

DRAFT SYLLABUS

***FOUR YEAR UG SYLLABUS UNDER NEP OF ECONOMICS MAJOR
FOR SEMESTER III TO SEMESTER V FROM 2023-24 ACADEMIC
SESSION AS APPROVED IN THE UGBOS MEETING HELD ON 01
JULY, 2024***

***DEPARTMENT OF ECONOMICS
WEST BENGAL STATE UNIVERSITY
BARASAT, NORTH 24 PARGANAS***

SEMESTER III(DS-3)

ECONOMICS MAJOR (DSC)

DS-3: ECODSC303T

MATHEMATICAL METHODS FOR ECONOMICS-I

5 Credits (4L+1T)

Total number of Lecture hours = 75

Course Outcome/ Learning Outcome: After successful completion of this course students will be able to:

* Understand the transmission of basic mathematics that enables the creation of economic theory in general.

*Understand the application of mathematical techniques to economic theory, in general.

*Understand the process of optimization techniques in economic theory, in general.

*In this course, particular economic models are not the ends and the material is to be taught as indicated by the contents of the prescribed textbook

Syllabus:

1. Preliminaries:

(10L+2T)

Concept: Sets and set operations; relations; functions and their properties; number systems. Set Theory: Definition of a set and discussion of related concepts; Set types; Operations on sets; Nested sets; Cartesian product; Concept of Euclidean Space Functions and Relations: Definitions; Concepts of

'range', 'domain' and 'mapping'; Explicit and implicit functions; Types of polynomial functions and correspondences.

2. Brief Review of Differential and Integral Calculus: (12L+3T)

Concepts of 'limits and continuity', 'derivative', 'partial derivative', 'total differential' and 'integral' (stress on both intuitive and mathematical understanding); differentiable functions: Applications of differential and integral calculus to the study of functions: level curves; slope and curvature of functions, area under a curve etc. second order derivatives.

Applications: Slutsky equation and decomposition of price effect; Properties of demand functions.; savings function, Total average and marginal Cost & Production, Consumption function, saving & investment function.

3. Simultaneous Linear Systems and Related Applications of Matrix Algebra: (10L+2T)

Vector spaces: algebraic and geometric properties, scalar products, norms, orthogonality; linear transformations: properties, matrix representations and elementary operations; systems of linear equations and their solution sets; determinants: characterization, properties and applications (Example- Multipliers in IS-LM model).

4. Single-variable optimization: (12L+3T)

Geometric properties of functions: convex functions, distinction between concave and convex functions; their characterizations and applications; local and global optima (maxima and minima).

Applications: Equilibrium under cardinal utility theory; Maximization of Revenue and Profit, Minimization of cost of production in short run.

5. Multi-variable optimization: (12L+3T)

Free and constrained optimization; Static optimization problems; applications

Applications: Equilibrium under cardinal and ordinal utility theory; Maximization of Profit in perfect market form, Minimization of cost of production in long run.

Suggested Readings:

1. K. Sydsaeter and P. Hammond, Mathematics for Economic Analysis, Pearson Educational Asia: Delhi, 2002.
2. Blume, Lawrence and Carl Simon (1994), Mathematics for Economists, Norton.
3. Chiang, Alpha and Kevin Wainwright (2005), Fundamental Methods of Mathematical Economics, Fourth Edition, McGraw-Hill
4. Baldani, Bradfield and Turner, An Introduction to Mathematical Economic, C engage Learning: 2007.
5. James M. Henderson and Richard E. Quandt., Microeconomic Theory A Mathematical Approach, ED 3rd, Mcgraw Hill Book Company.
6. E.Silberberg, The Structure of Economics: A Mathematical Analysis," 2nd Edition, McGraw Hill, Boston, 1990

SEMESTER IV (DS-4, DS-5, DS-6, DS-7)

ECONOMICS MAJOR (DSC)

DS-4: ECODSC404T

INTERMEDIATE MICROECONOMICS – I

5 Credits (4L+1T)

Total number of Lecture hours=75

Course Outcome/ Learning Outcome: Since students are already familiar with the basic concepts of behaviour of the consumer and the producer and also covers the behaviour of a competitive firm, after successful completion of this course students will be able to:

- Acquire knowledge regarding the short run and long run behaviour of firms in a given demand condition under different imperfectly competitive market set up.
- Understand how to determine optimal price and employment of an input in different market structures and the role of the labour union in determining wage rates.
- Check whether the independent action by each economic agent is consistent while there is interdependence among the economic agents.
- Know how choice in the face of risk differs from choice in the absence of risk, how to measure and reduce risk.

Syllabus:

1. Consumer Theory Revisited:

(20L+5T)

- (i) Application of indifference curve approach: Derivation of labour supply and inter temporal choice- Saving and borrowing
- (ii) Choice under risk: Describing Risk, Preferences towards risk, Reducing risk, the demand for Risky assets-the trade-off between Risk & Return
- (iii) Revealed Preference – the weak axiom and substitution effect.

2. Market Structure: Perfect Competition (12L+3T)

Features, Short run and long run equilibrium of the firm, Short run supply function, Industry equilibrium; Long run industry supply with or without external economies or diseconomies.

3. Imperfect Market Structure: Monopoly(20L+5T)

(i) Monopoly and anti-trust policy; government policies towards competition; Sources of monopoly power, Index of monopoly power.

(ii) Equilibrium with single plant, multiple plants, Constrained revenue maximisation, Natural monopoly; Dead-weight loss of Monopoly

(iii) Price discrimination; peak-load pricing; bundling; two-part tariff.

(iv) Monopsony.

4. Imperfect Market Structure: Monopolistic Competition (8L+2T)

Concept: Product diversification; Short-run & Long-run equilibrium; Excess Capacity.

Suggested Readings:

1. Hal R. Varian, Intermediate Microeconomics, a Modern Approach,
2. Pindyck & Rubinfeld – Microeconomics
3. Koutsoyiannis – Modern Microeconomics
4. Henderson & Quandt – Microeconomic Theory- A Mathematical Approach

ECONOMICS MAJOR (DSC)

**DS5 : ECODSC405T
INTERMEDIATE MACROECONOMICS–I**

5 Credits (4L+1T)

Total Number of Lecture Hours = 75

Course Outcome/ Learning Outcome: This course is a sequel to Introductory Macroeconomics. After successful completion of this course students will be able to:

- Understand various alternative theories of output and employment determination in a closed economy in the short run as well as long run, and the role of policy in this context.
- Understand the causes and effects of different types of inflation and inflation unemployment trade-off in an economy.
- Understand various theories of output and employment determination in an open economy.

Syllabus:

1. **The classical system:** (12L+3T)
The Classical view of macroeconomics in respect of the determination of employment, output and prices. Say's law and Walras' law – The dichotomy between the real sector and monetary sector – neutrality of money.
2. **The Complete Keynesian model:** (16L+4T)
 - Derivation of aggregate demand and aggregate supply curve – Keynesian labour supply function – determination of equilibrium – wage rigidity – involuntary unemployment – Underemployment equilibrium – effects of change in money supply and other factors on complete Keynesian model – money illusion.
 - Comparison with the Classical system – price flexibility – Real balance effect.
3. **Inflation, Unemployment and Expectations:** (16L+4T)
 - (i) Phillips curve; adaptive and rational expectations; policy ineffectiveness debate
 - (ii) Aggregate supply and Phillips curve; Inflation, unemployment and Phillips curve
Shift of Phillips curve, Phillips curve, Expectations and Inflation Inertia, Disinflation and sacrifice ratio. Rational expectations and Painless Disinflation, Natural Rate Hypothesis, Hysteresis.
4. **Open Economy Models** (16L+4T)
Short-run open economy models; Mundell-Fleming model; exchange rate determination; purchasing power parity; asset market approach; Dornbusch's overshooting model; monetary approach to balance of payments; international financial markets.

Suggested Readings:

1. N. Gregory Mankiw. Macroeconomics, Worth Publishers, 7th edition, 2010.
2. Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 2010.
3. Olivier Blanchard, Macroeconomics, Pearson Education, Inc., 5th edition, 2009.
4. Errol D'Souza, Macroeconomics, Pearson Education, 2009
5. Branson, Macroeconomics (2nd) edition
6. Soumyen Sikdar - Principles of Macroeconomics (OUP)
7. R.T.Froyen. Macroeconomics-Theories and Policies, Prentice Hall; 9th Edition, 2008.

ECONOMICS MAJOR (DSC)

DS-6: ECODSC406T

STATISTICAL METHODS FOR ECONOMICS-I

5 Credits (4L+1T)

Total number of Lecture hours = 75

Course outcome/ Learning Outcome: After the successful completion of the course the student will be able to

*learn the basic concepts of statistical data analysis

*perceive the characteristics of sample data using various methods of statistical measurements

* understand the compatibility, consistency, spreadness /concentration among different sets of sample data

* understand the degree and direction of association in bivariate set up

*learn various important concepts of statistical analysis which has enormous applications such as Time Series, Index Numbers, Vital Statistics.

Syllabus:

1. Basic concepts: (4L+1T)

Population and sample, parameter and statistic; Data Collection: primary and secondary data, methods of collection of primary data; Presentation of Data: Univariate frequency distribution; cumulative frequency; graphic and diagrammatic representation of data

2. Measures of Central tendency: (12L+3T)

Measures of Central Tendency: mean, median, mode and other quartile measures; geometric mean, harmonic mean, their relative merits and demerits

3. Measures of Dispersion: (8L+2T)

Measures of Dispersion: absolute and relative - range, mean deviation, standard deviation, coefficient of variation, quartile deviation, their merits and demerits

4. Measures of Skewness and Kurtosis; Interpolation: (8L+2T)

Moments- Central moments & Non-central moments-skewness=kurtosis

5. Bivariate frequency distribution: (12L+3T)

Simple Correlation: scatter diagram, simple correlation coefficient - Karl Pearson's correlation coefficient and its properties, probable error of correlation coefficient, Spearman's rank correlation coefficient, partial and multiple correlation, Regression Analysis: Properties of linear regression, explained and unexplained variation regression in bivariate frequency distribution.

6. Time series: (8L+2T)

Meaning, Components of time series and their measurement, measurement of trend and statistical fluctuations; Two variable linear curve fitting analysis

7. Index Numbers: (8L+2T)

Meaning, Methods of construction (Price and quantity Index Numbers): Problems in the Construction of Index Numbers, Tests for index Numbers, Chain based Index, Cost of Living Index Number, Wholesale Price Index, Uses of Index Numbers (Example- Index numbers as indices of wellbeing, Stock market indices).

Suggested Readings:

1. Kenny and Keeping: Mathematical Statistics, Part 1 & Part II
2. Giri and Banerjee: Statistical Methods
3. Das, N.G., Statistical Methods, The World Press Pvt. Ltd., Calcutta.
4. Fundamentals of Statistics: Goon, Gupta, Dasgupta, The World Press, 1996

ECONOMICS MAJOR (DSC)

**DS- 7: ECODSC407T
DEVELOPMENT ECONOMICS**

5 Credits (4L+1T)

Total number of Lecture hours = 75

Course Outcome/ Learning Outcome: After successful completion of this course students will be able to :

- understand alternative conception of development and their justification.
- learn about various stages of growth along with various theories and models and strategy of growth.
- understand the basic demographic concepts and their evolution during the process of development along with various theories and model explaining the problems of labour surplus economy.

- learn different measures of poverty and inequality and explore the connection between growth & inequality.
- link the issues and strategies related with economic development and the question of sustainable development

Syllabus:

1. **Basic concepts of development** **(12L+3T)**
Different concepts of development –Sustainable development, Participatory development, Inclusive development, Human development, Growth and Development– Broad Indicators of Economic Development–Per capita Income–Human Development Index, construction and interpretation of HDI; –Gender Development Index–Gender Empowerment Measure
2. **Persistence of Underdevelopment and Strategies of Development** **(24L+6T)**
Characteristics of underdevelopment – Stages of growth - Obstacles to development – Trap Models – Vicious circle of poverty – Critical minimum effort thesis – Low level equilibrium trap – Process of cumulative causation – Big push argument targeting the big push-balanced vs. unbalanced growth; Hirschman model, Choice of technique and investment criteria, Concept of surplus labour – Surplus labour as potential saving – Economic development with unlimited supplies of labour (Lewis Model). Harris-Todaro model.
3. **Poverty and Inequality** **(20L+5T)**
Meaning of inequality, Inequality measures: Lorenz Curve, Range, Coefficient of variation, Gini-coefficient, Poverty, relative and absolute deprivation with respect to income, Poverty line, Poverty measures – Head count ratio, Poverty gap ratio, Income gap ratio, Sen’s Index, Human Poverty Index, Hunger index, Multidimensional poverty index etc. Tackling Poverty – The World Bank Approach
4. **Globalization** **(4L+1T)**
Globalization in historical perspective- Brettonwoods and its after math, the economics and politics of multilateral agreements;

Suggested Readings

1. Thirlwall: Growth and Development
2. Debraj Roy: Development Economics
3. G.M. Meier and J.E. Rauch. Leading Issues in Economic Development. Oxford University Press. (8th edition or latest)
4. K. Basu: Analytical Development Economics, OUP
5. Debesh Bhattacharya: Political Economy of Development
6. Todaro and Smith: Economic Development, Pearson Education, 2009
7. Y. Hayami, “Development Economics”, (Oxford University Press)
8. Soumyen Sikdar(2013): Contemporary Issues in Globalization: An Introduction to Theory and Policy in India, OUP

SEMESTER V(DS-8, Ds-9. Ds-10 & Ds-11)

ECONOMICS MAJOR (DSC)

DS 8: ECODSC508T

INTERMEDIATE MICROECONOMICS – II

Credit:5 (4L+1T)

Total number of Lecture hours =75

Course Outcome/Learning Outcome: This course is a sequel to Intermediate Microeconomics I, after successful completion of this course students will be able to:

- Have conceptual clarity to the student coupled with the use of mathematical tools and reasoning.
- Know the strategic behaviour oligopolistic firms
- Understand market failure
- Learn about general equilibrium and welfare, imperfect markets and topics under information economics.

Syllabus:

1. **Market Structure: Oligopoly and Strategic Behaviour of Firms(20L+5T)**
Conjectural Variation & Reaction functions, Analysis of Cournot & Stackelberg; Collusive Oligopoly & Prisoners' dilemma in cartel stability, Nash equilibrium of game.
2. **Market Failure: (12L+3T)**
Externalizes; public goods and markets with asymmetric information-Moral hazard and adverse selection (concepts only)-Market for Lemons
3. **Input Markets: (16L+4T)**
Derived demand for a single input & multiple input in competitive & imperfectly competitive markets, Firm demand & industry demand, Adding up problem, Collective bargaining & exploitation, Rent & Quasi-rent.
4. **General Equilibrium, Efficiency and Welfare (12L+3T)**
Equilibrium and efficiency under pure exchange and production; Conditions of Pareto optimality; overall efficiency and welfare economics.

Suggested Readings:

1. Robert Gibbons. A Primer in Game Theory, Princeton University Press, 1992.
2. Gravelle & Rens, Microeconomics (3rd Edition)
3. Pindyck & Rubinfeld – Microeconomics
4. Koutsoyiannis – Modern Microeconomics
5. Maddala & Miller – Microeconomics

ECONOMICS MAJOR (DSC)

DS-9: ECODSC509T INTERMEDIATE MACROECONOMICS-II

5 Credits (4L++1T)

Total Number of Lecture Hours = 75

Course Outcome/ Learning Outcome: This course is a sequel to Intermediate Macroeconomics I and after successful completion of this course students will be able to:

- Have an idea about the long run dynamic issues like growth and technical progress.
- Gather knowledge about the micro-foundations to the various aggregative concepts used in the previous courses.
- Evolution of economic thoughts and recent development in macroeconomic concepts with special reference to Real Business Cycle and New Keynesian Economics.

Syllabus:

- 1. Economic Growth (20L+5T)**
Harrod-Domar model; Solow model; golden rule; technological progress and elements of endogenous growth.
- 2. Microeconomic Foundations (32L+8T)**
 - a) Consumption: Keynesian consumption function; Fisher's theory of optimal intertemporal choice; life-cycle, Duesenberry's relative income hypothesis and permanent income hypotheses; rational expectations and random-walk of consumption expenditure.
 - b) Investment: determinants of business fixed investment; residential investment and inventory investment. Tobin's q , Accelerator model of investment.
 - c) Demand for money: Transaction demand for money, Precautionary demand for money,
 - d) Speculative demand for money, The Regressive Expectations Model, The portfolio balance approach, The Baumol-Tobin models of Cash Management, Money as a consumer's and producer's good.
- 3. Schools of Macroeconomic Thoughts (concept only) (8L+2T)**
Mercantilism, Physiocracy, Classical; Keynesians; New-Classicals and New-Keynesians.

Suggested Readings:

1. N. Gregory Mankiw. Macroeconomics, Worth Publishers, 7th edition, 2010.
2. Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 2010.
3. Olivier Blanchard, Macroeconomics, Pearson Education, Inc., 5th edition, 2009.
4. Charles I. Jones, Introduction to Economic Growth, W.W. Norton & Company, 2nd edition, 2002.
5. Errol. D'Souza, Macroeconomics, Pearson Education, 2009.

6. Robert J. Gordon, Macroeconomics, Prentice-Hall India Limited, 2011.
7. Branson, Macroeconomics (2nd edition)
8. R. T. Froyen. Macroeconomics-Theories and Policies, Prentice Hall; 9th Edition, 2008

ECONOMICS MAJOR (DSC)

DS-10: ECODSC510T

MATHEMATICAL METHODS FOR ECONOMICS-II

5 Credits (4L+1T)

Total Number of Lecture hours = 75

Course Outcome/ Learning Outcome: After going through the course, the students will be able to

- * Understand the basic mathematics that enables the creation of economic theory in general.
- * Understand the application of mathematical techniques to economic theory specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this Syllabus.
- * Understand the application of linear Programming Problems, interdependence industry relation and game theory.
- * In this course, particular economic models are not the ends, but the means for illustrating the specific methods of applying mathematical techniques to economic theory.

Syllabus:

- 1. Multi-variable function: some concept (10L+2T)**
Convex sets; properties and applications; quasi convex functions and applications; the implicit function; homogeneous and homothetic functions: characterizations and application to comparative statics problems: Envelope theorem and applications.
- 2. Classical Optimization (10L+2T)**
First Order condition for optimum; Second Order Condition and sufficiency requirement; Local and Global Optima and Local-Global Theorem; Constraint qualification and Kuhn Tucker condition; Lagrangean Technique for optimization and its interpretation.
- 3. Linear Programming and Duality (8L+2T)**

Basic concepts and solution methods (graphical and simplex); Duality theorem.

Applications: Duality in Consumer Theory: Producer's Theory.

4. Simultaneous Equation Systems: (12L+3T)

Systems of linear equations: properties of their solution sets, Eigen Values, Eigenvectors.

Applications: Simple Linear Input-Output models with fixed coefficients and their Solutions (Leontief Static open and closed model). Two good general equilibrium systems: existence of equilibrium, and comparative statics.

5. Dynamical Methods: algebraic and geometric exposition (12L+3T)

Single Equation linear Difference and Differential equations systems: Monotonic and oscillatory convergence, divergence and stability.

Applications: Cobweb models, Samuelson Multiplier-acceleration model and their existence of equilibrium and comparative statics

6. Game Theory and its Applications: (9L+2T)

Constant and non-constant sum game, two-person zero sum game, concept of pure strategy and mixed strategy, Nash equilibrium method and method of dominance.

Application: Cournot model, problem of prisoner's dilemma.

Suggested Readings:

1. Intrilligator, Mathematical Optimization and Economic Theory, (1971).
2. A. Dixit, Optimization in Economic Theory, OUP, (1995).
3. Dorfman, Samuelson and Solow, Linear Programming and Economic Analysis.
4. Simon and Blume, Mathematics for Economists, Norton and Company, 1994.
5. K. Sydsaeter, P Hammond, Mathematics for economic analysis, Pearson Education, (2002).
6. A.C. Chiang, Mathematical Economics, McGraw Hill, 1995.

ECONOMICS MAJOR (DSC)

**DS-11: ECODSC511T
INDIAN ECONOMY I (ECODSC511T)**

5 Credits (4L+1T)

Total Number of Lectures = 75

Course Outcome/ Learning Outcome: After completion of this course the students will be able to understand:

*Basic characteristics of India economy with respect to structural change, growth and distribution, savings and investment, sustainability and regional contrasts

*The rational and major objectives of Planning and how the emphasis of those objectives has changed over time and recent developments

The key economic issues related to Indian agriculture, industry, foreign sector, monetary sector, poverty, unemployment and income distribution in post-independence period

*The changes in the policies of the government in the fields of money market, capital market, public sector and external sector

Syllabus:

1. Structure of Indian Economy (12L+3T)

Introduction (a brief overview of Indian Economics History 1857-1947); Major features of the economy at independence, Structural constraints; Changes in the pattern of intersectoral distribution of National Income since Independence; Changes in the pattern of occupational structure; A brief overview of Indian Planning: achievements and failures, Niti Aayog; Background of Indian Economic Reforms - New Economic Policy, Redefining India's development strategy, changing role of state and market, Pattern of growth in post-liberalisation era, growth of the service sector

2. Population and Human Development (8L+2T)

Size and growth rate of population in India, Changes in sex composition since inception of planning, Population policy and population projections for India, Demographic Dividend; Trends in poverty, inequality and unemployment, different estimates of poverty nature and types of unemployment in India, Policies undertaken for poverty eradication and employment generation

3. Agriculture (8L+2T)

Causes for low productivity in Indian agriculture, Problems of institutional credit in agriculture; Green revolution and its appraisal; Land reforms and its appraisal; Targeted public distribution system; Impact of Globalisation on Indian Agriculture, Post-reform Agricultural performance and its crisis

4. Industry (8L+2T)

Review of Industrial growth under planning regime; Industrial sickness in India; Role of small scale industries, in economics development; Government schemes for small scale industries, SMEs, MSMEs and Entrepreneurship development schemes; Role of trade union and social security measures in India; Post reform Industrial policy, Disinvestment policy and Privatisation.

5. Financial Sector (8L+2T)

An overview of the Indian Financial System; Reserve Bank of India, role of RBI and Monetary Policy; Role of commercial banks in India, Bank Nationalisation and associated problems, Profitability of commercial banks in India; Role of Development Banks in India.

6. External Sector**(8T+2T)**

Volume, composition and trends in India's foreign trade in the pre and post-Liberalisation period; Issues related to Foreign Exchange market, Balance of Payment, Rupee Convertibility, Foreign Direct investment, Export-Import policies

7. Indian Public Finance**(8T+2T)**

Sources of Revenue of Union and State Governments; Introduction of GST and its implication; Union-State Financial Relation; Centre-State conflict on Finances; Central Finance Commission; Public expenditure and Public debt

Suggested Readings:

1. Uma Kapila, Indian Economy: Performance and Policies (latest Ed.)
2. Uma Kapila, Indian Economy Since Independence (latest Ed.)
3. Jean Dreze and Amartya Sen, 2013. An Uncertain Glory: India and its Contradictions Princeton University Press.
4. Jean Dreze and Amartya Sen, Economic Development and Social Opportunity, OUP
5. Datt & Sundaram, Indian Economy (latest Ed.)
6. Mishra & Puri, Indian Economy (latest Ed.)
7. Desai V., 'The Indian Financial System and Development', Himalaya Publishing House, 5th edition)