FIRST SEMESTER CORE

ECO-RC-1016: Principles of Microeconomics–I

Course Description

This course intends to expose the student to the basic principles in Microeconomic Theory and illustrate with applications.

Course Outline

1. Introduction

Problem of scarcity and choice: scarcity, choice and opportunity cost; production possibility frontier; economic systems.

Demand and supply: law of demand, determinants of demand, shifts of demand versus movements along a demand curve, market demand, law of supply, determinants of supply, shifts of supply versus movements along a supply curve, market supply, market equilibrium.

Applications of demand and supply: price rationing, price floors, consumer surplus, producersurplus.

Elasticity: price elasticity of demand, calculating elasticity, determinants of price elasticity, otherelasticities.

2. Consumer Theory

Budget constraint, concept of utility, diminishing marginal utility, Diamond-water paradox, income and substitution effects; consumer choice: indifference curves, derivation of demand curve from indifference curve and budget constraint.

3. Production andCosts

Production: behavior of profit maximizing firms, production process, production functions, law of variable proportions, choice of technology, isoquant and isocost lines, cost minimizing equilibriumcondition.

Costs: costs in the short run, costs in the long run, revenue and profit maximizations, minimizing losses, short run industry supply curve, economies and diseconomies of scale, long runadjustments.

4. PerfectCompetition

Assumptions: theory of a firm under perfect competition, demand and revenue; equilibrium of the firm in the short run and long run; long run industry supply curve: increasing, decreasing and constant costindustries.

Welfare: allocative efficiency under perfectcompetition.

Readings:

Case, Karl E. & Ray C. Fair, *Principles of Economics*, Pearson Education, Inc., 8th

SECOND SEMESTER CORE

ECO-RC-2016: Principles of Microeconomics–II

Course Description

This is a sequel to Fundamentals of Microeconomics covered in the first semester.

Course Outline

1. **MarketStructures**

   Theory of a Monopoly Firm

   Concept of imperfect competition; short run and long run price and output decisions of a monopoly firm; concept of a supply curve under monopoly; comparison of perfect competition and monopoly, social cost of monopoly, price discrimination; remedies for monopoly: Antitrust laws, natural monopoly.

   Imperfect Competition

   Monopolistic competition: Assumptions, short run and long run price and output determinations under monopolistic competition,
   Oligopoly: assumptions, overview of different oligopoly models, contestable markets.

2. **Factorpricing**

   Demand for a factor input in a competitive factor market, supply of inputs to a firm, market supply of inputs, equilibrium in a competitive factor market. Factor markets with monopsony power.

3. **Market Failure**

   Efficiency of perfect competition, Sources of market failure.

   Externalities and market failure, public goods and market failure, markets with asymmetric information (Ideas only)

Readings:

Case, Karl E. & Ray C. Fair, *Principles of Economics*, Pearson Education, Inc., 8th edition, 2007.

Pindyck, R.S, Rubinfield, B.L and Mehta, P.L, Microeconomics, Pearson, 7th edition

THIRD SEMESTER CORE

ECO-RC-3016: Principles of Macroeconomics–I

Course Description

This course introduces students to the basic concepts in Macroeconomics. Macroeconomics deals with the aggregate economy. In this course the students are introduced to the definition, measurement of the macroeconomic variables like GDP, consumption, savings, investment and balance of payments. The course also discusses various theories of determining GDP in the short run.

Course Outline

1. Introduction
What is macroeconomics? Macroeconomic issues in an economy.

2. National Income Accounting
Concepts of Income, Domestic Income and National Income; GDP and NDP at Market Price and Factor Cost, measurement of national income and related aggregates; nominal and real income;

3. Determination of GDP
Actual and potential GDP; aggregate expenditure; consumption function; investment function; equilibrium GDP; concepts of MPS, APS, MPC, APC; autonomous expenditure; Concept of multiplier.

4. National Income Determination withGovernmentIntervention and Foreign Trade
Fiscal Policy: impact of changes in government expenditure and taxes; net exports function; net exports and equilibrium national income.

5. Money in a Modern Economy
Concept of money in a modern economy; monetary aggregates; demand for money; quantity theory of money; liquidity preference and rate of interest; money supply and credit creation; monetarypolicy.

Readings:

1. Case, Karl E. & Ray C. Fair, *Principles of Economics*, Pearson Education, Inc., 8th edition,2007.
2. Sikdar, Shoumyen, *Principles of Macroeconomics*, 2nd Edition, Oxford University Press,India

FOURTH SEMESTER CORE

ECO-RC-4016: Principles of Macroeconomics–II

Course Description

This is a sequel to Principles of Macroeconomics–I. It analyses various theories of determination of National Income in greater detail. It also introduces students to concept of inflation, its relationship with unemployment and some basic concepts in an open economy.

Course Outline

1. IS-LM Analysis
Derivations of the IS and LM functions; IS-LM and aggregate demand; shifts in the AD curve.

2. GDP and Price Level in Short Run and LongRun
Aggregate demand and aggregate supply; multiplier Analysis with AD curve and changes in price levels; aggregate supply in the SR and LR.

3. Inflation and Unemployment
Concept of inflation; determinants of inflation; relationship between inflation and unemployment: Phillips Curve in short run and long run.

4. Balance of Payments and Exchange Rate
Balance of payments: current account and capital account; market for foreign exchange; determination of exchange rate.

Readings:

1. Case, Karl E. & Ray C. Fair, *Principles of Economics*, Pearson Education, Inc., 8th edition,2007.
2. Sikdar, Shoumyen, *Principles of Macroeconomics*, 2nd Edition, Oxford University Press,India

FIFTH SEMESTER DSE

ECO-RE-5016: Economic Development and Policy in India–I

Course Description

This course reviews major trends in aggregate economic indicators in India andplaces these against the backdrop of major policy debates in India in the post- Independenceperiod.

Course Outline

1. Issues in Growth, Development and Sustainability

2. Factors in Development: Capital formation (Physical and Human); technology; institutions.

3. Population and Economic Development Demographic trends; urbanisation.

4. Employment: Occupational structure in the organised and the unorganised sectors; open-, under- and disguised unemployment (rural and urban); employment schemes and their impact.

5. Indian Development Experience: Critical evaluation of growth, inequality, poverty and competitiveness, pre and post reforms era; savings and investment; mobilisation of internal and external finance; monetary and fiscal policies; centre-state financial relations.

Readings:

1. Michael P Todaro and Stephen Smith. Economic Development, Pearson, 11th edition (2011).

2. Uma Kapila, Indian Economy since Independence, Academic Foundation, 19th edition (2009).

3. United Nations Development Programme, Human Development Report 2010, Palgrave Macmillan (2010).

4. Government of India, Economic Survey (latest)

5. Government of India, Finance Commission Report (latest)

SIXTH SEMESTER DSE

ECO-RE-6016: Economic Development and Policy in India–II

Course Description

Building on the more aggregative analysis of trends in the Indian Economy offered in Economic Development and Policy–I, this course examines sector-specific trends in key indicators and their implications in the post-Independence period.

Course Outline

1. **Agriculture: Policies and Performance**
   Production and productivity; credit; labour; markets and pricing; land reforms; regionalvariations.

2. **Industry: Policies and Performance**
   Production trends; small scale industries; public sector; foreign investment.

3. **Foreign Trade: Trends andPolicies**
   Balance of trade and balance of payments; India and the World Trade Organisation.

Readings:

1. Uma Kapila, *Indian Economy since Independence*, Academic Foundation, 19th edition (2009).
2. Government of India, *Economic Survey*(latest)

FIFTH SEMESTER GE

ECO-RG-5016: Economic Development and Policy in India–I

Course Description

This course reviews major trends in aggregate economic indicators in India and places these against the backdrop of major policy debates in India in the post- Independence period.

Course Outline

1. Issues in Growth, Development and Sustainability

2. Factors in Development: Capital formation (Physical and Human); technology; institutions.

3. Population and Economic Development Demographic trends; urbanisation.

4. Employment: Occupational structure in the organised and the unorganised sectors; open-, under- and disguised unemployment (rural and urban); employment schemes and their impact.

5. Indian Development Experience: Critical evaluation of growth, inequality, poverty and competitiveness, pre and post reforms era; savings and investment; mobilisation of internal and external finance; monetary and fiscal policies; centre-state financial relations.

Readings:

1. Michael P Todaro and Stephen Smith. Economic Development, Pearson, 11th edition (2011).

2. Uma Kapila, Indian Economy since Independence, Academic Foundation, 19th edition (2009).

3. United Nations Development Programme, Human Development Report 2010, Palgrave Macmillan (2010).

4. Government of India, Economic Survey (latest)

5. Government of India, Finance Commission Report (latest)

SIXTH SEMESTER GE

ECO-RG-6016: Economic Development and Policy in India–II

Course Description

Building on the more aggregative analysis of trends in the Indian Economy offered in Economic Development and Policy–I, this course examines sector-specific trends in key indicators and their implications in the post-Independence period.

Course Outline

1. **Agriculture: Policies and Performance**
   Production and productivity; credit; labour; markets and pricing; land reforms; regionalvariations.

2. **Industry: Policies and Performance**
   Production trends; small scale industries; public sector; foreign investment.

3. **Foreign Trade: Trends andPolicies**
   Balance of trade and balance of payments; India and the World Trade Organisation.

Readings:

3. Uma Kapila, *Indian Economy since Independence*, Academic Foundation, 19th edition (2009).
4. Government of India, *Economic Survey* (latest)

FIRST SEMESTER CORE

ECO-HC-1016: INTRODUCTORY MICROECONOMICS

Course Description

This course is designed to expose the students to the basic principles of microeconomic theory. The emphasis will be on thinking like an economist and the course will illustrate how microeconomic concepts can be applied to analyze real-life situations.

Course Outline

1. Exploring the subject matter of Economics
Why study economics? Scope and method of economics; the economic problem: scarcity and choice; the question of what to produce, how to produce and how to distribute output; science of economics; the basic competitive model; prices, property rights and profits; incentives and information; rationing; opportunity sets; economic systems; reading and working with graphs.

2. Supply and Demand: How Markets Work, Markets andWelfare
Markets and competition; determinants of individual demand/supply; demand/supply schedule and demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, demand and supply together; how prices allocate resources; elasticity and its application; controls on prices; taxes and the costs of taxation; consumer surplus; producer surplus and the efficiency of the markets.

3. The Households
The consumption decision - budget constraint, consumption and income/price changes, demand for all other goods and price changes; description of preferences (representing preferences with indifference curves); properties of indifference curves; consumer's optimum choice; income and substitution effects; labour supply and savings decision - choice between leisure and consumption.

4. The Firm and Perfect Market Structure
Behaviour of profit maximizing firms and the production process; short run costs and output decisions; costs and output in the long run.

5. Imperfect Market Structure
Monopoly and anti-trust policy; government policies towards competition; imperfect competition.

6. Input Markets
Labour and land markets - basic concepts (derived demand, productivity of an input, marginal productivity of labour, marginal revenue product); demand for labour; input demand curves; shifts in input demand curves; competitive labour markets; and labour markets and public policy.

Readings

1. Karl E. Case and Ray C. Fair, *Principles of Economics*, Pearson Education Inc., 8th Edition, 2007.
2. N.GregoryMankiw,*Economics:PrinciplesandApplications*,IndiaeditionbySouth Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4th edition,2007.
3. Joseph E. Stiglitz and Carl E. Walsh, *Economics*, W.W. Norton & Company,Inc., New York, International Student Edition, 4th Edition,2007.

ECO-HC-1026: MATHEMATICAL METHODS IN ECONOMICS–I

Course Description

This is the first of a compulsory two-course sequence. The objective of this sequence is to transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this syllabus. In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general. The level of sophistication at which the material is to be taught is indicated by the contents of the prescribed textbook.

Course Outline

1. Preliminaries

Sets and set operations, relations and functions, number system

2. Functions of one real variable

Elementary types of functions: quadratic, polynomial, power, exponential, logarithmic, convex, quasi-convex and concave functions, limit and continuity of functions

3. Differential calculus

Differentiation of a function, Basic rules of differentiation, partial and total differentiation, second and higher order derivatives for single variable, economic applications of differentiation

4. Single variable optimization

Local and global optima: geometric characterization, characterization using calculus: tests for maximization and minimization, applications: profit maximization, cost minimization, revenue maximization

5. Integration of functions

Meaning and significance of integration, basic rules of integration, significance of a constant after integration, applications: derivations of total functions (total cost, total revenue, consumption and

saving functions) from marginal functions, consumer's surplus and producer's surplus, problems relating to investment and capital formation

Readings:

1. K. Sydsaeter and P. Hammond, *Mathematics for Economic Analysis*, Pearson Educational Asia: Delhi, 2002

2. Chiang A.C. and K. Wainwright, *Fundamental Methods of Mathematical Economics*, McGraw Hill International Edition

3. Baruah S.N., *Basic Mathematics and its Economic Applications*, MacMillan

SECOND SEMESTER CORE

ECO-HC-2016: INTRODUCTORY MACROECONOMICS

Course Description

This course aims to introduce the students to the basic concepts of Macroeconomics. Macroeconomics deals with the aggregate economy. This course discusses the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variable like savings, investment, GDP, money, inflation, and the balance ofpayments.

Course Outline

1. Introduction to Macroeconomics and National IncomeAccounting
Basic issues studied in macroeconomics; measurement of gross domestic product; income, expenditure and the circular flow; real versus nominal GDP; price indices; national income accounting for an open economy; balance of payments: current and capital accounts.

2. Money
Functions of money; quantity theory of money; determination of money supply and demand; credit creation; tools of monetary policy.

3. Inflation
Inflation and its social costs; hyperinflation.

4. The Closed Economy in the ShortRun
Classical and Keynesian systems; simple Keynesian model of income determination; IS-LM model; fiscal and monetary multipliers.

Readings:

1. Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition,2010.
2. N. Gregory Mankiw. *Macroeconomics,* Worth Publishers, 7th edition,2010.
3. OlivierBlanchard,*Macroeconomics*,PearsonEducation,Inc.,5thedition,2009.
4. RichardT.Froyen,*Macroeconomics*,PearsonEducationAsia,2ndedition,2005.
5. Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education,Inc., 7th edition,2011.

ECO-HC-2026: MATHEMATICAL METHODS IN ECONOMICS - II

Course Description

This course is the second part of a compulsory two-course sequence. This part is to be taught in Semester II following the first part in Semester I. The objective of this sequence is to transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this Syllabus. In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general. The level of sophistication at which the material is to be taught is indicated by the contents of the prescribedtextbook.

Course Outline

1. Linear algebra

Matrix: various types of matrices, vector and vector space-concept, matrix operations: addition, subtraction and multiplication; rank, norm and trace of a matrix, introduction to the concept of determinants and their properties, non-singularity of matrix, matrix inversion, solutions of simultaneous equations by using matrix inversion and Cramer's rule, simple market model and national income model

2. Functions of several real variables

Homogeneous and homothetic functions: concepts, Differentiable functions: concepts, Implicit Function Theorem and applications

3. Multi-variable optimization

Unconstrained optimization: geometric characterization, characterization using calculus and applications: price discrimination and multi-plant firm; constrained optimization with equality constraints, Lagrange multiplier, applications: consumer's equilibrium and producer's equilibrium

4. Differential equation

Meaning, first order differential equation, application to market model

5. Difference equation
First order difference equation, Cob-Web market model

Readings:
1. K. Sydsaeter and P. Hammond, *Mathematics for Economic Analysis*, Pearson Educational Asia: Delhi, 2002
2. Chiang A.C. and K. Wainwright, *Fundamental Methods of Mathematical Economics*, McGraw Hill International Edition
3. Baruah S.N., *Basic Mathematics and its Economic Applications*, MacMillan

THIRD SEMESTER CORE

ECO-HC-3016: INTERMEDIATE MICROECONOMICS - I

Course Description

The course is designed to provide a sound training in microeconomic theory to formally analyze the behaviour of individual agents. Since students are already familiar with the quantitative techniques in the previous semesters, mathematical tools are used to facilitate understanding of the basic concepts. This course looks at the behaviour of the consumer and the producer and also covers the behaviour of a competitive firm.

Course Outline

1. ConsumerTheory
Preference; utility; budget constraint; choice; demand; Slutsky equation; buying and selling; choice under risk and inter-temporal choice; revealed preference.

2. Production, Costs and PerfectCompetition
Technology; isoquants; production with one and more variable inputs; returns to scale; short run and long run costs; cost curves in the short run and long run; review of perfect competition.

Readings:

1. Hal R. Varian, *Intermediate Microeconomics, a Modern Approach*, W.W. Norton and Company/Affiliated East-West Press (India), 8th edition, 2010. The workbook by Varian and Bergstrom may be used forproblems.
2. C. Snyder and W. Nicholson, *Fundamentals of Microeconomics,* Cengage Learning (India),2010.
3. B. Douglas Bernheim and Michael D. Whinston, *Microeconomics,* Tata McGraw-Hill (India),2009.

ECO-HC-3026: INTERMEDIATE MACROECONOMICS - I

Course Description

This course introduces the students to formal modeling of a macro-economy in terms of analytical tools. It discusses various alternative theories of output and employment determination in a closed economy in the short run as well as medium run, and the role of policy in this context. It also introduces the students to various theoretical issues related to an openeconomy.

Course Outline

1. Aggregate Demand and Aggregate SupplyCurves
Derivation of aggregate demand and aggregate and supply curves; interaction of aggregate demand and supply.

2. Inflation, Unemployment andExpectations
Phillips curve; adaptive and rational expectations; policy ineffectiveness debate.

3. Open Economy Models
Short-run open economy models; Mundell-Fleming model; exchange rate determination; purchasing power parity; asset market approach; Dornbusch's overshooting model; monetary approach to balance of payments; international financial markets.

Readings:

1. Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition,2010.
2. N. Gregory Mankiw. *Macroeconomics,* Worth Publishers, 7th edition,2010.
3. Olivier Blanchard, *Macroeconomics*, Pearson Education, Inc., 5th edition,2009.
4. Steven M. Sheffrin, *Rational Expectations*, Cambridge University Press, 2nd edition,1996.
5. Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education,Inc., 7th edition,2011.
6. Errol D'Souza, *Macroeconomics*, Pearson Education,2009
7. Paul R. Krugman, Maurice Obstfeld and Marc Melitz, *International Economics*, Pearson Education Asia, 9th edition,2012.

ECO-HC-3036: STATISTICAL METHODS FOR ECONOMICS

Course Description

This is a course on statistical methods for economics. It begins with some basic concepts and terminology that are fundamental to statistical analysis and inference. It then develops the notion of probability, followed by probability distributions of discrete and continuous random variables and of joint distributions. This is followed by a discussion on sampling techniques used to collect survey data. The course introduces the notion of sampling distributions that act as a bridge between probability theory and statistical inference. The semester concludes with some topics in statistical inference that include point and interval estimation.

Course Outline

1. Introduction and Overview

The distinction between populations and samples and between population parameters and sample statistics; the use of measures of location and variation to describe and summarize data; moments – basic concepts and types.

2. Elementary Probability Theory

Sample spaces and events; probability axioms and properties; addition and multiplication theorem of probability, counting techniques; conditional probability and Bayes' rule; independence of events.

3. Random Variables and Probability Distributions

Defining random variables; probability distributions; expected values of random variables and of functions of random variables; properties of commonly used discrete and continuous distributions (uniform, binomial, poisson and normal random variables).

4. Random Sampling and Jointly Distributed Random Variables

Density and distribution functions for jointly distributed random variables- basic concepts; covariance and correlation coefficients.

5. Sampling

Principal steps in a sample survey; methods of sampling; Sampling techniques- random, stratified random, multi-stage random and systematic random sampling; the role of sampling theory; properties of random samples.

Readings:

1. Jay L. Devore, Probability *and Statistics for Engineers,* Cengage Learning, 2010.
2. John E. Freund, *Mathematical Statistics*, Prentice Hall, 1992.
3. Richard J. Larsen and Morris L. Marx, *An Introduction to Mathematical Statistics and its Applications,* Prentice Hall, 2011.
4. William G. Cochran, *Sampling Techniques,* John Wiley, 2007.

FOURTH SEMESTER CORE

ECO-HC-4016: INTERMEDIATE MICROECONOMICS - II

Course Description

This course is a sequel to Intermediate Microeconomics I. The emphasis will be on giving conceptual clarity to the student coupled with the use of mathematical tools and reasoning. It covers general equilibrium and welfare, imperfect markets and topics under information economics.

Unit 1: General Equilibrium, Efficiency and Welfare

a) Exchange Economy, Consumption Allocation and Pareto Optimality; Edgeworth Box and Contract Curve; Equilibrium and Efficiency under Pure Exchange.
b) Pareto Efficiency with production: Concepts of PPF, Social Indifference Curves and Resource Allocation.
c) Perfect Competition, Pareto Efficiency and Market Failure (Externalities and Public Goods), Property Right and Coase Theorem.

Unit 2: Market Structure and Game Theory

a) Monopoly, Pricing with Market Power; Degree of Monopoly, Price Discrimination-Different Degrees; Multi-plant Monopoly, Peak-Load Pricing.
b) Monopolistic competition; Product Differentiation; Perceived and Proportionate Demand Curves; Price-Output Determination.
c) Oligopoly and Game Theory (Two Person Zero Sum Game, Basic ideas and examples of non zero sum games, Prisoner's Dilemma), Applications of Game Theory in Oligopolistic Markets (Cournot Equilibrium, Bertrand Equilibrium, Stackleberg Equilibrium).

Unit 3: Markets with Asymmetric Information

Information Asymmetry, Adverse Selection, Moral Hazard, Signaling and Screening.

Readings:

1. Dominick Salvatore, Micro Economics – Theory and Applications, OUP.
2. Koutsoyiannis. A, Modern Micro-Economics, ELBS/Macmillan.
3. Hal Varian, Microeconomic Analysis, Third Edition, Selected Chapters, W.W. Norton and Company.
4. C. Snyder and W. Nicholson, Fundamentals of Micro Economics, Cengage Learning (India).
5. G.S. Maddala and Ellen Miller, Micro Economic Theory and Application, Tata McGraw Hill.
6. R.R. Barthwal, Micro Economic Analysis, Wiley Eastern Limited.
7. Martin J. Osbrne, An Introduction to Game Theory, OUP, New Delhi.
8. Hugh Gravelle and Ray Rees, Micro Economics, Pearson Education.

ECO-HC-4026: INTERMEDIATE MACROECONOMICS - II

Course Description

This course is a sequel to Intermediate Macroeconomics I. In this course, the students are introduced to the long run dynamic issues like growth and technical progress. It also provides the micro-foundations to the various aggregative concepts used in the previous course.

Course Outline

1. Economic Growth
Harrod-Domar model; Solow model; golden rule; technological progress and elements of endogenousgrowth.

2. Microeconomic Foundations

a. Consumption: Keynesian consumption function; Fisher's theory of optimal intertemporal choice; life-cycle and permanent income hypotheses; rational expectations and random-walk of consumptionexpenditure.
b. Investment: determinants of business fixed investment; residential investment and inventoryinvestment.
c. Demand formoney.

3. Fiscal and MonetaryPolicy
Active or passive; monetary policy objectives and targets; rules versus discretion: time consistency; the government budget constraint; government debt and Ricardian equivalence.

4. Schools of Macroeconomic Thoughts
Classicals; Keynesians; New-Classicals and New-Keynesians.

Readings:

1. Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition,2010.
2. N. Gregory Mankiw. *Macroeconomics,* Worth Publishers, 7th edition,2010.
3. Olivier Blanchard, *Macroeconomics*, Pearson Education, Inc., 5th edition,2009.
4. Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education,Inc., 7th edition,2011.
5. Robert J. Gordon, *Macroeconomics*, Prentice-Hall India Limited,2011.

ECO-HC-4036: INTRODUCTORY ECONOMETRICS

Course Description

This course provides a comprehensive introduction to basic econometric concepts and techniques. It covers statistical concepts of hypothesis testing, estimation and diagnostic testing of simple and multiple regression models. The course also covers the consequences of and tests for misspecification of regressionmodels.

Course Outline

1. Statistical Background
Normal distribution; chi-sq, t- and F-distributions; estimation of parameters; properties of estimators; testing of hypotheses: defining statistical hypotheses; distributions of test statistics; testing hypotheses related to population parameters; Type I and Type II errors; power of a test; tests for comparing parameters from two samples.

2. Simple Linear Regression Model: Two VariableCase
Estimation of model by method of ordinary least squares; properties of estimators; Gauss-Markov theorem; goodness of fit; tests of hypotheses; scaling and units of measurement; confidence intervals; forecasting.

3. Multiple Linear RegressionModel
Estimation of parameters; properties of OLS estimators; goodness of fit - R^2 and adjusted R^2; partial regression coefficients; testing hypotheses – individual and joint; functional forms of regression models; qualitative (dummy) independent variables.

4. Violations of Classical Assumptions: Consequences, Detection andRemedies
Multicollinearity; heteroscedasticity; serial correlation.

5. SpecificationAnalysis
Omission of a relevant variable; inclusion of irrelevant variable; tests of specification errors.

Readings

1. D.N.Gujarati and D.C.Porter,*EssentialsofEconometrics,*McGrawHill,4th edition, International Edition,2009.
2. Christopher Dougherty, *Introduction to Econometrics*, Oxford University Press,3rd edition,Indianedition,2007

FIFTH SEMESTER CORE

ECO-HC-5016: INDIAN ECONOMY-I

Course Description

Using appropriate analytical frameworks, this course reviews major trends in economic indicators and policy debates in India in the post-Independence period, with particular emphasis on paradigm shifts and turning points. Given the rapid changes taking place in India, the reading list will have to be updated annually.

Course Outline

1. Economic Development since Independence

Major features of the economy at independence; growth and development under different policy regimes—goals, constraints, institutions and policy framework; an assessment of performance—sustainability and regional contrasts; structural change, savings and investment.

2. Population and HumanDevelopment

Demographic trends and issues; education; health and malnutrition.

3. Growth and Distribution

Trends and policies in poverty; inequality and unemployment.

4. International Comparisons

With China, Pakistan, Banglade3sh, Sri Lanka, Nepal and Vietnam

Readings:

1. Jean Dreze and Amartya Sen, Jean Dreze and Amartya Sen, 2013. *An Uncertain Glory: India and its Contradictions*, Princeton UniversityPress.
2. Pulapre Balakrishnan, 2007, The Recovery of India: Economic Growth in the Nehru Era, *Economic and Political Weekly*, November.
3. Rakesh Mohan, 2008,-Growth Record ofIndianEconomy:1950-2008.AStory of Sustained Savings and Investment, *Economic and Political Weekly*,May.
4. S.L. Shetty, 2007,-India'sSavingsPerformancesincethe Advent of Planning,in K.L. Krishna and A. Vaidyanathan, editors, *Institutions and Markets in India's Development.*
5. Himanshu, 2010, Towards New Poverty Lines for India, *Economic and Political Weekly*,January.
6. Jean Dreze and Angus Deaton, 2009, Food and Nutrition in India: Facts and Intepretations, *Economic and Political Weekly*,February.
7. Himanshu. 2011, -Employment Trends inIndia: A Re-examination, *Economicand Political Weekly*, September.
8. Rama Baruetal, 2010, -Inequities in Access to Health Services in India: Caste, Class and Region, *Economic and Political Weekly*,September.

ECO-HC-5026: DEVELOPMENT ECONOMICS-I

Course Description

This is the first part of a two-part course on economic development. The course begins with a discussion of alternative conceptions of development and their justification. It then proceeds to aggregate models of growth and cross-national comparisons of the growth experience that can help evaluate these models. The axiomatic basis for inequality measurement is used to develop measures of inequality and connections between growth and inequality are explored. The course ends by linking political institutions to growth and inequality by discussing the role of the state in economic development and the informational and incentive problems that affect stategovernance.

Course Outline

1. Conceptions of Development
Alternative measures of development, documenting the international variation in these measures, comparing development trajectories across nations and within them.

2. Growth Models and Empirics
The Harrod-Domar model, the Solow model and its variants, endogenous growth models and evidence on the determinants of growth.

3. Poverty and Inequality: Definitions, Measures andMechanisms
Inequality axioms; a comparison of commonly used inequality measures; connections between inequality and development; poverty measurement; characteristics of the poor; mechanisms that generate poverty traps and path dependence of growth processes.

4. Political Institutions and the Functioning of the State
The determinants of democracy; alternative institutional trajectories and their relationship with economic performance; within-country differences in the functioning of state institutions; state ownership and regulation; government failures and corruption.

Readings

1. Debraj Ray, *Development Economics,* Oxford University Press,2009.
2. ParthaDasgupta, *Economics, A Very Short Introduction,* Oxford University Press,2007.
3. Abhijit Banerjee, Roland Benabou and DilipMookerjee, *Understanding Poverty,* Oxford University Press,2006.
4. KaushikBasu, *The Oxford Companion to Economics in India,* OUP,2007.
5. AmartyaSen, *Development as Freedom,* OUP,2000.
6. DaronAcemoglu and James Robinson, *Economic Origins of Dictatorship and Democracy*, Cambridge University Press,2006.
7. Robert Putnam, *Making Democracy Work: Civic Traditions in Modern Italy*, Princeton University Press,1994

SIXTH SEMESTER CORE

ECO-HC-6016: INDIAN ECONOMY-II

Course Description

This course examines sector-specific polices and their impact in shaping trends in key economic indicators in India. It highlights major policy debates and evaluates the Indian empirical evidence. Given the rapid changes taking place in the country, the reading list will have to be updated annually.

Course Outline

1. Macroeconomic Policies and Their Impact
Fiscal Policy; trade and investment policy; financial and monetary policies; labour regulation.

2. Policies and Performance in Agriculture
Growth; productivity; agrarian structure and technology; capital formation; trade; pricing and procurement.

3. Policies and Performance in Industry
Growth; productivity; diversification; small scale industries; public sector; competition policy; foreign investment.

4. Trends and Performance inServices

Readings:

1 Shankar Acharya, 2010,-MacroeconomicPerformanceandPolicies 2000-8,lin Shankar Acharya and Rakesh Mohan, editors, *India's Economy: Performances and Challenges: Development and Participation*, Oxford UniversityPress.

2 Rakesh Mohan, 2010,-India'sFinancial Sector and Monetary Policy Reforms,lin Shankar Acharya and Rakesh Mohan, editors, *India's Economy:Performances and Challenges: Development and Participation*, Oxford UniversityPress.

3 Pulapre Balakrishnan, Ramesh Golait and Pankaj Kumar, 2008,-Agricultural Growth in India Since 1991, *RBI DEAP Study no.27.*

4 B.N. Goldarand S.C. Aggarwal, 2005,-Trade Liberalisation and Price-Cost Margin in Indian Industries, *The Developing Economics*,September.

5 P. Goldberg,A.Khandelwal, N.Pavcnikand P.Topalova, 2009,-Trade Liberalisation and New Imported Inputs, *American Economic Review, Papers and Proceedings*,May.

6 KunalSen, 2010,-Trade,Foreign Direct Investment and Industrial Transformation in India, ïn Premachandra Athukorala, editor, *The Rise of Asia*, Routledge.

7 A.Ahsan, C.Pages and T. Roy, 2008,-Legislation, Enforcement and Adjudication

ECO-HC-6026: DEVELOPMENT ECONOMICS-II

Course Description

This is the second module of the economic development sequence. It begins with basic demographic concepts and their evolution during the process of development. The structure of markets and contracts is linked to the particular problems of enforcement experienced in poor countries. The governance of communities and organizations is studied and this is then linked to questions of sustainable growth. The course ends with reflections on the role of globalization and increased international dependence on the process of development.

Course Outline

1. Demography and Development
Demographic concepts; birth and death rates, age structure, fertility and mortality; demographic transitions during the process of development; gender bias in preferences and outcomes and evidence on unequal treatment within households; connections between income, mortality, fertility choices and human capital accumulation;migration.

2. Land, Labor and Credit Markets
The distribution of land ownership; land reform and its effects on productivity; contractual relationships between tenants and landlords; land acquisition; nutrition and labor productivity; informational problems and credit contracts; microfinance; inter-linkages between rural factormarkets.

3. Individuals, Communities and Collective Outcomes
Individual behavior in social environments, multiple social equilibria; governance in organizations and in communities; individual responses to organizational inefficiency.

4. Environment and Sustainable Development
Defining sustainability for renewable resources; a brief history of environmental change; common-pool resources; environmental externalities and state regulation of the environment; economic activity and climate change.

5. Globalization
Globalization in historical perspective; the economics and politics of multilateral agreements; trade, production patterns and world inequality; financial instability in a globalized world.

Readings

1. Debraj Ray, *Development Economics,* Oxford University Press,2009.
2. Partha Dasgupta, *Economics, A Very Short Introduction,* Oxford University Press, 2007.

Bank Institute Development Studies, 1999.
2. World Development Report, *Investing in Health,* The World Bank,1993.
3. Ronald G., Ehrenberg and Robert S., Smith, *Modern Labor Economics: Theory and Public Policy,* Addison Wesley,2005.

ECO-HE-5026: MONEY AND FINANCIAL MARKETS

Course Description

This course exposes students to the theory and functioning of the monetary and financial sectors of the economy. It highlights the organization, structure and role of financial markets and institutions. It also discusses interest rates, monetary management and instruments of monetary control. Financial and banking sector reforms and monetary policy with special reference to India are also covered.

Course Outline

1. Money

Concept, functions of money; concept of money supply and its measurement; money multiplier theory, RBI's approach to money supply.

2. Financial Institutions, Markets, Instruments and Financial Innovations

Meaning and types of financial institutions, nature and role of financial institutions; financial markets: definitions and types-money market and capital market, their characteristics and functions, call money market, treasury bill market, commercial bill market including commercial paper and certificates of deposits, government securities market, primary and secondary market for securities, financial sector reforms in India, financial derivatives –meaning, types ,distinctive features of financial derivatives and its benefits.

3. Interest Rates

Determination; sources of interest rate differentials; theories of term structure of interest rates; interest rates in India.

4. Banking System

Meaning and types; Functions of Commercial banks, process of credit creation and its limitations, Balance sheet of Commercial banks, portfolio management-meaning and objective of portfolio management, theories of portfolio management; banking sector reforms in India.

5. Central Banking and Monetary Policy

Functions of central bank; monetary policy-objectives, indicators and instruments of monetary control; monetary management in an open economy; current monetary policy of India.

Readings

1. F. S. Mishkin and S. G. Eakins, *Financial Markets and Institutions*, Pearson Education, 6th edition, 2009.
2. F. J. Fabozzi, F. Modigliani, F. J. Jones, M. G. Ferri, *Foundations of Financial Markets and Institutions*, Pearson Education, 3rd edition, 2009.
3. M. R. Baye and D. W. Jansen, *Money, Banking and Financial Markets*, AITBS,1996.
4. Rakesh Mohan, *Growth with Financial Stability- Central Banking in an Emerging Market*, Oxford University Press, 2011.
5. L. M. Bhole and J. Mahukud, *Financial Institutions and Markets*, Tata McGraw Hill, 5th edition, 2011.
6. M. Y. Khan, *Indian Financial System*, Tata McGraw Hill, 7th edition, 2011.
7. N. Jadhav, *Monetary Policy, Financial Stability and Central Banking in India*, Macmillan, 2006.
8. R.B.I. – *Report of the Working Group: Money Supply Analytics and Methodology of Compilation*, 1998.
9. R.B.I. Bulletin, Annual Report and Report on Currency and Finance (latest).
10. Sampat Mukherjee, *Macro Economics: Global Text*,
11. S.B.Gupta, *Monetary Economics: Institutions, Theory and Policy*, S.Chand and Company Ltd., 2003.
12. M.L.Jinghan, *Money, Banking, International Trade and Public Finance*, Vrinda Publications.
13. Bharati V Pathak, *Indian Financial System: Markets, Institutional and services*, Pearson Education India,3rd edition,2011.

ECO-HE-5036: PUBLIC FINANCE

Course Description

This course is a non-technical overview of government finances with special reference to India. The course does not require any prior knowledge of economics. It will look into the efficiency and equity aspects of taxation of the centre, states and the local governments and the issues of fiscal federalism and decentralisation in India. The course will be useful for students aiming towards careers in the government sector, policy analysis, business and journalism.

Course Outline

Part 1: Theory

1. Normative Theory of Public Finance –Nature and Scope: Allocation Function, Distribution Function and Stabilization Function. Coordinating the functions.
2. Public Goods and their characteristics. Free Rider Problem and Market Failure, Externalities vis-à-vis Public Good.
3. Direct and Indirect Tax. Concepts of taxation: tax rate, buoyancy & elasticity of a tax. Proportional, Progressive and Regressive Taxation. Benefit Principle and Ability to Pay Theory.

Part 2: Issues from Indian Public Finance

4. Fiscal Policies: Definition and Objectives. Instruments of Fiscal Policy.Adopting Monetary

Policy to complement Fiscal Policy: The Indian Experience.
5. Indian Tax System. Direct Taxes: Income Tax, Corporate Tax, Customs Duty etc. Reforms in the Indirect Tax Structure: Goods and Service Tax.
6. Structure of the Public Budget. Types of Deficits and their significance: Revenue Deficit, Fiscal Deficit and Primary Deficit
7. Fiscal Federalism in India: Principles of Fiscal Devolution, Horizontal and Vertical Fiscal Balance. Federal Finance and the Finance Commission.
8. State and Local Finances. The State Subjects and its Budget. Fiscal decentralization: Role of Municipalities and Gaon Panchayats.

Readings

1. Musgrave, R.A. and P.B. Musgrave, *Public Finance in Theory and Practice*, Mc-Graw Hill, 1989.
2. Mahesh Purohit , "*Value Added Tax: Experience of India and Other Countries*", Gayatri Publications, 2007.
3. KaushikBasu, and A. Maertens (ed.), *The Oxford Companion to Economics in India,* Oxford University Press,2007.
4. M.M Sury, Government Budgeting in India, Commonwealth Publishers, 1990.
5. Shankar Acharya, "Thirty years of tax reform" in India, *Economic and Political Weekly,* May 2005.
6. Government of India, *Report of the 13th Finance Commission.*
7. *Economic Survey*, Government of India (latest).
8. State Finances: A Study of Budgets, *Reserve Bank of India* (latest).

SIXTH SEMESTER DSE
(Any Two per Semester)

ECO-HE-6016: ENVIRONMENTAL ECONOMICS

Course Description

This course focuses on economic causes of environmental problems. In particular, economic principles are applied to environmental questions and their management through various economic institutions, economic incentives and other instruments and policies. Economic implications of environmental policy are also addressed as well as valuation of environmental quality, quantification of environmental damages, tools for evaluation of environmental projects such as cost-benefit analysis and environmental impact assessments. Selected topics on international environmental problems are also discussed.

Course Outline

1. Introduction

Basic concepts: Environment, Ecology, Economy and the ecosystem. Definition and scope of environmental economics, why study environmental economics.Interaction between the environment and the economy, environmental economics and ecological economics, environmental economics and resource economics.Review of microeconomics and welfare economics: the utility function, social choice mechanism, the compensation Principle and social welfare function (concepts only).

2. The Theory of Externalities

Pareto optimality or Pareto efficiency, Externalities: meaning and types of externality, market failure: meaning, market failure in the presence of externalities; market failure and public goods, is environment a public good? Property rights and the coase theorem.

3. The Design and Implementation of Environmental Policy

Environmental Policies: an overview; Nonmarket and market based instruments of Environmental Policy: command and control (CAC) approach, economic instruments like pigovian taxes and effluent fees, tradable permits and mixed instruments. Monitoring and Enforcement: What is monitoring and enforcement? Penalties, cost of abatement. Damages from pollution. Incentives to sources to comply with environmental regulations.

4. International Environmental Problems

Nature of environmental problems: transboundary pollution –Climate change, global warming, ozone depletion and bio-diversity loss; Trade and environment: pollution haven hypothesis.

5. Measuring the Benefits of Environmental Improvements

Non-Market values: use and non-use values and optional value, measurement methods: Direct method-contingent valuation and indirect method-hedonic pricing methods, value of statistical life; their applications and limitations.

6. Sustainable Development

Conventional development model: a critique, Alternative approach: Sustainable Development and its origin, objectives of Sustainable Development, Approaches to Sustainable Development: weak sustainability, strong sustainability, Safe minimum standard approach, ecological perspective and social perspective, Rules and indicators of Sustainable Development.

Readings:

1. Charles Kolstad, *Intermediate Environmental Economics*, Oxford University Press, 2nd edition, 2010.
2. Robert N. Stavins (ed.), *Economics of the Environment: Selected Readings*, W.W. Norton, 5th edition, 2005.
3. Roger Perman, Yue Ma, James McGilvray and Michael Common, *Natural Resource and Environmental Economics*, Pearson Education/Addison Wesley, 3rd edition, 2003.
4. Maureen L. Cropper and Wallace E. Oates, 1992, —Environmental Economics: A Survey, I *Journal of Economic Literature*, Volume 30:675-740.
5. Subhashini Muthukrishnan, *Economics of Environment*, PHI Learning Private Limited, 2nd edition, 2015.
6. Bhattacharyya R, *Environmental Economics,* Oxford University Press.
7. Nick Hanley, Jason F. Shogren and Ben White, *Introduction to Environmental Economics,* Oxford University Press.
8. Gautam Purkayastha, *Environmental Economics: Theory ,Problems and Solutions*, Kalyani Publishers , Reprinted 2016

ECO-HE-6026: INTERNATIONAL ECONOMICS

Course Description

This course develops a systematic exposition of models that try to explain the composition, direction and consequences of international trade, and the determinants and effects of trade policy. It then builds on the models of open economy macroeconomics developed in courses 08 and 12, focusing on national policies as well as international monetary systems. It concludes with an analytical account of the causes and consequences of the rapid expansion of international financial flows in recent years. Although the course is based on abstract theoretical models, students will also be exposed to real-world examples and case studies.

Course Outline

1. Introduction

What is international economics about?, subject matter of International Economics, An overview of world trade- its changing pattern.

2. Theories of International Trade

The Ricardian theory- comparative advantage, Heckscher-Ohlin model, specific factors model, new trade theories- Leontief Paradox, factor-intensity reversal, international trade in the context of

economies of scale and imperfect competition, technological gap and product cycle theories; the Locational theory international trade; multinational enterprises and international trade.

3. Trade Policy

Instruments of trade policy- tariff and quota- partial equilibrium analysis; political economy of trade policy- free trade vs. protection; controversies in trade policy.

4. International Macroeconomic Policy

Fixed versus flexible exchange rates; international monetary systems- Gold Standard, interwar period, Bretton-Woods system, European Monetary system; financial globalization and financial crises.

Readings:

1. Paul Krugman, Maurice Obstfeld, and Marc Melitz, *International Economics: Theory and Policy*, Addison-Wesley (Pearson Education Indian Edition), 9 edition, 2012.
2. Dominick Salvatore, *International Economics: Trade and Finance*, John Wiley International Student Edition, 10th edition, 2011.

THIRD SEMESTER SE

ECO-SE-3014: Data Collection and Presentation

Course Description:

This course helps students in understanding use of data, presentation of data using computer softwares like MS-Excel. Students will be involved practically to preparation of questionnaires/interview schedules, collection of both primary and secondary data and its presentation. Students will also be asked to prepare a report on collected data and will be evaluated accordingly.

Course Outline:

1. Use of Data

Use of data in social sciences; types and sources of data; data collection methods. Population census versus sample surveys. Random sampling.

2. Questionnaires and Schedules

Meaning; how to prepare a questionnaire and interview schedule; use of questionnaire and interview schedule for data collection.

3. Presentation of Data

Data presentation in tabular formats; use of diagrams for data presentation; creating charts and diagrams in MS-Excel – bar, line, pie, scatter, radar, bubble diagrams, population pyramids.

Readings

1. S P Gupta, *Statistical Methods*, S Chand.
2. Webtech Solutions Inc., *Mastering Microsoft Excel Functions and Formulas*

FOURTH SEMESTER SE

ECO-SE-4014: Data Analysis

Course Description:

This course discusses how data can be summarized and analysed for drawing statistical inferences. The students will be introduced to important data sources that are available and will also be trained in the use of statistical softwares like SPSS/PSPP to analyse data.

Course Outline:

1. Data entry in softwares like MS-Excel, SPSS/PSPP
2. Univariate frequency distributions. Measures of central tendency: mean, median and mode; arithmetic, geometric and harmonic mean. Measures of dispersion: range, mean deviation and standard deviation, skewness and kurtosis.
3. Bivariate frequency distribution. Correlation and regression. Rank correlation.
4. Estimation of population parameters from sample data. Unbiased estimators for population mean and variance.

Readings:

1. P.H. Karmel and M. Polasek (1978), *Applied Statistics for Economists*, 4th edition, Pitman.
2. M.R. Spiegel (2003), *Theory and Problems of Probability and Statistics* (Schaum Series).