

NOWGONG COLLEGE (AUTONOMOUS)
DEPT. OF ECONOMICS
MA/MSC IN ECONOMICS SYLLABUS UNDER CBCS

Course Code	First Semester
ECON-1016	Principles of Microeconomics (<i>Core</i>)
ECON-1026	Elements of Macroeconomics (<i>Core</i>)
ECON-1036	Quantitative Orientation (<i>Core</i>)
ECON-1046	Elements of Development Economics (<i>Core</i>)
Course Code	Second Semester
ECON-2016	Advanced Microeconomics (<i>Core</i>)
ECON-2026	Macroeconomic Theory and Analysis (<i>Core</i>)
ECON-2036	Quantitative Tools (<i>Core</i>)
ECON-2046	Development Economics: Theory and Practice (<i>Core</i>)
Course Code	Third Semester
ECON-3016	Elements of Econometrics (<i>Core</i>)
ECON-3026	Public Finance (<i>Core</i>)
ECON-3036	International Economics (<i>Core</i>)
ECON-3046	Financial System (<i>Elective</i>)
ECON-3056	Environmental Economics (<i>Elective</i>)
Course Code	Fourth Semester
ECON-4016	Indian Economy in the Global Context (<i>Core</i>)
ECON-4026	Operations Research (<i>Core</i>)
ECON-4036	Advanced Econometrics (<i>Elective</i>)
ECON-4046	Model Building and Simulation in Economics (<i>Elective</i>)
ECON-4056	Agricultural Economics and Farm Management (<i>Elective</i>)
ECON-4066	Economics of Social Sector (<i>Elective</i>)

FIRST SEMESTER
ECON-1016
Principles of Microeconomics
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Core (Theory)

Unit 1: Theory of Production and Cost

Production function and related concepts – Isoquants and Substitution between Factors – Elasticity of Substitution – Returns to Scale and Returns to a Factor – Technical Progress and Production Function – Forms of Production Function; Cobb-Douglas, CES and Fixed coefficient Type – the Ideas of Partial and Total Factor Productivity - Single Decision of a Firm; Choice of Optimal Factor Combination – Expansion Path – Derivation of Cost Function from Production Function – Multi-product Firm: production Efficiency Locus, Production Possibility Frontier and Choice of Optimal Combination of Output of Products

Unit 2: Analysis of Consumer's Choice

A Review of Indifference Curve and Revealed Preference Approach – Violation of the Premises of Indifference curve Approach: Satiation and Lexicographical Ordering – Indirect Utility Function – Dual Properties of Utility and Expenditure Functions, Ray's Identity-ordinary and compensated demand curves and measures of welfare change – Linear Expenditure System.

Unit 3: Market Structure and Pricing of Products

A Review of Perfect Competition Equilibrium – Monopoly and its Regulation – Monopolistic Competition: Price-Output Equilibrium – Duopoly Models of Cournot, Bertrand and Stackelberg
– Kinked Demand Curve Model of Oligopoly – Collusive Oligopoly: Price Leadership Models.
- Contestable Markets.

Unit 4: Business Accounts and Managerial Theories of the Firm

Profit and Loss Account, Balance Sheet and Cash Flow Statements of a Firm, Break Even Analysis; A critique of the Traditional Theories of Firm –Contributions of Baumol, Morris and Williamson to Managerial Theories of the Firm

Recommended Readings:

Pindyck, R. & Rubinfeld, D.L., "Microeconomics"
Snider and Nicholson, "Microeconomics"
Ryan and Pearce, "Price Theory," Macmillan.
Koutsoyiannis, A., "Modern Microeconomics", Macmillan.
Anindya Sen, "Microeconomic Theory", Oxford University Press.
Madalla and Miller, "Microeconomics", McGrawHill.
Mukherjee, S., "Business and Managerial Economics"

ECON-1026
Elements of Macroeconomics
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Core (Theory)

Unit 1: A Review of Aggregate Income and its Determination

The Ideas of Income, Domestic Income and National Income; GDP as a Production Total and its sectoral composition, NDP as an Income Total, the Circular Flow and GDP as an Expenditure Total; Introduction to Equilibrium and Disequilibrium in the Macro-economy; Classical Model of Full Employment; Keynes Criticism of Classical theory, The Simple Keynesian Framework and the Multiplier

Unit 2: Income Determination with Money Market

Liquidity Preference and the Rate of Interest; the IS-LM framework and Policy Analysis, IS-LM Model with Flexible Prices; Real Balance Effect and Patinkin's Full Employment Equilibrium

Unit 3: Consumption Function

The Consumption Function Puzzle; The Relative Income Hypothesis; The Permanent Income Hypothesis; The Life Cycle Hypothesis; Random Walk Hypothesis; Consumption Theories and Policy Implications

Unit 4: Investment and Business Cycles

Firm Business Investment: The Rental Price of Capital, the Cost of Capital and Determination of Investment; Residential and Inventory Investment: nature and determinants; the Accelerator Model; Business Cycles as Multiplier Accelerator Interaction Process

Unit 5: Open Economy Macroeconomics

The Exchange rate and its Determination; Balance of Payment and its Adjustment under Fixed and Flexible Exchange Rate Regimes, Effectiveness of Devaluation; The Open Economy IS-LM Model; Capital Flow and the Mundell-Fleming Model; Foreign Trade Multiplier

Recommended Readings:

N. Gragory Mankiw, Macroeconomics
Brian Snowdon and H R Vane, Modern Macroeconomics
Raghavendra Jha, Macroeconomics for a Developing
Economy Soumen Sikdar, Principles of Macroeconomics
Don Patinkin, D., Money, Interest and Prices
Levacic and Rebman: Macroeconomics: An Introduction to Keynesian Neo-Classical
Controversies
Ola Olson, Essentials of Advanced Macroeconomic Theory

ECON-1036
Quantitative Orientation
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Core (Theory)

Unit 1: Classical Optimization

Unconstrained maxima and minima with a single explanatory variable – applications to cost minimization, revenue maximization, tax revenue maximization, profit maximization and equilibrium of firm, Unconstrained maxima and minima with more than one explanatory variables – applications to discriminatory monopoly, Multiproduct equilibrium, Multiplan equilibrium, equilibrium of firm with advertisement cost and subsidy.

Unit – 2: Optimization with Equality Constraint

Optimization with equality constraints, Lagrange's multiplier method – application to consumer's equilibrium and producer's equilibrium in factor market

Unit – 3: Integration

Applications relating to derivation of total functions from marginal functions, estimation of consumer's surplus, producer's surplus, problems relating to investment, capital formation and derivation of simple growth process (Domar).

Unit 4: Matrix Algebra and its Applications

Rank, Norm and Trace of a matrix, Partition matrix, Matrix inversion, Structure of input-Output table, Static Leontief system – Domestic and External sector

Unit – 5: Probability: Basic Ideas

Axiomatic Definition and derivation of Basic Probability Rules – Conditional Probability, Baye's Theorem (Concept only) – Random variable – Mathematical Expectation and Moments relating to Discrete random variables

Unit – 6: Theoretical Probability Distributions

Binomial, Poisson and Normal Distributions with Properties – Moment Generating Function – The Central Limit Theory (without Proof).

Recommended Readings:

- A.C. Chiang, "Fundamental Methods of Mathematical Economics", McGrawHill.
S. Baruah, "Basic Mathematics and its Economics Applications", MacMillan.
1. J. M. Henderson and R. E. Quandt, "Micro-economic Theory – A Mathematical Treatment."
R.G.D. Allen, "Mathematical Analysis for Economists."
Mouhammed, "Introduction to Mathematical Economics", Prentice Hall of India
Hoy. M. and others: Mathematical Economics
Yamane, Taro, "Statistics – An Introductory Analysis".
Hooda, P.R., "Statistics for Business and Economics", Macmillan.
Gupta, S.C. and Kapoor, U.K., "Fundamentals of Mathematical Statistics" Nagar, A.L. and Das, R.K., "Basic Statistics", Oxford.
Salvatore, Dominick and Reagle, Darrick, "Statistics and Econometrics", TMH

ECON-1046
Elements of Development Economics
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Core (Theory)

Unit – 1: Development and its Measurement

Problems in Defining Economic Development, Per Capita Income as an Index of Development, Alternative Measures of Development Gap: HDI, GDI and related indices.

Unit – 2: Poverty and Inequality

Poverty: Concepts and Measurement, Income Inequality: Axioms, Index and Measures, Redistribution with Growth

Unit – 3: Classical Development Theories

Theories of Evolution of a Capitalist Economy: Classical, Marx and Schumpeter, Theories of Persistence of underdevelopment: The Vicious Circle Theory, The Stages of Growth: Rostow

Unit – 4: Development Strategies

Big Push: Rosenstein-Rodan, Balanced Growth: Nurkse, Unbalanced Growth: Hirschman, Critical Minimum Efforts: Leibenstein.

Unit-5: Dualistic Pattern of Development

Unlimited Supply of Labour and the Dual Economy - Models of Arthur Lewis and Fei-Renis, Rural-Urban Migration: The Harris–Todaro Model, Core-Periphery Models - The Process of Cumulative Causation: Myrdal, Neo-Colonial Dependence Model

Unit – 6: Development Planning

The Concept and Types of Planning, Rationale for Planning in a Developing Economy, The Planning Process: Projection of Macro Variables, Input-Output Models and Sectoral Projections, Project Evaluation and Social Cost-Benefit Analysis, Plan Failures, Market Versus Planning, Planning in a Market Oriented Economy, Plan Models in India

Recommended Readings:

Barro & Salai-Martin, “Economic Growth”, Prentice Hall of India. Basu, K., “Analytical Development Economics:”, OUP.

Meier, G.M., “Leading Issues in Economic Development”, OUP. Roy, D., “Development Economics”, OUP.

Thirlwal, A. P. “Growth and Development” Palgrave Todaro, M.P., “Development Economics”, Pearson. UNDP, “Human Development Reports”, OUP. World Bank, “World Development Reports”, OUP

SECOND SEMESTER
ECON-2016
Advanced Microeconomics
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Core (Theory)

Unit 1: Inter-temporal Choice and Choice under Uncertainty

Discounting and Present Value – Inter-temporal Consumption Decision – Inter-temporal Production Decision – Evaluation of Investment Projects – Determination of the Rate of Interest; Attitude towards Risk – Expected Utility – Measures of Risk Aversion – Certainty Equivalence and the Cost of Risk

Unit 2: Economics of Insurance and Information

Economics of Insurance – Asymmetric Information and Adverse Selection – Moral Hazard – Signaling and Screening - the Principal Agent Problem

Unit 3: Determination of Factor Prices

Pricing of Factors under Perfect Competition – Factor Share and Technical Progress – Backward Bending Supply Curve of Labour – Monopsony

Unit 4: General Equilibrium

Partial Versus General Equilibrium Approaches –Walrasian General Equilibrium System: Existence, Stability and Uniqueness of the Equilibrium - Tatonnement and Non-tatonnement Process–Arrow and Debreu re-specification of the Walrasian Economy – Idea of Fixed-Point Theorems and their Application to Existence Proof – Uncertainty and the Contingent Markets – Ideas of Computable General Equilibrium

Unit 5: Welfare Economics

Pareto Optimality – The Fundamental Theorems of Welfare Economics – Market Failure: Externality and Public Good – Welfare Effects of Non-price Allocations and Price Control – Problem of Welfare Maximization: Compensation Principle, Social Welfare Function – Social Choice: Contributions of Arrow and Sen.

Recommended Readings:

Layard and Walters, “Microeconomic Theory”, Snyder and Nicholson
“Microeconomics”

Madalla and Miller, “Microeconomics,” Tata McGrawHill.

Varian, Hall, “Intermediate Microeconomics.”

Hands, D.W., “Introductory Mathematical Economics”

Baumol, W.J., “Economic Theory and Operations Research”, Prentice Hall.

Sen, Amartya., “On Economic Inequality”

ECON-2026
Macroeconomic Theory and Analysis
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Core (Theory)

Unit 1: Money, Inflation and Unemployment

Inventory and Portfolio Balance Approaches to Demand for Money; Friedman's Restatement of the Quantity Theory of Money; Inflation-Unemployment Trade-off: the Philips Curve Analysis; Monetarists' Criticism of the Trade-off, Natural Rate of Unemployment and the Long Run Philip Curve; Adaptive versus Rational Expectations, New Classical School and the Policy Ineffectiveness Hypothesis

Unit 2: Supply of Money

Supply of Money and its Components, Inside and Outside Money, Determinants of Money Supply, High-powered Money, Money Multiplier, Money Supply Determination in an Open Economy

Unit 3: Advances in Business Cycle Theory

Theory of Real Business Cycles, Interpretation of the Labour Market, Importance of Technology Shocks, Neutrality of Money; New Keynesian Economics: Menu Cost Model, Recessions as Coordination Failure

Unit 4: Growth Theory

Determinants Growth, Harrod-Domor Model: Instability of Equilibrium, Solow's Neoclassical Model and Steady State Growth, the Alternative Theory: Kaldor's theory of Distribution and Growth

Unit 5: Further Issues in Growth Theory

The Convergence Debate, Role of Technical Progress, Learning by Doing, Role of Human Capital, Endogenous Growth Theories, Accounting for Sources of Economic Growth, Overlapping Generation Models

Recommended Readings:

N. Gragory Mankiw, Macroeconomics
Brian Snowdon and H R Vane, Modern Macroeconomics
Levacic and Rebman: Macroeconomics: An Introduction to Keynesian Neo-Classical Controversies
Soumen Sikdar, Principles of Macroeconomics
Ola Olson, Essentials of Advanced Macroeconomic Theory
David Romer, Advanced Macroeconomics
Debraj Ray, Development Economics
A P Thirlwal, Growth and Development

ECON-2036
Quantitative Tools
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Core (Theory)

Unit – 1: Calculus for Dynamic Analysis

First and second order differential equation and its solutions – application to dynamic stability of market and simple growth process (Harrod-Domar), First order difference equation and its solution application of difference equation – lagged market model (Cobweb) and Harrod’s model of growth; Optimal Control Theory- Basic Idea– Procedure – A few illustrative examples

Unit – 2: Optimization with inequality constraint

Liner programming, General formulation Transportation problem, diet problem and production problem – Simplex method of solution for well-behaved and ill-behaved functions(two variables, two constraints only) – Concept of duality, Formulation of dual equations.

Unit – 3: Game Theory

An overview of game theory, Nash equilibrium-economic application, Prisoner’s dilemma-economic application, Repeated games, Finitely repeated Prisoner’s Dilemma and Infinitely repeated Prisoner’s Dilemma.

Unit – 4: Sampling and Estimation

Concept of Sampling Distribution and Standard Error of a Statistic – Methods of Estimation – Principles of Moments, Least Square and Maximum Likelihood (Concepts only)

Unit – 5: Statistical Inference

Testing of Hypothesis: Type I and Type II Errors, One-tailed and Two-tailed Tests – Test based on Standard Normal, t and Chi-Square Distributions.

Recommended Readings:

A.C. Chiang, “Fundamental Methods of Mathematical Economics”, McGrawHill.
S. Baruah, “Basic Mathematics and its Economics Applications”, MacMillan.
J. M. Henderson and R. E. Quandt, “Micro-economic Theory – A Mathematical Treatment.”
R.G.D. Allen, “Mathematical Analysis for Economists.”
Mouhammed, “Introduction to Mathematical Economics”, Prentice Hall of India
M. Metwally, “Mathematical Treatment of Micro-Economics.” Hoy. M. and others: Mathematical Economics
Yamane, Taro, “Statistics – An Introductory Analysis”.
Hooda, P.R., “Statistics for Business and Economics”, Macmillan.
Gupta, S.C. and Kapoor, U.K., “Fundamentals of Mathematical Statistics” Nagar, A.L. and Das, R.K., “Basic Statistics”, Oxford.
Salvatore, Dominick and Reagle, Darrick, “Statistics and Econometrics”, TMH

ECON-2046
Development Economics: Theory and Practice
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Core (Theory)

Unit – 1: Financing of Development

Domestic Sources: Private Savings, Taxation, Financing by Money Creation and its Effects, The Dual Gap Analysis: Saving-Investment Gap and the Foreign Exchange Gap, Foreign Borrowing and the Debt Servicing Problem, Private Foreign Investment: Portfolio and Direct Investment, Effects on Host and Investing Countries – Direct Investment and Exploitation

Unit – 2: Trade and Development

Trade as an Engine of Growth, Trade and Aid, Gains from Trade, Terms of Trade and LDCs: Prebisch, Singer and Myrdal's Views.

Unit – 4: Environment and Development

Environment and Economy Interdependence, Poverty and Environmental Degradation, The Concept of Sustainable Development, Micro Planning for Environmental and Eco-Preservation, Watersheds and Joint Forest Management, Role of State in Environmental Preservation

Unit – 5: Economics of Education

Education and Economic Development, Cost –Benefit Analysis of Education, Measurement of Costs, Measurement of Benefits, The Rate of Return of Investment in Education, Social Rate of Return to Investment in Education, Public and Private, Financing of Education: Criteria for Adequacy of Education Finance, Traditional as well as Modern Concept of Adequacy, Financing of Education and Equity

Unit - 6: Health and Economic Development

Health Care and Human Resource Development, Cost-Benefit Analysis of Health Care facilities, Cost-effectiveness Analysis of Health care Facilities

Unit – 7: Role of Institutions in Development

Overview of growth models, Introducing institutions, Institutions as a determinant of growth, Institutional characteristics, Pitfalls of institutional reform

Recommended Readings:

Acemoglu, D and J Robinson, "The Role of Institutions in Growth and Development", Working Paper No.10, Commission on Growth and Development, World Bank.
Aghion, P and Steven N Durlauf (ed), "Handbook of Economic Growth", Volume 1A, Elsevier
Basu, K., "The Less Developed Economy:", OUP.
G. Psacharopoulos (ed), "Economics of Education", Pergamon Press.
Ian Beardwell and Len Holden (ed), "Human Resource Management – Contemporary Perspective", MacMillan.
Meier, G.M., "Leading Issues in Economic Development", OUP.
Thirlwall, A. P. "Growth and Development", Palgrave
Todaro, M.P., "Development Economics", Pearson.

World Bank, “World Development Reports”, OUP.

THIRD SEMESTER
ECON-3016
Elements of Econometrics
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Core (Theory)

Unit 1: Classical Linear Regression

The General Linear Regression Model – Quantitative and Qualitative Explanatory Factors – Least Square Assumptions – OLS Estimators and their Properties – The Coefficient of Determination – Some Results of Two and Three Variable Regression Models - Test of Hypothesis about Regression Coefficients – Prediction with the Linear Regression Equation

Unit 2: Further Topics in Linear Regression

Consequences of Omission of Relevant Regressors and Inclusion of Irrelevant Regressors; Multicollinearity: Effects, Detection and Remedies, Dummy Variable Trap; Heteroscedasticity: Consequences, Tests and Remedy, Auto-correlated Disturbances: Consequences, Detection and Remedy

Unit 4: Introduction to Time Series Econometrics

The Idea of a Stochastic Time Series - Stationary and Non-stationary –Simple Random Walk and Random Walk with a Drift–Unit Root: Dickey Fuller Tests –Spurious Regression–Integrated Series and Simple Cointegration

Unit 5: Introduction to Simultaneous Equation Model

Structural and Reduced Forms – Simultaneity Bias – Informal Introduction to Identification Problem, Indirect Least Squares and Two Stage least Squares

Recommended Readings:

Christopher Daugherty, Introduction to Econometrics, OUP
Damodar Gujarathi, Basic Econometrics, McGrawHill.
Jeffery M Wooldridge, Introductory Econometrics: a Modern Approach
Johnston and Dinardo, Econometric Methods, McGrawHill

ECON-3026
Public Finance
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Core (Theory)

Unit-1 Role of the State in the Economy

The role of the government in the economy -allocation, distribution, and stabilization functions. Criteria for policy evaluation – equity, economic efficiency, paternalism and individual freedom and their tradeoff. The welfare cost of inefficient output.

Unit-2: The Provision of Public Goods

The nature of Public goods. Public Goods and market failure. The efficient provision of public goods. The Theory of Clubs, Inter-local competition and Tiebout Hypothesis Inefficiency from externalities and its correction. Internalizing externalities: The Coase Theorem. Viability of government intervention.

Unit-3: The Theory of Public Choice

Preferred political outcome of a voter and Downs' Rational Voter Hypothesis. Majority Rule and the Median Voter Model. Cyclical Majority Phenomenon and Arrows Impossibility Theorem. Political Positioning and the Median Voter. Voting on multiple issues: Logrolling.

Unit-4: Public Expenditure

Public Expenditures on non-marketed goods, fixed-quantity subsidy for marketed goods and excise subsidy-their impact on allocation and distribution. Program Budgeting and Cost-effectiveness Analysis. Public Project Appraisal: Cost-Benefit Analysis. Public expenditure on Health Care, Education and Retirement Security: Rationale and Emerging Issues.

Unit-5: Public Revenue

Concepts of Tax Ratio, Buoyancy, and Elasticity of taxation, Tax Credit, Exemption and Deduction, and Taxable Capacity.

Excess burden- Lumpsum Tax versus Price Distorting Tax, Efficiency Loss Ratio of atax. Partial versus General Equilibrium Analysis: Incidence of Excise Taxes and General Sales Tax. The welfare cost of taxation. Goods and Services Tax (GST) and the Indian experience.

Unit-6 The Public Budget and Deficit Financing

Structure of a public budget. Concepts of Budget Deficits Burden of Deficit Finance- Ricardian Equivalence Theorem. Deficit financing and the Capital market: *The Crowding OutEffect*. The Welfare Cost of Deficit Finance. Rationale and methods of reducing deficits.

Unit-7. Fiscal Federalism

Principles of division of financial resources. Instruments of inter-government resource transfer. Horizontal and Vertical fiscal balance. Problems of Centre-State Financial Relations in India.

Recommended Readings:

Browning E K & Browning J M, Public Finance and the Price System, Pearson Education. Singapore.

Hyman D N, Public Finance: A Contemporary application of Theory to Policy, Thomson

South Western.

Ulbrich H, Public Finance in Theory and Practice, Thompson South Western.

Mukherjee S, Ghose A & Nag NN, Analytical Public Finance. Public Economics- Public Choice- Public Policies, New Central Book Agency (P), Kolkata.

Ghosh A & Ghosh C, Public Finance, PHI Learning Private Limited, Delhi.

Musgrave & Musgrave., Public Finance in Theory and Practice, McGraw Hill, Singapore.

Cullis, John & Jones, Philip, Public Finance and Public Choice, McGrawHill.

ECON-3036
International Economics
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Core (Theory)

Unit 1: International Trade Theories

Factor Endowments and Trade: Heckscher-Ohlin Theory, Factor –Price Equalization Theorem and Income distribution- Stolper-Samuelson Theorem, The Specific-Factors Model.

Unit 2: Economic Growth and Changes in Trade

Shifts in Demand: Engel Effects and Engel's Law; Factor Growth-Rybczynski Theorem; Technical progress and Trade; Technological Change and Trade: Technology as Factors of Production; New Products and the Product Cycle.

Unit 3: Economies of Scale, Imperfect Competition, and International Trade

Monopolistic Competition and Trade-Economies of Scale and Comparative Advantage, Significance of Intra-industry Trade, Economies of Reciprocal Dumping

Unit 4: International Trade Policy

Tariff Analysis in General Equilibrium; Theory of Customs Unions; Export Barriers; Export Subsidies and Countervailing Duties, Dumping. Retaliation against Dumping; International Cartels.

Unit 5: International Monetary Order

International Monetary System --Gold Standard, Inter War Period, Bretton Woods System; Managed Flexibility, Floating Exchange Rate, Monetary Union, Optimum Currency Area,

Unit - 6: International Debt Crisis

Dimensions of Debt Crisis, International capital Movement, Capital Transfer Process, Recycling of Petro-Dollars, Causes of Debt Crisis, Secondary Market for Debt of Developing Countries, Alternative Policy Options.

Recommended Readings:

Chacholiades, M., "International Trade: Theory and Policy", McGrawHill.
Kindleberger, Ridge, "International Economics", Irwin.
Soderston, B., "International Economics", Tata McGrawHill.
Lipsey, R. G., "The Theory of Customs Union", Windfield.
Caves, R. E., J. A. Frankel and R. W. Jones, "World Trade and Payments", Pearson.
Krugman, P. R. and M. Obstfeld, "International Economics", Pearson.
Meade, J. F., "Theory of International Economic Policy", OUP.
Roy, P. N., "International Trade: Theory and Policy".

ECON-3046
Financial System
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Elective (Theory)

Unit-1: The Financial System

The nature of credit, Financial system and its Components: *Instruments, Markets, Institutions and Services*, The Functional Perspective of the Financial System, Financial System in Economic Growth and Global Integration.

Unit-2: Intertemporal Value of Money

Time Value of Money, Future Value: Single Cash Flow, Multiple Cash Flows, Annuity, Present Value: Single Cash Flow, Multiple Cash Flows, Annuity, Present Value, Net Present Value, Rate of Return, Internal Rate of Return

Unit-3: The Money Market

Structure and functions, Instruments in the money market, Call Money Market and its participants, Volatility in Call Rates, Money Market Intermediaries: *The Discount and Finance House of India and Money Market Mutual Funds*, Liquidity Management Instruments in the Money Market

Unit-4: The Capital Market

The Capital market: Its nature and functions, Primary Capital Market: Instruments of resource mobilization- *Public Issues: IPO & FPO, Right Issues, and Private Placement*, Resource mobilization from International Capital Market, Pricing of new issues: the Book Building process, Reverse Book Building and Green Shoe Option, Secondary Capital Market: Organization, Management and Membership, Trading & Settlement, *The Over the Counter Exchange of India*, The Depository System and its operation, Stock Market Index- Method of calculating the index, Mutual Fund and its functional classification, Net Asset Value

Unit 5: The Derivative Market

Nature of the Derivative Market, Traders and Instruments in a derivative market, Trading Strategies: Hedging with Index futures, Speculation Strategies and Strategies for Arbitrage

Unit-6: Valuation of Financial Assets

Concept of Value, The valuation of debt instruments: bonds with maturity-Yield to Maturity, Current yield, Yield to Call, Deep Discount Bonds, Perpetual Bonds, Interest Rates and Bond Values, Valuing stock: Value of a Preference Share, Ordinary Shares: Single Period and Multi-

Period Valuation, Linkage between Share Price, Earnings and Dividends, The significance of Price-Earnings Ratio (P/E)

Unit-7: Banking Sector Operations and Management

Overview of bank operations: Banks as financial intermediaries, Sources of Funds of banks, Uses of Funds by banks, Off-balance sheet activities of banks, Regulation of banks: Capital Regulation, Operations Regulation, Bank Monitoring Measures undertaken by Regulators, Issues relating to government bailout, Reforms in Banking Sector in India.

Recommended Readings:

Pathak B. V. *Indian Financial System*, Pearson Education, Singapore.

Alexander G J, Sharpe W F & Bailey JV. *Fundamentals of Investments*
Pearson Education, Singapore.

Madura J. *Financial Institutions and Markets*, Thomson South Western.

Gupta, S. B. *Monetary Economics: Institutions, Theory and Policy*, S Chand & Co,
New Delhi.

Bodie Z, Merton R. C. & Cleeton D. L. *Financial Economics*. Pearson/ Prentice
Hall. Panday I.M. *Financial Management*. Vikas.

Bhole L.M. *Financial Institutions and Markets: Structure, Growth & Innovation*,
Tata McGraw Hill, New Delhi

ECON-3056

Environmental Economics

Credit: 6

Total Marks: 100 (T 80+IA 20)

Course Type: Elective (Theory)

Unit –1: Environmental Economics as a sub discipline in Economics

Environmental Economics –Scope and Nature- Environmental Economics, Ecological Economics and Resource Economics.

Basic Concepts: Natural Resources-Renewable and Non-Renewable, Market Failure, Externality, Property Rights, Transaction costs, Pigouvian Tax – Environment as Public Goods- Open Access – The Tragedy of Commons.

Global Environmental Issues- Climate Change, Loss of Biodiversity, Ozone Depletion, Pollution Havens

Unit –2: Environment and the Economy- the neoclassical perspective

Environment and the Economy: the neoclassical perspective- Role of natural environment on the economy-market as a provider of information on resource scarcity-price as an indicator of absolute, relative and emerging resource scarcity; Factor substitution possibilities, technical change- implications on resource scarcity and resource conservation. Economy and the environment- Neoclassical world view.

Unit –3: Environment and the Economy-An ecological perspective

Environment and the Economy: An ecological perspective – Ecosystem structure, Ecosystem function- materials recycling-energy and thermodynamics, Ecological Succession, Ecology and its implications for the economy.

Unit – 4: Economics of Natural Resources

Economic Issues relating to use of Non-renewable Resources, Optimal Depletion – Issues relating to Renewable resources, Sustainable exploitation, Common Property Resources – Case studies (e.g., Sacred groves)

Unit –5: Valuation of Environmental Goods and Services

Demand for environmental goods –ordinary goods vs. environmental goods- Willingness to pay and willingness to accept- Use and Nonuse Values; measuring demand-revealed preference and stated preference. Methods for measuring benefits of environmental improvement –the market pricing approach, the replacement cost approach. Hedonic Pricing approach-valuation of health risks; Household Production Function Approach-Aversive expenditure, Travel Cost method; Contingent Valuation Method

Unit –6: Pollution Control

Pollution Prevention, Control and Abatement – Command and Control and Market Based Instruments

– Taxes Vs Tradable Permits; International Conventions and Protocols; Environmental Policy in India- Environmental Impact Assessment.

Unit –7: Environment and Development

Environment Development Trade off : Population, development and environmental degradation in the developing world -Poverty and Environment – Affluence and its contribution to environmental degradation Sustainable Development-Hartwick-Solow Approach, ecological economics approach- safe minimum standard approach; Sustainable National Income Accounting .

Recommended Readings:

Kolstad, Charles D., *Environmental Economics*, Oxford University Press.

Kolstad, Charles D. (2011) *Intermediate Environmental Economics*, Oxford University Press. Hanley, Shogren and White, *Environmental Economics*, Macmillan.

Shanker, U, *Environmental Economics*, Oxford University Press.

Bhattacharjya, R., *Environmental Economics*”, Oxford University Press. Hussen, Ahmed, (2004) *Principles of Environmental Economics*, Routledge

FOURTH SEMESTER
ECON-4016
Indian Economy in the Global Context
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Core (Theory)

Unit – 1: Global Economy: Concept and Evolution

Global Economy- Nature of Global Economy; Emergence and evolution of the Global Economy-Pre-Industrial Revolution to the Present Times.

Unit – 2: Global Economy: Key Issues

International Trade, Transnational Production, Global Financial System, Global Division of Labour, Gender, Economic Development, Global Environmental change, Ideas, Security, Governance.

Unit – 3: Economic History of India in the Global Context-An Overview

Transition to colonialism-Colonial Times-Post Colonial –Post Independence-Post reforms.

Unit – 4: India's Economic Reforms

Rationale for Economic Reforms – India's Economic Reforms in the Global Context –Foreign Trade Policy – Convertibility of Rupee – Impact of WTO on Indian Economy – Foreign Investment and Multinational Corporations- Privatisation and Competition –Financial Sector Reforms

Unit – 5: India: The Emerging Giant

Macroeconomic Indicators-GDP-Real Economy-Prices-Saving-Investment- Government Finance, Money and Finance, External Sector, Infrastructural Indicators; Human Development Indicators; Institutional Development in the Financial Sector; Competitiveness Indicators-India and the Global Financial Crisis

Recommended Readings:

- Bardhan, P., "The Political Economy of Development of India", OUP.
Brahmananda, P.R. and Panchamukhi, V.R., "The Development Process of Indian Economy", Himalaya.
Jalan, Bimal (Ed), "The Indian Economy – Problems and Prospects", Viking.
Kapila, Uma (Ed), "India's Economic Reforms", Academic Foundation.
Hazari, R.K., "Industrial Planning and Licensing Policy", Final Report.
Sen, A. and Dreeze, J., "Economic Development and Social Opportunities", OUP.
Wadhwa, C. (Ed), "Some Problems of India's Economic Policy", Tata McGrawHill.
Rao, V.K.R.V., "India's National Income, 1950-1980", Sage.
Byres, T.J. (Ed), "The State, Development Planning and Liberalisation in India".
O'Brien, Robert and [Marc Williams](#) Global Political Economy: Evolution

and Dynamics, Palgrave Macmillan

Roy Tirthankar, The Economic History of India, 1857-1947 Oxford

ECON-4026
Operations Research
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Core (Theory)

Unit I:

Definition, features of Operations Research, scientific method in Operations Research, opportunities and shortcomings.

Unit II:

An overview of linear programming, formulation of some special problems, solution methods for the ill-behaved problems, solutions via dual, sensitivity analysis in linear programming and its various techniques, integer programming with special reference to the zero-one programming.

Unit III:

Non-linear Programming, formulation of problems, graphical solution method, Kuhn-Tucker conditions and solution by Kuhn-Tucker conditions.

Unit IV:

Transportation Problem, an overview of the transportation problem, balanced and unbalanced transportation problem, method of finding out initial solution by North-West Corner Method, Least Cost Method, and Vogel's Approximation Method, loop in transportation table, dual of transportation model, method of finding out optimal solution.

Unit V:

Queuing Theory, introduction, essential features of a queuing system, estimation of inter-arrival time distribution, Transient- State and Steady- State- distribution of Service Time, Pure Birth Process and Pure Death Process.

Unit VI:

Project Management, introduction, CPM and PERT technique, basic difference between the two, significance of using PERT/CPM, Phases of Project Management, PERT/ CPM Network Components and Precedence Relationships, Activity-on-Node (AON) and Activity-on- Arrow (AOA) network, errors and dummies in Network, Critical Path Analysis, Forward Pass Method and Backward Pass Method, Float of an activity and event.

Recommended Readings:

J K Sharma, *Operations Research Theory and Applications*, Macmillan H A Taha, *Operations Research*, Pearson

A.M. Natarajan P. Balasubramani A. Tamilarasi, *Operations Research*, Pearson. Martin J. Osborne, *An Introduction to Game Theory*, Oxford University Press.

ECON-4036
Advanced Econometrics
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Elective (Theory)

Unit 1: Generalized Least Squares and Maximum Likelihood Estimation

Non-spherical Disturbance and GLS – Feasible GLS and its Properties Seemingly Unrelated Regression Estimation; Maximum Likelihood Methods, Estimation and Properties – Likelihood Ratio, Wald and Scope Tests

Unit – 2: Non-Linear Estimation

Non-Linear Least Squares and Iteration process – Models with Binary Dependents Variables – Logit and Probit Models

Unit – 3: Distributed Lag Models

Lag Structure and Parameters – Koyck Model – Partial Adjustment and Adaptive Expectation Models – Estimation of Models with a Lagged Dependent Variable

Unit – 4: Simultaneous Equation Models

Formalization of Identification Problem - Order and Rank Conditions of Identification – Recursive Models – Methods of Estimation: IV, 2SLS, 3SLS and FIML–Simulation and Forecasting

Unit 5: Time Series Modeling

Univariate Time Series Modeling,-Autocorrelation Function and Correlelogram – Basic Features of AR, MA, ARMA and ARIMA models –Trend versus Difference Stationary - Co-integration, Error Correction Mechanism and ARDL Granger Causality and VAR

Unit 6: Introduction to Panel Data

Nature and Advantages of Panel Data – Modeling Issues: Fixed Effect versus RandomEffects – Housman Test – Estimation methods

Recommended Readings

Johnston and Dinardo, Econometric Methods, McGrawHill
Pindyck and Rubinfeld, Econometric Models and Econometric Forecasts, McGrawHill.
Greene, William, Econometric Analysis, Macmillan
Christopher Daugherty, Introduction to Econometrics, OUP
Damodar Gujarathi, Basic Econometrics, McGrawHill.
Jeffery M Wooldridge, Introductory Econometrics: a Modern Approach

ECON-4046
Model Building and Simulation in Economics
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Elective (Theory)

Unit 1: Introduction to Model Building

Basic principles of model building in economics - issues relating to specification, identification and estimation of models

Unit 2: Taxonomy of Models

Introduction to various types of models: mathematical models, econometric models and time-series models; models with micro-orientation, optimizing models and macro- econometrics; systematic outline of AGE models – demonstration using the Shoven- Walley model, macro-econometrics models – estimation demonstration using Klein's Model I, structure of Klein-Goldberger model, static and dynamic models, sectoral models; simulation models, simultaneous and recursive models.

Unit 3: Estimation and Evaluation of Models

Various methods of estimating macro, policy-oriented and programming models; testing the validity of models - principles and criteria.

Unit 4: Empirical and Policy Models built for India

Discussion of specific models – IEG-DSE, NCAER, RBI and other macro-econometric models

Unit 5: Simulations of Models: Static and Dynamic

Basic concepts in simulations, development and implementation of simulation modelling, design of simulation models, simulation of sectoral and macro models; examples of simulation modelling - queuing systems, simulation of inventory systems etc., optimization of simulation parameters, base results and subsequent scenarios, verification and validation of simulation results, ex-ante and ex-post simulations.

Recommended Readings:

Fair, R.C., Specification, Estimation and Analysis of Macro-econometric Models, Harvard University Press, Cambridge, 1984.

Kendall, M.G., 'Introduction to Model Building and its Problems' in Mathematical Model Building in Economics and Industry, 1968, London, Charles Griffin and Co., Ltd.

Tabor, M., Chaos and Integrability in Non-linear Dynamics: An Introduction, 1989, New York, John Wiley.

Granger, C.W.J., (ed.), Modelling Economic Series: Readings in Econometric Methodology, Clarendon Press, Oxford, 1990.

Granger, C.W.J. and Timo, T., Modelling Non-linear Economic Relationships, 1996, Oxford University Press.

Rubinstein, R., Simulation and the Monte Carlo Method. 1981, New York.

Hoover, S.V. and Ronald, F.P., Simulation: A Problem-Solving Approach, 1989, Massachusetts, Addison Wesley.

Woods, R.L. and Kent, L.L., Modelling and Simulation of Dynamic Systems, 1997, Prentice Hall, New Jersey.

ECON – 4056
Agricultural Economics and Farm Management
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Elective (Theory)

Unit – 1: Introduction to Agricultural Economics

Nature and Scope of Agricultural Economics – Agricultural Economics and Resource Economics, Agricultural Economics and Environmental Economics; Primary Sector vs. Secondary Sector - Role of Agriculture in Economic Development -Interdependence between Agriculture and the Rest of the Economy.

Unit – 2: Farming Systems

Farming Systems-Subsistence farming, Peasant Farming-Chhayanovian Farm Household Model, Shifting Cultivation, Cooperative Farming, Commercial Farming.

Unit – 3: Farm Management

General management and Farm Management, Position and the role of a Farm Manager, Farming objectives, Farm Management Tasks-Planning, Organisation, Implementation, Control, the Decision-Making Process in Farm Management-Steps in Decision Making, Farm Size and Productivity, Uncertainty and Risk, Rotation of Crops, Location of Crops. Farm Budgeting-Types.

Unit – 4: The Economics of Agricultural Production

Production Functions – Factor-Factor Relationships, Product-Product Relationships; Discreet Production Functions – Continuous Production Functions -. Inverse Production Functions-Duality of Cost and Production

Unit-5: Agricultural Production Functions: Forms of Production Functions, Original Cobb Douglas Function-Early Generalizations, Cobb Douglas Type of Function - Profit Maximization with the Cobb Douglas Function-Duality and the Cobb Douglas Function; Spillman Production Function, Transcendental Production Function, Cobb Douglas Function with Variable Elasticities, Generalized Power Production Function.

Unit – 6: Agricultural Factor Markets

Land Market: Land Use and Land Prices, Lease Market – Land Tenure System; Labour Market: Mobility of Labour – Segregation of Labour; Credit Market: Role of Capital in Agricultural Development; Interlinked markets.

Unit – 7: Demand and Supply of Agricultural Products

Demand for Farm Products: Factors affecting Demand for Food, Engel law and Engel Elasticities – Supply of Agricultural Products – Supply of Individual Crops and Aggregate Supply – Marketed Surplus and Marketable Surplus – Cobweb Market Model, Nerlove's PAAE Model – Supply Response of Perennials Crops.

Unit – 8: Behavior of Agricultural Prices

Features of Agricultural Prices – Intra and Inter Seasonal and Inter-Year Price Behavior —
Agricultural Price Indices – Agricultural Price Policy: Its Role and Functions – Sectoral Terms
of Trade and Economic Growth.

Recommended Readings:

Heady, E.O. “Economics of Agricultural Production and Resource Use”, Prentice Hall.

Heady, E.O. and Dhillon, J., “Agricultural Production Functions”, Kalyani.

Schultz, T.W., "The Economic Organisation of Agriculture", McGrawHill.

Cohen, R., “The Economics of Agriculture”, Cambridge University Press.

Soni, R.N., “Leading Issues in Agricultural Economics”.

Fei, Ranis, “Economic Growth: An Evolutionary Perspective”.

Ray, Debraj, “Development Economics”, OUP.

Debertin, David L. “Agricultural Production Economics “Pearson Education

Kay, Ronald D. ,William M. Edwards, and Patricia A. Duffy. “Farm Management” McGraw

Snodgrass M.M. and L.T.Wallace “Agriculture Economics and Resource Management”

Prentice Hall of India Pvt. Ltd. New Delhi.

Reenen, M.J. Van J.A.H. Davel Farm Management -A Business approach University of
South Africa Pretoria

ECON-4066
Economics of Social Sector
Credit: 6
Total Marks: 100 (T 80+IA 20)
Course Type: Elective (Theory)

Unit 1: Health Economics and Development

Rationale and Scope of Health Economics; Investment in Health; Health outcomes and their relationship with macroeconomic performance; Health and Productivity Relation: Empirical Evidence; Economics of Nutrition.

Unit 2: Determinants and Indicators of Health

Determinants of Health Status; Indicators of Health Status: Input and Output Indicators; Measures of Health Status: Disease Burden - DALY, QALY; Consequences of Gender Bias in Health; Concept of Missing Women; Linkages of Female Education with mortality and morbidity. Health outcomes; health care delivery systems and health financing: Public- Private Partnership in Providing health care services: Equity and Efficiency debate; Evolution of health care policies in India. Cross Country Comparisons in terms of health care investment and health outcomes

Unit 3: Health Care Market

Demand for Health care – Grossman model of health demand; Supply of Health Care; Economics of Health Insurance: Market failure in health insurance and sources; Market of Pharmaceuticals

Unit 4: Introduction to Economics of Education

Concept and scope of Economics of Education; Education as consumption and investment goods; Role of education in Economic development, Human Capital- Human Capital Vs Physical Capital, Demand and Supply of Education; Cost of education- private costs and social cost, direct and indirect cost; Benefits of education-Direct and indirect benefits, private and social benefits; inequality in education; the Relationship between Employment Opportunities and Educational Demand.

Unit 5: Financing of Education

Private versus public provision of education, Empirical evidence on the determinants of public versus private funding, Interactions between public and private sector, Centralization versus decentralization of educational finance, Fiscal federalism in education finance.

Recommended Readings:

William, Jack (1999): Principles of Health Economics for Developing Countries, World Bank Publications.

World Development Report (1993): Investing in Health, The World Bank.

Ronald G., Ehrenberg and Robert S., Smith (2005) Modern Labor Economics: Theory and Public Policy, Addison Wesley

Human Development Reports, Technical Notes: UNDP-various issues Michael P. Todaro & Stephen C. Smith (2005): Economic Development, Pearson Education

Grossman, Michale (1999): The Human Capital Model of the Demand for Health, working paper, National Bureau of Economics Research, Cambridge

Gerald M. Meier & James E. Rauch (2005): Leading Issues in Economic Development, Oxford University Press.

George Psacharopoulos (1987): Economics of Education, Pergaman Press

Blaug,M. (1972): Introduction to Economics of Education, Penguin, London.

Checchi,D, The Economics of Education, Cambridge University Press

Johnes,G.andJohnes,J.,(Ed.)InternationalHandbookontheEconomicsofEducation,EdwardElgar PublishingLtd.

K.Venkatasubramanian,(1998) Education and Economic Development of TN.

G.S.Parnes, Planning Education for Economic Social Development.

Cohn,(2005) Economics of Education

Tilak (2006),Economics of Inequality in Education

SudhaV.Rao(2003), Education and Rural Development

Nalla Gounden A.M.(1998),Education and Economic Development

Cohen,E.andT.Gaske(1989):Economics of Education, Pergamon Press,

London Vaizoy (1962):Economics of Education, Faber and Faber, London

McMohan,W.W.(1999):EducationandDevelopment:MeasuringtheSocialBenefits,OUP,Oxford.

Woodhall,M.(1992):CostBenefitAnalysisinEducationalPlanning,UNESCO,Paris