COURSES OF STUDIES
M.A./ M. Sc in ECONOMICS

SEMESTER EXAMINATION SYSTEM WITH ELECTIVES AND OPTIONALS

DEPARTMENT OF ECONOMICS
RAVENSHAW UNIVERSITY
CUTTACK-753003

Master of Arts (M.A)/Master of Science (M.Sc)
Department of Economics, Ravenshaw University, Cuttack
Syllabus-Academic Session 2020-21

FIRST SEMESTER   Total Hours (Weekly) 20 Total credit 20

SL.	Course Code	Course Name	Marks	L	T	P/S	C
1	ECO-1.1.1	Microeconomics Analysis-I	50	4	1	0	4
2	ECO-1.1.2	Public Economics-I	50	4	1	0	4
3	ECO-1.1.3	Economics of Growth & Development-I	50	4	1	0	4
4	ECO-1.1.4	Macroeconomic Analysis-I	50	4	1	0	4
5	ECO-1.1.5	Basic Econometrics-I	50	4	1	0	4

SECOND SEMESTER

SL.	Course Code	Course Name	Marks	L	T	P/S	C
1	ECO-1.2.6	Microeconomics Analysis-II	50	4	1	0	4
2	ECO-1.2.7	Public Economics-II	50	4	1	0	4
3	[1]ECO-1.2.8	Economics of Growth & Development-II	50	4	1	0	4
4	ECO-1.2.9	Macroeconomic Analysis-II	50	4	1	0	4
5	ECO-1.2.10	Basic Econometrics-II	50	4	1	0	4

[1] Term paper and seminar

THIRD SEMESTER

SL.	Course Code	Course Name	Marks	L	T	P/S	C
1	[2]ECO-2.3.11	Indian Economic Policy-I	50	4	1	0	4
2	ECO-2.3.12	International Economics-I	50	4	1	0	4
3	ECO-2.3.13	Economics of Environment-I	50	4	1	0	4
4	ECO-2.3.14	Optional-1-I	50	4	1	0	4
5	ECO-2.3.15	Optional-2-I	50	4	1	0	4

SL.	Course Code	Course Name	Marks	L	T	P/S	C
1	ECO-2.4.16	Indian Economic Policy-II	50	4	1	0	4
2	ECO-2.4.17	International Economics-II	50	4	1	0	4
3	ECO-2.4.18	Economics of Environment-II	50	4	1	0	4
4	ECO-2.4.19	Optional-1-II	50	4	1	0	4
5	ECO-2.4.20	Optional-2-II	50	4	1	0	4

*Term Paper & Seminar

Multidisciplinary Course   (Grand Total Credit-80)

Students are also required to take same optional papers in IVth Semester as taken in IIIrd Semester. Each paper is divided into three modules. Students are required to answer one question from each module having two alternative questions. All questions carry equal marks. The duration of the examination will be three hours.

OPTIONAL PAPER

SL.NO.	COURSE NAME	MARKS	L	T	P/S	C
1	Mathematical Optimisation	50	4	1	0	4
2	Advanced Econometrics – I	50	4	1	0	4
3	Agricultural Economics – I	50	4	1	0	4
4	Financial Institutions and Markets – I	50	4	1	0	4
5	Game Theory and Strategic Behaviour	50	4	1	0	4
6	Advanced Econometrics – II	50	4	1	0	4
7	Agricultural Economics-II	50	4	1	0	4
8	Financial Institutions and Markets – II	50	4	1	0	4

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[2] Multidisciplinary course

Programme Outcomes of M. A. in Economics:

The Master of Arts programme in Economics has been designed with the objective to develop in-depth knowledge of students in frontier areas of economic theory and methods, so that they are able to use the knowledge to study real world economic problems.

The course has a strong focus on theoretical and quantitative skills and train students in the collection and analysis of the data using their software skills. The programme offers specialised optional courses, which allow student to pursue their studies in their area of interest. Besides, to hone the student's writing and analytical skills they are required to submit a term paper on current economic problem. Thus, the Masters in Economics programme seek to:

- Prepare students to develop critical thinking to carry out investigation about various socio-economic issues objectively while bridging the gap between theory and practice.

- Equip the student with skills to analyse problems, formulate an hypothesis, evaluate and validate results and draw reasonable conclusions thereof.

- Prepare students for pursuing research or careers that provide employment through entrepreneurship and innovative methods. Because today's unemployment problem can also be solved by developing the micro and small entrepreneurship

- Prepare students to develop own thinking /opinion regarding current national or international policies and issues

- Create awareness to become a rational and an enlightened citizen so that they can take the responsibility to spread the governments' initiatives/schemes to the rural areas for the upliftment of the poor or vulnerable section of the society for inclusive growth

Programme Learning Outcome:

At the end of the programme, the students will have adequate competency in the frontier areas of economic theory and methods. The students will acquire additional specialisation through optional courses. They will be able to use common software for analysis of economic data. Besides, students will be able to execute in-depth analysis of economic issues based on their understanding of economic theory, which will not only widen their opportunities for employment, but also help them to pursue their doctoral studies. Keeping the programme objectives in view, the specific learning outcomes of Masters in Economics are:

- Understanding the basic assumptions in various economic theories and enhance capabilities of developing ideas based on them

- Prepare and motivate students for research studies in Economics especially by developing questionnaire, collecting primary data through field surveys

- Provide knowledge of a wide range of econometric techniques using excel or other statistical software

- Motivate students to extract or utilize different websites for secondary data collection, generating concepts for various facets of economic studies and gather latest informations provided by various Universities, UGC, or ICSSR

- Motivate students in preparing for various competitive examinations, NET, SET, Indian Economic Service etc., by developing or gaining value addition day by day by giving assignments, by following a routine or developing discipline / concentrationetc.

SEMESTER - I		
Course Code	**Course Name**	**Course Outcomes**
ECO-1.1.1	**Micro Economics Analysis-I**	**Course Objective**: To develop an advanced theoretical understanding of consumer behaviour and decision-making. It covers advanced concepts of economic principles. **Course Outcomes**: • On successful completion of the course, a student will be able to develop a sound understanding of the core microeconomic concepts that economists use to understand the process of decision-making by an economic agent(s). • The student should be able to apply mathematical tools and techniques to study behaviour of economic agents. By studying this course, students are expected to understand the theorems and the underlying mathematical analyses of interrelationship between concepts, choice theories and markets phenomena.
ECO-1.1.2	**Public Economics I**	**Course Objective:** To know about the role of Government, Public Policy and criteria of public Expenditure. **Course Outcomes:** • The overall outcome of the course is the development of anunderstanding of public sector financial resources.

		• Understanding of the rationale for the existence of moderngovernments • Familiarity with the micro and macro aspects of publicexpenditure. • Acquaintance with the phenomenon of externality and the role of government. • To know about fiscal policy and stabilization policy. • Acquaintance with the technique of cost-benefit analysis forproject appraisal
ECO-1.1.3	**Economics of Growth and Development-I**	**Course Objectives:** To have knowledge about development gap, theories of development and measurement of development through indices. **Course Outcomes**: • Understanding the basic facts of economic growth. • Comprehension of relationship between growth anddevelopment. • Familiarity with the wide-ranging partial theories in growth economics. • A thorough understanding of literature on classicalgrowth models .
ECO-1.1.4	**Macro Economic Analysis - I**	**Course Objectives:** To get an overview of the major developments in macroeconomic theory, Supply of and Demand for Money and rate of interest. **Course Outcomes** : • Get an overview of the major developments in macroeconomic theory, with particular emphasis on the policy prescriptions of the earlier macroeconomic schools of thought. • Develop an understanding of the interrelationships among the various macroeconomic variables and the way they impact upon the working of the economy as a whole, thereby determining the course of the economy. • Gain in depth knowledge about Keynesian vs Monetarist policy formulations as well as the post Keynesian approaches to demand for money. • Knowledge about money supply and open economy. • The course prepares the students with a theoretical base on the evolution of money

		and deeper insights into the utility of money in different macroeconomic frameworks.
ECO-1.1.5	Basic Econometrics-I	**Course Objectives:** The Course covers basis econometric models to impart mathematical and basic statistical skills required for economic analysis. **Course Outcomes:** • By studying this paper students are expected to learn about concepts and fundamental models of statistical tools, regression models, and problems in regression models dynamic which will help their basic understanding on statistical tools and software packages for data analysis essential for higher studies and research. **Knowledge Gained:** • Basic assumptions behind the application of OLS technique for estimation • Formulation and estimation of a multiple regression model • Testing multiple hypothesis • Decision about the statistical significance of individual explanatory variable and also over all model • Impacts for the violation of one of the important assumptions for application of OLS regression • Concepts of Heteroscedasticity & Multicollinearity • Possible reasons behind the presence of Heteroscedasticity & Multicollinearity • Various tests to understand the presence of Heteroscedasticity and multicollinearity **Competency developed:** • Application of regression model for empirical data and try to compare the theoretical validity with empirical findings • Decision about the reliability of estimation
		SEMESTER - II
ECO-1.2.6	Micro Economic Analysis-II	**Course Objective:** The objective of the course is to introduce the student with advanced modern microeconomic theory. **Course Learning Outcomes:** • After the completion of the course, students

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| | | will be able to address economic issues related to uncertainty and risk in decision-making.
• The students will learn to understand how in the real world market contractual settings are characterized by conflict of interests as well as asymmetry of information among the individuals involved. Students also learn about General Equilibrium and Welfare Economics. |
|---|---|---|
| ECO-1.2.7 | **Public Economics -II** | **Course Objectives:** Main purpose of this paper is to understand what is taxation with the reformation made in taxation, Public debt in context of India and other developing countries, the sources of revenue of the government.

Course Outcomes:
• Develops an understanding of various aspects taxation theory
• Familiarity with the different aspects of fiscal federalism
• Acquaintance with the technique of cost-benefit analysis forproject appraisal
• Understanding of various aspects of fiscal policy and debtmanagement. |
| ECO-1.2.8 | **Economics of Growth and Development-II** | **Course Objectives**: To know basic issues and theories of growth to impart basic knowledge on growth models.

Course Outcomes:
• Familiarity with the theoretical and empirical analysis ofeconomic growth process and policy implications.
• Acquiring technical skills on measurement issues related toTotal Factor Productivity.
• By studying this paper students are expected to learn about concepts and fundamental theories of economic development, theories of economic growth, and economic growth and technical progress. These concepts will help them to understand the basic differences in various growth models which they can empirically verify later in their research work with respect to several economics' topic |
| ECO-1.2.9 | **Macro Economic** | **Course Objectives:** To have knowledge about Open Economy, different approaches to inflation, Theories of Business Cycle and Macroeconomic Policies. |

	Analysis - II	**Course Outcomes**: • Understand the role of expectations in macroeconomics • Understanding New Classical policy approach • Exposure to some later developments in macroeconomic theories. • Understand about the basics of open economy macroeconomics. • Gain Knowledge about theories of business cycle and Macroeconomic policies.
ECO-1.2.10	Basic Econometrics-II	**Course Objectives:** The objective is to know basic econometric models to impart mathematical skill required for economic analysis. **Course Learning Outcomes** • By studying this paper students are expected to learn about concepts and fundamental models of econometrics, regression with qualitative variables as dependent variable, dynamic econometric models, simultaneous equation model and causality in economics which will boost their basic econometrics knowledge and helpful for higher studies and research. • After completion of the course, the students will be able to learn the technique of estimating Econometric Models by the use of dummy variables to accommodate qualitative investigation. The students are trained to apply basic econometric techniques like the Logit, and Probit models to empirical settings. Students also learn the use of Models and interpret data in the presence of problems that are prevalent in most econometric modelling settings. **Knowledge gained** • Gained the knowledge related to various dynamic econometric models Problems related to estimation of distributed lag model • Possible solution techniques for solving the problem associated with such dynamic model • Gained knowledge regarding the differences between single equation regression model and simultaneous equation system • Estimation techniques for solving each equations of simultaneous equation model.

		SEMESTER - III	

ECO-2.3.11	Indian Economic Policy-I	**Course Objectives:** This course aims at imparting overall knowledge to P.G students on Indian economic Planning, Objectives, Problems and Policies relating to different sectors **Course Outcomes**: • It will enable them to understand the objectives and Strategy of Planning • Familiarity with the concept of Land Resources, Forest Resources, Water Resources, mineral resources and policy issues. • Understanding the concepts of economic reform and external sector of India. • It discussed the background of Indian economic development during the last seven decades, major economic policy reforms and policies relating to infrastructure, services sector and trade policies have been discussed.
ECO-2.3.12	International Economics-I	**Course Objectives:** This course aims at imparting overall knowledge to about theories of International Trade and trade Policy. **Course Outcomes**: • By studying this course, students are expected to understand New Theories of International Trade and International Trade Policy • Students will learn about the idea of dual economy and its problems, and about the advantages and disadvantages of import substitutions and export promotions • Students will acquire knowledge on the importance of trade in economic growth and development, students will be acquainted with emerging issued related to trade and trade policy. • Make students familiar with the empirical test of Heckecher Ohlin theorem, Product Life Cycle Theory, Linder Theory, Kenen's Theory and Emanuel's Theory. • Students will learn about various instruments of trade policies and about the costs and benefits of imposition of tariff, and about the advantages and disadvantages of • Free trade.

		Knowledge gained • Evolution of trade through theories with international trade practices • New trade theories and international trade policy with foreign exchange markets and exchange rates.
ECO-2.3.13	**Economics of Environment-I**	**Course Objectives:** This course aims at imparting overall knowledge to P.G students about development of environmental economics and environmental valuation. **Course Outcomes:** • By studying this course, students are expected to know about Environment economy interaction, cost of Pollution and Measurement of Environmental values. • Familiarity with the concept of Pollution and Government policy.
ECO-2.3.14	**Optional Agricultural Economics -I**	**Course Objectives:** This course aims at imparting overall knowledge on issues in Indian agriculture. **Outcomes:** • By studying this course, students are expected to understand important issues like theories of agriculture, agrarian structure and land reform. • Understand the various constraints specific to less developed agriculture. • Develop an understanding of the manifold obstacles to agricultural development, and the policies adopted to overcome them, with particular emphasis on the Indian agricultural scenario. • Awareness of the debates on farm size and productivity. • Gathering knowledge about state interventions and planning for agricultural development
ECO-2.3.14	Optional Advanced Econometrics-**I**	**Course Objectives:** This course aims at imparting overall knowledge to P.G students about Advanced Econometrics I which covers advanced econometric models to impart advanced econometrics skill required for rigorous data analysis in economics. **Course Outcomes:** • By studying this paper students are expected to learn about concepts and fundamental time series models of econometrics, modeling volatility using financial data, empirically verifying short

		run and long run association between several variables from economic theories. • This will boost their advanced econometrics knowledge using advanced softwares such as E-Views, and RATS helpful for higher studies, corporate sector jobs as economic analyst and research
ECO-2.3.15	**Optional Financial Institutions and Market-I**	**Course Objectives:** The course aims at providing basic knowledge about structure and functions of financial system. The objective is to impart fundamental knowledge about the time value of money and functions of financial institutions. **Course Outcomes:** • By studying this paper students are expected to learn about concepts of financial system, its structure, functions, simple calculation of present and future value of money • Familiarity of concepts like structure of interest rate and theories of interest. • Have knowledge on different types of financial ratio calculation. • Measurement of risk and return of an asset and portfolio
ECO-2.3.15	**Optional Mathematical Economics-I**	**Course Objectives:** This course aims at imparting overall knowledge to P.G students about different tools of optimization, and linear programming. **Course Outcomes:** • By studying this course, students are expected to understand classical optimization, differential calculus to be used in econometrics and optimisation, and input-output & linear programming • Students can know applications of linear programming in economics • Students can know applications of dynamic programming solution multistage optimization problem
Optional	**Health Economics**	**Course Objectives:** This course aims at imparting overall knowledge to P.G students about Health economics, its supply and demand. **Course Outcomes** By studying this course, students are expected to know about Health care Economics and models of demand and supply of Health Care.

Optional	Economics of Law-I	**Course Objectives:** This course aims at imparting overall knowledge to P.G students about Economics analysis of law, Nature of Legal Disputes and laws relating to consumer. **Course Outcomes:** • By studying this course, students are expected to know about Economic approach to law and Nature of Legal Disputes.
Optional	Economics of Natural Resources-I	**Course Objectives:** This course aims at imparting overall knowledge to P.G students about Natural Resource Economics , and related policies. **Course Outcomes:** By studying this course, students are expected to know about Natural resources management and its conservation
Optional	Economics of Social Sector	**Course Objectives:** This course aims at imparting overall knowledge to P.G students about importance of social sectors in our economy. **Course Outcomes:** • By studying this course, students are expected to know about importance and performance of social sectors in India. • Problems about Education, Health water supply and sanitation
Optional	Demography -I	**Course Objectives:** This course aims at imparting overall knowledge to P.G students about Theories and trends of Population. **Course Outcomes:** • By studying this course, students are expected to know about different structure of population, theories, and how population help in the development process.
SEMESTER IV		
ECO-2.4.16	Indian Economic Policy-II	**Course Objectives:** This course aims at imparting overall knowledge to P.G students on issues, problems and policies on Agriculture and Industrial sectors. Along with it the objective is to provide knowledge regarding International Monetary System. **Course Outcomes:** • By learning this paper students are expected to equip

		with knowledge on different sectoral issues and policies and programmes related to those sectors. It presents and integrated approach to different aspects of policy making with regard to agriculture and industrial sectors. • Students will know about Agriculture and allied sector in Odisha and policies initiated by government, issues in agricultural sector; industrial development– Problems and Prospects; Tertiary Sector Growth; public finance of Odisha
ECO-2.4.17	**International Economics-II**	**Course Objectives:** This course aims at imparting overall knowledge to P.G students on Foreign Exchange Markets with different adjustment policies along with the evolution of international financial monetary system **Course Outcomes:** • By studying this course, students are expected to know about the transaction in Foreign Exchange Market with different adjustment policies to attain external and internal stability • Familiarity with Present International Monetary System, financial globalization, the developing countries growth and its crisis
ECO-2.4.18	**Economics of Environment-II**	**Course Objectives:** This course aims at imparting overall knowledge to P.G students about climate change. Environmental problems and Natural Resources Economics. **Course Outcomes:** • By studying this course, students are expected to know about issues of climate change and Environmental and Natural Resource Problems in India. • Learn about the Environmental laws and their implementation; Policy instruments for controlling water and air pollution and forestry policy
ECO-2.4.19	**Optional Advanced Econometrics - II**	**Course Objectives Outcomes** Advanced Econometrics II is a special optional paper of economics which covers advanced econometric models to impart advanced econometrics skill required for rigorous data analysis in economics. **Course Outcomes** • By studying this paper students are expected to learn about concepts of Multi-equation time series models of econometrics, panel data regression with policy analysis.

		• Students learn about qualitative response variable models which will boost their advanced econometrics knowledge using advanced softwares such as E-Views, STATA, and RATS helpful for higher studies, government jobs mostly related to planning and policy making departments, corporate sector jobs as economic analyst and research. • Use linear probability model, formulating a probability model, the probit and the Logit models, misspecification in Binary Dependent Models, Ordered Probit, Tobit models
ECO-2.4.19	**Optional Agricultural Economics-II**	**Course Objectives:** Agricultural Economics-I is an optional paper in MA-Economics, which covers issues in Indian agriculture. **Course Outcomes** • By studying this course, students are expected to understand important issues like marketing, credit, insurance and distribution. • Know about Food security system in India and public distribution; Issues of Agricultural Subsidies
ECO-2.4.20	**Optional Mathematical Economics – II**	**Course Objectives**: Mathematical Economics-II is an optional paper in MA-Economics, which covers various concepts and application of game theory. **Course Outcomes:** • By studying this course, students are expected to understand the concepts of game theory, its application in decision making and market behavior.
ECO-2.4.20	**Optional Financial Institutions and Market**	**Course Objectives**: This course aims at imparting basic knowledge about Monetary Policy of the RBI, Valuation of Securities and derivative market. **Course Outcomes:** • By studying this paper students are expected to learn about recent tools of monetary policy and its functioning. • Learn about valuation of shares and bonds and derivative instruments and functioning of derivative market.
Optional	**Health Economics-II**	**Course Objectives:** Health Economics-II is an optional paper in MA-Economics, which covers Scope, and the context of financial modelling in health care. **Course Outcomes:** By studying this course, students are expected to understand Modeling in Health Care Financing, components of health promotion and strategies for

		preventing drug abuse
Optional	Economics of Social Sector-II	**Course Objectives:** Economics of Social Sector- II is a paper MA Economics, which covers different aspects like environment, he and labour. **Course Outcomes:** By studying this course, students are expected to understand about Environment and development and Health dimension of development
Optional	**Economics of Law-II**	**Course Objectives:** Economics of Law-II Law includes Course on B**us**iness law, and theory of crime and punishment. **Course Outcomes:** Students will learn about National and global environmental agreement their legal and economic interpretation.
Optional	**Economics of Natural Resources-II**	**Course Objectives:** This paper imparts knowledge on forests and Wild life, and Environmental law and their implementation. **Course Outcomes:** - Students will learn about Mechanism for environmental regulations in India, Environmental law and their implementation, Policy instruments for controlling water and air pollution. - Learn about Management of common and forest lands, institutions of joint forest management and social forestry in India: rationale and benefits
Optional	**Demography-II**	**Course Objectives:** This paper imparts knowledge on new Population Policy and National population Commissions. **Course Outcomes:** - Students will learn about Characteristics of population in India- size and growth rate of population, birthrate and death rate, infant mortality rate, sex ratio of population. - Rural urban migration, State wise area wise density of population in India, Region wise population in India, Population and literacy, Expectation of life at birth, Population problem on India

SEMESTER- I
MICROECONOMIC ANALYSIS-I
Paper - 1 (Eco-1.1.1)

UNIT I   **Choice and Demand**

Preferences and utility: Axioms of rational choice, utility function, indifference curves and the notion of convexity, MRS and marginal utility, utility functions for specific references-Cobb-Douglas utility, perfect substitutes, perfect complements, CES utility, Homogeneous and homothetic utility functions

Utility maximization and choice: order conditions for utility maximization, corner solution, n-good case; indirect utility function and expenditure function- relations between the two, indirect utility and consumer preferences

Slutsky theorem- substitution and income effect, Ordinary and compensated demand functions, demand elasticities, Engel aggregation and Cournot aggregation, gross substitutes and gross complements, Consumer surplus, Compensating variation, equivalent variation, Revealed preference and substitution effect, Consumer behavior under uncertainty- the Von Neumann-Morgenstern theorem

UNIT II   **Theory of Production and Cost**

Isoquants and the rate of technical substitution, returns to scale and varying proportions, Elasticity of substitution- cases of linear, fixed proportions, Cobb-Douglas and CES production functions, Homogeneous, non-homogeneous and homothetic production functions, technical progress and production function

Cost functions, Derivation of cost function from production function, properties of cost functions, input substitution, inputs demand and Shephard's lemma, Profit maximization, cost minimization, Input demand functions, Duality between cost and production functions, short run supply of a price taking firm, profit function

UNIT III   **Perfect Competition, Monopoly, Monopolistic Competition**

Perfect competition: Market demand and demand elasticity, timing of the supply response, short run market supply and supply elasticity, Equilibrium of firm and industry in short-run, reaction to shifts, long run supply curve of a firm and equilibrium, producer surplus in the long run, Ricardian rent, Economic efficiency and welfare analysis, price controls and shortages,

Monopoly: price and output determination, monopoly power, pricing with market power- price discrimination, two part tariff, bundling and advertising, Control of monopoly

Monopolistic competition: Equilibrium of firm and group with product differentiation and selling cost, Excess capacity.

Basic Readings

Walter Nicholson, Christopher M. Snyder, *Microeconomic Theory: Basic Principles and Extensions,* Cengage Learning

Jehle and Reny, *Advanced Microeconomic* Theory, Pearson India

Additional Readings

Andreu Mas-Colell, Michael Dennis Whinston, Jerry R. Green, *Microeconomic theory*, OUP

Hal Varian, *Microeconomic Analysis*, W.W. Norton.

Hugh Gravelle, Ray Rees, *Microeconomics*, Pearson Education Ltd

P.R.G. Layard and A.W. Walters, *Microeconomic Theory*, McGraw Hill.

SEMESTER- I
PUBLIC ECONOMICS -I
Paper - 2 (Eco-1.1.2)

Unit I **Role of Government:**

Government in organized society, Government as an Agent for Economic Planning and Development; as a Tool for operationalising the Planning Process, Changing Role of Government, Normative approach to public finance- Allocation, Distribution and Stabilization branch; Private goods, Public goods and Merit goods; Market Failure –Free rider problem, Imperfection, Decreasing Costs, Externalities; Pigouvian taxation, Coase theorem; theory of Second Best

Unit II **Public Policy**

Optimum Provision of Public goods- Efficiency and Distribution, Private provisioning Vs public provisioning of public goods, Voluntary exchange models; Impossibility of decentralized provision of public goods (contributions of Samuelson and Musgrave); Pure Theory of Public Expenditure, Demand Revealing Schemes for Public Goods- Contributions of Clarke, Groves and Ledyard. **Fiscal policy:** Objectives, fiscal policy for stabilization, balanced budget multiplier, automatic vs. discretionary stabilization, alternative methods of resource mobilization and their impact on growth, distribution and prices

Unit III **Public Expenditure**

Wagner's Law of Increasing State Activities; Wiesman–Peacock Hypothesis; Colin Clark's critical limit hypothesis, Baumol's law; Criteria for Pubic Investment; Social Cost-Benefit Analysis, Evaluation under risk and uncertainty,

Pricing in the Public Sector- The Ramsey-Boiteux linear pricing model, Peak load pricing, marginal cost pricing, Reforms in expenditure budgeting; Program budgeting and zero base budgeting.

Basic Readings

A.Atkinson and J. Stiglitz (1980), *Lectures on Public Economics*, McGraw-Hill

A . Bagchi(ed) (2005), *Readings in Public Finance,* OUP

John Cullis and Philip Jones, Public Finance and Public Choice, OUP

Additional Readings

R. Jha (1997), *Modern Public Economics*, Routledge

Hindriks, Jean and Gareth D. Myles, *Intermediate Public Economics*, Prentice Hall of India

Auerbach, A.J. and M.Feldstern (Eds) (1985), *Handbook of Public Economics*, Vol. I. North Holland Amsterdam.

Houghton, J.M. (1970), *The Public Finance: Selected Reading*, Penguin, Harmondsworth.

Musgrave, R.A and P.B.Musgave (1976), *Public Finance in Theory and Practices*, McGraw Hill Kogakusha, Tokyo.

SEMESTER- I
ECONOMICS OF GROWTH AND DEVELOPMENT - I
Paper - 3 (Eco-1.1.3)

Unit I   **Measuring Economic Development:** Measurement of development and development gap: GDP, Per capita income, Gini coefficient. Calculating the human development indices-HDI, HPI-1, HPI-2, GDI, GEM; A critical analysis of the most recent Human Development Report, Criticism of Human Development Index (HDI) as a measure of economic development.

Unit II   **Theories of Development:** Classical theory of development - contributions of Adam Smith, Ricardo, Malthus; Karl Marx and development of capitalist economy - theory of social change, surplus value and profit. Crisis in capitalism - Schumpeter and capitalistic development; innovation - role of credit, profit and degeneration of capitalism; Structural analysis of development.

Unit III   **Partial theories of growth and development** :Vicious circle of poverty, circular causation, unlimited supply of labour, big push, balanced growth, unbalanced growth, critical minimum effort thesis, low-income equilibrium trap; Dualism - technical, behavioural and social; Ranis and Fei model.

Basic Readings

Adelman, I. (1961), Theories of Economic Growth and Development, Stanford University Press.

Ghatak, S. (1986), An Introduction to Development Economics, Allen and Unwin

Kindleberger, C.P. (1977), Economic Development, (3rd Edition), McGraw Hill,

Todaro, M P (1996), (6th Edition), Economic Development, Longman, London.

Additional Readings

Chenery, H.B. et.al (Eds) (1974) Redistribution with Growth, Oxford University Press

Dasgupta, P. (1993), An Enquiry into Well-being and Destitution, Clarendon Press

Higgins, B (1959), Economics Development, W.W. Norton

Hogendrn, (1996), Economic Development, Addison, Wesley, New York.

Thirwal, A.P. (1999), (6th Edition), Growth and Development, Macmillan, U. K. Barro, Robert J and Xavier Sala-i-Matin, Economic Growth, PHI Pvt Ltd

SEMESTER- I
MACROECONOMIC ANALYSIS-I
Paper Code (Eco-1.1.4)

Unit I Theories of consumption and investment spending

Overviews on Keynesian consumption function and its conjectures. Intertemporal Choice model-effects of change in income, rate of interest and borrowing constraint on consumption. Life cycle, permanent income and random-walk hypotheses and their implications. The Pull of Instant Gratification theory.

Theories on the determinants of Business Fixed Investment, Residential and Inventory Investment. Profit, accelerator and MEI theories of investment. Influence of policy measures on investment.

Unit II Supply of and Demand for Money

Post-Keynesian approaches to demand form only - Patinkin and the Real Balance Effect; Approaches of Baumol and Tobin; Friedman and the modern quantity theory; Crisis in Keynesian economics and the revival of monetarism. Mechanistic and behavior model of money supply; RBI approach to money supply; High powered money and money multiplier; budget deficits and money supply; Money supply and open economy; control of money supply.

Unit III Neo-classical, Keynes and IS-LM approach:

Neo-classical and Keynesian views on interest; The IS-LM model; Extension of IS-LM model, shift in ISLM;IS-LM model with government sector; Relative effectiveness of monetary and fiscal policies; Extension of IS-LM models with labour market and flexible prices- Keynes & Pigou effects; crowding out hypothesis.

Basic Readings

1. Gregory Mankiw "Macroeconomics", 2016, 8th Edition Worth Publishers
2. Rosalind Levacic and Alexander Rebman "Macroeconomics", 1982, McMillan

Additional Readings

1. Brian Snowdon and Howard R.Vane. *Modern Macroeconomics Its Origins, Development and Current State.* Edward Elgar Publishing, Inc.

2. Andrew Abel and Ben Bernanke "Macroeconomics", 2003, Pearson,Indian Ed
3. Richard T. Froyen "Macroeconomics", 2003, Pearson Indian Ed
4. Bernhard Felderer and Stefan Homburg, "Macroeconomics and New Macroeconomics", 1992, Springer Verlag
5. David Romer "Advanced Macroeconomics", 1996, McGrawhil

SEMESTER-I
BASIC ECONOMETRICS-I
Paper - 5 (Eco-1.1.5)

Unit I   **Review of Basic Statistical Tools:** Fundamentals of Probability: Random variables and their probability distributions, Mathematical Expectation and its Properties, Joint distributions, conditional distributions and independence, Probability Density Function, Normal and related distributions, Central Limit Theorem

Estimation: parameter and statistic, estimates and estimators, point estimators and its properties (small sample and asymptotic properties), confidence intervals for population parameters

Hypothesis Testing: Defining statistical hypotheses; null vs alternative hypotheses, Type I and Type II errors; power of a test; the concept of degrees of freedom; testing hypotheses related to population parameters based on Z, t, χ^2 and F-tests.

Unit II   **Regression Models:** Two-variable linear regression model, Assumptions, OLS method of estimation and properties of the estimators, Gauss-Markov theorem, Standard Errors of regression coefficients, Concepts and derivation of R^2 and adj R^2, Prediction, Normality assumption, Statistical inference, Maximum likelihood estimation; Three variable linear regression model- OLS estimators and their properties, adj R^2, Inferences.

Unit III   **Problems in Regression Analysis**: Multicollinearity- sources, effects, detection and solution; Heteroscedasticity- tests, consequences, solution; Autocorrelation-sources, consequences, remedies.

Basic Readings

Gujarati D. N. (1995), Basic Econometrics (2nd Edition) Mc Grow Hill, New Delhi.

Kmenta J. (1997), Elements of Econometrics (Reprint) University of Michigan Press

Koutsoyiannis A. (19977) Theory of Econometrics, The Macmillan Press Ltd

Maddala G. S. (Ed) (1993) Econometrics Methods and Application (2vols) Aldershot

Wooldridge, Introduction to Econometrics

MICROECONOMIC ANALYSIS-II
Paper Code (Eco-1.2.6)

Unit I: Oligopoly and Economic Behaviour of Firm: Non-collusive oligopoly**:** Homogeneous Product- Cournot solution, Bertrand, Stackelberg solutions; Nonhomogeneous Product, the kinked demand curve; Collusive oligopoly – Cartels and Price leadership; Alternative theories of firm - Baumol's sales maximization hypothesis, Behavioural model of firm.

Unit II: Welfare Economics:
Pigovian welfare economics; Pareto optimal conditions; Value judgement; Social welfare function; Compensation principle; Inability to obtain optimum welfare — Imperfections, market failure, decreasing costs, uncertainty and non-existent and incomplete markets; Theory of Second Best — Arrow's impossibility theorem; some possibilities- the utilitarian form, Rawl's theory of justice, equity-efficiency trade off.

Unit III: General Equilibrium: Equilibrium in exchange; Equilibrium in competitive market systems- existence of equilibrium and efficiency; Equilibrium in production- producers, consumers, equilibrium and welfare.

Basic Readings
1. Jehle and Reny, Advanced Microeconomic Theory, Pearson India
2. Hugh Gravelle and Ray Rees, Microeconomics, Pearson Education Ltd

Additional Readings
- Andreu Mas-Colell, Michael Dennis Whinston, Jerry R. Green, Microeconomic theory, OUP
- Christopher Snyder and Walter Nicholson, Fundamentals of Microeconomics, Cengage Learning
- Hal Varian, Microeconomic Analysis, W.W. Norton.

SEMESTER-II
PUBLIC ECONOMICS -II
Paper - 7 (Eco-1.2.7)

Unit I   **Taxation:** Properties of a good tax structure, Benefit and Ability-to-pay approaches; Impact of taxation on price, output, work effort, saving, investment and risk taking, Theory of incidence, Alternative concepts of incidence; Allocative and equity aspects of income tax and commodity tax; Theory of optimal taxation-The Inverse Elasticity Rule and the Ramsey Rule; Efficiency of Taxation-Excess burden and deadweight loss; Tradeoff between

equity and efficiency; The problem of double taxation, Tax evasion and the black economy; Tax reforms in India.

Unit II   **Public Debt:** Classical View of Public Debt; Ricardian equivalence, Keynesian and post-Keynesian theories, Compensatory aspect of debt policy, Debt Through Created Money; burden of public debt, Intergeneration equity, debt sustainability, Public Borrowings and Price Level; Crowding Out of Private Investment and Activity; principles of debt management, Methods of debt redemption, debt retirement and economic stabilization, Trends and Structure of Indian Public Debt; Issues in Debt Management in India.

Unit III   **Fiscal Federalism:** Principles of multi-unit finance; Fiscal federalism in India; Assignment of function and sources of revenue; Constitutional provisions; Finance Commission, Devolution of resources and grants; Theory of grants; Resource transfer from Union to States — Criteria for transfer of resources; Centre-State financial relations in India, The recent most report of the Finance commission of India

Basic Readings

A . Bagchi(ed) (2005), Readings in Public Finance, OUP

Ambar Ghosh and Chandana Ghosh, Economics of the Public Sector, PHI

Raghbendra Jha, Modern Theory of Public Finance, New Age International (P) Ltd.

Additional Readings

A.Atkinson and J. Stiglitz (1980), Lectures on Public Economics, McGraw-Hill

Auerbach, A.J. and M. Feldstern (Eds) (1985), Handbook of Public Economics, Vol. I. North Holland

Buchanan, J., M. (1970), The Public Finances, Richard D.Train Home-wood.

Musgrave, R.A and P.B.Musgave (1976), Public Finance in Theory and Practices, McGraw Hill

R. Jha (1997), Modern Public Economics, Routledge

Report of recent most Finance Commission of India

S. Mundle (ed) (2000), Public Finance: Policy Issues for India, OUP

Shome.P, (Ed) (1995), Tax policy: Handbook Tax Division Fiscal Affairs Department, International Monetary Fund Washington D.C.

SEMESTER-II
ECONOMICS OF GROWTH AND DEVELOPMENT - II
Paper - 8 (Eco-1.2.8)

Unit I   **Growth Accounting**: Standard Primal Growth Accounting, Dual Approach to Growth Accounting, Problems with Growth Accounting, TFP Growth and R & D, Growth Accounting Versus Sources of Growth, Factors affecting economic growth-capital, labour, technology; Technological progress - embodied and disembodied technical progress

Unit II   **Economic Growth-I:** Growth models- Harrod-Domar; Neo-classical growth models- Solow and Meade; Joan Robinson's growth model; Cambridge criticism of neo-classical analysis of growth, the capital controversy, Growth models of Kaldor and Pasinetti, Optimal savings and Ramsey's Rule, Golden Rule of Capital Accumulation

Unit III   **Economic Growth-II:** Theoretical dissatisfaction with Neoclassical Theory, Models with Endogenous Growth: One sector growth models- The AK model, learning by doing and knowledge spillover; two-sector model of Ujawa-Lucas, Romer's model of technological change; Growth models with consumer optimization(the Ramsey model), Overlapping Generations Model

References

Adelman, I. (1961), Theories of Economic Growth and Development, Stanford University Press, Stanford.
Robert Barro and Xavier Sala-i-Matin, Economic Growth, PHI
Chenery, H.and T.N. Srinivasan (Eds) (1989), Handbook of Development Economics, Vols 1 & 2 Elsevier, Amsterdam
Additional Readings
Behrman, S. and T.N. Srinivasan (1995), Handbook of Development Economics vol.3 Elsevier, Amsterdam.
Brown, M. (1966), On the Theory and Measuremant of Technical Change, Cambridge University Press, Cambridge, Mass.
Chenery, H.B. et.at (Eds) (1974) Redistibution with Growth, Oxford University Press Oxford

SEMESTER-II
MACRO ECONOMIC ANALYSIS - II
Paper - 9 (Eco-1.2.9)

Unit I   **Macroeconomics in an Open Economy:** Mundell-Fleming model — Asset markets, expectations and exchange rates; the new classical critique of micro

foundations, the new classical approach; Policy Implications of new classical approach - empirical evidence.

Unit II **Inflation and unemployment:** Classical, Keynesian and Monetarist and Structuralist approaches to inflation; Philips curve analysis (Short run and long run)-Natural rate of unemployment-expectation augmented Phillips curve-Non-accelerating inflation rate of unemployment (NAIRU)- Tobin's modified Philips curve; Adaptive expectations and rational expectations hypothesis. Policies to control inflation.

Unit III **Theories of Business Cycle and Macroeconomic Policies**: Theories of Business Cycle-Schumpeter, Kaldor, Samuelson, Hicks, and Goodwin, Targetting monetary aggregates-Targeting interest rates-Inflation targeting-Budget deficits and money creation-The Barro-Ricardo equivalence theorem (The Ricardian equivalence)- Hyper inflation-Costs of inflation- The issue of Central bank autonomy-Rules vs discretion- The Taylor Rule-Time inconsistency of policy.

Basic Readings

Gregory Mankiw "Macroeconomics", 2006, Worth Publishers

Rosalind Levacic and Alexander Rebman "Macroeconomics", 1982, McMillan

Rudiger Dornbusch and Stanley Fischer "Macroeconomics",1994, McGrawhill

Brian Snowdon and Howard R.Vane, *A Macroeconomics Reader.* Routledge

Additional Readings

Brian Snowdon and Howard R.Vane. *Modern Macroeconomics Its Origins, Development and Current State.* Edward Elgar Publishing, Inc.

Andrew Abel and Ben Bernanke "Macroeconomics", 2003, Pearson,Indian Ed

Richard T. Froyen "Macroeconomics", 2003, Pearson Indian Ed

Bernhard Felderer and Stefan Homburg, "Macroeconomics and New Macroeconomics", 1992, Springer Verlag

David Romer "Advanced Macroeconomics", 1996, McGrawhill

Robert J Gordon "Macroeconomics", 1990, Harper Collins

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SEMESTER-II
BASIC ECONOMETRICS - II
Paper- 10 (Eco-1.2.10)

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Unit I **Regression with Dummy Variables:** Dummy independent variables-dummy variable trap, Testing structural stability of regression models comparing two regressions, interaction effects, estimating seasonal effects, ANOVA vs ANCOVA, piecewise linear regressions; Panel data regression models-estimation methods- fixed effects vs random effects approaches

Unit II   **Dynamic Econometric Models:** Distributed lag models- Koyck's geometric lag, Almon's polynomial lag, Partial adjustment and adaptive expectation models; Autoregressive models- estimation by using instrumental variables, Detecting autocorrelation in autoregressive models- Durbin h-test; error correction mechanism, Causality in economics- Granger and Sim's tests.

Unit III: **Simultaneous Equation Models:** Simultaneous equation bias and inconsistency of OLS estimators, Identification- rank and order conditions, Estimation- Recursive system, ILS, 2SLS, LIML, 3SLS methods.

References

Baltagi, B. H. (1998) Econometrics Springer, New York.
Goldberger, A. S. (1998), Introductory Econometrics, Harvard University Press, Cambridge Mass.
Gujarati D. N. (1995), Basic Econometrics (2nd Edition), Mc Grow Hill
Kmenta J. (1997), Elements of Econometrics (Reprint Edition) University of Michigan Press, New York.
Koutsoyiannis A. (19977), Theory of Econometrics (2nd Edition) The Macmillan Press Ltd, London.
Maddala G. S. (Ed) (1993), Econometrics Methods and Application (2vols) Aldershot U.K.
Theil, H. (1981), Introduction to Econometrics, Prentice Hall of India, New Delhi.

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SEMESTER- III
INDIAN ECONOMIC POLICY-I
Paper-11 (Eco-2.3.11)

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Unit I   **Indian Economy Issues and Planning in India:** Broad demographic features of Indian population; Population Policy and its development, migration and urbanization issues; Poverty and Inequality -major issues and critical appraisal of government measures; Food security, food procurement and PDS.

Planning in India: Objectives and strategy of planning; Types of planning, structure of planning, Achievements and Failures of planning in India; Recent Planning –objectives, allocation and targets.

Unit II   **Infrastructure and Resource Base:** Resource Base in India: Land Resources and related issues, Forest Resources and government policy, Water Resources and distribution related issues, Mineral resources and related issues with government policy.
Infrastructure in India: Physical infrastructure-energy, transport, communication - development and challenges; social infrastructure-Education and Health; Issues and policies in financing infrastructure development; development and issues of the Service Sector.

Unit III   **Economic Reforms and External Sector of India:** Rationale for reforms and LPG policy; W.T.O. and its impact on Indian Economy; Need for and issues in good governance.

Structure and direction of foreign trade; Balance of payments crisis; Balance of payments in post reform period; export-import policy and trade liberalization; progress of trade reforms in India; Latest foreign trade policy; foreign exchange management - FERA AND FEMA; currency convertibility; foreign capital and MNCs in India.

References

Ahluwalia, I.J. and I.M.D Little (eds.) (1999), India's Economic Reforms and Development (Essays in honour of Manmohan Singh), Oxford University Press, New Delhi

Chakravarty, S. (1987), Development Planning: The Indian Experience, Oxford University Press, New Delhi

Bhahmananda, P.R. and V.R. Panchmukhi (Eds.) (1987), The Development Process of the Indian Economy, Himalaya Publishing House, Bombay.

Hanumantha Rao, C.H. and H.Linnemann (Eds.) (1996), Economic Reforms and Poverty Alleviation in India, Sage Publications, New Delhi.

Noorjahan, Bava ; People's Participation in Development Administration in India.

Dhingra Ishwar C (2006) ; Indian Economy, Sultan Chand & Sons, New Delhi.

Datt, R. and K.P.M. Sundharam , "Indian Economy", S. Chand & Company Ltd., NewDelhi.

Kapila U ,"Indian economy since independence",academic foundation,New Delhi

Misra, S.K. and V.K. Puri , "Indian Economy — Its Development Experience", Himalaya Publishing House, Mumbai

Government of India, Economic Survey (Annual), Economic Division, Ministry of Finance,New Delhi.

SEMESTER- III
INTERNATIONAL ECONOMICS -I
Paper-12 (Eco-2.3.12)

Unit I: New Theories of International Trade:

Intra-Industry Trade, Imperfect Competition and Increasing Returns to Scale as determinants of Trade and gains from trade, Effect of changes in tastes, per capita income and technology on Trade and gains from trade, Kravis Theory of Availability, Linder's theory, Posner's Imitation Gap theory, Vernon's Product Cycle Theory, Kenen's theory

of Human capital, Emanuel's theory of Unequal Exchange, "New" new trade theory (views of Melitz and Pol Antras)

Unit II: International Trade Policy: Economic growth and International trade, Economic Development and International trade. Free trade versus Protection, Trade restrictions: Tariffs (Partial and General Equilibrium analysis), Effective Rate of Protection and optimum tariff, Non-tariff trade barriers: Import Quotas, Voluntary Export restraints, International Cartels,

Dumping,Export subsidies. Economic Integration: Customs Union and Free Trade Areas, International Resource Movements and Multinational Corporations.

Unit III: Foreign Exchange Markets, Exchange Rates

Functions of the Foreign Exchange Market. Equilibrium Exchange Rates. Cross Exchange Rates, Effective Exchange Rates and Arbitrage. Spot and Forward Exchange Rates, Foreign Exchange Futures and Options, Foreign Exchange Risks, Hedging, Speculation, Overview of Exchange Rate Determination: Trade or Elasticity Approach, Purchasing-Power Parity Theory, The Monetary Model to Exchange Rates, Asset or Portfolio Model of Exchange Rates.

Central Bank intervention and money supply: central bank balance sheet, foreign exchange intervention, sterilization, balance of payment and money supply, Central bank fixes the exchange rate: Foreign exchange market equilibrium under fixed exchange rate, money market under fixed exchange rate, stabilization policies with fixed exchange rate ;BOP crisis and capital flight :managed floating and sterilized intervention; Reserve currencies in the world Monetary system.

Basic Readings

- Krugman Paul R., Obstfeld Maurice and Melitz. International Economics, Pearson Education
- Salvatore, D. (1997). International Economics, Prentice Hall.

Additional Readings

- Batra, Raveendra N. (1975), The Pure Theory of International Trade under Uncertainty, The Macmillan Press.
- Bhagwati, J. (Ed.) (1981), International Trade: Selected Readings, Cambridge University Press.

- Dana, M.S. (2000), International Economics: Study, Guide and Work Book, Routledge Publishers.
- Dunn, R.M. and J.H.Mutti (2000), International Economics, Routledge Publishers, London.
- Gandolfo Giancarlo, International Trade Theory and Policy, Springer.
- Haberler, G. (1937), The Theory of International Trade, Macmillan & Co.
- Heller, H. Robert (1968), International Monetary Economics, Prentice-Hall of India.
- Kenen, Peter B. (1989). The International Economy, Prentice-Hall of India Pvt. Ltd.
- Kindleberger, C.P. (1977). International Economics, D.B. Taraporevala Sons & Co. Meade, James Edward (1952). A Geometry of International Trade, George Allen and Unwin.

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SEMESTER-III
ECONOMICS OF ENVIRONMENT-I
Paper-13 (Eco-2.3.13)
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Unit I: Economy and Environment: The historical development of environmental economics– Early economic paradigms and the Environment, Post war economics and the rise of environmentalism, Interaction Between Ecological and Economic Systems; Environment-Development-Poverty Nexus; Sustainable Development- Concept and Operationalisation, Institutional economics Paradigm, The market model of environmental values, Sustainable economic growth and development, Environment economy interaction, The circular economy.

Unit II: The Economics of Pollution: The optimal level of pollution, Pollution as externality, alternative definitions of pollution, The market achievement and optimal pollution, Property rights and market bargain theorems, Coase theorem, taxation, Subsidies and optimal pollution, The optimal pigovian tax, Pollution charges and abatement costs, Pollution reduction subsidies, Marketable pollution permits, The theory of marketable permits, The advantages of marketable permits, Types of permit system, Permit trading in practice.

Unit III: Measurement of Environmental values: Meaning of environmental valuation, the uses of economic value, Total economic value, Option value, Existence value, Empirical measures of option and existence value, Total economic value and decision making; Direct and Indirect Valuation of Environmental Goods: The hedonic price approach, Contingent valuation, Travel cost approach, Household health production function, Willingness to pay vs. Willingness to accept

Basic Readings

Kolstad C.D. (1999) Environmental Economics, Oxford University Press, New Delhi.

Pearce D.W. and R. Turner (1991) Economics of Natural Resource Use and

Environment, John Hopkins University Press, Baltimore.

Tietenberg, T. (1994) Environmental Economics Policy and Harper Collins New York

Additional Readings

Baumol W.J. and W.E. Oates (1988) The Theory of Environmental Policy (2nd Edition) Cambridge University Press, Cambridge.

Bromley, D.W.(Ed) (1995), Handbook of Environmental Economics, Blackwell, London

Fisher, A, C. (1981) Resource and Environmental Economics, Cambridge University press Cambridge.

Hanley N.J.F. Shogern and B.White (1997) Environmental Economics in Theory and Practice Macmillan.

Hussen A.M. (1999) Principles of Environmental Economics Routledge, London.

Jeroen, C.J.M. van den Bergh (1999) Handbook of Environmental and Resource Economics, Edward Elgar Publishing Ltd U.K.

Perman R.Ma and J. McGilvary (1996) Natural Resource and Environmental Economics, Longman, London.

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P.G. Semester III
MATHEMATICAL OPTIMIZATION
Paper: Optional
Eco-2.3.15

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Unit I **Classical Optimization:**
Weierstrass Theorem; Concavity, convexity of a function,Maclaurin series before Taylor series, mean value theorem,Unconstrained Optimization; Optimization with Equality Constraints (Lagrangian method),Inequality constraints**(Kuhn-Tucker optimality conditions), Standard applications of Optimization-Consumer's equilibrium with n-commodities, and producer's equilibrium with m-outputs, Value function and the envelope theorem.

Unit II   **Differential & Difference Equations**:
Differential Equations-Linear first order, non-linear first order, Linear second order and simultaneous differential equations. (solutions with Economic applications)
Difference Equations- Linear first order, non-linear first order, linear second order difference equations and simultaneous difference equations. (solutions with Economic applications)

Unit III **Linear Programmingand Input-output Analysis** —
Structure of LPP, Primal and dual problem, Simplex method; transport and storage problems, Duality and its economic interpretation. Complementary slackness theorem and its economic application.
Input-output analysis:
Static open **input-output** model, Hawkins-Simon theorem, a linear programming interpretation of input-output models; Leontief's dynamic system; Testing consistency of planning models.

Readings:
- Hoy, M., Livernois, J. , McKenna, C & T. Stengos. Mathematics for Economics, PHI

- Dixit, A, Optimisation in Economic Theory, OUP
- Dorfman R., Samuelson P.A and Solow R. M. Linear Programming and EconomicAnalysis. Dover Publications.
- Hadley, G. (1962). Linear Programming, Addison-Wesley Pub. Co., Massachusetts.
- Gass, S. I, Linear Programming: Methods and Applications, Dover Publications

Additional Readings
- Arrow, K.J. and M.D. Intriligator (eds.) (1981). Handbook of Mathematical Economics, Vol.I, North Holland, Amsterdam.
- Bez, K. (1983). An Introduction to Input Output Techniques, N.B.T., Goel Publishing House, Meerut.

SEMESTER-III
FINANCIAL INSTITUTIONS AND MARKETS-I
Paper Code: Optional
Eco-2.3.15

Unit I Basic Concepts in Finance: Introduction to Financial Economics, The structure of the financial system, Financial Markets: functions of financial system, Financial Instruments, Equilibrium in Financial Markets, Financial System and Economic Development. Time Value of Money: Future Value, Present Value, Future value of an annuity, Present value of annuity, Present rate of perpetuity. Investment Criteria: Net Present Value, Benefit Cost Ratio, Internal Rate of Return, Modified Internal Rate of Return, Pay Back Period.

Unit II Structure of Interest Rates: Structure of Interest rates, Theories of term structure interest rates: Expectation Theory, Market Segmentation Theory and Liquidity Premium Theory; determinants of general structure of interest rates; Analysis of financial statement: Ratio Analysis, Different Kinds of Financial Ratios, Calculation and its importance in financial analysis; Risk and Return: Types of risk, Measurement of Risk and Return of an asset, Measurement of Risk and Return of a Portfolio, Determinants of Beta, Risk-Return trade off.

Unit III Banking Institutions and NBFIs: Commercial Banks: Profitability and efficiency of Banks, Development Banks-Role and functions, Investment banking and Merchant banking, Definition and Types of NBFIs: UTI, Mutual Funds: Valuation (NAV), UTI and Other Mutual Funds; Insurance Companies, Provident Funds and Pension Funds, Growth and impact of NBFIs, Control of NBFIs .

Basic Readings

Chandra, P (2012) Financial Management, Theory and Practice, McGraw Hill Education Pvt. Ltd. New Delhi.

Bhole, L. M. and J Mahakud (2009) Financial Institutions and Markets, McGraw Hill Education Pvt. Ltd. New Delhi.

Mishkin F S and S G Eakins (2011) Financial Institutions and Markets, Pearson, New Delhi.

Additional Readings

Khan, M. Y. and Jain, P. K. (2004), Financial Management, Text, Problems and Cases, McGraw Hill Education Pvt. Ltd. New Delhi.
Pandey, I. M. Financial Management, Vikas Publishing House, New Delhi.
Harker P. T. and S. A. Zenios (2000) (Eds) Performance of Financial Institutions Cambridge University Press, Cambridge.
Johnson , H. J. (1993) Financial Institutions and Markets, McGraw Hill, New York.
Khan M. Y. (1996) Indian Financial System Tata McGraw Hill, New Delhi.
Machiraju, M. R. (1999) Indian Financial System, Vikas Publishing House, New Delhi.
Brigham E F and M C Ehrhardt, (2012) Financial Management, Theory and Practice, Cengage Learning, New Delhi.

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SEMESTER-III
ADVANCED ECONOMETRICS-I
Paper Code: Optional
Eco-2.3.14

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Unit I	**Univariate Time series Modeling**: Properties of time series, Properties of AR, MA, ARMA, ARIMA processes, Stationary stochastic process- Random walk and white noise, Tests for Stationarity- Graphic inspection, Integrated series, Trend Stationary and Difference Stationary series, Unit Root Tests, ARIMA models-identification, estimation, diagnostic testing, forecasting- MA(1), ARMA(1,1) and ARIMA(1,1,0) processes, Seasonality
Unit II	**Modeling Volatility:** The stylized facts of economic time series, the ARCH model- testing for ARCH effects, estimation of ARCH model by iteration; the GARCH model, the GARCH (1,1) as an infinite ARCH(q), Maximum Likelihood Estimation of GARCH models, estimating GARCH model with EViews; Introduction to EGARCH model.
Unit III	**Modeling with trends:** Deterministic and stochastic trends, removing the trend, Unit roots and regression residuals, structural change, Cointegration: a general cointegrated system, error correction model and tests for cointegration; cointegration in single equations- Engle-Granger method, system estimation method – Johansen procedure

References

Jack Johnston and John Dinardo, Econometric Methods, McGraw-Hill International Editions, Singapore, 1997

Walter Enders, Applied Econometric Time Series, Wiley India (P) Ltd, New Delhi2004
Wooldridge

SEMESTER-III
AGRICULTURAL ECONOMICS-I
Paper Code: Optional
Eco-2.3.14

Unit 1   **Agriculture and Economic Development:** Nature and scope of agricultural economics; Agriculture and its peculiarities; Role of agriculture in economic development; Interdependence between agriculture and industry; Traditional peasant agriculture and Modern capitalist Agriculture; Traditional agriculture and its modernization-Approaches of Schultz, Mellor and Boserup

Unit II   **Agricultural Production:** Production function in agriculture- conventional iso-quant and iso-cost approach; Cobb-Douglas production function; laws of returns and return to scale; Cost functions and cost curves in agricultural production decisions; Supply response in agriculture; Size of farm and productivity debate.

Unit III   **Agrarian Structure and Land Reforms:** Farming systems and suitable farming system for India, Types of Agricultural Tenancy and their effects, Incidence of tenancy in India, Land reform measures: achievements and failures; Ceiling on Land Holding; Tenancy Reforms; Cooperative farming

Basic Readings

Soni R.N. Leading Issues in Agricultural Economics, Vishal Publishing, 2013

Mamoria C.B. Agricultural Problems of India, Kitab Mahal Publisher

Kapila Uma, Indian Economy since Independence, Academic Foundation

Bhaduri, A (1984), The Economic Structure of Backward Agriculture, Macmillan, Delhi

Bilgrami, S.A.R (1996), Agricultural Economics, Himalaya Publishing House, Delhi

Dantwala, M.L, et al. (1991), Indian Agricultural Development since Independence, Oxford and IBM, New Delhi

Rudra (1982), Indian Agricultural Economics: Myths and reality, Allied Publishers, New Delhi

Saini, G.R (1979), farm Size, Resource Use efficiency and Income Distribution, Allied Publishers, New Delhi

Joshi, P.C. (1975), Land reforms in India: trends and Prospects, allied Publishers, Bombay

HEALTH ECONOMICS-1
Paper-Optional

Unit I   **Subject Matter of Health Economics:** what is Health Economics? Why Health Economics? How Health Economics? Basic questions in Health Care Economics, why good health? Production of good health, Determinants of health, What is special about Health care Economics? Does economics apply to health and health care? Is health care different? Medical care vs. health care

Unit II   **Demand for Health Care:** Investment in health as a form of human capital, Grossman's investment Model of Health and its critic, The Consumption Model, Demand for Medical Care, Preferences for health and health care, Income and price effects, Non-Economic determinants of the demand for medical care, market demand for health care and Fuzzy Demand Curve, Is medical care a normal or a superior good? Role of Quality in the demand for medical care

Unit III **Supply of Health Care:** Hospital as a supplier of medical care, Hospitals and patients-a model of equilibrium quality and price, Supply of physician services, Physicians as providers of health care-market for physicians' services, Model of Physician induced demand, Market for nurses, is physician an entrepreneur or a labour?

References

The Economics of Health and Health Care: Sherman Folland, Allen C. Goodman and Mirom Stano: Person-Prentice Hall
Health Economics-Prentice Hall
A Health Economics Primer: Shirley Johnson Lans; Person- Addison Wesley
Health Economics-Theories, Insights and Industry Studies; Rexford E. Santerre and Stephen P.Neun; Irwin

Semester-III
ECONOMICS OF SOCIAL SECTOR-I
Paper: Optional

Unit I   **Social Services**- Private Vs. public sector financing, Recent debate on the fixation of prices of social services in India during successive five- year Plans, Current performance of social sectors in India-Labour and employment, Education,

Population, Family welfare, Health water supply and sanitation, Development of women and children, Social welfare.

Unit II   **Welfare Economics, Social Sectors and Environment:** Pareto optimality and competitive equilibrium, Fundamental theorem of welfare economics, Externalities and market inefficiency externalities as missing markets, Property rights, non-convexities and externalities, Pareto optimal provision of public goods-Lindahi's equilibrium.

Unit III   **Economics of Education:** Education as an instrument for economics growth, Human Capital vs Physical Capital, Components of Human capital, Private demand and social demand for education, Determinants of demand for education Cost of education-Expenditure on education, Private costs and social costs and wastage and stagnation, Benefits of education – Direct and indirect benefits, Private and social benefits, Resource Mobilisation and Utilisation, Pricing and Subsides, Effects of educational financing on income distribution.

References

Equality, Quality and Quantity: J.P.Naik Allied Punlisher: 1975

The theory of Externalities and Public Goods: R.Crones and T.Sandler: Combridge University Press,1989

Economics of Education: J.Vaizey: Faber and Faber:1962

Cost-Benefit Analysis in Educational Planning: M.Wood hall: UNESCO: 1992

Semester-III
ECONOMICS OF LAW-I
Paper: Optional

Unit I   **Introduction:** Economics analysis of law: Introduction of legal reasoning, Mirkets and Efficiency, Market failure, Coase Theorem and the related ideas, Nature of economics reasoning, Economic approach to law, History and criticism of law and legal institutions, The institutions of the Federal and state court systems.

Unit II   **The Nature of Legal Disputes:** How legal Rules evolve? International aspects of economics and law, General Agreement on Treade and Tariffs (GATT) /World Treade Organisation (WTO),TRIPS and TRIMS, FERS And FEMA.

Unit III   **Law Relating to Consumer Activities:** Bargain theory, Economic rule of contract, Economic theory of contract, Remedies as incentives formation, Defences and performance excuses, Duress, Bargaining Power and Unconscious Ability, Tort Law, Tort Liability and economic models, Economics of accidents, fault, victim, fault and strict liability, Function of damages, consumer protection, consumer courts.

References

Law and Economics: R D Cooter and T S Allen: Addision Wesley:2000

Economics Analysis of law: R A Posner: Little Brown: 1998

Administrative Law: I P Massey :PEastern Book Company :1995

Law and Economic Anthology: K G Dan- Schmidt and T S Alen: Addision Wesley

Semester-III
ECONOMICS OF NATURAL RESOURCES- I
Paper- Optional

Unit I   **Natural Resource Economics:** A resource Taxonomy, Efficient intertemporal allocations, Market Allocations, Natural resources management and sustainable development: Theories of optimal use of exhaustible and renewable resources, Environment and development trade off and the concept of sustainable development, integrated environmental and economic accounting, Environmentally corrected GDP

Unit II   **Energy:** Demand for energy, Natural gas price control, oil-the cartel problem, Transition fuels- environmental problems, Conservation and local management, Renewable and non-conventional sources of energy, Energy modelling, Need for and a sketch of an optimal energy policy.

Unit III   **Water:** The potential for water Scarcity, The efficient allocation of scarce water, Surface water and ground water, The current allocation system, potential remedies, Water pollution, Nature of water pollution programmes- sources of contamination, Types of pollutants, Water pollution control policy, Efficiency and cost effectiveness.

References

Environmental Economics and Policy: Tom Titenberg, Addision- Wesley 1988

Resource and Environmental Economics: A.C Fisher. Cambridge University Press,1981

Economics of Natural Resource3 Use and Environment: D.W. Pearce and R.Turner: John Hopkins University Press.1991

Economics of Education: J. Vaizey: Faber and Faber, 1962

Private Health Care in India: Social Characteristics and Trends: R.V. Basu: 1998 Sage Publications

Econology and Economics: Ram Prasad Sengupta: Oxford University Press, 2001

Semester-III
DEMOGRAPHY-I
Paper: Optional

Unit I   **Population and Development:** Meaning and scope of demography, Theories of population-Malthus, Optimum Theory of population, Theory of Demographic Transition, Population and development with reference to india, Population growth and health services, Education, Per Capita income and food supplies.

Unit II   **Population Structure:** Population trends in the twentieth century, International aspects of population growth and distribution, Characteristics of population structure, Age and sex characteristics, Factors influencing sex-ratio, age structure, Marital Status, Religion Literary and population Population pyramid

Unit III   **Fertility:** Nature of fertility, Determinants of fertility, Measures of fertility, Total fertility rate, Gross reproduction rate, Net reproduction rate, Differential fertility, Low fertility in developed countries, High fertility in developing countries Socio-economic theories of fertility, Microeconomic household theory of fertility

References

Population Studies: Hans Raj, Surajeet Publications, New Delhi

Demography: M.L.Jhingan, B.K.Bhatt and J.N Desai, Vrinda Publications.

Elements of Demography: V.C Sing and EZacharia –Allied Publishes

Population Policy in India: P.K.Choubey, Kaniska Publications 2000

Demography and Population Problems: R.K.Sharma, Atlantic Publishers

Fundamentals of Demography: Hans Raj: Surajeet Publications, New Delhi

SEMESTER- IV
INDIAN ECONOMIC POLICY-II
Paper-16 (Eco-2.4.16)

Unit I   **Issues in Agriculture Sector of India:** critical evaluation of Land reforms in India and recent initiative; need for second Green revolution; policies for sustainable agriculture; modern farm inputs and subsidies; agricultural marketing and price policy commercialization and diversification of agriculture; New Agricultural Policy.

Unit II   **Issues in Industrial Sector of India:** Scenario since Industrial policy of 1991; Public Sector enterprises and their performance; Privatization and disinvestment debate; Problem of sick units in India and government policy; revival of Small-scale sector; Land acquisition, SEZ and Industrialisation., Exit policy – issues in labour market reforms

Unit III   **Growth and Development of Odisha Economy**: A macro glance of Odisha's economy; Odisha Economy in relation to India and major states in recent decades: in terms of indicators on - per capita SDP, per capita consumption (rural and urban), income growth, human development.; policies relating to social sector; state of infrastructure in Odisha and project initiated to improve;. Agriculture and allied sector in Odisha and policies initiated by government, issues in agricultural sector; industrial development– Problems and Prospects; Tertiary Sector Growth. public finance in Odisha.

References

Chakravarty, S. (1987), Development Planning: The Indian Experience, Oxford University Press, New Delhi

Bhahmananda, P.R. and V.R. Panchmukhi (Eds.) (1987), The Development Process of the Indian Economy, Himalaya Publishing House, Bombay.

Dhingra Ishwar C (2006) ; Indian Economy, Sultan Chand & Sons, New Delhi.

Datt, R. and K.P.M. Sundharam , "Indian Economy", S. Chand & Company Ltd.

Kapila U ,"Indian economy since independence", Academic Foundation.

Misra, S.K. and Puri, V.K. "Indian Economy — Its Development Experience", Himalaya Publishing House.

Joshi P.C. (1975), Land Reforms in India, Allied Publishers Pvt. Ltd., New Delhi.

Government of India, Economic Survey (Annual), Economic Division, Ministry of Finance.

Economic survey (annual), planning and coordination department,directorate of economics and statistics ,government of Odisha.

Mathur R, "Indian economic policy and reform",RBSA publisher,Jaipur

Jalan B "Indian economic policy", Penguin Books Ltd

Mathur R, "challenges facing indian", RBSA Pub, Jaipur

SEMESTER IV
INTERNATIONAL ECONOMICS-II
Paper Code: 2.4.17

Unit I   **Open-Economy Macroeconomics:**

Automatic Adjustments with Flexible and Fixed Exchange Rates - Adjustment with Flexible Exchange Rates. Stability of the Foreign exchange Market. Elasticity estimates and the J-curve, Adjustment with Fixed Exchange Rates: The

Gold Standard. Income Determination in a Closed Economy and in an Open Economy. Foreign Repercussions. Absorption Approach. Synthesis of Automatic adjustments with Rates.

Unit II   **The International Monetary System:**

Fixed Versus Fixed Exchange Rates: AnOverview. The Case for and against Flexible Exchange Rates. The Case for and against Fixed Exchange Rates. Optimum Currency Areas and the European Monetary System, Exchange rate Bands, Adjustable Pegs, Crawling Pegs, and Managed Floating. The Gold Standard and the Interwar Experience. The Bretton Woods System: its operation and evolution, Present International Monetary System. WTO and India

Unit-III: **Financial Globalization, Developing Countries: Growth and Crisis**

International Capital market and gains from trade: risk aversion, portfolio diversification as a motive for international Asset trade, Debt vs equity, international banking and international capital market: structure, offshore banking and offshore currency trading Eurocurrency, shadow banking system and their problems

Income, wealth and growth in the World Economy, Structural features of Developing countries, Developing countries Borrowing and Debt, East Asia: Success and Crisis Digital currency-Crypto currency, Bit coin

Basic Readings
- Chacholiades, Miltiades (1990). The Pure Theory of International Trade, McGraw Hill.
- Krugman Paul R., Obstfeld Maurice and Melitz. International Economics, Pearson Education
- Salvatore, D. (1997). International Economics, Prentice Hall.

Additional Readings
- Batra, Raveendra N. (1975). The Pure Theory of International Trade under Uncertainty, The Macmillan Press.
- Bhagwati, J. (Ed.) (1981). International Trade: Selected Readings, Cambridge University Press.
- Copeland Laurence. Exchange Rates and International Finance. Addison Wesley Dana, M.S. (2000). International Economics: Study, Guide and Work Book, Routledge Publishers.
- Gandolfo Giancarlo, International Finance and Open-Economy Macroeconomics, Springer
- Gandolfo Giancarlo, International Trade Theory and Policy, Springer.
- Haberler, G. (1937). The Theory of International Trade, Macmillan & Co.

- Heller, H. Robert (1968). International Monetary Economics, Prentice-Hall of India. Kenen, Peter B. (1989). The International Economy, Prentice-Hall of India Pvt. Ltd., New Delhi.
- Kindleberger, C.P. (1977). International Economics, D.B. Taraporevala Sons & Co. Meade, James Edward (1952). A Geometry of International Trade, George Allen and Unwin.
- Roy, P.N. (1986). International Trade: Theory and Practice, Wiley Eastern.

SEMESTER-IV
ECONOMICS OF ENVIRONMENT-II
Paper-18 (Eco-2.3.18)

Unit I: Issues of Climate Change

Climate Change: Scale of the Environment Challenge, Economics, Ethics and Climate Change, Impact of Climate Change on Growth and Development

Unit II: Environmental and Natural Resource Problems in India: Mechanism for environment regulation in India; Environmental laws and their implementation; Policy instruments for controlling water and air pollution and forestry policy; People's participation in the management of common and forest lands; The institutions of joint forest management and the joint protected area management; Social forestry - rationale and benefits.

Unit III: Natural Resources Economics: A resource taxonomy, Resource scarcity, Renewable resources, Growth curves, The rate of exploitation, Costs and Revenues, Preservation values, Exhaustible resources, Principles of exhaustible resource use, Optimal resource use, Resource degradation, Policy failure, Market failure, Planning failure, Propert rights failure, Management of common property resources.

Basic Readings

Kolstad C.D. (1999) Environmental Economics, Oxford University Press, New Delhi.
Pearce D.W. and R. Turner (1991) Economics of Natural Resource Use and
Environment, John Hopkins University Press, Baltimore.
Tietenberg, T. (1994) Environmental Economics Policy and Harper Collins New York
The Economics of Climate Change: The Stern Review by Great Britain Treasury,
Cambridge University Press
Bhattacharya R.N(2001) Environmental Economics, An Indian Perspective, Oxford
University Press, New Delhi.

Additional Readings

Baumol W.J. and W.E. Oates (1988) The Theory of Environmental Policy (2nd Edition)
Cambridge University Press, Cambridge.
Bromley, D.W.(Ed) (1995), Handbook of Environmental Economics, Blackwell, London
Fisher, A, C. (1981) Resource and Environmental Economics, Cambridge University
press Cambridge.

Hanley N.J.F. Shogern and B.White (1997) Environmental Economics in Theory and Practice Macmillan.
Hussen A.M. (1999) Princifples of Environmental Economics Routledge, London.
Jeroen, C.J.M. van den Bergh (1999) Handbook of Environmental and Resource Economics, Edward Elgar Publishing Ltd U.K.

P.G. Semester IV
GAME THEORY AND STRATEGIC BEHAVIOUR
Paper: Optional

Unit I   **Strategic form of Games:** Rules of the Game, The Extensive and Strategic form of Games. Solutions: Dominant Strategy, Dominance Solvability, Nash Equilibrium. Applications: Cournot Duopoly, Stackelberg model, The commons problem; Mixed strategies and their applications: Natural Monopoly and Bankruptcy Law, Zero-sum games, Playing safe: Maximin, Playing sound: Minimax, Playing both safe and sound: Playing Nash.

Unit II   **Extensive form of Games:** Perfect Information Games, Backward Induction, Application: R&D Model, Subgame Perfect Equilibrium, Finitely Repeated Games, Infinitely Repeated Games: Trigger strategies and Good behavior, Folk Theorem

Unit III   **Dynamic Games:** The model of Commons problem, Sustainable Development and Social optimum, Moral Hazard and Incentives Theory, Games with Incomplete Information, Mechanism Design, The Revelation Principle, Signaling Games and the Lemons problem.

References

Binmore Ken. Game Theory: A Very Short Introduction. Oxford University Press
Brown Kevin Leyton, Shoham Yoav, Essentials of Game Theory: A Concise, Multidisciplinary Introduction. Morgan & Claypool
Dutta Prajit K Strategies and Games: Theory and Practice. MIT Press.

Fudenberg Drew, Tirole Jean. Game Theory. MIT Press (MA)

Gibbons Robert, Game Theory for Applied Economists. Princeton University Press

Myerson Roger B. Game Theory: Analysis of Conflict. Harvard University Press.

Neumann John Von, Morgenstern Oskar, Rubinstein Ariel. Theory of Games and Economic Behavior. Princeton University Press.

Romp Graham Game Theory: Introduction and Applications. Oxford University Press.

Rubinstein Ariel. Game Theory in Economics. E. Elgar Publisher.

FINANCIAL INSTITUTIONS AND MARKETS-II
Paper Code: Optional

Unit I Regulatory and Promotional Institutions: The Reserve Bank of India: Roles and Functions, Monetary Policy of the RBI, Techniques of Monetary Control, Recent Policy Developments, Liquidity Adjustment Facility (LAF), The Securities and Exchange Board of India: Genesis, Organizations, Objectives and Functions, Performance of SEBI, IRDA and its role in financial markets, Financial Sector reforms in India.

Unit II Valuation of Securities: Fundamentals of Valuation of Securities: Valuation of Bonds and Stocks; Bond Yield, Yield to Maturity. Equity Valuation: Dividend Discount Model, The P/E Ratio Approach; Irrelevance of Dividends: Modigliani and Miller Hypothesis; Relevance of Dividends: Walter's Model, Gordon's Model. The Cost of Capital: Debt and equity; Cost of Debt, Cost of Preference Capital and Equity Capital.

Unit III Derivative Markets: An introduction to financial derivatives: Types and uses of derivatives; Forward Contracts: basic concepts, determination of forward prices, Futures Contract: basic concepts, theories of future prices- the cost of carry model, the expectation model, capital asset pricing model. Relation between Spot and Future Prices, forward vs future contract, Hedging in Futures; Options: types, value of an option, the Pay-Offs from Buying and Selling of Options; the Put Call Parity Theorem; Binomial option pricing model (BOPM) and Black-Scholes option pricing model.

Basic Readings

Bhole, L. M. and J Mahakud (2009) Financial Institutions and Markets, McGraw Hill Education Pvt. Ltd. New Delhi.

John C. Hull, and S Basu (2013), Options Futures and other Derivatives, Pearson, New Delhi. Chandra, P (2012) Financial Management, Theory and Practice, McGraw Hill Education Pvt. Ltd. New Delhi.

Additional Readings

Khan, M. Y. and Jain, P. K. (2004), Financial Management, Text, Problems and Cases, Tata McGraw Hill Company Ltd. New Delhi.

Brigham E F and M C Ehrhardt, (2012) Financial Management, Theory and Practice, Cengage Learning, New Delhi.

Gardener D. C. (2003), Derivatives, Macmillan India Limited, New Delhi

Gupta S.L. (2011), Financial derivatives, PHI Learning, New Delhi.

Swain PK (2012), Fundamentals of Financial derivatives, Himalaya Publishing House, Mumbai.

Avadhani, V. A. (2003) security Analysis and Portfolio Theory, Himalaya Publishing House, Mumbai.

P.G. Semester IV
ADVANCED ECONOMETRICS-II
Paper: Optional

Unit I   **Multi-equation Time series Models:** Vector Autoregressions (VARs): Estimation of VAR- Testing the order of the VAR, Testing for Granger causality and Sim's test, the Impulse Response Function, Orthogonal innovations, Variance Decompositions; Vector Error Correction Models-testing for Cointegration Ranks, Estimation of Cointegration Vectors, Estimation of a Vector Error Correction model; Structural VARs, Identification conditions, Estimation of structural equations, Forecasting in VAR models, Problems with VAR modeling

Unit II   **Panel data Methods:** Sources and types of panel data, Simple panel data methods-Policy analysis with Pooled Cross Sections, Two period panel data analysis, policy analysis with two period panel data analysis, Differencing with more than two time periods; advanced panel data methods- Fixed effects estimation, Random effects model, Wu-Hausman test

Dynamic Heterogeneous Panels: Bias in dynamic panels, solution to the bias problem, Bias in heterogeneous slope parameters, solution to heterogeneous bias- the mean group estimator, the pooled mean group (PMG) estimator

Unit III   **Discrete and Limited Dependent Variables Models:** Types of discrete choice models, linear probability model, formulating a probability model, the probit and the Logit models, misspecification in Binary Dependent Models, Ordered Probit, Tobit models.

References

Jack Johnston and John Dinardo, Econometric Methods, McGraw-Hill International Editions, Singapore, 1997
Walter Enders, Applied Econometric Time Series, Wiley India (P) Ltd, New Delhi2004
Amemiya, T. (1985) Advanced Econometrics Harvard University Press
Baltagi, B. H. (1998) Econometrics Springer, New York.
Dongherty, C, (1992) Introduction to Econometrics, Oxford University Press, New York.
Goldberger, A. S. (1998), Introductory Econometrics, Harvard University Press
Gujarati D. N. (1995), Basic Econometrics (2nd Edition) Mc Grow Hill, New Delhi.
Hill R. C., E. G. William and G.G. Judge (1997) Undergraduate Econometrics, Wiley
Kennedy P. (1998) A Guide to Econometics (4th Edition) MIT Press, New York.
Kmenta J. (1997), Elements of Econometrics (Reprint Edition) University of Michigan Press, New York.
Koutsoyiannis A. (19977) Theory of Econometics (2nd Edition), The Macmillan Press Ltd, London.

Krishna, K. L. (Ed) (1997) Econometric Applications in India, Oxford University Press
Maddala G. S. (Ed) (1993) Econometrics Methods and Application (2vols) Aldershot
Theil, H. (1981) Introduction to Econometrics, Prentice Hall of India, New Delhi.

SEMESTER-IV

AGRICULTURAL ECONOMICS-II

Unit I **Agricultural Marketing and Price Policy**: Problems in agricultural marketing in India and Government Measures, Regulated Markets; Cooperative marketing, Marketed and marketable surplus; Contract farming; Terms of trade between agricultural and non-agricultural prices; Objectives of agricultural price policy; Food security system in India and public distribution; Issues of Agricultural Subsidies

Unit II **Agriculture credit and Insurance**: Interlinkage of land, labour and credit markets; Characteristics of rural credit; Sources of Rural Credit: Institutional and Non-institutional, Role of credit cooperatives, Commercial Banks and Regional Rural Banks and their performance; Crop Yield and Weather Based Crop Insurance Schemes

Unit III **Growth, Distribution and International Aspects of Agriculture**: Green Revolution and distribution of gains; Cropping Pattern shifts and foodgrain production; Gender Issues in Agriculture; Problems of Agricultural labour; Problems of marginal and small farmers**;**, New Economic Policy and Agriculture; WTO and its impact on agriculture

Basic Readings

Soni R.N. Leading Issues in Agricultural Economics, Vishal Publishing, 2013

Mamoria C.B. Agricultural Problems of India Kitab Mahal Publisher

Gulati & Kelley - Trade Liberalization of Indian Agriculture, (1999), Oxford University Press

Kapila Uma, Indian Economy since Independence, Academic Foundation
Kalhon, A.S and Tyagi, D.S (1983), Agriculture Price Policy in India, Allied Publishers, New Delhi

Semester-IV
HEALTH ECONOMICS-II
Paper-Optional

Unit I   **Modeling in Health Care Financing:** Definitions, Scope, Focus, The context of financial modelling in health care; Health statistics- sources of statistical data, data sources for financial modelling, data problems; Health accounting health and national accounting, health and social accounting, national health accounts-methodology, data souirces, problems and prospects

Unit II   **Health Promotion:** What is health promotion? Changing priorities in health promotion, Why promote health? Who promotes health? Environmental influence on health, Interconnection between lifestyle and environment, Components of health promotion, Health promotion models, Ethical issues in health promotion, Evaluation in health promotion- objectives and criteria of health promotion.

Unit III   **Drugs and Society:** The cost of drug use to society, Explaining drug use and abuse- Biological explanations, Phychological explanations, Sociological explanations, Drug abuse and the law, Strategies for preventing drug abuse, Athletes and drug abuse, Drug use among women, Drug use in adolescent sub-cultures, Drug use in HIV positive sub-cultures, Using education to control drug use

References

Promoting Health: Knowledge and Practice⊗ed) Jeanne Katz, Alyson Peberdy and Jenny Douglas, The Open University, Palgrave

Evidence- Based Health Promotion ⊗ed) Elizabeth R. Perkins, Ina Simnett and Linda Wright, Wiley

Communication and Education for Health Promotion and Population Regulation: A Global Perspective; (ed) Kuttan Mahadevan, B.R. Publishing Corporation

Drug and Society: Glen Hanson and Peter Venturelli, Jones and Bartlett Publishers

Semester-IV
ECONOMICS OF SOCIAL SECTOR-II
Paper: Optional

Unit I   **Environmental Economics:** Causes and Effects of environmental degradation degradation of land, forest, natural resources, The market model of environmental manangement pollution prevention, Control and abatment, Legal institutions and instruments, Valuation of environmental damages/ benefits-direct and indirect

methods. Environment and development, Integrated environmental and economic accounting. Environmentally corrected GDP.

Unit II   **Health Economics:** Health dimension of development, Determinants of Health poverty, malnutrition and environmental issues, Economic dimensions of health care-demand and supply, Financing of health care and resource constraints, Distributional issues in health care delivery. Theory and empirical studies of production of health care, inequalities in health: class and gender perspectives.

Unit III   **Economics of Labour:** Demand for and supply of labour, Rural urban migration and labour supply labour market policies, Social security of labour, Some specific problems of labour-child labour, Female labour, Globalization and Market for labour, Labour Market reforms-exit policy, need for safety nets. Technological change in organized private sector industries and employment. Analysis of education unemployment.

References

Environmental Economics and Policy: Tom Tietenberg: A ddison-Wosley:1998

Environmental Economics: U.Shankar: Oxford University Press:2001

Private Health Care in India: Social Characteristics and Trend: R.V Baru:1998

Economics and Labour Management Relation : Dynamics of Change: C.S Venkata Ratnam:L Saja 2001

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Semester-IV
ECONOMICS OF LAW-II
Paper: Optional
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Unit I   **Law of Business Organization:** Structure of Firm, Kinds, corpotation, corporate vest, capital, shares, debentures, Insiders trading, Antitrust, RBI, IRDA, MRTP, Role of SEBI, Economics of mergers, Amalgamation and takeovers.

Unit II   **Economics Theory of Crime and Punishment:** The traditional theory of criminal law, Economic theory of crime and punishment, Does punishment deter crime? Efficient punishment, does punishment deter crime? Efficient punishment, Efficiency of capital sentence, Addictive drugs and crime, plea bargaining, Reforms of criminal procedure and faulty thesis, law relating to economic offences, corruption and human rights.

Unit III   **Micro Economics and Law:** Law and distribution of income and wealth, inequality, contract theory of distributive justice, Economic cost of poverty, wealth distribution by liability rules, Taxation and efficiency, Economics of federalism, Freedom of inter-state trade and commerce, National and global

environmental agreement their legal and economic interpretation, Economics of social sector disinvestments in PSUs.

References

Law and Economics: R D Cooter and T S Allen: Addision Wesley:2000

Economics Analysis of law: R A Posner: Little Brown: 1998

Administrative Law: I P Massey :PEastern Book Company :1995

Law and Economic Anthology: K G Dan- Schmidt and T S Alen: Addision Wesley

Law and Economics : J.M. Oliver: George Allen and Unarin: 1979

Semester-IV
ECONOMICS OF NATURAL RESOURCES- II
Paper: Optional

Unit I   **Forests and Wildlife:** Defining efficient management of forests, Sources of inefficiency, Implementing and efficient management, Wildlife,Efficient harvests, the biological dimension, static efficient sustained yield: Appropriability and market solution, Local approaches to wildlife protection.

Unit II   **Environmental and Natural Resource Problems in India:** Mechanism for environmental regulations in India, Environmental law and their implementation, Policy instruments for controlling water and air pollution.

Unit III   **Forestry Policy:** Management of common and forest lands, The institutions of joint forest management and the joint protected area management, social forestry in India: rationale and benefits.

References

Environmental Economics and Policy: Tom Titenberg, Addision- Wesley 1988

Resource and Environmental Economics: A.C Fisher. Cambridge University Press,1981

Economics of Natural Resource3 Use and Environment: D.W. Pearce and R.Turner: John Hopkins University Press.1991

Economics of Education: J. Vaizey : Faber and Faber:12962

Private Health Care in India: Social Characteristics and Trends: R.V. Basu: 1998 Sage Publications

Econology and Economics: Ram Prasad Sengupta: Oxford University Press,2001

Semester-IV
DEMOGRAPHY-II
Paper: Optional

Unit I   **Life Statistics:** Mortality; Measures of Mortality, Crude death rate, Age Specific Death rate, Cause specific death rate, Infant mortality rate, life expectancy, Morality differtials, Mortality trends, Life table construction, Population projection.

Unit II   **Population Policy in India:** Evolution of Population Policy in India Shift in policy from population control to family welfare to women empowerment, Achievements of family welfare programme in India, Maternal nutrition and child health policies, Social impact of new reproductive technologies, new Population Policy, National population Commissions.

Unit III   **Sources of Demographic Data:** Population census, Registration method, Sample surveys, international publications, Sources of demographic data in India- Census, Civil registration system and demographic surveys, Census of 1971,1981,1991,and 2001. Characteristics of population in India- size and growth rate of population, birthrate and death rate, infant mortality rate, sex ratio of population, Rural urban migration, State wise area wise density of population in India, Region wise population in India, Population and literacy, Expectation of life at birth, Population problem on India.

References

Population Policy in India: P.K.Chaudey

Population Studies: Hans Raj

Demography and Population Problems: R.K. Sharma

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DEPT. OF ECONOMICS OFFERS

ADDITIONAL SKILL ENHANCEMENT COURSES (OPTIONAL PAPER) ON

DATA ANALYSIS AND COMPUTER APPLICATION IN ECONOMICS

Total Marks- 100
Contact hours-30

Course Objectives and Outcomes: The main goal of this blended learning course is to provide proficiency in practical applications of economics using computers. After completion of this course, the students are expected to acquire some basic skills in using computers for data storage, compilation, analysis and presentation. Students will learn about the elementary and advanced features of spreadsheets using Excel, using the web to find economic data, and an introduction to Stata, SPSS, and E-Views for data analysis

UNIT: I Data processing using Microsoft Excel– fundamentals of spreadsheets, fillhandles, absolute positioning, cell operations, data sorting and filter, Data representation: Charts, barcharts, line charts, pie charts; statistical functions: Data analysis-measures of central tendencies and dispersions, correlation and regression.

UNIT: II Introduction to Stata – Stata Description – Stata Windows – creating new dataset – importing ASCII data – creating log, cmdlog and do files – generating and replacing variables – summary statistics and exploratory data analysis –frequency tables and two-way cross tabulations

UNIT: III Multivariate data analysis using SPSS and E-Views – basics data management, importing data, recoding variables, creating new variables using compute command, selecting and weighting cases, univariate analysis, cross tabulations, multiple regression analysis, Importing data to E-Views, Time series regression analysis

References

Brooks Chris (2nd edition), 2008, Introductory Econometrics for finance using E-views, Cambridge University press

Jack Johnston and John Dinardo, Econometric Methods, McGraw-Hill International Editions, Singapore, 1997

Walter Enders, Applied Econometric Time Series, Wiley India (P) Ltd, New Delhi2004

Baltagi, B. H. (2005) Econometric analysis of panel data, third edition, John Wiley and Sons, Ltd.

Wooldridge J.M., Introductory Econometrics, Cengage Learning publication

Acock Alan C. 2006, A Gentle Introduction to STATA, Third edition, STATA press.

DEPARTMENT OF ECONOMICS
ADD ON COURSE

INDIAN ECONOMY
Course Code: ECO-AO
2 Credits
Contact hours-30   Marks-50

Course Objectives and Outcomes: The objective of the course is to familiarise the students about the contemporary economic problems and policies. The course will aware the students about major issues of Indian Economy and different policies.

UNIT I   **Characteristics of Indian Economy**

Indian Economy in the Pre-British Period; British Rule and Economic Exploitation. Development Strategy after Independence.

Indian Economic Problems: Poverty and Inequality; Trends in Poverty; Poverty Estimation; Poverty Alleviation Programme; Unemployment; Employment Policy.
Demographic trends and Issues; Causes of rapid population growth; Population and economic development; Population policy; Demographic Dividend.

UNIT II   **Issues in Agriculture Sector:** Role of Agriculture in Economic Development, Green Revolution; Need for second Green revolution; Issues in Food Security; Agricultural Price Policy Climate Change and Policies for Sustainable Agriculture; Agricultural Finance and Insurance; WTO and Indian Agriculture; New Agricultural Policy.

UNIT III   **Industry and External Sector:** Industrial policy of 1991; Overview of Economic Reforms; Fiscal Reform; Privatization and disinvestment debate; Problem of sick units in India and government policy; Importance and Performance of MSME , Recent Changes in Foreign Trade Policy; FDI in India.

Text Book:
- Misra, S. K. and Puri V. K. Indian Economy — Its Development Experience. Himalaya Publishing House, Mumbai

Reference Books:
- Dutt R. and Sundaram K. P. M. *Indian Economy*. S. Chand & Company Ltd., New Delhi.
- Indian Economy Since Independence, ed by Uma Kapila, Academic Foundation,