-econometric modelling.

GENERIC ELECTIVE PAPERS BEING OFFERED IN THE DEPARTMENT.

ECOG 1: Environmental Problems of India. (CBCS)

1. Introduction

Economy-environment interaction; Material Balance Principle; entropy law; market failure; property rights; open, closed and common property resources; resource economics-environmental economics-ecological economics: characteristics and synergy.

2. The Indian economy and its main features: view from an environmentalist's perspective.

3. Nature and magnitude of environmental problems of India: air pollution; water pollution; deforestation; solid waste disposal; loss of bio-diversity.

4. Climate Change and India: sources of climate change, economic consequences of climate change, economic policy for climate change, costs and benefits of mitigation and adaptation. Approach of India to climate change and its economic consequences.

5. Environmental Law and Policy in India

India's environmental policy in the 1970s; Policy since mid- 1980s; Liberalization and Economic approaches; laws and acts pertaining to water pollution control, air pollution control, forests, wildlife protection and urban problems.

Learning outcome

1. This paper which is being offered to students of other departments as an interdisciplinary course is to create awareness of environment and natural processes/cycles responsible for existence of the living planet, the inter-relationship between it and the economy.

2. It also addresses the main features of the Indian economy from an environmentalist perspective i.e. accounting its total resources comprising of natural, capital and human resources and the main economic activities being undertaken in terms of footprints involved in short whether the economy is in a sustainable path or not?

3. The students will learn about the current major environmental problems of India. They will learn the problems in terms of nature and magnitude and assessment of government or otherwise steps to solve them.

4. The much alive and important topic of climate change phenomena in the context of India is taken up here. In what form is it being felt in India and its adverse impact on India in terms of economic, social and cultural etc is addressed. The stand of India in this issue and its role in the global attempt in tackling climate change is also taken up.

6. Finally the students will learn about the evolving environmental laws and policy in India from 1970s till date. Through these we can assess whether the country is adequately equipped with legal laws, instruments and institutions to protect the environment in this ever increasing complex system with differing, at times conflicting interests of various stakeholders in issues of environment.

Reading List

1. Kolstad, C., Intermediate Environmental Economics, Oxford University Press, 2012(2nd edition)

2. Rabindra N. Bhattacharya (2005), Environmental Economics: an Indian Perspective, Oxford University Press, New Delhi.

3. Shyam Divan and Armin Rosencranz (2001), Environmental Law and Policy in India, 2nd edition, Oxford University Press, New Delhi.
4. Goulder, L.H., and William A. Pizer (2006), The economics of climate change, NBER Working Paper No. 11923.
5. Stern, Nicholas (2006), What is the Economics of Climate Change?, World Economics, 7(2).
6. Balakrishnan, P. (2010), Economic Growth in India, New Delhi: OUP.
7. Basu, Kaushik (ed) (2005), India's Emerging Economy, New Delhi: OUP.
8. India Development Report, Various Years, New Delhi: OUP.
9. Puri, V.K. and S.K. Mishra (2019), Indian Economy, 37th revised and updated edition, Himalaya Publishing House, Mumbai.

ECOG2: Economics Social Sector (CBCS)

1. Introduction to Economics of Education: Education as Consumption and Investment goods; Human capital: the concept, Components of Human capital, Historical developments in the human capital theory; Human capital and human development.
2. Costs 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.
3. 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.
4. Introduction to Economics of Health: The concept of health and health care; life expectancy and mortality rates, morbidity- Health as Consumption and an 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.
5. Financing and Institutional Issues in Health Care: Resource Mobilisation and Utilisation 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 of GATT for Health Sector and financing.

Learning outcome

- 1 The students will learn the benefits of education on the individual, society and economic growth of the country

- 2 Financing of education and education planning
- 4 The students will learn how good health is important not only to an individual but in the economic growth of the country like education.
- 5 Health financing is a big issue in any country. Healthcare financing in India and its equity/inequity will be touched upon. How TRIPS affected medicine prices will be also be examined.

READING LIST

1. Becker, G.S.(1974). *Human Capital*. 2nd edition, NBER, New York.
2. Blaug, Mark (1972). *Introduction to Economics of Education*. London: Penguin.
3. Culyer, A. J., and J.P. Newhouse (eds). *Handbook of Health Economics*. Amsterdam: Elsevier.
4. Folland, S., A.C. Goodman, and M. Stano (2001). *The Economics of Health and Health Care*. New Jersey: Prentice Hall.
5. Klarman, H.E. (1995). *The Economics of Health*. New York: Columbia University Press.
6. Panchamukhi, P.R.(1980). *Economics of Health: A Trend Report*. ICSSR Survey, New Delhi: Allied.
7. Phelps, Charles E. (2010). *Health Economics*. 4th edition, Prentice Hall.
8. Tilak, J.E.G.(1989). *Economics of Inequality in Education*. New Delhi: Sage.
9. Walker, Melanie, and Elaine Unterhalter (eds.). (2007). *Amartya Sen's Capability Approach and Social Justice in Education*. Macmillan.
10. William, Jack (2000). *Principles of Health Economics for Developing Countries*. WBI Development Studies.
11. World Bank (1993). *The World Development Report 1993: Investing in Health*. Oxford University Press.

SKILL ENHANCEMENT COURSE

ECOSEC: Field Survey & Report Writing

This paper comprises of four modules:

- i) Sampling Designs and Survey techniques, Questionnaire schedule, Problems & challenges in field survey.
- ii) Field Survey.
- iii) Data editing, entry and processing
- iv) Analysis, Report Writing & presentation.

Learning Outcome

The students will learn about sampling design & survey techniques. They will get first-hand experience of data collection in field. They will also learn how to enter the data in the system, analyse & use it in its report writing.