FOUR YEAR

UNDERGRADUATE PROGRAMME

(Effective from Academic Year 2013-2014 onwards)

DEPARTMENT OF ECONOMICS

UNIVERSITY OF DELHI

(Approved by Academic Council on May 8, 2013)

TABLE OF CONTENTS

Page No.

Norms for Course Readings

Course Readings: The nature of several of the courses is such that only selected readings can be specified in advance. As in the past, reading lists will be updated and topic-wise readings will be discussed in regular meetings organised by the Department of Economics, Delhi School of Economics, with all college teachers of the University of Delhi associated with teaching these courses.

I. ECONOMICS FOUR YEAR COURSE STRUCTURE

I. ECONOMICS FOUR YEAR COURSE STRUCTURE

Semester	Economics Discipline Course 1			Economics Discipline Course 2	Economics Applied Courses
	1	2	3		
1	Principles of Economics	Mathematical Methods for Economics-I			
2	Statistical Methods in Economics-I	Mathematical Methods for Economics-II			
3	Statistical Methods in Economics-II	Microeconomics-I		Introductory Economics	Game Theory
4	Macroeconomics-I	Microeconomics-II		Microeconomic Theory and Applications	Financial Economics
5	Macroeconomics-II	Money and Financial Markets	Introductory Econometrics	Macroeconomic Theory and Policy	Public Finance
6	Indian Economic Development: Historical Perspectives and Current Issues-I	Development Theory and Experience-I	International Economics	Money and Banking	Environmental Economics
7	Indian Economic Development: Historical Perspectives and Current Issues -II	Development Theory and Experience-II	Research I (Applied Econometrics)	Indian Economy	
8	Political Economy	Public Economics	Research II (Project)	Development Economics	

II. ECONOMICS DISCIPLINE COURSE-I

ECON-DC I: PAPER 1

PRINCIPLES OF ECONOMICS

Course Description

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

Course Outline

1. Exploring the Subject Matter of Economics
Why study economics? The scope and method of economics; scarcity and choice; questions of what, how and for whom to produce and how to distribute output; the basic competitive model; prices, property rights and profits; incentives and information; rationing; opportunity sets; economic systems, gains from trade; comparative advantage and trade.

2. Supply and Demand: How Markets Work, Markets and Welfare
Individual demand and supply schedules and the derivation of market demand and supply; shifts in demand and supply curves; the role of prices in resource allocation; the concept of elasticity and its application; consumer and producer surplus; taxes and their efficiency costs; restrictions on trade.

3. Introduction to Macroeconomics and National Income Accounting
Basic issues studied in macroeconomics; measurement of gross domestic product; income, expenditure and the circular flow; real versus nominal GDP; price indices.

4.Money and Inflation
Functions of money; quantity theory of money; determination of money supply and demand; credit creation; tools of monetary policy; inflation and its social costs; hyperinflation.

Readings

1. N. Gregory Mankiw, *Economics: Principles and Applications*, India edition by South Western, Cengage Learning India Private Limited, 4th edition, 2007.
2. Joseph E. Stiglitz and Carl E. Walsh, *Economics*, W.W. Norton & Company, Inc.,New York, International Student Edition, 4th edition, 2007.
3. Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education, Inc., 7th edition, 2011.
4. N. Gregory Mankiw, *Macroeconomics,* Worth Publishers, 7th edition, 2010.

ECON-DC I: PAPER 2

MATHEMATICAL METHODS FOR ECONOMICS-I

Course Description

This is the first of a two-part course. The objective of this part 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
Logic and proof techniques; sets and set operations; relations; functions and their properties; number systems.

2. Functions of One Real Variable
Graphs; elementary types of functions: quadratic, polynomial, power, exponential, logarithmic; sequences and series: convergence, algebraic properties and applications; continuous functions: characterizations, properties with respect to various operations and applications; differentiable functions: characterizations, properties with respect to various operations and applications; second and higher order derivatives: properties and applications.

3. Single-variable Optimization
Geometric properties of functions: convex functions, their characterizations and applications; local and global optima: geometric characterizations, characterizations using calculus and applications.

4. Integration of Functions
Areas under curves; indefinite integrals; the definite integral

Readings

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

ECON-DC I: PAPER 3

STATISTICAL METHODS IN ECONOMICS-I

Course Description

This is the first of a two-part course on statistical methods. 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. The semester concludes with a discussion of joint distributions.

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; population moments and their sample counterparts.

2. Elementary Probability Theory
Sample spaces and events; probability axioms and properties; counting techniques; conditional probability and Bayes' rule; independence.

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, normal, poisson and exponential random variables).

4. Random Sampling and Jointly Distributed Random Variables
Density and distribution functions for jointly distributed random variables; computing expected values; covariance and correlation coefficients.

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.

ECON-DC I: PAPER 4

MATHEMATICAL METHODS FOR ECONOMICS-II

Course Description

This course is the second part of the two- part course. This course covers the essentials of linear algebra and optimization techniques required for the analysis of functions of several variables that are commonly used in economics.

Course Outline

1. Linear algebra
Vector spaces: algebraic and geometric properties, scalar products, norms, orthogonality; linear transformations: properties, matrix representations and elementary operations; systems of linear equations: properties of their solution sets; determinants: characterization, properties and applications.

2. Functions of several real variables
Geometric representations: graphs and level curves; differentiable functions: characterizations, properties with respect to various operations and applications; second order derivatives: properties and applications; the implicit function theorem, and application to comparative statics problems; homogeneous and homothetic functions: characterizations and applications.

3. Multi-variable optimization
Convex sets; geometric properties of functions: convex functions, their characterizations, properties and applications; further geometric properties of functions: quasiconvex functions, their characterizations, properties and applications; unconstrained optimization: geometric characterizations, characterizations using calculus and applications; constrained optimization with equality constraints: geometric characterizations, Lagrange characterization using calculus and applications; properties of value function: envelope theorem and applications.

Readings

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

ECON-DC I: PAPER 5

STATISTICAL METHODS IN ECONOMICS-II

Course Description

This is the second part in the two part course on statistical methods. It begins with a discussion on sampling techniques used to collect survey data. It introduces the notion of sampling distributions that act as a bridge between probability theory and statistical inference. It then covers topics in inference that include point estimation, statistical intervals and hypothesis testing. It concludes with a discussion of the simple linear regression model.

Course Outline

1. Sampling
Principal steps in a sample survey; methods of sampling; the role of sampling theory; properties of random samples.

2. Point and Interval Estimation
Procedures; properties of estimators; confidence intervals for population parameters.

3. Hypothesis Testing
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.

4. Simple Linear Regression
Estimation of the slope and intercept parameters; inference and prediction.

Readings

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

ECON-DC I: PAPER 6

MICROECONOMICS-I

Course Description

This is the first part of the two part course, and is designed to provide a sound training in microeconomic theory. This course looks at the behaviour of the consumer and the producer and also covers the behaviour of a competitive firm.

Course Outline

1. Consumer Theory
Preference; utility; budget constraint; choice; demand; Slutsky equation; buying and selling; choice under risk and intertemporal choice; revealed preference.

2.Production, Costs and Perfect Competition
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; firm behaviour in 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, accompanying the text may be used for problems.
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.

ECON-DC I: PAPER 7

MACROECONOMICS-I

Course Description

This is the first part in the two part course and introduces the students to formal modelling 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 open economy.

Course Outline

1. The Closed Economy in the Short Run
Simple Keynesian model of income determination; IS-LM model; fiscal and monetary multipliers.

2. Aggregate Demand and Aggregate Supply Curves
Derivation of aggregate demand and aggregate and supply curves; interaction of aggregate demand and supply.

3. Inflation, Unemployment and Expectations
Phillips curve; adaptive and rational expectations; policy ineffectiveness debate.

4. Open Economy Models
Short-run open economy models; Mundell-Fleming model; Dornbusch's overshooting model; monetary approach to balance of payments.

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. Errol D'Souza, *Macroeconomics*, Pearson Education, 2008.

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ECON-DC I: PAPER 8

MICROECONOMICS-II

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Course Description

This course is a sequel to Microeconomics I. It covers general equilibrium and welfare, imperfect markets and topics under information economics.

Course Outline

1. General Equilibrium, Efficiency and Welfare
Equilibrium and efficiency under pure exchange and production; overall efficiency and welfare economics.

2. Market Structure and Game Theory
Monopoly; pricing with market power; price discrimination; two-part tariff; oligopoly; game theory and competitive strategy.

3. Market Failure
Externalities; public goods and markets with asymmetric information.

Readings

1. Hal R. Varian, *Intermediate Microeconomics: A Modern Approach*, 8th edition, W.W. Norton and Company/Affiliated East-West Press (India), 2010.The workbook by Varian and Bergstrom, accompanying the text may be used for problems.
2. C. Snyder and W. Nicholson, *Fundamentals of Microeconomics,* Cengage Learning (India), 2010.

ECON-DC I: PAPER 9

MACROECONOMICS-II

Course Description

This course is a sequel to 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
Solow model; golden rule; technological progress and elements of endogenous growth.

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 consumption expenditure.
   b. Investment: determinants of business fixed investment; residential investment and inventory investment.
   c. Demand for money.

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

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. Charles I. Jones, *Introduction to Economic Growth***,** W.W. Norton & Company, 2nd edition, 2002.
5. Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education, Inc., 7th edition, 2011.
6. Errol D'Souza, *Macroeconomics*, Pearson Education, 2008.

ECON-DC 1: PAPER 10

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, measurement; theories of money supply determination.

2. Financial Institutions, Markets, Instruments and Financial Innovations
a. Role of financial markets and institutions; problem of asymmetric information – adverse selection and moral hazard; financial crises.
b. Money and capital markets: organization, structure and reforms in India; role of financial derivatives and other innovations.

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

4. Banking System
a. Balance sheet and portfolio management.
b. Indian banking system: Changing role and structure; banking sector reforms.

5. Central Banking and Monetary Policy
Functions, balance sheet; goals, targets, 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, 6[th]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. L. M. Bhole and J. Mahukud, *Financial Institutions and Markets,* Tata McGraw Hill, 5th edition, 2011.
4. M. Y. Khan, *Indian Financial System*, Tata McGraw Hill, 7th edition, 2011.
5. Various latest issues of R.B.I. Bulletins, Annual Reports, Reports on Currency and Finance and Reports of the Working Group, IMF Staff Papers.

ECON-DC I: PAPER 11

INTRODUCTORY ECONOMETRICS

Course Description

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

Course Outline

1. Nature and Scope of Econometrics

2. Review of Statistical Concepts
Normal distribution, chi-square, t- and F-distributions, estimation of parameters, properties of estimators; testing of hypotheses.

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

4. Multiple Linear Regression Model
Estimation of parameters; properties of OLS estimators, goodness of fit, partial regression coefficients, testing hypotheses,functional forms of regression models, qualitative (dummy) independent variables.

5. Violations of Classical Assumptions: Consequences, Detection and Remedies
Multicollinearity, heteroscedasticity, serial correlation.

6. Specification Analysis
Omission of a relevant variable, inclusion of irrelevant variable, tests of specification errors.

Readings

1. D. N. Gujarati and D.C. Porter, *Essentials of Econometrics,* McGraw Hill, 4th Edition, International Edition, 2010.
2. Christopher Dougherty, *Introduction to Econometrics*, Oxford University Press, 3rd Edition, Indian Edition, 2007.
3. Jan Kmenta, *Elements of Econometrics, Indian Reprint*, Khosla Publishing House, 2nd edition, 2008.

ECON-DC I: PAPER 12

INDIAN ECONOMIC DEVELOPMENT: HISTORICAL PERSPECTIVES AND CURRENT ISSUES-I

Course Description

This course reviews major trends in economic indicators and policy debates in India, starting from the pre-independence period and continuing to the present, and introduces students to analytical methods appropriate for policy analysis.

1.Overview of Colonial Economy
Introduction and macro trends; major features of the economy at Independence

2.Growth and Development in Post-Independence India
Goals, constraints, institutions and performance under different policy regimes; structural changes; regional contrasts

3.Population and Human Development
Demographic trends and population structure, issues in education and health

4.Distributional Issues
Trends and policies in poverty; inequality; malnutrition and unemployment

Readings

1. Irfan Habib, *Indian Economy: 1858-1914,* 2006. *A People's History of India, Volume 28,* Tulika, Selected chapters.
2. Tirthankar Roy, *The Economic History of India: 1857-1947*, Oxford University Press, 3rd edition, selected chapters, 2011.
3. Pulapre Balakrishnan, "The Recovery of India: Economic Growth in the Nehru Era," *Economic and Political Weekly,* November, 2007.
4. Jean Dreze and Amartya Sen, *India: Development and Participation*, Oxford University Press, 2nd edition, selected chapters, 2002.
5. Rakesh Mohan, "Growth Record of Indian Economy: 1950-2008. The Story of Sustained Savings and Investment," *Economic and Political Weekly,* May, 2008.
6. Sumit Guha, "Mortality Decline in Early 20th Century India," *Indian Economic and Social History Review*, 1991.
7. Tim Dyson, "India's Demographic Transition and its Consequences for Development," in Uma Kapila, (ed), *Indian Economy since Independence, 19th edition,* Academic Foundation, 2008.
8. K.S James "Glorifying Malthus: Current Debate on Demographic Dividend in India," *Economic and Political Weekly,* June, 2008.
9. Rama Baru et al, "Inequities in Access to Health services in India: Caste, Class and Region," *Economic and Political Weekly*, September, 2010.
10. Geeta Gandhi Kingdon, *"The Progress of School Education in India," Oxford Review of Economic Policy*, 2007.

11. Gaurav Datt and M. Ravallion, "Shining for the Poor Too?" *Economic and Political Weekly,* February, 2010.
12. Ajit Mishra and Indranil Dasgupta, "Inequality" in Kaushik Basu and Annemie Maertens, editors, *The New Oxford Companion to Economics in India,* Oxford University Press, 2012.

ECON-DC I: PAPER 13

DEVELOPMENT THEORY AND EXPERIENCE-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 state governance.

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 and Mechanisms
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. Partha Dasgupta, *Economics: A Very Short Introduction,* Oxford University Press, 2007.
3. Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, *Understanding Poverty,* Oxford University Press, 2006.
4. Kaushik Basu, editor, *The New Oxford Companion to Economics in India*, Oxford University Press, 2012.
5. Amartya Sen*, Development as Freedom,* Oxford University Press, 2000.
6. Daron Acemoglu 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.
8. S Subramanian (ed), *Measurement of Inequality and Poverty,* Oxford University Press, 2005

ECON-DC I: PAPER 14

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. 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? An overview of world trade.

2. Theories of International Trade
The Ricardian, specific factors, and Heckscher-Ohlin models; new trade theories; the international location of production; firms in the global economy — outsourcing and multinational enterprises.

3. Trade Policy
Instruments of trade policy; political economy of trade policy; controversies in trade policy.

4. International Macroeconomic Policy
Fixed versus flexible exchange rates; exchange rate determination; purchasing power parity; asset market approach.

Readings

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

ECON-DC I: PAPER 15

INDIAN ECONOMIC DEVELOPMENT: HISTORICAL PERSPECTIVES AND CURRENT ISSUES-II

Course Description

This course examines sector-specific policies and their impact in shaping trends in key economic indicators in India.

1.Macroeconomic policies
National Income, fiscal policy, trade and investment policy, financial and monetary policies, labour policies

2.Agriculture
Agrarian structure and land relations; agricultural market and institutions; agricultural growth and productivity; pricing and procurement

3.Trade, Industry and Services
Deindustrialization, evolution of industrial structure, labour relations; growth, productivity, diversification; public sector, competition policy, foreign investment

Readings

1. Dharma Kumar, "The Fiscal System," Chapter 12 in the *Cambridge Economic History of India*, 1983.
2. Shankar Acharya, "Macroeconomic Performance and Policies 2000-8," in Shankar Acharya and Rakesh Mohan, editors, *India's Economy: Performances and Challenges,* Oxford University Press, 2010.
3. Irfan Habib, Indian Economy: *1858-1914,* 2006. *A People's History of India, volume 28,* Tulika, Selected chapters.
4. Pulapre Balakrishnan, Ramesh Golait, and Pankaj Kumar, *Agricultural Growth in India since 1991*, *RBI DEAP Study 27*, 2008.
5. Ramesh Chand, "Understanding the nature and causes of Food Inflation, "*Economic and Political Weekly*, February, 2010.
6. A.K. Bagchi, *"Deindustrialization in India in the 19th century: Some Theoretical Implications"*, *Journal of Development Studies,* 1976.
7. Kunal Sen, *"Trade, Foreign Direct Investment and Industrial Transformation in India"*, in Prem Chandra Athukorala, (ed), *The Rise of Asia,* Routledge, 2010.
8. Dipak Mazumdar and Sandeep Sarkar, "The Employment Problem in India and the Phenomena of the Missing Middle", *Indian Journal of Labour Economics*, 2009.
9. P. Goldberg, A. Khandelwal, N. Pavcnik and P. Topalova, "Trade Liberalisation and New Imported Inputs", *American Economic Review, Papers and Proceedings*, May, 2009.
10. A. Ahsan, C. Pages, and T. Roy, "Legislation, Enforcement and Adjudication in Indian Labour Markets: Origins, Consequences and the Way Forward", in D. Mazumdar and S. Sarkar, (ed), *Globalization, Labour Market and Inequality in India ,* Routledge,2008.

ECON-DC I: PAPER 16

DEVELOPMENT THEORY AND EXPERIENCE-II

Course Description

This is the second part of the economic development course. 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, Labour 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 factor markets.

3. Individuals, Communities and Collective Outcomes
Individual behaviour 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.
3. Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, *Understanding Poverty,* Oxford University Press, 2006.
4. Thomas Schelling, *Micromotives and Macrobehavior,* W. W. Norton, 1978.
5. Albert O. Hirschman, Exit, Voice and Loyalty: *Responses to Decline in Firms, Organizations and States*, Harvard University Press, 1970.

6. Raghuram Rajan, *Fault Lines: How Hidden Fractures Still Threaten the World Economy*, Princeton University Press, 2010.
7. Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action,* Cambridge University Press, 1990.
8. Dani Rodrik, *The Globalization Paradox: Why Global Markets, States and Democracy Can't Coexist,* Oxford University Press, 2011.
9. Michael D. Bordo, Alan M. Taylor and Jeffrey G. Williamson (ed.), *Globalization in Historical Perspective,* University of Chicago Press, 2003.

ECON-DC I-PAPER 17

RESEARCH-I

(Research Methodology: Applied Econometrics)

Course Description

The aim of this course is to provide a foundation in applied econometric analysis and develop skills required for empirical research in economics.

Course Outline

1. Stages in Empirical Econometric Research

2. Introduction to Statistical and Econometric Software Packages
EXCEL, GRETL, E-VIEWS, STATA (at least one).

3. Regression Analysis : Diagnostics and Specification
Misspecification, functional forms, model selection.

4. Advanced Topics
Panel data models; qualitative data

Readings

1. Jeffrey M. Wooldridge, Econometrics, *Cengage Learning,* India Edition, 2009.
2. Dimitrios Asteriou and Stephen Hall*, Applied Econometrics: A Modern Approach,* Palgrave Macmillan, 2007.
3. Damodar Gujarati*, Econometrics by Example,* Palgrave Macmillan, 2011.
4. Deirdre McCloskey, *Economical Writing*, Waveland Press,1999.
5. William Thomson, *A Guide for the Young Economist*, MIT Press, 2001.
6. *The Chicago Manual of Style*, 16th ed., University of Chicago Press, 2010.
7. *New Oxford Style Manual*, Oxford University Press, 2012.

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ECON-DC I: PAPER 18

POLITICAL ECONOMY

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Course Description

Employing perspectives from alternative schools of thought, this course explores the development of the structure and institutions of capitalist economies and their relationship to social and political forces. Students are expected to read some classic texts as well as more recent commentaries.

Course Outline

1. Capitalism as an Evolving Economic System
Basic features; capitalism as a historical process; accumulation and crisis; the modern corporation; monopoly capitalism—alternative perspectives.

2. The State in Capitalism
The state and the economy – contestation and mutual interdependence; the state as an arena of conflict; imperialism – the basic foundations.

3. Governance and Regulation; theories of regulation; the political economy of policy-making and governance; theories of rent-seeking and corruption.

4. Voting and Collective Action; positive and normative aspects of majority voting and other common aggregation procedures; median voter theorem; positive and normative implications of two-party and multi-party democracies; collective action; lobbying.

Readings:

1. J. Gurley, "The Materialist Conception of History"*, Ch.2.1 in R. Edwards, M. Reich and T. Weisskopf (ed.), *The Capitalist System*, 2nd edition, 1978.
2. O. Lange, *Political Economy*, Chapters 1 and 2, Vol. 1, 1963.
3. E. K. Hunt, *History of Economic Thought*, M.E. Sharpe, Indian edition, Shilpi Publications, 2004.
4. Irfan Habib, "Capitalism in History"*, Social Scientist, Vol. 23, pp. 15-31, 1995.,
5. R. L. Heilbroner, *"Capitalism",* in The New Palgrave Dictionary of Modern Economics, Macmillan, 1987**.** Also reprinted as Chapter 2 in *Behind the Veil of Economics* by R.L. Heilbroner, W.W. Norton, 1988.
6. P. Sweezy, *The Theory of Capitalist Development*, Monthly Review Press, 1942, chapters 2, 4, 5, 6, 8 and 10.
7. Anwar Shaikh, Entries on "Economic Crises" and "Falling Rate of Profit" in T. Bottomore et al. (eds.), *The Dictionary of Marxist Thought*, *OUP*, Indian edition, Maya Blackwell, 2000.
8. Vamsi Vakulabharanam*, "The Recent Crisis in Global Capitalism: Towards a Marxian Understanding", *Economic and Political Weekly*, March 28, Vol. 44, pp. 144-150, 2009.
9. J. Schumpeter, *Capitalism, Socialism and Democracy***,** George Allen and Unwin 1976, Chapters 6, 7 and 8.
10. P. Baran, *The Political Economy of Growth*, 1957. Chapter 3, Pelican edition, 1973.

11. R. Heilbroner, The Role of the State", 1985. Ch.4 in *The Nature and Logic of Capitalism.*

12. M. Kalecki*,* "Political Aspects of Full Employment", in E.K. Hunt and J.G. Schwarz (eds.), *A Critique of Economic Theory*, Penguin Books, 1972.

13. Amit Bhaduri, "Nationalism and Economic Policy in the Era of Globalization", 2002. Ch. 2 in Deepak Nayyar (ed.), *Governing Globalization: Issues and Institutions*, Oxford University Press [*also* WIDER Working Paper no.188, WIDER website (2000)].

14. Prabhat Patnaik, *"Introduction", in Lenin and Imperialism,* Orient Longman, 1986.

15. James O'Connor, "The Meaning of Economic Imperialism", in Robert Rhodes, ed., *Imperialism and Underdevelopment*, New York: Monthly Review Press, pp. 101 to 111, 1970.

16. S. Bowles, H. Gintis, "The evolutionary basis of collective action", in B. Weingast, D. Wittman (eds.), *The Oxford Handbook of Political Economy*, Oxford University Press, 2008.

17. A. Dixit, *"The Making of Economic Policy: A Transaction Cost Politics Perspective,"* Munich Lectures in Economics Series, MIT Press, 1998.

18. A. Dixit, *"Lawlessness and economics: alternative modes of governance"* The Gorman Lectures In Economics, Princeton University Press, 2004.

19. S. Djankov, E. Glaeser, R. La Porta, F. Lopez-de-Silanes, A. Shleifer, "The new comparative economics", *Journal of Comparative Economics* 31, 595-619, 2003.

20. A. Krueger, "The political economy of a rent-seeking society", *American Economic Review* LXIV, 291-303, 1974.

21. D. Mueller, *"Public Choice III,"* Cambridge University Press,2003, selections from Chapter 5, 7, 11, 13.

22. K. Murphy, A. Shleifer, R. Vishny, "Why is rent-seeking so costly to growth?", American Economic Association Papers and Proceedings, 409-414, 1993.

23. M. Olson, *"The Logic of Collective Action,"* Harvard University Press, 1965.

24. R. Posner, "Theories of economic regulation", *Bell Journal of Economics* 5, 335-358, 1974.

25. A. Shleifer, R. Vishny, "Pervasive shortages under socialism", *Rand Journal of Economics* 23, 237-246, 1992.

26. A. Shleifer, R. Vishny, "Corruption", *Quarterly Journal of Economics,* 599-617, 1993.

27. G. Stigler, "The theory of economic regulation", *Bell Journal of Economics* 2, 3-21, 1971.

ECON-DC I-PAPER 19

PUBLIC ECONOMICS

Course Description

Public economics is the study of government policy from the perspective of economic efficiency and equity. The paper deals with the nature of government intervention and its implication for allocation, distribution and stabilization. Micro theoretic tools are employed to examine how rational individuals respond to incentives and how government policy may be employed to enhance social welfare. Inherently, the course would involve a formal analysis of government taxation and expenditure.

Course Outline

1. Competitive economies
Review of exchange and production economies, and classical efficiency theorems.

2. Public goods
Various modes of provision and decision-making; mechanism design, e.g., Clarke-Groves schemes.Club goods and local public goods; various models of provisioning; the Tiebout model.

3. Externalities
Various examples; various models for dealing with the inefficiency; taxation, licensing, internalization, the Coasian approach.

4. Imperfect competition
Inefficiency and welfare loss; regulation of monopolies, monopsonies and oligopolies; detection of collusion and merger policy; taxation as a remedy.

5. Asymmetric information
Moral hazard, screening, signalling; second-best contracting.

6. Taxation
Deadweight losses, optimal taxation, tax rules and equity considerations of commodity taxes; public sector pricing; income taxes and labour supply; various taxation schemes; models of tax evasion, auditing and punishment.

7. Fiscal federalism
Arguments for multi-level government; optimal structure; risk sharing.

Readings

1. J. Hindriks, G. Myles: *Intermediate Public Economics*, MIT Press , 2006.
2. H. Rosen, T. Gayer: *Public Finance*, 9th ed., McGraw-Hill/Irwin , 2009.
3. J. Stiglitz: *Economics of the Public Sector*, 3rd. ed., W. W. Norton and Co,.2000.

ECON-DC I: PAPER 20

PROJECT

III. ECONOMICS DISCIPLINE COURSE-II

ECON-DC II: PAPER 1

INTRODUCTORY ECONOMICS

Course Description

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

Course Outline

1. Exploring the Subject Matter of Economics
Why study economics? The scope and method of economics; scarcity and choice; questions of what, how and for whom to produce and how to distribute output; the basic competitive model; prices, property rights and profits; incentives and information; rationing; opportunity sets; economic systems, Gains from trade; comparative advantage and trade.

2. Supply and Demand: How Markets Work, Markets and Welfare
Individual demand and supply schedules and the derivation of market demand and supply; shifts in demand and supply curves; the role of prices in resource allocation; the concept of elasticity and its application; consumer and producer surplus; taxes and their efficiency costs; Restrictions on trade.

3. Introduction to Macroeconomics and National Income Accounting
Basic issues studied in macroeconomics; measurement of gross domestic product; income, expenditure and the circular flow; real versus nominal GDP; price indices.

4. Money and Inflation
Functions of money; quantity theory of money; determination of money supply and demand; credit creation; tools of monetary policy; inflation and its social costs; hyperinflation.

Readings

1. N. Gregory Mankiw, *Economics: Principles and Applications*, India edition by South Western, Cengage Learning India Private Limited, 4th edition, 2007.
2. Joseph E. Stiglitz and Carl E. Walsh, *Economics*, W.W. Norton & Company, Inc, New York, International Student Edition, 4th edition, 2007.
3. Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education, Inc., 7th edition, 2011.
4. N. Gregory Mankiw, *Macroeconomics,* Worth Publishers, 7th edition, 2010.

ECON-DC II: PAPER 2

MICROECONOMIC THEORY AND APPLICATIONS

Course Description

The course is designed to provide training in microeconomic theory. This course looks at the behaviour of the consumer as well as the behaviour of a competitive firm. It also covers aspects of general equilibrium and welfare and firm behaviour in imperfectly competitive markets.

Course Outline

1. Consumer Theory
Preference; utility; budget constraint; choice; demand; intertemporal choice.

2.Production, Costs and Perfect Competition
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; Profit maximization; firm behaviour in perfect competition.

3. General Equilibrium, Efficiency and Welfare
Equilibrium and efficiency under pure exchange; overall efficiency and welfare economics.

4. Imperfect Competition
Monopoly; pricing with market power; price discrimination; two-part tariff. Oligopoly.

Readings

1. B. Douglas Bernheim and Michael D. Whinston, *Microeconomics,* Tata McGraw-Hill (India), 2009.
2. Robert S. Pindyck, Daniel L. Rubenfeld and Prem L. Mehta, *Microeconomics,* Pearson, 7th edition, 2009.

ECON-DC II: PAPER 3

MACROECONOMIC THEORY AND POLICY

Course Description

This course introduces the students to modelling 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 open economy. The course also discusses aspects of economic growth.

Course Outline

1. The Closed Economy in the Short Run
Simple Keynesian model of income determination; IS-LM model; fiscal and monetary multipliers.

2. Aggregate Demand and Aggregate Supply Curves
Derivation of aggregate demand and aggregates upply curves; interaction of aggregate demand and supply.

3. Open Economy Models
Short-run open economy models; Mundell-Fleming model.

4. Economic Growth
Solow model; golden rule; technological progress

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.

ECON-DC II: PAPER 4

MONEY AND BANKING

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, measurement; theories of money supply determination.

2. Financial Institutions, Markets, Instruments and Financial Innovations
a. Role of financial markets and institutions; problem of asymmetric information – adverse selection and moral hazard; financial crises.

b. Money and capital markets: organization, structure and reforms in India; role of financial derivatives and other innovations.

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

4. Banking System
a. Balance sheet and portfolio management.
b. Indian banking system: Changing role and structure; banking sector reforms.

5. Central Banking and Monetary Policy
Functions, balance sheet; goals, targets, 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. L. M. Bhole and J. Mahukud, *Financial Institutions and Markets,* Tata McGraw Hill, 5th edition, 2011.
4. M. Y. Khan, *Indian Financial System*, Tata McGraw Hill, 7th edition, 2011.
5. Various latest issues of R.B.I. Bulletins, Annual Reports, Reports on Currency and Finance and Reports of the Working Group, IMF Staff Papers.

ECON-DC II: PAPER 5

INDIAN ECONOMY

Course Description

This course introduces students to trends in major economic indicators and provides an analysis of their economic impact.

Course Outline

I. **Economic Development in Post-Independence India**

Trends in sectoral growth, institutional framework and policy regimes

II. **Growth and Distribution**

Trends in poverty and inequality, measurement issues, social safety nets

III. **Current Perspectives in Agriculture**

Agricultural growth and composition, productivity, constraints, pricing

IV. **Current Perspectives in Industry and Service**

Changes in industrial growth and structure, labour; growth, productivity, public sector, competition policy, foreign investment

Readings

1. Pulapre Balakrishnan, "The Recovery of India: Economic Growth in the Nehru Era," *Economic and Political Weekly*, November, 2007.
2. Jean Dreze and Amartya Sen, *India: Development and Participation,* 2nd edition, Oxford University Press,2002, Selected chapters.
3. Rakesh Mohan, "Growth Record of Indian Economy: 1950-2008. The Story of Sustained Savings and Investment," Economic and Political Weekly, May, 2008.
4. Tendulkar Committee Report, summary, sections 2 and 3.
5. Ajit Mishra and Indranil Dasgupta, "Inequality" in Kaushik Basu and Annemie Maertens, editors, The New Oxford Companion to Economics in India, Oxford University Press, 2012.
6. Mahendra Dev, "Agriculture Development," in Kaushik Basu and Annemie Maertens, editors, *The New Oxford Companion to Economics in India*,op.cit.
7. Ramesh Chand, "Understanding the nature and causes of Food Inflation," Economic and Political Weekly, February, 2010.
8. Kunal Sen, "Trade, Foreign Direct Investment and Industrial Transformation in India," in Prem Chandra Athukorala, editor, The Rise of Asia, Routledge, 2010.
9. Isher Ahluwalia, "Industry," in Kaushik Basu and Annemie Maertens, editors, *The New Oxford Companion to Economics in India*, op. cit.
10. R. Nagaraj, "Industrial Growth," in Kaushik Basu and Annemie Maertens, editors, *The New Oxford Companion to Economics in India*, op.cit.
11. Rupa Chanda, "Services led Growth" in Kaushik Basu and Annemie Maertens, editors, *The New Oxford Companion to Economics in India*, op.cit.

ECON-DC II: PAPER 6

DEVELOPMENT ECONOMICS

Course Description

This course reviews major policy debates in India in the post-Independence period, with some focus on Indian agriculture and industry.

Course Outline

1. Issues in Growth, Development and Sustainability
Critical evaluation of growth, inequality, poverty and competitiveness, pre and post reforms era;mobilisation of internal and external finance; monetary and fiscal policies; centre-state financial relations.

2. Population and Economic Development
Demographic trends; urbanisation.

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

4. Indian Development Experience
(a) Agriculture: Policies and Performance
Production and productivity; credit; labour; markets and pricing; land reforms; regional variations.
(b) Industry: Policies and Performance
Production trends; small scale industries; public sector; foreign investment.

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, *Five Year Plan* (latest)
6. Government of India, *Finance Commission Report* (latest)

IV. ECONOMICS APPLIED COURSES

ECON-AC: PAPER 1

GAME THEORY

Course Description

Game theory is an integral part of modern economics and many other disciplines. Its basic ideas and methods do not need any prior knowledge of economics. This course should be accessible to anyone with an analytical mind and exposure to elementary mathematics. This course introduces the basic concepts of game theory in a way that allows students to use them in solving simple problems. The course will deal with the solution concepts for normal form and extensive form games along with a variety of applications. The course trains the students in business, political and social strategy formulations.

Course Outline

1. **Normal form games**
The normal form; dominant and dominated strategies; dominance solvability; mixed strategies; Nash equilibrium; applications.

2. **Extensive form games with perfect information**
The game tree; strategies; subgame perfection; backward induction in finite games; commitment; bargaining; other applications.

Readings

1. Martin J. Osborne, *An Introduction to Game Theory*, Oxford University Press, New Delhi, 2004.
2. Avinash Dixit and Susan Skeath, *Games of Strategy*, W. W. Norton & Company Inc., New York,1999.

ECON-AC: PAPER 2

FINANCIAL ECONOMICS

Course Description

This course introduces students to the economics of finance. The course does not require any prior knowledge of economics. This course should be accessible to anyone with an exposure to elementary mathematics. The course is designed to impart the essential aspects of financial asset valuation. The students will be introduced to numerical techniques in finance using spreadsheet programmes such as Microsoft Excel. The course will impart skills that will be useful in a variety of business settings including investment banks, asset management companies and in the field of financial and business journalism.

Course Outline

1. Deterministic cash-flow streams
Basic theory of interest; discounting and present value; internal rate of return; evaluation criteria; fixed-income securities; bond prices and yields; interest rate sensitivity and duration; immunisation; the term structure of interest rates; yield curves; spot rates and forward rates.

2. Single-period random cash flows
Random asset returns; portfolios of assets; portfolio mean and variance; feasible combinations of mean and variance; mean-variance portfolio analysis: the Markowitz model and the two-fund theorem; risk-free assets and the one-fund theorem.

3. Capital Asset Pricing Model (CAPM)
The capital market line; the capital asset pricing model; the beta of an asset and of a portfolio; security market line; use of the CAPM model in investment analysis and as a pricing formula.

Readings

1. David G. Luenberger, *Investment Science*, Oxford University Press, USA, 1997.
2. Richard A. Brealey and Stewart C. Myers, *Principles of Corporate Finance*, McGraw-Hill, 7th edition, 2002.
3. Burton G. Malkiel, *A Random Walk Down Wall Street*, W.W. Norton & Company, 2003.
4. Simon Benninga, *Financial Modeling*, MIT Press, USA, 1997.

ECON-AC: PAPER 3

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. Overview of Fiscal Functions, Tools of Normative Analysis, Pareto Efficiency, Equity and the Social Welfare.
2. Market Failure, Public Good and Externalities.
3. Elementary Theories of Product and Factor Taxation (Excess Burden and Incidence).

Part 2: Issues from Indian Public Finance
4. Working of Monetary and Fiscal Policies.
5. Current Issues of India's Tax System.
6. Analysis of Budget and Deficits
7. Fiscal Federalism in India
8. State and Local Finances

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. Kaushik Basu, 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).

ECON-AC: PAPER 4

ENVIRONMENTAL ECONOMICS

Course Description

This course introduces students to concepts, methods and policy options in managing the environment using tools of economic analysis. This course should be accessible to anyone with an analytical mind and familiarity with basic concepts of economics. Since several environmental problems are caused by economic activity (for instance, carbon emissions, over-harvesting of renewable resources and air and water pollution as a by-product of industrial activity), this course examines different approaches to adjusting behaviour through economic institutions such as markets and incentives as well as through regulation, etc. It also addresses the economic implications of environmental policies through practical applications of methods for valuation of environmental goods and services and quantification of environmental damages. Conversely, the impact of economic growth on the environment is also addressed under the rubric of sustainable development. Environmental problems and issues from the Indian and international context (especially global warming)are used to illustrate the concepts and methods presented in the course. The course will be useful for students aiming towards careers in the government sector, policy analysis, business, journalism and international organisations.

Course Outline

1. Introduction
Key environmental issues and problems, economic way of thinking about these problems, basic concepts from economics; Pareto optimality and market failure in the presence of externalities; property rights and other approaches.

2. The Design and Implementation of Environmental Policy
Overview, Pigouvian taxes and effluent fees, tradable permits, implementation of environmental policies in India and international experience; transboundary environmental problems; economics of climate change.

3. Environmental Valuation Methods and Applications
Valuation of non-market goods and services--theory and practice; measurement methods; cost-benefit analysis of environmental policies and regulations.

4. Sustainable Development
Concepts; measurement; perspectives from Indian experience

Readings

1. Roger Perman, Yue Ma, Michael Common, David Maddison and James McGilvray, *"Natural Resource and Environmental Economics"*, Pearson Education/Addison Wesley, 4th edition, 2011.
2. Charles Kolstad, *"Intermediate Environmental Economics"*, Oxford University Press, 2nd edition, 2010.

3. Robert N. Stavins (ed.), "*Economics of the Environment: Selected Readings"*, W.W. Norton, 6th edition, 2012.
4. Robert Solow , "An Almost Practical Step toward Sustainability," Resources for the Future 40th anniversary lecture,1992.
5. Kenneth Arrow et al. , "Are We Consuming Too Much?" *Journal of Economic Perspectives*, 18(3): 147-172, 2004.
6. IPCC (Intergovernmental Panel on Climate Change), Fifth Assessment Report (forthcoming 2014).