REVISED SYLLABUS

for

M. A. in Analytical and Applied Economics

Admission Batch 2021-22

Choice Based Credit System

(Passed in the BoS Meeting dated 30 January 2021)

Department of Analytical and Applied Economics
Utkal University, Vani Vihar,
Bhubaneswar, Odisha, India

The department of Analytical and Applied Economics offers three programmes at post-graduate level. Those are (i) MA in A & A Economics, (ii) M.Phil in A & A Economics and (iii) Ph.D in A & A Economics.

Master of Arts in Analytical and Applied Economics

Eligibility: Bachelor's degree in 10+2+3 or other equivalent modes
Intake Capacity: 88
Selection criteria: Career score and performance in common entrance test.

Programme Description and Objectives:
The Masters programme in A & A Economics was initiated in 1963 as an effort to provide Economics education to students of Odisha aspiring for a career in economics and public policy. Currently, the programme operates in a Choice Based Credit system (CBCS) mode of 100 credits spread out in four semesters. The course composition includes analytical courses termed as Hard Core Economics courses such as Microeconomics, Macroeconomics, Quantitative Methods, Public Economics, Indian Economy and Basic Econometrics. These courses are designed to provide a core understanding of the subject. There are also applied courses termed as Core Electives and Allied Electives which are designed to enrich understanding on application of economics in various fields influencing economic and social life of human beings. A detailed description of these courses is given in the detailed syllabus. In order to make the course more interdisciplinary and to respect the spirit of choice based system of education, there are also courses called free electives offered to any student of the university irrespective of their discipline. These courses include International Finance, Computer Application in Economics, Environmental Impact Assessment, and Entrepreneurship and Economic Development. The courses are revised in regular intervals to incorporate new knowledge in economic sciences and their application. In order to promote research aptitude and orientation, which can help our students in their higher studies in economics, the programme also includes a five credit course that requires students to undertake a guided research work and write a dissertation reporting their findings.

Expected Outcomes of the MA Programme

The students who successfully complete the programme are expected to have

(1) Exposure to social realities through study tours, data collection through fieldwork and regular interaction with experts in student seminars.
(2) Exposure to computational packages like Stata and SPSS which are widely used for data analysis in industry.
(3) Better employability through skill building in quantitative research, computational packages, add-on courses and compulsory Internship programme introduced in 2021.
(4) Better writing skills through their engagement in dissertation writing, term papers and concurrent evaluation activities.

Course Structure for MA in A & A Economics

SEMESTER I

Paper Code	Nature of Paper	Paper Name	Credit
HCE101	Hard Core	Microeconomics I	05
HCE102		Macroeconomics I	05
HCE103		Quantitative Methods I	05
HCE104		Public Economics	05
HCE105		Indian Economy	05

SEMESTER II

Paper Code	Nature of Paper	Paper Name	Credit
HCE201	Hard Core	Microeconomics II	05
HCE202		Macroeconomics II	05
HCE203		Quantitative Methods II	05
HCE204		Economics of Growth and Development	05
CEE201	Core Elective	Core Elective I	05
Summer Internship: Minimum of one month duration (Compulsory)			02

SEMESTER III

Paper Code	Nature of Paper	Paper Name	Credit
HCE301	Hard Core	Basic Econometrics	05
CEE301	Core Elective	Core Elective II	05
AEE301	Allied Elective	Allied Elective I	05
FEE301	Free Elective	Free Elective I	05
FEE302		Free Elective II	05

SEMESTER IV

Paper Code	Nature of Paper	Paper Name	Credit
CEE401	Core Elective	Core Elective III	05
CEE402		Core Elective IV	05
AEE401	Allied Elective	Allied Elective II	05
AEE402		Allied Elective III	05
AEE403		Allied Elective IV	05

Total Credit 100+2

Available Electives and Allied: Semester-wise

Semester II

Core Electives

1. **Economics of Education**
2. Labour Economics

Semester III

Core Electives,

1. **International Economics**
2. Industrial Economics
3. Banking

Allied Electives,

1. **Agricultural Economics**
2. History of Economic Thought
3. Managerial Economics

Free Electives

1. **International Finance**
2. **Computational Economics**
3. **Health Economics**
4. Environmental Impact Assessment
5. Entrepreneurship and Economic Development

Semester IV

Core Electives

1. **Economics of Environment**
2. **Dissertation**
3. **Rural Economics**
4. Demography

Allied Electives

1. **Financial Institutions and Market**
2. **Mathematical Economics**
3. **Advanced Econometrics**
4. **Economics of Gender and Development**
5. **Financial Inclusion and Economic Development**
6. Economics of Discrimination
7. Financial Economics

Proposed Allied Department

1. Commerce
2. Management
3. PM&IR
4. Statistics
5. Sociology
6. Anthropology
7. Mathematics
8. Psychology

Semester I
Paper HCE101
Microeconomic Analysis I

Course Objectives

1. To have a theoretical understanding of consumer behavior and decision-making
2. To get acquainted with recent advances in microeconomic theory and acquire the skills to apply the theoretical knowledge in research
3. To learn about theory of demand, Utility Functions - types and properties; Consumers' choice involving risk and uncertainty; Production function – types and properties; Theories of Cost and general equilibrium theory – An overview.

Course Outcomes:

On successful completion of this course students will be able to

1. have an understanding of the basic reasoning of Economics and understand the consumption; production and cost concepts in an analytical way;
2. apply mathematical tools and techniques to study behavior of economic agents; and
3. understand the basic principles of General equilibrium theory.

Module I

Theory of demand, Utility function Ordinary and Compensated Demand Functions, Lexicographic Ordering, Slutsky Theorem, Revealed Preference Theory.

Module II

Consumers' choice involving Risk and Uncertainty: N – M Utility Function, Utility – Expenditure duality, Indirect Utility function, Inter-temporal consumption, Consumer's surplus.

Module III

The production function, Elasticity of substitution, C-D and CES Production function and their properties, Multiproduct firm and it's equilibrium.

Module IV

Theories of cost and pricing: various types of short-run and long-run costs; full cost**,** average cost and Marginal cost pricing theories. Limit pricing theory of Bain

Module V

Partial and General Equilibrium – Walrarian System, Excess Demand Approach, Existence, Stability and Uniqueness of equilibrium

Basic Reading List

1. Henderson, J. M. & Quandt, R.E. (1980), Micro Economic Theory – A Mathematical Approach, Mc Graw Hill Co.
2. Varian, H. R. (1992), Micro Economic Analysis, WW Norton & Co., New York.
3. Gravelle, H & Rees, R (1992) Micro Economics, Pearson Education U.K.
4. Snyder, C & Nicholson, W (2008), Fundamentals of Micro Economics, Cengage learning, New Delhi.
5. Maddala, G.S. & Miller, E (2004), Micro Economics: Theory and Application, Tata Mc Graw Hill, New Delhi.

Paper HCE102
Macroeconomic Analysis I

Course Objectives:

1. To analyse and establish the functional relationship between economy level/aggregates.
2. To have a proper understanding of macroeconomic theoretical structure
3. To educate the students on different terms and concepts in macroeconomics like national income accounting, Circular flows, consumption function, investment function, supply and demand for money etc

Course Outcomes:

On successful completion of this course students will be able to:

1. apply the subject knowledge in understanding the working of the economy as well as the macroeconomic issues and policies; and
2. understand systemic facts and theoretical developments.

Module I

Circular Flow of Income in two, three and four sector economy; National Income and different forms of national income accounts – social accounting, input-output accounting, flow of funds accounting and balance of payments accounting.

Module II

Theory of Income determination: Classical and Keynes, consumption function, Keynes' psychological law – implications of the law; short-run and long-run consumption function; empirical evidence on consumption function; income-consumption relationship – absolute income, relative income, life cycle and permanent income hypotheses.

Module III

Investment behavior, Marginal efficiency of capital and investment – long run and short run; the accelerator and investment behavior – impact of inflation; Influence of policy measures on investment.

Module IV

Financial intermediation – a mechanistic model of bank deposit determination; A behavioral model of money supply determination, a demand determined money supply process; RBI approach to money supply; money supply and open economy; control of money supply.

Module V

Classical approach to demand for money–Quantity theory approach, Fisher's equation, Cambridge quantity theory, Keynes's liquidity preference approach, Derivation of LM curve. Post-Keynesian approaches to demand for money–Patinkin and the Real Balance Effect. Approaches of Baumol and Tobin; Friedman and the modern quantity theory.

Basic Reading List:

1. Macro Economics - An Introduction to Keynesian-Neo-Classical Controversies: R. Levacic and A Rebmann.
2. Macroeconomics: Dorn Busch, Fisher
3. Macroeconomics: Theory and Policies: Richard, T. Froyen
4. Macroeconomics Analysis: E. Shapiro
5. Macroeconomics: N.G. Manikiw

Paper HCE103
Quantitative Methods I

Course Objectives:

1. To train the students to use the techniques of mathematical and statistical analysis, which are commonly applied to understand and analyze economic problems
2. To emphasize the mathematical methods rather than learning mathematics itself, which are usually used for understanding economic concepts
3. To learn about the classical techniques involving functions and calculus
4. To gain knowledge about the elements of Game Theory as applicable to real life economic analysis.

Course Outcome:

On completion of this course, a student should be able to

1. express relationship between economic variables mathematically, analyze, optimize and interpret them;
2. use appropriate techniques to solve problems with calculus and linear algebra; and
3. understand the basics of Game theory to resolve economic issues.

Module I

Functions: Types of functions, Limit, Continuity and derivates- Rules of differentiation: Revenue, Cost demand and Supply functions; Elasticities, Multivariable functions – Production functions; Partial derivatives; Total differential; Total derivatives; Jacobian and functional dependence.

Module II

Matrix – Types of matrices, Algebra of matrices- Transposition, Inversion, Rank of a matrix; Determinants – their properties; Solution of a system of equations; Vector space and linear independence of vectors; Eigen values and eigen vectors; Introduction to Input – output Analysis.

Module III

Quadratic forms; Optimization – Hessian and constrained optimization – bordered hessian- Economic applications; Linear programming – Graphical solution to a linear programming

Module IV

Integration – Rules of integration; Application to consumer's surplus and producer's surplus; growth rates; Difference equations – Solution of first and second order difference equations; Domar's growth model and Lagged market equilibrium models; Differential equations – Solution to first order linear differential equation, Dynamics of market price; Non-linear differential equation of first order & first degree.

Module V

Game theory - Concept of Game, Types of Game, Two-persons-zero sum game, Nash Equilibrium, Prisoner's dilemma. Maximin - minimax principle; Saddle point solution, Dominant Strategy, Mixed Strategies; Graphical solution of 2 x n and m x 2 Games

Basic Reading List

1. Chiang, A. C. (1986): Fundamental Methods of Mathematical Economics, McGraw Hill.
2. Gupta, S. C. (1993): Fundamental Methods of Applied Statistics, S. Chand & Sons.
3. Speigel, M. R. (1992): Theory & Problems of Statistics, McGraw Hill Book Co
4. Yamane, Taro (1975): Mathematics for Economists, Prentice Hall of India, New Delhi.
5. Mukherji & Guha (2011): Mathematical Methods & Economic Theory, Oxford University Press

Paper HCE104
Public Economics

Course Objectives:

1. To provide the students with thorough analytical understanding to analyze public goods, externalities, market failures; economics of government expenditure, taxation and public borrowing;
2. To critically analyze fiscal policies/finance and its implication in Indian Economy.

Course Outcomes:

On successful completion of this course, the students will be able to

1. have conceptual clarity on the theories of public goods, public expenditure, public revenue and public borrowing; and
2. apply the principles of public economics in analyzing various government policies

Module I: Role of Government

Role of government and fiscal functions-Allocation, Distribution and Stabilization branch; Private goods, public goods and merit goods; Externalities, Market failure and public goods, Private and public mechanism for allocating resources; Problems for allocating resources. Arrow's impossibility theorem; Theory of club goods, Tiebout model

Module II Public Revenue

Sources and classification of public revenue- tax and non-tax revenue, direct and indirect taxes, effects of tax on production, distribution and economic activities; Principles of tax equity– Benefit principle of taxation, Ability to pay principle, Efficiency of taxation- Excess burden and deadweight loss, Incidence of taxation- incidence under perfect competition- partial and general equilibrium analysis, incidence under monopoly.

Module III Public Expenditure

Growth of public expenditure, Wagner's law of increasing state activities; Wiseman–Peacock hypothesis; effects of public expenditure on production, distribution and economic activities; public sector pricing policy-average cost and marginal cost pricing, Criteria for public investment- Social cost benefit analysis

Module IV Public Debt and Budget

Sources of public borrowing, effects of public debt, burden of public debt-classical, Ricardian and others, shifting of debt burden, intergenerational shifting, methods of debt redemption; Budget: Basic concepts, balanced vs. unbalanced budget, budgetary deficits and their limitations, budget as an instrument of Economic policy

Module V: Fiscal federalism

Principles of multi-unit finance; Fiscal federalism in India- Vertical and horizontal fiscal imbalances, corrective measures; Constitutional provisions; Finance Commission, Devolution of resources and grants; Resource transfer from Union to States – Criteria for transfer of resources; Theory of Grants- matching vs non matching grant, general vs earmarked grants

Basic Reading List

1. Cullis, J. & Jones, P. (2009): Public Finance and Public Choice. Oxford University Press.
2. Musgrave, R. A. & Musgrave, P. B. (2004): Public Finance in Theory and Practice. Fifth edition, TATA McGraw-Hill
3. Herber, B. P. (1967): Modern Public Finance. Richard D. Irwin, Homewood.
4. Stiglitz, J. E (2000) Economics of the Public Sector. W W Norton
5. Rangarajan, C. and D. K. Srivastava (2011) 'Federalism and Fiscal Transfers in India'. Oxford University Press, New Delhi.

Paper HCE105
Indian Economy

Course Objectives

1. To critically understand the economic growth trajectory, economic policies, and institutional reforms of modern India
2. To understand four major economics challenges of Indian Economy, i.e. Poverty, Inequality, Unemployment and inflation
3. To have an in-depth analysis of the sectoral contributions of agriculture, industry and service sector in India
4. To examine the operation and implementation of fiscal and monetary policy in India

Course Outcomes

On successful completion of this course students will be able to

1. have a clear picture of the economic growth trajectory, economic policies, and institutional reforms in India;
2. understand four major economics challenges of Indian Economy, i.e. Poverty, Inequality, Unemployment and inflation;
3. have an in-depth analysis of the sectoral contributions of agriculture, industry and service sector in India; and
4. understand the nitty-gritty of fiscal and monetary policy.

Module I: Growth and Economic Reforms I

Phase I (1951–65)-Takeoff under a Liberal Regime: era of liberal trade and foreign investment policies, a restrictive industrial policy regime, agriculture; Phase II (1965–81)-Socialism Strikes with a Vengeance: the political context, the crisis and failed liberalization episode, strangulation of industry, foreign trade, factor market regulation-land and labour, nationalization of banks, agriculture, insurance, savings and investment

Module II: Growth and Economic Reforms I

Phase III (1981–88) - Liberalization by Stealth: Political Context, Deregulation of Industry, Trade Liberalization, and other Reforms; Phase III (1988 onwards) - Triumph of Liberalization: Political Context, Shifting of Consensus, Growth and BOP Crisis, New Industrial Policy, Trade Liberalization

Module III: Major Economic Problems

Poverty: estimations – old and new method, phase I and II – good intentions but poor performance, phase III and IV – liberalizing reforms and significant decline in poverty, expenditure growth - the NAS and NSS, farmers suicide; Inequality: forms, inequality at national level, regional inequality, urban – rural inequality; Unemployment: measurement, trends and patterns, rural and urban, gender aspect of unemployment, jobless growth, green jobs and growth; Inflation: trend and pattern, inflation and growth debate, sources of inflationary pressure, food price inflation

Module IV: Sectoral Growth in India

Agricultural Sector: performance, food security, input market, public investment in agriculture, agriculture and environment; Secondary Sector: output and employment pattern, productivity, privatization, regional aspects; Tertiary Sector: what explains rapid service growth, is it sustainable, Education – infrastructure and outcome, Health – infrastructure and outcome

Module V: Fiscal and Monetary Policies in India

Fiscal Policy of India: fiscal consolidation in India, tax reform, FRBM Act 2003; Monetary Policy: role of financial sector in economic growth, financial sector reform, money and banking in pre- and post-1991, capital market

Basic Reading List

1. Panagariya, Arvind (2008): India: The Emerging Giant, Oxford University Press, New York
2. Acharya, S. and Mohan, R. (Eds.) (2010): India's Economy: Performance and Challenges, Oxford University Press, New Delhi.
3. Ahluwalia, I. J. and Little, I. M. D. (Eds.) (1998): India's Economic Reforms and Development: Essays for Manmohan Singh, Oxford University Press, New Delhi.
4. Rakshit, M. (2009): Macroeconomics of Post-reform India, Oxford University Press, New Delhi

Semester II
Paper HCE201
Microeconomic Analysis II

Course Objectives:

1. To impart theoretical knowledge on decision making under market imperfections
2. To impart theoretical knowledge on distribution.

Course Outcomes:

After completing the course, the students are expected to have

1. deeper knowledge on decision making under different market imperfections including oligopoly;
2. deeper knowledge about the broad paradigm of neo-classical economics; and
3. deeper knowledge about distributional and welfare aspects of economic activities.

Module I

Price and output determination under Monopoly; Price discrimination and dumping aspects, Bilateral monopoly. Monopolistic competition – product differentiation, Selling costs and excess capacity – effects of free entry and price competition.

Module II

Non-collusive oligopoly models: Cournot, Bertrand, Stackelberg, Sweezy, Chamberlin, Collusive oligopoly models: Cartels, price leadership and basing point price systems.

Module III

Critical evaluation of marginal Analysis: Baumol's sales Revenue maximization, Williamson's model of managerial discretion, Marris model of managerial enterprise.

Module IV

Neo-classical Approach, Product exhaustion theorem, Euler's theorem, distribution theories in imperfect product and Factor markets.

Module V

Pareto optimal conditions; B-S Social welfare function, Compensation criteria, optimum welfare under market imperfections and externality.

Basic Reading List

1. Henderson, J. M. & Quandt, R.E. (1980): Micro Economic Theory – A Mathematical Approach, McGraw Hill Co.
2. Mankiw, (2006): Principles of Micro Economics, Cengage Learning India, New Delhi
3. Landsburg, S. E. (2008), Pricing, Cengage Learning India, New Delhi
4. Baumol, W. J. (1977): Economic Theory & Operation Analysis, Prentice – Hall of India, New Delhi.
5. Bilas, R. A. (1985): Micro Economic Theory, McGraw Hill Publishers.

Paper HCE202
Macroeconomic Analysis II

Course Objectives:

1. To make the students understand the different terms and concepts in macroeconomics like Money market and real market, inflation in developing countries, causes of occurrence of business cycle in a market economy and ways to control them.
2. To expose the students to open economy macroeconomics and the dynamics there in.

Course Outcomes:

On successful completion of this course students will be able to

1. apply the subject knowledge in understanding the macroeconomic dynamics both in a closed and an open economy; and
2. understand the functioning of a market economy and the ways and means to keep such an economy functioning properly.

Module I

Keynesian views on interest. The IS-LM model; Change in general Equilibrium: a change in investment, a change in the money supply, Extension of IS-LM model with government sector (government spending, taxation); Relative effectiveness of monetary and fiscal policies; Extension of IS-LM models with flexible wage and flexible prices, Wage-Price flexible with Pigou Effect and other effects.

Module II

Trade Cycle and its different phases; Theories of Trade cycle: Schumpeter, Kaldor, Samuelson, Hicks, Goodwin's model of Trade Cycle, Control of business cycle.

Module III

Classical, Keynesian and Monetarist approaches to inflation' Structuralist theory of inflation; Philips curve analysis – short run and long run Philips curve; the natural rate of unemployment hypothesis; Solow and Tobin's modified Philips curve.

Module IV

The new classical critique of micro foundations, the new classical approach; Policy implications of new classical approach – empirical evidence

Module V

The open Economy Macro Economics: International Monetary System- Exchange Rate and market for foreign exchange; Current exchange rate system; Experience with floating exchange rates. Monetary and Fiscal Policy in the Open Economy - The Mundell-Fleming Model; Monetary and Fiscal Policy under Imperfect and Perfect Capital Mobility- Under fixed and Flexible Exchange Rate.

Basic Reading List

1. Macro Economics - An Introduction to Keynesian-Neo-Classical Controversies: R. Levacic and A Rebmann.
2. Macroeconomics: Dorn Busch, Fisher
3. Macroeconomics: Theory and Policies: Richard, T. Froyen
4. Macroeconomics Analysis: E. Shapiro
5. Macroeconomics: N.G. Manikiw

Paper HCE203
Quantitative Methods II

Course Objectives

1. To train the students to use the techniques of probability theory and statistical analysis, which are commonly applied to understand and analyze economic problems
2. To deals with simple tools and techniques, which will help in sampling theory and designs, data collection, analysis, theory of estimation and hypothesis testing
3. To initiates the correlation analysis - simple, multiple and partial, and regression analysis - linear and non-linear.

Course Outcomes

On completion of this course, a student should be able to

1. have fair idea about probability theory which forms the foundation of inferential statistics;
2. understand theoretical distributions and their significance;
3. understand sampling and sampling designs, theory of estimation and hypothesis testing procedure; and
4. fit a linear and some commonly used non-linear curves.

Module I

Deterministic and non-deterministic experiments; Sample space; Addition rule and complementation rule, Conditional probability, Multiplication rule, Independence of events; Bayes theorem and problems; Random variable and its probability distribution, probability mass function and probability density function, expectation and variance of a random variable, laws of expectation and variance.

Module II

Theoretical probability distributions: Binomial, Poisson and Normal probability distributions and their properties; Normal approximation to Binomial; Joint, marginal and conditional probability distributions, independence of random variables, covariance, results on expectation and variance.

Module III

Basic concepts of sampling, random and non-random sampling; simple random sampling, stratified random sampling and p.p.s. sampling; concept of an estimator and its sampling distribution; desirable properties of an estimator.

Module IV

Interval estimation; statistical hypotheses- null and alternative; Type I and Type II errors; power of a test, confidence intervals and hypothesis testing based on z, t, x^2 (chi-square) and F-distributions.

Module V

Correlation and regression analysis; correlation coefficient and its properties, rank correlation co-efficient, concept of least squares and the lines of regression; standard error of estimates; partial and multiple correlation and regression (applications only)' methods of estimation of non-linear equations: parabolic, exponential, modified exponential, Gompertz and logistic relationships

Basic Reading List

1. Chiang, A. C. (1986): Fundamental Methods of Mathematical Economics", McGraw Hill.
2. Gupta, S. C. (1993): Fundamental Methods of Applied Statistics, S. Chand & Sons.
3. Speigel, M.R. (1992): Theory & Problems of Statistics, McGraw Hill Book Co
4. Yamane, Taro (1975): Mathematics for Economists, Prentice Hall of India, New Delhi.
5. Mukherji & Guha (2011): Mathematical Methods & Economic Theory, Oxford University Press.

Paper HCE 204
Economics of Growth and Development

Course Objectives:

1. To learn neoclassical growth models of Solow, Meade, Robinson, Kaldor and Pasinetti
2. To discuss about Cambridge criticism over measurement of capital
3. To understand the importance of endogenous growth theories which highlight on human capital as an essential component for a country like India
4. To analyse the investment decisions through investment criterion along with its merits and demerits

Course Outcomes:

On completion of this course, a student should be able to

1. To gain knowledge about recent developments in growth and development, and in particular dynamic growth theories focusing, among other issues, on labor market distortions, pollution and the cost benefit of projects to be undertaken.

Module I

Theories of Economic Growth: Neo-Classical Growth Models of Solow and Meade; Mrs. Joan Robinson's Growth Model; Cambridge Criticism of Neo-Classical Analysis of Growth – Controversy on the Measurement of Capital.

Module II

Growth Models of Kaldor and Pasinetti; Technological Progress – Embodied and Disembodied; Hicks- Harrod Neutrality Approach

Module III

Production Function Approach to Economic Growth; Total Factor Productivity; Growth Accounting; Transitional Dynamics; Convergence Hypothesis; Golden Rule of Capital Accumulation.

Module IV

Endogenous Growth, Intellectual Capital, Role of Learning, Education and Research, Optimal Savings and Ramsay Model, Two Sector Growth Model of Ujawa

Module V

Need for Investment Criteria in Developing Countries, Alternative Investment Criteria; Cost – Benefit Analysis, Shadow Prices, Project Evaluation and UNIDO Guidelines

Basic Reading List

1. Todaro, M. P. (1994): Economic Development, Longman Publishing, New York.
2. Acemoglu, D. (1995): Introduction to Modern Economic Growth, Princeton University Press.
3. Jones, C. I. (2001): Introduction to Economic Growth, W. W. Norton & Company, New York.
4. Thirwal, A.P. (2003): Growth and Development: With special reference to Developing Economies, Palgrave MacMillan, New York.
5. Jones, H. G. (1984): Economic Growth, V. N. Reinhold Company, Ltd. England.
6. Barro, R. J. & Sala – I – Martin, X. (2004): Economic Growth, PHI, New Delhi.
7. Vanden – Burg, H. (2001): Economic Growth and Development, Mc Graw Hill, New York.

Paper CEE201
Economics of Education

Course Objectives:

1. To study the role of economics in evaluating education and education policy
2. To familiarize with educational problems in the context of economic concepts, theories and techniques
3. To develop an understanding of planning, financing and cost of education
4. To find the link between the educational system and economic development
5. To apply standard economic theories to understand how individuals make education choices
6. To explain and predict education markets and their inefficiencies

Course Outcomes:

On successful completion of the course, students will be able to

1. understanding of key concepts, issues, theories and models relating to economics of education, along with empirical evidence on and policy implications of those theories and models and a deeper understanding of recent research activity;
2. understand methods used by economists to evaluate education policies;
3. understand and Model the Education Production Function;
4. define the return to education and understand its empirical estimates; and
5. research and investigative skills such as problem framing and solving and the ability to assemble and evaluate complex evidence and arguments.

Module I: Economics of Education and Demand for Education

Economics of Education: definition, methods, evidence and policy, Classical Economists and Education; The demand for education: Education as creation of minimal capabilities, Education as investment in human capital, The role of individual talent, Imperfect financial markets and the indivisibility of human capital investment

Module II: Supply of Education

The supply of education: Human capital formation, Class formation and peer effects, Integration or segregation, Class size, Resource effectiveness, Resource efficiency, Efficiency versus equity

Module III: Educational Financing

Education financing: Demand for education when agents differ in abilities and family incomes, Collective choice over public or private schooling, Growth and inequality under public and private schooling, Education financing and school stratification, School voucher as a solution, Subsidizing or lending; Financing Education in India

Module IV: Production of Education

Education Production Function: concept, estimation, role in policy analysis; Costs of Education: direct and indirect; Wastage and Stagnation; Benefits of Education: types, measurement; Returns to Education: Productivity of human capital, Effort-enhancing preferences, Education as a signal or as a screening device, On-the-job training, Measuring the return on education, Estimating the return on education

Module V: Educational Planning

Educational planning and economic growth – Cost- benefit analysis; production function models; education and economic growth: dimensions, sources, contributions. Manpower requirements approach programming and input-output models. Economics of educational planning in developing countries with reference to India.

Basic Reading List

1. Checchi, D. (2005): The Economics of Education, Cambridge University Press, New York
2. Psacharopoulos, G. (1987): Economics of Education: Research and Studies, Pergamon Books Ltd, Oxford
3. Lovenheim, M. & Turner, S. (2018): Economics of Education, Worth Publishers, New York

Paper INT201
Summer Internship
Minimum of one month duration (Compulsory)

In its efforts to increase the exposure of the Master degree students of the department to social realities and to expose them to the realities of the labour market, the Department of Analytical and Applied Economics proposes an 'Academic Internship' as an integral part of the MA programme. The Internship Certificate will carry 02 (two credits) for successful completion of a mandatory one-month internship in any organization engaged in commodity production or service sector. Students are expected to complete the tenure of internship during the summer vacation after completing their 2nd Semester course. The necessary skills acquired by students before they can undertake the internship are be analytical comprehension on micro and macroeconomic problems, basic mathematical and statistical tools taught in the QT-1 and QT-2 papers, and a paper on Research Methods and Computing. The basic features of the internship are as below.

- Students with approval from their mentors may start identifying suitable organisations/institutions and initiate communication with them during their second semester in the MA Programme.
- The department shall also take adequate steps to create awareness among potential employers about the internship programme.
- Students can undertake internship in any organisation registered through Companies Act, Societies Act, government agencies, educational institutions, professional association of academic bodies, media houses, banking sector, PRIs and so on.
- At the end of the internship, students need to submit a joining report and completion certificate verified and acknowledged by the head of the institution/organization where internship is carried out.

Semester III
Paper HCE301
Basic Econometrics

Course Objectives:

1. To introduce the relevant econometric theory and explaining the theory with examples
2. To understand Classical Linear Regression Models and regression diagnostics
3. To develop an intuitive understanding of the material that will allow these econometric tools to be utilized effectively and creatively.

Course Outcomes:

On successful completion of this Course, students will be able to

1. learn various basic econometric methods, estimation methods and related econometric theories; and
2. apply these methods to data or econometric modeling techniques.

Module I

Meaning and scope of econometrics; Two variable linear regression model – its assumptions, estimation of parameters and properties of estimators; Gauss Markov Theorem, Coefficient of determination; Analysis of Variance of two variable LRM.

Module II

K – Variable LRM: Estimation of parameters, properties of estimators, Gauss – Markov theorem; Testing of significance of single co-efficient, Subset of Coefficients: ANOVA; Adjusted coefficient of determination.

Module III

Prediction in two – variable and K – Variable LRM; Multicollinearity - Nature, detection, consequences and remedy. Specification Errors and Measurement errors

Module IV

Heteroscedasticity - Meaning, Consequences, detection and remedy; Generalized Least square and weighted least square estimation; Auto-correlation: Meaning, Detection, Consequences and remedy.

Module V

Dummy variable models: Estimation; Testing the structural stability of regression models; Interaction effects; Seasonal analysis; Piecewise Linear regression

Basic Reading List:

1. Johnston (1991): Econometric Methods, Mc Graw Hill Book Co
2. Koutsoyiarnis, A. (1992): Introduction to Econometrics, OUP
3. Dougherty, C. (1992): Introduction to Econometrics, OUP.
4. Kmenta, J. (1997): Elements of Econometrics, University of Michigan Press
5. Gujarati, D & Sangeetha (2007): Basic Econometrics, Mc Graw Hill Book Co.

Paper CEE301
International Economics

Course Objectives:

The objectives of this course are to provide the students with thorough analytical understanding of

1. the theories of international trade, gains from trade and its distribution;
2. effects of trade policy and regional trading blocs;
3. BOPs and its adjustments.

Course Outcomes:

On successful completion of this course, the students will be able to

1. analyse and apply the trade theories and theories of tariff;
2. apply and analyze the different policies for BOPs adjustments of developing countries like India; and
3. comment critically on and participate in current debates on international economic policy.

Module I: Pure Theories of International Trade

Introduction to the International Economics, Trade Based on Absolute Advantage, Comparative Advantage and Opportunity Costs, Modern Trade Theories: Heckscher-Ohlin theory of trade. Factor Price Equalization theory, Stolper-Samuelson Theory, Empirical test of the H-O model: The Leontief paradox, the gains from trade

Module II: New Theories of International Trade:

The Specific factors model, economies of scale, Imperfect Competition and international trade, Intra-Industry Trade, Effect of changes in tastes, per capita income and technology on Trade. Kravis Theory of Availability, Trade based on dynamic technological changes: Technological Gap theory and Product Life Cycle theory

Module III: Economic Growth and International trade

Growth of factors of production: The Rybczynski theorem, Effect of growth on trade, Economic growth and trade in small country and in large country case, Technical Progress and International trade, trade as an engine of growth, the immeserising growth.

Module IV: The Theory of Interventions

Tariffs: Partial and General Equilibrium analysis, Effective Rate of Protection and optimum tariff, Non-tariff trade barriers: Import Quotas, Voluntary Export restraints, Export subsidies; Economic Integration: the Customs Union

Module V: Balance of Payments and its adjustments

The Balance of Payments: components of balance of payments; Equilibrium and disequilibrium, deficit and surplus in the balance of payments, balance of payments adjustments: Automatic process, expenditure–reducing, expenditure-switching policies and direct controls, Elasticity estimates and the J-curve, Policies for achieving internal and external equilibrium

Basic Reading List

1. Chacholiades, M. (1990), The Pure Theory of International Trade, McGraw Hill.
2. Krugman P. R., Obstfeld Maurice and Melitz. International Economics, Pearson Education
3. Batra, R. N. (1975), The Pure Theory of International Trade under Uncertainty, The Macmillan Press.
4. Bhagwati, J. (Ed.) (1981), International Trade: Selected Readings, Cambridge University Press.

5. Dana, M.S. (2000), International Economics: Study, Guide and Work Book, Routledge Publishers.
6. Dunn, R. M. and Mutti, J. H. (2000), International Economics, Routledge Publishers, London.
7. Gandolfo Giancarlo, International Trade Theory and Policy, Springer.
8. Haberler, G. (1937), The Theory of International Trade, Macmillan & Co.
9. Heller, H. R. (1968), International Monetary Economics, Prentice-Hall of India.
10. Kenen, P. B. (1989). The International Economy, Prentice-Hall of India Pvt. Ltd.
11. Kindleberger, C.P. (1977). International Economics, D.B. Taraporevala Sons & Co.
12. Meade, J. E. (1952). A Geometry of International Trade, George Allen and Unwin.
13. Neihans, J. (1984). International Monetary Economics, John Hopkins University Press.
14. Roy, P. N. (1986). International Trade: Theory and Practice, Wiley Eastern.
15. Salvatore, D. (1997). International Economics, Prentice Hall
16. Sodersten, BO (1991). International Economics, The Macmillan Press.

Paper AEE301
Agricultural Economics

Course Objectives:

1. To impart knowledge on applications of economic theories in agricultural sector,
2. To make students understand the linkage between agriculture and other sectors of the economy.
3. To impart knowledge on new developments in the policy paradigms related to agricultural sector.

Course Outcomes:

After completing the course, the students are expected to have

1. deeper knowledge on different theories related to economic development and the agricultural sector; and
2. increased interest to undertake research activities related to aspects of agricultural sector in India and Odisha.

Module I

General Models of agricultural development: Frontier model, Conservation model, Urban-industrial Impact model, Diffusion model, High payoff input model.

Module II

Schultz model of Agricultural Development, Mellor Theory of Agricultural development, Boserup model of Agricultural development, Lewis & Ranis-Fei Model. Types of farming & Farm organization

Module III

Agricultural production and productivity – measures of farm efficiency Production function analysis – Factor use and resource substitution, Size of farms and productivity – theoretical and empirical issues. Tenancy & share cropping – Efficiency & equity issues.

Module IV

Labour supply in agriculture & inter-locking of factor markets, Agricultural wage: Determinants & implications, marginalization of rural labour, Role of technology in agriculture – technical efficiency and labour absorption. Agriculture and environment – Sustainability issues in agriculture

Module V

Agriculture price policy – objectives, product price & factor price – issue of subsidies in agriculture, terms of trade between agricultural and industry – implications and Indian experiences.

Agricultural marketing and measures to improve efficiency in agricultural marketing in India.

Instability in agriculture - Price instability & cob-web model.

Agricultural Credit Risk & uncertainty in farming and crop insurance – Indian experience.

Basic Reading List

1. Bhaduri, A. (1984): The Economic Structure of Backward Agriculture, Macmillan, Delhi.
2. Gulati. A. and T. Kelly (1999): Trade Liberalization and Indian Agriculture, Oxford University Press, New Delhi.
3. Rao. C. H. Hanumanatha (1975): Agricultural Growth, Rural Poverty and Environmental Degradation in India, oxford University Press, New Delhi.

Paper FEE301
International Finance

Course Objectives:

1. To educate the students on different terms and concepts in international finance like exchange rate and interest rate determination and forecasting, different forms of derivatives and its uses, different financial risk in international market.
2. To enhance the skill of the student to understand the activities in international market.

Course Outcomes:

On successful completion of this Course, students will be able to

1. appreciate the functioning of the international financial markets and its management and the determination of different exchange rates; and
2. understand the way the foreign exchange market and the derivatives markets and the capital markets function using futures, options and swaps.

Module I

The International Finance: International Business and its modes, Nature, scope and Importance of International Finance; International Financial Markets and Instruments, Exchange rate mechanism: Exchange rate quotes, Nominal, real and effective exchange rates, factors influencing exchange rates, exchange rate determination in spot and forward market.

Module II

Market for foreign exchange and derivatives: Spot and forward market; Forward Market: Features, Arbitrage, Hedging and Speculation, Futures Market: Features, Hedging and Speculation, Options Market: Features, Hedging and Speculation, Currency swap and interest swap.

Module III

Exchange rate determination: Mint Parity theory, Purchasing Power Parity, Monetary Models of Exchange Rate Determination; the Portfolio Balance Model. International Investment decision: FDI: theories, cost and benefits of FDI and strategy, capital budgeting: Evaluation criteria and computation of the cash flow, political risk: meaning and forms, evaluation and management of political risk, international portfolio investment: benefits, problems and modes.

Module IV

Foreign Exchange Exposure and its management: Exchange rate forecasting: need and techniques, Foreign Exchange Exposure: transaction, real operating and translation, Management of Foreign Exchange Exposure: need, hedging of transaction and real operating exposure;

Module V

Management of short-term funds: working capital policy; managing cash and near cash assets, management of receivables and management of inventory. Financing foreign trade: Foreign trade documentation, modes of payment in international trade, methods of trade financing

Basic Reading List

1. Apte, P.G. (1995): International Finance Management, Tata McGraw-Hill Publishing. Co. Ltd, New Delhi.
2. Levi, M.D. (1990): International Finance, McGraw-Hill Publishing Company.
3. Levi, M.D. (1996): International Finance, McGraw-Hill, Inc, New Delhi.
4. Kevin, S. (2009): Fundamentals of International Financial Management" PHI, Learning Pvt. Ltd, New Delhi.
5. Click, R. W. & Coval, J. D. (): The Theory and Practice of International Financial Management, Pearson Education.
6. Avadhani, V.A. (): International Financial Management" Himalayan Publishing House.
7. Pibeam, K. (1998): International Financial, McMillan Press Ltd. London.
8. Shapiro, A.C. (1995): Multinational Financial Management, Prentice. Hall of India Pvt. Ltd.

Paper FEE302
Computational Economics

Course Objectives:

1. To teach different aspects and steps involved in undertaking a research work in social sciences.
2. To enable the students for using computers for data analysis and thesis writing.
3. To build capacity of the students on using two popular computational packages such as SPSS and STATA widely used in industry.

Course Outcomes

On successful completion of this Course, students will have

1. increased ability to observe social realities with the lens of a researcher;
2. increased number of students opting for dissertation in the fourth semester; and
3. increased employability of students in research organisations and corporate sector.

This paper is designed to impart the skills related to data analysis and carrying out independent research activities. The course has potential to enhance the employability of students passing out from the department of Analytical and Applied Economics, Utkal University.

The performance of students in the entire course including Module I will be evaluated through practical mode.

Module I: Fundamentals of Research and Academic Ethics

Writing a research proposal, Key elements
Review of literature: meaning, objectives, types, sources, stages and precautions. Exercise on wiring a review of literature.
Academic writing, the APA style sheet
Ethical Guidelines for Social Sciences Research in Health adopted by GoI; Plagiarism: Meaning and types; Why do people plagiarized? How to avoid it?

Module 2: Data Analysis through SPSS

Basics of SPSS, Descriptive Statistics in SPSS, Graphs and Charts in SPSS, Regression Analysis using SPSS

Module 3: Data Analysis through STATA

Basics of STATA, Descriptive Statistics in STATA, Graphs and Charts in STATA, Regression Analysis using STATA

Module 4: Data Analysis through EViews

Basics of Eviews, Descriptive Statistics in Eviews, Graphs and Charts in Eviews, Regression Analysis using Eviews

Module 5: Open Source Softwires for Data analysis (R-Statistics or GRETL)

Basics of R-Statistics/GRETL, Descriptive Statistics in R-Statistics/GRETL, Graphs and Charts in in R Statistics/GRETL, Regression Analysis using R Statistics/GRETL

Paper FEE303
Health Economics

Course Objectives

1. To introduce relevant theory of microeconomics and demonstrate its applicability to health care issues
1. To outline key principles of health economics including efficiency and equity
2. To provides a foundation for and rationale for performing economic evaluation

Course Outcomes:

On successful completion of the course, students will be able to

1. gain knowledge of the key analytical reasoning and tools of health economics and their normative foundations and ethical implications; basic economic theories and models of regulation applied to health care providers as hospitals and long-term care organizations and the health-related behavioral determinants and an overview of some recent policies aimed at improving the populations' lifestyles;
2. use economic models to understand behaviors of actors in the health care sector, do analyses of needs for health care services, make analyses of efficiency and quality of health care organizations, find and utilize relevant data sources describing and use relevant econometric models for the analysis of the economic agents' behaviour; and
3. attain competence to apply economic concepts and models to the fields of demand for health, demand for health services, demand for health insurance, provision of health insurance and provision of health care; competence to describe, analyse and critically address economic aspects of healthcare organizations.

Module I: Introduction to Health Economics

Health Economics: Definition and Relevance; Health and healthcare; Healthcare as an economic good; Wants, demands and needs; Economic Methods and Health Economics; Does Economics apply to health and healthcare; Why health economics?

Module II: The Demand for and Supply of Health and Healthcare

Demand for Health and healthcare: concept, a theoretical and empirical investigation, determinants; Socioeconomic Disparities in Health; Demand for Insurance and Moral Hazards; Supply of health and health care: concept, determinants

Module III: Health Production and Development

Health Production: concept and estimation; Health and Development: theory and evidences

Module IV: Measurement of Health and Health Status

Introduction; Patient Reported; Patient Centeredness; Health Outcomes; Health Summary Measures; Health Technology Assessment

Module V: Overview of India's Health Sector

Features of Indian Health Sector; Health Care System in India: history, structure, programs, infrastructure, health information system; Public Health in India; Financing Healthcare in India; Health Sector Reform in India

Basic Reading List:

1. Jay Bhattacharya, J., Hyde, T., Tu, P. (2014): *Health Economics*, Palgrave Macmillan, UK
2. Krabbe, P. F. M. (2017): *The Measurement of Health and Health Status*, Elsevier Inc, London

SEMESTER IV
Paper CEE401
Economics of Environment

Course Objectives:

The objectives of this course are to provide the students with thorough analytical understanding in the

1. application of economic theories for environmental issues;
2. global environmental externalities and climatic change; and
3. valuation of environmental goods; economics natural resources.

Course Outcomes

On successful completion of the course, students will be able to

1. apply economic principles for applied environmental issues; and
2. select and apply appropriate economic techniques to solve environmental problems and measure value of environmental goods.

Module 1: The Theory of Externalities

Pareto optimality and competitive equilibrium; public goods and externalities, public goods and bads, efficient provision of public goods and bads, pricing of public goods and bads; Environmental externalities-Pigouvian taxes and subsidies, property rights and externalities, Coase's bargaining solution and collective action.

Module 2: The Economics Pollution

Pollution charges and abatement costs, Marketable pollution permits, The theory of marketable permits, The advantages of marketable permits, Types of permit system, Permit trading in practice. Tradable pollution permits vs international carbon tax. Informal regulation and the new model of pollution control. Environmental institutions and grass root movements; Cooperative Solution to Common Property resources.

Module 3: Measurement of Environmental Values

The concept of total economic value: Use values; Option values and non-use values; Monetary Valuation techniques – use of market prices, The Hedonic pricing approach, The contingent valuation method, the travel cost methods; the non-monetary valuation techniques;

Module 4: Natural Resource Economics

Resource taxonomy, theories of optimal use of exhaustible and renewable resources; Environmental Kuznet Curve and its critique. Environment and development, The concept of sustainable development; strong and weak sustainability; the concept of green GDP

Module 5: Environment Regulation and Policies

Mechanism for environment regulation in India; environmental laws and their implementation; Policy instruments for controlling water and air pollution and forestry policy; People's participation in the management of common and forest lands. The institutions of joint forest management and the joint protected area management; social forestry-rationale and benefits

Basic Reading List

1. Kolstad, C. D. (2010): Environmental Economics. OUP.
2. Bhatacharya, R. (2001): Environmental Economics: An Indian Perspective. OUP
3. Samuelson, P. A. (1995): Diagrammatic Exposition of a Theory of Public Expenditure. *The Review of Economics and Statistics*, 37(4): 350-356.

4. Bator, F. M. (1958): The Anatomy of Market Failure, *The Quarterly Journal of Economics*, 72(3): 351-379.
5. Buchanan, J. M. & Stubblebine, C. W. (1962): Externality, Economics. New Series, 29(116), November, 371-384.
6. Mishan, J. E. (1971): The Postwar Literature on Externalities: An Interpretative Essay, *Journal of Economic Literature*, 9(1): 1-28.
7. Baumol, W. J. & Oates, W. E. (1988). The Theory of Environmental Policy, Second Edition, Cambridge University Press, Cambridge.
8. Coase, R. H. (1960): The Problem of Social Cost, *Journal of Law and Economics*, 3: 1-44.
9. Markandya, A. & Richardson, J. (ed.) (2005): Environmental Economics, Earthscan Publications, London.
10. Ostrom, E. (1997): Governing the Commons: The Evolution of Institutions for Collective Action, Cambridge University, Cambridge.
11. Shiva, V. et. Al. (1997): The Enclosure and Recovery of the Commons. Research Foundation for Science, Technology and Ecology, New Delhi.
12. Grossman, G. M. & Krueger, A. B. (1994): Economic Growth and the Environment, NBER Working paper 4634.
13. Baland, J. & Platteau, J. (1996): Halting Degradation of Natural Resources: *Is there a Role for Rural Communities?* Published by Food and Agriculture Organization of the United Nations
14. Dasgupta, P. & Maler, K. (1997): The Environment and Emerging Development Issues. Clarendon Press

Paper CEE402
Dissertation

Presentation: 50 Marks and Hardcopy of Dissertation: 50 Marks

Paper CEE 403
Rural Economics

Course Objectives:

The objectives of this course are to provide the students with thorough analytical understanding of the

1. basic concepts, elements, determinants and theories of rural development; and
2. policies and strategies for rural development

Course Outcomes:

On successful completion of the course, students will be able to

1. explain and analyse the concepts of rural development; and
2. critically comment on and participate in current debates on rural development issues in India.

Module I: Concepts and Rural Economy of India

Concepts of rural development; Basic elements of rural development; Need for rural development; Dilemmas in rural development; Size and structure of rural economy of India; Characteristics of rural sector of India; Role of agricultural and non-agricultural sub-sectors in rural economy of India; Challenges and opportunities.

Module II: Paradigms and Determinants of Rural Development

Paradigms of rural development-Theory of Modernization, Theory of Dependency, Theory of World-Systems, Theory of Globalization, Myrdal's thesis of 'spread and backwash' effects, Gandhian model of rural development; Determinants of rural development- output, natural resources, human resources, capital, technology.

Module III: Policies and Strategies for Rural Development

Freedom, control and public policy; Need for and goals of rural development policy; Hierarchy of policy goals; Globalization and rural development; Sustainable development strategy for rural development; Policy instruments of rural development.

Module IV: Rural Development Programs in India

Equity-oriented programs; Growth-oriented Programs; Poverty and unemployment eradication Programs; Social welfare-oriented programs, Infrastructure Development Programs

Module V: Planning and Organizing for Rural Development

Planning for rural development- functions of planning, decentralization of planning, micro-level planning, block- and district-level planning; Organizing for rural development- government organizations, Panchayati Raj Institutions, cooperatives, voluntary organizations/NGOs, corporations; World Bank and rural development; Financing rural development- sources, issues, challenges.

Basic Reading List

1. Katar Singh (2009): Rural Development Principles, Policies and Management, Sage Publication India, New Delhi.
2. Vasant Desai (2015): Rural Development in India, HPH, Bombay.
3. Hunter, G., Bunting, A. H. and Bottrall, A. (1978): Policy and Practice in Rural Development, English Language Book Society, London.
4. Vasant Desai (1986): Rural Development Programs and Strategies, HPH, Bombay.
5. Vasant Desai (1988): Rural Development Experiments in Rural Development, HPH, Bombay.
6. Vasant Desai (1988): Rural Development Rural Development through the Plans, HPH, Bombay.
7. Chambers, R. (1985): Rural Development: Putting the Last First, Longman, London.

Paper AEE401
Financial Institutions and Market

Learning Objectives:

1. To educate the students on different terms and concepts in financial institutions and market like commercial and central bank, monetary policy, money and capital market.
2. To enhance the understanding of the students about organisation, operation and growth of financial systems.

Learning Outcomes:

On successful completion of this Course, students will be able to

1. understand the financial system: its structure and functions and equilibrium;
2. understand the way the different rates of interests are determined;
3. appreciate the functioning and importance of different banking and non-banking financial institutions and their role in a developing economy; and
4. explain the role and structure of money and capital markets.

Module I

The structure of the financial system- Functions of the financial sector-Indicators of financial development-Equilibrium in Financial Markets, Financial System and Economic Development. The Concept of Risk and Return - its type, Risk and financial assets, Risk and return on assets, Risk-Return trade off-Valuation of Securities

Module II

Theories of interest rate determination-Level of interest rates-Long period and short period rates- Term Structure of Interest rates: Administered interest rates- Appropriate interest rate policy. Development banks- role and functions, Merchant banking; financial sector reforms in India.

Module III

Functions of Central Bank- the aims and objectives of the monetary policy in developing countries-Instruments and effectiveness of monetary policy. Proliferation of banking -Credit creation and its control; Balance Sheet Analysis, Profitability and efficiency of banks. Role of commercial banks in money market.

Module IV

Role and structure of money market and capital market, Primary and secondary market for securities. SEBI; its impact on the working of capital market in India; Non-banking financial institutions- Their growth and impact on India's economic development.

Module V

Non-Banking Financial Companies: concept and role in financial market-Regulation and functions of leasing, Hire purchase and Housing Finance Companies-Venture Capital Companies. Insurance Sector: Objectives, functions, changing role, IRDA and its role and functions in financial markets.

Basic Reading List

1. Khan, M. Y. (): Indian Financial System, Tata McGraw Hill, New Delhi.
2. Bhole, L. M. (): Financial institutions and Market, Tata McGraw hill, New Delhi.
3. Gorden & Natrajan (): Financial Market and institutions, Himalaya Publishing house.
4. Gupta, S. B. (): Monetary Economics.
5. Mishkin, F. S. & Eakins S. G (): Financial Market and institutions, PE, New Delhi.

Paper AEE 402
Mathematical Economics

Course Objectives:

1. To impart skills in using mathematics as a language of communication and expression for economic analysis.
2. To build capacity of students for applying different mathematical tools such as game theory, linear/non-linear programming and general equilibrium models in economics research.

Course Outcomes:

On successful completion of this Course, students will be able to

1. increased use of quantitative and mathematical tools in research activities; and
2. increased employability of students in organisations engaged in economic research.

Module I

Utility Function – Direct and Indirect, Roy's Identity, N-M Utility Function. Concept of elasticities, separable and additive utility function, homogeneous and homothetic utility function, Linear Expenditure system, Index Number.

Module II

CES and VES Production Function, Shephard's Lemma, Input demand function, Adding up theorem, Technical progress through Production function, Empirical uses of production function analysis.

Module III

Single market equilibrium – Marshallian and Walrasian equilibrium condition, lagged market equilibrium, multimarket equilibrium General equilibrium system of walras and Debreu, Stability of the conditions of equilibrium.

Module IV

Linear Programming – Primal and dual problems, Duality Theorems, Simplex method and Revised simplex method; parametric linear programming ; Linear Fractional programming; Non Liner Programming & Khun – Tucker Condition (KTC)

Module V

Dominance property; Arithmetic method for nxn Games; General solution of mxn rectangular games, co-operative & non-cooperative games

Basic Reading List

1. Silberberg, E & Suen, W (2001): The Structure of Economics: A Mathematical Approach, Mc Graw Hill Co., New York.
2. Chiang, A. C. & Wainwright, K (2005): Fundamental Methods of Mathematical Economics, Mc Graw Hilll Co., New York.
3. Sydsaeter, K & Hammond, P. J (1995): Mathematics for Economic Analysis, Pearson Education.
4. Kundu K. B. (1971): Welfare Economics; An Introductory Analysis, Nababharat Publishers, Kolkata.

Paper AEE 403
Advanced Econometrics

Course Objectives:

1. To provide a basic understanding of limited dependent variable models, Simultaneous Equation Models and Time series Econometric Models
2. To introduce the relevant econometric theory and explaining the theory with examples
3. To develop an intuitive understanding of the material that will allow these econometric tools to be utilized effectively and creatively.

Course Outcomes:

On successful completion of this Course, students will be able to

1. learn various advanced econometric methods, estimation methods and related econometric theories;
2. apply these methods to data or econometric modeling techniques; and
3. use software packages to estimate econometric models, interpret econometric estimates and analyze the results.

Module I

Dummy dependent variable models: Estimation using LPM, Logit, Probit and Tobit models; Multivariate normal Probability distribution – its properties; Hotelling T distribution.

Module II

Autoregressive and distributed lag models – Koyek's model, Partial Adjustment model, Adaptive expectation model; Instrumental Variables; Almon's approach to distributed lag models; Causality test – Granger test, Sim test.

Module III

Simultaneous equations models – Introduction and examples; the simultaneous equation bias and inconsistency of OLS estimators; The Identification problem – Rules of identification – Order and rank conditions; Methods of estimation of Simultaneous equation model – Recursive method, ILS,2SLS. System method of estimation of Simultaneous equation models – 3SLS.

Module IV

Multivariate Analysis: Discriminant Analysis, Principal Component Analysis, Factor Analysis, Cluster analysis. Panel data techniques – Fixed effect model, Random effect model, Random Coefficient model.

Module V

Time Series Econometrics – Stationariy, Tests of Stationarity, Unit root, Spurious regression and co-integration, Dickey Fuller test, Engle – Granger test, Random walk model; Forecasting with ARIMA model, Box-Jenkins methodology, Vector auto regression, Problems with VAR modeling – Applications.

Basic Reading List:

1. Johnston (1991): Econometric Methods, Mc Graw Hill Book Co
2. Koutsoyiannis, A, (1992): Introduction to Econometrics, OUP
3. Dougherty, C. (1992): Introduction to Econometrics, OUP.
4. Kmenta, J (1997): Elements of Econometrics, University of Michigan Press
5. Gujarati, D & Sangeetha (2007): Basic Econometrics, McGraw Hill Book Co.

Paper AEE 404
Economics of Gender and Development

Course Objectives:

1. To provide a critical overview of economic theories, methods and economic policy-debates from a gender perspective.
2. To cover major debates in gender economics relevant to developed and developing countries.
3. To analyse orthodox economic theory and provides students with a gender-critique.
4. To explore alternative feminist economic theory and apply these different theoretical understandings to concrete examples in the real world.

Course Outcomes:

On successful completion of the course, a student should be able to demonstrate the ability to

1. demonstrate a general understanding of the theoretical debates surrounding the construction of gender and gender relations in the discipline of economics;
2. critically examine and assess mainstream and heterodox economic theories and policies from a gender perspective;
3. evaluate the ways in which current economic realities in developed and developing countries have different effects on men and women; and
4. identify the connections between feminist economic theory and feminist economic reality in developed and developing countries.

Module I

Gender and Development-Concepts, Patriarchy, Caste, Kinship and implications on gender, Gender in mainstream Economics- WID, WAD and GAD approach in development- Basic Needs and Capability Approach. HDI, GDI and GEM, Empowerment of women: concept and implications.

Module II

Demography and female population- Age structure and sex ratio, Mortality and fertility rates and declining sex ratio with special reference to India. Gender in ownership and access to resources, intra household distribution and decision making; Property rights and land rights for women and implications, Historical trends, land reforms and current provisions; Women and environment: WED and Eco feminism, Climate change, women and sustainable development

Module III

Women and work - concepts and valuation: visible and invisible, productive and unproductive, paid and unpaid work; Economic participation of women in pre-industrial and industrial societies. Women in labour market-supply and demand for female labour, female work participation developing countries with special reference to India, agricultural and non-agricultural activities. Women in formal and informal sector; Gender wage differential- Theories of wage discrimination and differentials and use of time- use survey

Module IV

Gender Issues in Poverty - Women and poverty, feminization of poverty, Inclusive growth and development, Gender inequalities: Access to education, health and other public services; Social security and Insurance, entitlements and social justice; Women and access to finance: Micro finance and self help groups; Women empowerment – concept and indicators; Development, Migration and women, Technology and women: ownership, access and implications on gender inequality

Module V

Globalization and Gender in Neo Liberal economics, Smart Economics and Women in Development Institution framework - engendering development, Women and macroeconomic policies, Decentralization of governance and empowerment of women in India; Gender budgeting with special reference to India

Basic Reading List

1. Boserup, E (1970): Women's Role in Economic Development, George Allen and Unwin, London
2. Seth, M. (2000): Women and Development: the Indian Experience, Sage Publications, New Delhi.
3. Venkateswaran, S. (1995): Environment, Development and Gender Gap, Sage Publications, New Delhi.
4. Kabeer, N. (1994): Reversed Realities: Gender Hierarchies in Development Thought, Kali for Women, New Delhi.
5. Nussbaum, M. (2000): Capability Approach and Human Development, Cambridge University Press.
6. Mies, M. (1998): Patriarchy and Accumulation on a World Scale: Women in the International Division of labour, Zed Book, London.
7. Agnihotri, S. B. (2000): Sex ratio in Indian Population: A Fresh Exploration, Sage Publications, New Delhi.
8. Agarwal, B. (1994): A Field of One's Own: Gender and Land Rights in South Asia, Cambridge University Press
9. Sen, A. K. (1990): Gender and Cooperative Conflicts, in Tinker (Ed) 'Persistent Inequalities: Women and World Development', Oxford University Press, New York.
10. Amsden, A. H. (Ed.) (1980): The Economics of Women and Work, Penguin Publications.
11. ILO (1998): Women's Participation in the Economic Activity of Asian Countries, Geneva.
12. Papola, T. S. and A. N. Sharma (Eds.) (1999): Gender and Employment in India, Vikas Publishing House, New Delhi.
13. Schultz, T. P. (1988): Education Investments and Returns, in Chenry, H. B. and T. N. Srinivasan, Handbook of Development Economies North Hollnad, New York.
14. Ahmed. I. (Ed.) (1985): Technology and Rural Women: Conceptual and Empirical Issues, George Allen and Unwin, London.
15. Jhabwala, R. and R. K. Subramanya (Eds) (2000): The Unorganized Sector: Work Security and Social protection, Sage Publications, New Delhi.
16. Narasimhan, S. (1999): Empowering Women: An Alternative Strategy from Rural India, Sage Publications, New Delhi.
17. Purushothaman, S. (1998): The Empowerment of Women in India: Grassroots Women's Network and the State, Sage Publications, New Delhi.
18. Jacobs, Jerry, A. (1995): Gender Inequality at Work, Sage Publications

Paper AEE 405
Financial Inclusion and Economic Development

Course Objectives:

The objectives of this course are to provide the students with thorough understanding of

1. financial inclusion and exclusion, relation between financial inclusion and economic development; and
2. role of financial institutions, micro finance and micro insurance in financial inclusion.

Course Outcomes:

On successful completion of this course, the students will be able to

1. learn and analyse the dimensions of financial inclusion, the progress of financial inclusion in India; and
2. analyse the complexities associated with financial inclusion in India.

Module I: Financial Inclusion and Inclusive Growth

Inclusive Growth: Concept, Relevance and Salient Features. A Theoretical Model for Inclusive Economic Growth in India, Challenges and prospects of inclusive growth in India. Financial Inclusion: Concepts, Rationale; Financial exclusion, financial inclusion in India

Module II: Strategy for financial Inclusion

Strategies to extend financial services to vulnerable groups, Measurement of the progress of financial inclusion, Financial inclusion Index, Determinants of financial inclusion, Economics of financial inclusion.

Module III: Institutions and Financial Inclusion

Role of Banking System in Financial Inclusion, Financial Inclusion and Social Banking, Regional Rural Banks, Cooperative Credit Institutions, Reserve bank of India, Government in financial inclusion, Technology Applications in Banking Sector.

Module IV: Rural Credit and Micro Finance

Rural Credit, Demand and Supply Side Analysis, Institutional Mechanism in India, Government Policies for Promoting Rural Credit, Micro Finance: Institutions and Mechanisms, Credit to SHGs, Growth, Prospectus and Challenges, Policy Measures; Farm and Non-farm credit

Module V: Insurance

Moral Hazard and Adverse Selection Problem in Insurance Market; Benefits and Costs of Insurance, Micro insurance, The Moral Foundations of Universal Health Insurance, Evolution of Insurance Market in India. Reforms in Indian Insurance Market

Basic Reading List

1. Karmarkar, K. G., Banerjee, G. D. & Mohapatra, N. P. (2011): Towards Financial Inclusion in India, Sage Publication
2. Desai, V. (2005): Rural Development in India, Himalaya Publishing House
3. Rohtagi (2010) Rural Banking & Overdues Management, Cyber Tech Publications
4. Patnaik, U. C. & Mishra, R. N. (1999): Rural Banking in India, Anmol Publications
5. Bhatnagar, A. (2008): Rural Micro finance & Microenterprise, Concept Publishing Co.
6. Sohani, A. K. (2009): Financial Inclusion: Perspectives and Country Experiences, ICFAI
7. Sujatha, B. (2007): Financial Inclusion: Concepts and Strategies, ICFAI
8. Kocchar, S., Chakrabarty, K. C. & Rangarajan, C. (): Speeding Financial Inclusion, Academic Foundation
9. Sundaram, I. S. (2015): Rural Development, Himalaya Publishing House