

# **COTTON UNIVERSITY**

**DEPARTMENT OF ECONOMICS**

**GUWAHATI, ASSAM 781001**

**SYLLABUS**

**FOR**

**4 YEAR DEGREE PROGRAMME IN ECONOMICS**

**Semester I**

<b>Paper</b>	<b>Paper Title</b>	<b>Paper Code</b>	<b>Level</b>	<b>Credits</b>	<b>Credit Distribution (L+T+P)</b>
Core 1:	Fundamentals of Economics-I	ECO23C101	100	4	3+0+1
Minor-I	Foundation of Economics-I	ECO23M101	100	4	3+0+1
MDE-1	Economics of the Rural Sector	ECO23MDE101	-	3	2+0+1
SEC 1	Introduction to Official Statistics in India	ECO23SEC001	100	3	2+0+1
VAC	Modelling Solution to Environmental Problems	ECO23VACB04	100	2	1+0+1

**Semester I**  
**Paper: Fundamentals of Economics-I**  
**Course Code: ECO23C101**  
**Credit: 4**  
**(L+T+P=3+1+0)**

**Course Objective**

This course aims to introduce the students to the preliminary concepts of macroeconomics and monetary economics, and inculcate in them a comprehensive understanding of the Indian economy.

**Course Outcomes (CO):**

- CO1: Understanding of the concepts of investment, inflation and unemployment, enabling them to analyze the status of the economy, its growth over time.  
 CO2: Develop an understanding of business cycles, including the global recession.  
 CO3: Learn the fundamentals of monetary economics.  
 CO4: Develop an understanding of agricultural scenario of India and BOP situation in the economy.

**Unit 1: Investment:** investment function; business fixed investment; residential investment and inventory investment; marginal efficiency of capital (10)

**Unit 2: Inflation and unemployment:** Inflation and its social costs; unemployment-inflation relationship- Phillips curve: concept, short-run and long-run Phillips curve (12)

**Unit 3: Business cycle:** characteristics, phases, measures to control; Asian financial crisis, 1997; Sub-prime mortgage crisis and Great Recession, 2008 (10)

**Unit 4: Monetary Economics:** quantity theory of money: Fisher and Cambridge; Liquidity preference theory by Keynes; money supply and theory of credit creation (12)

**Unit 5: Introduction to Indian agriculture:** Role and status of agriculture, rural credit, agricultural marketing, MSP (10)

**Unit 6: BOP Situation of India:** BOP situation in India; India's current foreign trade policy (10)

**Readings**

N. Gregory Mankiw, *Macroeconomics*, Cengage

Eroll D'Souza, *Macroeconomics*, McMillan

Dutta, G. and A. Mahajan. *Indian Economy*, S. Chand, 72<sup>nd</sup> Edition

Kapila, U. 2017. *Indian Economy: Performance and policies*, Academic Foundation, 18<sup>th</sup> edition

Government of India: Economic Survey (relevant issues) 2nd Ed OUP

**Minor-I**  
**Foundation of Economics-I**  
**Course Code: ECO23M101**  
**Credits=4**  
**(L+T+P=3+1+0)**

**Course Objective**

Introduce the students to the preliminary concepts of microeconomics, while at the same time, familiarise them with quantitative tools to develop skills for applications in various economic fields.

**Course outcomes (CO)**

**CO1:** Understanding of the process of optimal decision making in consumption and production processes.

**CO2:** Enable the interpretation of government interventionist procedures with regard to prices and fiscal matters.

**CO3:** Understanding of the basic quantitative skills essential for economic analysis.

**Unit 1: Microeconomics (22)**

**Basic concepts:** Methodology of economics; the economic problem: scarcity and choice; the Edgeworth Box, the production possibility frontier; Allocation of resources; Concept of basic competitive model; Efficiency and perfect competition; Market failures: sources of market failures (concepts only)

**Household sector:** Indifference curve analysis: consumer's optimal position, decomposition of price effect, derivation of demand curve - ordinary and compensated; Engel's curve; labour supply and savings decision; controls on prices; taxes and the costs of taxation.

**Business sector:** Production process with two variable inputs: Isoquants, Characteristics of Isoquants, Marginal Rate of Technical Substitution, elasticity of substitution; Production function: Introduction to Linear, Fixed Proportions, Cobb-Douglas and CES production function.

**Cost:** opportunity cost, accounting vs. economic cost, cost minimizing input choice, producer equilibrium, expansion path and long run cost curve

**Unit 2: Essentials of quantitative analysis- I (22)**

Sets and set operations; relations; functions- Range; Domain; Limit and continuity of a function; Concept of Derivative, Basic rules of Differentiation (without proof) , Simple applications of Differentiation – Elasticity of Demand, cost and revenue functions, Derivation of marginal function from total function – cost and revenue functions, Relationship between AC and MC.

**Unit 3: Essentials of quantitative analysis- II (20)**

Population vs. sample, parameter vs. statistic, sample vs. complete enumeration;  
 Measures of central tendency: arithmetic mean, median, mode and concept of geometric mean;

Measures of dispersion: standard deviation, quartile deviation and mean deviation.  
Simple numerical problems

### Readings

- Karl E. Case and Ray C. Fair, Principles of Economics, 9<sup>th</sup> Ed.; Pearson Education Inc.,
- Daniel Rubinfeld and Robert Pindyck, Microeconomics, Pearson Education; Eighth edition (latest edition)
- N. Gregory Mankiw, Economics: Principles and Applications, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4th edition, 2007.
- Hal R. Varian, Intermediate Microeconomics A Modern Approach, W. W. Norton & Company, Inc.
- Christopher Snyder & Walter Nicholson, Microeconomic Theory Basic Principles and Extensions, Cengage; 11 edition (2014)
- A. C. Chiang & K. Wainwright (2005) Fundamental Methods of Mathematical Economics, Mcgraw Hill Education.
- K.Sydsaeter P. Hammond, Mathematics for Economic Analysis , Pearson Educational Asia: Delhi,2002.
- Prof. S. Barua, (2000), Basic Mathematics and its Economic Applications, Macmillan.
- D. Salvatore: Mathematics and Statistics, Schaum's Series Tata McGraw Hill.
- S.P. Gupta *Statistical Methods*, Sultan Chand and Sons.
- S.C. Gupta and V.K. Kapoor, *Fundamentals of Applied Statistics* Sultan Chand and Sons.
- Murray R Spiegel, Larry J. Stephens(2007), *Schaum's Outline of Statistics* McGraw Hill Professional.
- Dominick Salvator, Derrick Reagle(2001) Schaum's Outline of Statistics and Econometrics.
- A. C. Chiang & K. Wainwright (2005) Fundamental Methods of Mathematical Economics, Mcgraw Hill Education.
- K.Sydsaeter P. Hammond, Mathematics for Economic Analysis , Pearson Educational Asia: Delhi,2002.
- Prof. S. Barua, (2000), Basic Mathematics and its Economic Applications, Macmillan.
- R. Gibbons (1992). Game Theory for applied Economists, Princeton University Press; Reprint edition.

**MDE-1**  
**Economics of the Rural Sector**  
**Course Code: ECO23MDE101**

**Credit= 3 (L+T+P=2+0+1)**

**Course Objectives:**

This programme introduces the students to various issues prevailing in rural areas along with the prevailing socio-economic conditions. After completing the course, students are expected to devise solution to different rural problems.

**Programme Outcomes:**

**CO1:** Introduction to the concept of rural development, rural economy and related issues.

**CO2:** Understanding of the theories of development and growth.

**CO3:** Analyse different rural development policies in India.

**Unit 1: Rural Development: Concept, Objectives and Indicators (10)**

Rural Development: concept and objectives; Elements of rural development; Need for rural development; Rural-Urban Differences; Basic Indicators of Rural Development.

**Unit 2: Theories of Economic Growth (12)**

Rostow's stages of Growth, Lewis Theory of Development, Harris-Todaro model, and Gandhian Approach to Rural Development

**Unit 3: Rural Development in India (10)**

Rural development policy in India; Participatory approach; Panchayati Raj Institutions (PRIs) – functions, functionaries and funds.

**Unit 4: Exploring village economy (project report required)**

Mawlynnong/Rangsapara- cleanest villages; Fringe villages of any reserve forest/sanctuary/national parks etc.; Bell/Brass Metal Industry-Hajo/Sarthebari; village textile industry (any one).

**Readings**

Singh, K (2009) Rural Development Principles, Policies and Management, New Delhi: Sage

Bezbaruah, M.P (2010) Rural Development in India: The past experience and future

Perspective, in K. Singh (ed) Rural Development in India: Retrospect and Prospects. New Delhi: Concept Publishing Company

Website: <https://rural.nic.in>

**Skill Enhancement Course (SEC)**  
**Introduction to Official Statistics in India**  
**Course Code: ECO23SEC001**  
**Credit: 3 (L+T+P=2+0+1)**

**Learning outcome:**

The course will give an exposure of different data related to Indian economy and demography to the students. After attending the course students will understand how the government of India collects data on different issues of the economy for policy making. Also, the students will be familiarized with the estimation/computation of economic aggregates and different macroeconomic indices.

**Learning objectives:**

- To introduce students to the process of economic census and the estimation of national income
- To give an idea about the process of data collection on demographic indicators
- To familiarize the students with the working of National Sample Survey Organization (NSSO)
- To introduce the learners to the process of computation of inflation rate and other agricultural statistics

**Course**

**Unit 1:** Understanding the process of estimation of national income in India and the challenges in estimation of state GDP; Economic Census (8)

**Unit 2:** Census in India: Demographic indicators; an overview of NFHS (8)

**Unit 3:** Surveys conducted by NSSO: Different rounds of NSSO surveys, challenges faced in survey (8)

**Unit 4:** Price statistics in India; Agricultural statistics in India (6)

**Unit 5:** Applications of the datasets (Each student will choose any topic related to Indian economy and study the same with anyone of the dataset mentioned above.)

**Readings**

- <https://censusindia.gov.in/census.website/>
- [https://www.mospi.gov.in/sites/default/files/press\\_release/PressNoteNAD\\_28feb23final.pdf](https://www.mospi.gov.in/sites/default/files/press_release/PressNoteNAD_28feb23final.pdf)
- <https://www.mospi.gov.in/>
- <https://mospi.gov.in/29-price-statistics>
- <https://eands.dacnet.nic.in/>

(The Course instructor will just give an overview of the dataset and how it is collected. The instructor will also inform the students how to find the dataset. This course does not delve into the depth of data collection process. The study material will be of the choice of the instructor.)

**Value Added Course (VAC)**  
**Modelling Solution to Environmental Problems**  
**Course Code: ECO23VACB04**  
**Credit: 2 (L+T+P=1+0+1)**  
**Level: 100**

**Learning outcome**

Environmental problems have been increasing over time with the growth of population, industrialization and urbanization. These problems started with industrial revolution of the 1700s. As a result, climate has changed with global warming. Environment is a public good but due to its scarcity caused by free riding problem economics has entered the realms of environmental studies. This course will train students to visualize environment as commodity and how to use it optimally. This is necessary for sustainable development of mankind.

**Learning objectives**

- To introduce students to the idea of management of environmental quality by applying command and control approach and other market based approaches
- Students will learn the application of various tools for measuring the benefits of environmental decision making

**Unit I: Environmental problem and modeling solution to environmental problem (08)**

Economics and the environment; fundamental concepts in environmental economics: causes of environmental damage and sources; identifying environmental objectives: environmental quality, sustainable development, biodiversity; modeling solution to environmental problems: The command and control approach and the market approach

**Unit II: Assessing benefits for environmental decision making (07)**

Environmental benefits: concepts and issues; approaches to measuring environmental benefits: Demand function approach, Contingent Valuation method, Hedonic pricing method and Travel cost method

**Unit III: Practical application**

Conduct a survey of your local environmental problem and apply a suitable method to control it as taught in unit I **or** conduct a case study assessing the benefits of environmental decision making by applying any one of the methods taught in unit II

**Readings**

Thomas, J.M. and S.C. Callan (2010). *Environmental Economics*, Cengage India

Charles D. Kolstad (2000) *Environmental Economics*, Oxford University Press

**Pedagogy:** The teacher will first introduce the students to various environmental problems. After this, they will be taught about techniques to control the menace. In the second unit, students will be given an idea about different methods of valuation of environmental decision making with practical examples so as to make them capable to apply in real world.

**Semester II**

<b>Paper</b>	<b>Paper Title</b>	<b>Paper Code</b>	<b>Level</b>	<b>Credits</b>	<b>Credit Distribution (L+T+P)</b>
Core 2	Fundamentals of Economics- II	ECO23C201	100	4	3+1+0
Minor-2	Foundation of Economics-II	ECO23M201	100	4	3+1+0
MDE-2	Business Economics	ECO23MDE201	-	3	3+0+0
SEC 2	An Introduction to Survey Research	ECO23SEC002	100	3	2+0+1
VAC-2	Modelling Solution to Environmental Problems	ECO23VAC04	100	2	1+0+1

**Core 2: Fundamentals of Economics-II**  
**Course Code: ECO23C201**

**Credits=4**  
**(L+T+P=3+1+0)**

**Course Objective**

Introduce the students to the preliminary concepts of microeconomics, while at the same time, familiarizing them with quantitative tools to develop skills for applications in various economic fields.

**Course outcomes (CO)**

**CO1:** Understanding of the process of optimal decision making in consumption and production processes.

**CO2:** Enable the interpretation of government interventionist procedures with regard to prices and fiscal matters.

**CO3:** Understanding of the basic quantitative skills essential for economic analysis.

**Unit 1: Microeconomics (22)**

**Basic concepts:** Methodology of economics; the economic problem: scarcity and choice; the Edgeworth Box, the production possibility frontier; Allocation of resources; Concept of basic competitive model; Efficiency and perfect competition; Market failures: sources of market failures (concepts only)

**Household sector:** Indifference curve analysis: consumer's optimal position, decomposition of price effect, derivation of demand curve - ordinary and compensated; Engel's curve; labour supply and savings decision; controls on prices; taxes and the costs of taxation.

**Business sector:** Production process with two variable inputs: Isoquants, Characteristics of Isoquants, Marginal Rate of Technical Substitution, elasticity of substitution; Production function: Introduction to Linear, Fixed Proportions, Cobb-Douglas and CES production function.

**Cost:** opportunity cost, accounting vs. economic cost, cost minimizing input choice, producer equilibrium, expansion path and long run cost curve

**Unit 2: Essentials of quantitative analysis- I (22)**

Sets and set operations; relations; functions- Range; Domain; Limit and continuity of a function; Concept of Derivative, Basic rules of Differentiation (without proof) , Simple applications of Differentiation – Elasticity of Demand, cost and revenue functions, Derivation of marginal function from total function – cost and revenue functions, Relationship between AC and MC.

**Unit 3: Essentials of quantitative analysis- II (20)**

Population vs. sample, parameter vs. statistic, sample vs. complete enumeration;

Measures of central tendency: arithmetic mean, median, mode and concept of geometric mean;

Measures of dispersion: standard deviation, quartile deviation and mean deviation.

Simple numerical problems

## Readings

- Karl E. Case and Ray C. Fair, Principles of Economics, 9<sup>th</sup> Ed.; Pearson Education Inc.,
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- N. Gregory Mankiw, Economics: Principles and Applications, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4th edition, 2007.
- Hal R. Varian, Intermediate Microeconomics A Modern Approach, W. W. Norton & Company, Inc.
- Christopher Snyder & Walter Nicholson, Microeconomic Theory Basic Principles and Extensions, Cengage; 11 edition (2014)
- A. C. Chiang & K. Wainwright (2005) Fundamental Methods of Mathematical Economics, Mcgraw Hill Education.
- K.Sydsaeter P. Hammond, Mathematics for Economic Analysis , Pearson Educational Asia: Delhi,2002.
- Prof. S. Barua, (2000), Basic Mathematics and its Economic Applications, Macmillan.
- D. Salvator: Mathematics and Statistics, Schaum's Series Tata McGraw Hill.
- S.P. Gupta *Statistical Methods*, Sultan Chand and Sons.
- S.C. Gupta and V.K. Kapoor, *Fundamentals of Applied Statistics* Sultan Chand and Sons.
- Murray R Spiegel, Larry J. Stephens(2007), *Schaum's Outline of Statistics* McGraw Hill Professional.
- Dominick Salvator, Derrick Reagle(2001) Schaum's Outline of Statistics and Econometrics.
- A. C. Chiang & K. Wainwright (2005) Fundamental Methods of Mathematical Economics, Mcgraw Hill Education.
- K.Sydsaeter P. Hammond, Mathematics for Economic Analysis, Pearson Educational Asia: Delhi, 2002.
- Prof. S. Barua, (2000), Basic Mathematics and its Economic Applications, Macmillan.
- R. Gibbons (1992). Game Theory for applied Economists, Princeton University Press; Reprint edition.

**MINOR 2**  
**Paper: Foundation of Economics-II**  
**Course Code: ECO23M201**

**Credit 4**  
**(L+T+P=3+1+0)**

**Course Objective**

This course aims to introduce the students to the preliminary concepts of macroeconomics and monetary economics, and inculcate in them a comprehensive understanding of the Indian economy.

**Course Outcomes (CO):**

CO1: Understanding of the concepts of investment, inflation and unemployment, and business cycle enabling them to analyze the status of the economy, its growth over time in a compatible manner.

C02: Develop an understanding of business cycles, including the global recession.

C03: Develop an understanding of agricultural scenario of India

C04: Learn the fundamentals of monetary economics.

**Unit 1: Investment:** investment function; business fixed investment; residential investment and inventory investment; marginal efficiency of capital (10)

**Unit 2: Inflation and unemployment:** Inflation and its social costs; unemployment-inflation relationship- Phillips curve: concept, short-run and long-run Phillips curve (12)

**Unit 3: Business cycle:** characteristics, phases, measures to control; Asian financial crisis, 1997; Sub-prime mortgage crisis and Great Recession, 2008 (10)

**Unit 4: Agriculture Sector in India:** Agriculture in the national economy; crisis in agriculture; land reforms: need, types and appraisal; irrigation and other agricultural inputs; rural credit and its sources; agricultural marketing: present state and types, MSP. (12)

**Unit 5: BOP Situation of India:** India's BOP: India's BOP or current account, BOP crisis. BOP since 1991, India's current foreign trade policy. (10)

**Unit 6: Monetary Economics:** quantity theory of money: Fisher and Cambridge; Liquidity preference theory by Keynes; money supply and theory of credit creation (10)

**References:**

N. Gregory Mankiew, *Macroeconomics*, TMH

Eroll D'Souza, *Macroeconomics*, McMillan

Dutta, G. and A. Mahajan. *Indian Economy*, S. Chand, 72<sup>nd</sup> Edition

Kapila, U. 2017. *Indian Economy: Performance and policies*, Academic Foundation, 18<sup>th</sup> edition

Government of India: Economic Survey (relevant issues) 2nd Ed OUP

**MDE 2**  
**Business Economics**  
**Course Code: ECO23MDE201**

**Credit 3 (L+T+P=3+0+0)**

**Course Objective:**

The objective of this course is to encourage and prepare students to choose business and entrepreneurship as career choices. In this context the course contents have been so selected as to inculcate in the young minds the fundamentals required for entrepreneurship decision making.

**CO1:** Students will be apprised about basic concepts of costs and pricing that are vital in business ventures

**CO2:** Develop decision making skills for profitable ventures.

**CO3:** Learn to evaluate and compare among alternative business projects.

**Unit1. Fundamental concepts used in Business decisions and their implications (12):**

Cost concepts-Opportunity Cost, cost-output relationship and its importance in production choices and decision making; Marginal principle, Incremental principle, the Equi-marginal principle; Time perspective in business decisions.

**Unit2: Profit Analysis (10):** Meaning of Profit; Accounting Profit Vs Economic Profit; Break-even Analysis-implications and problems; Break-even quantity and sales; Targeted Profit; Safety margin.

**Unit3: Pricing Strategies (12):** Cost-oriented pricing, Cost plus-pricing, Peak load pricing, multiple product pricing, Price over life cycle of product, Price skimming, price penetration. (Only concepts of various strategies required)

**Unit4: Project evaluation (14):** Laws of returns and their applications; Meaning and importance of Capital Budgeting; Concepts of Payback Period and Net Present Value; Technique of Cost-benefit analysis; Project evaluation, Project analysis; Case study of particular small-scale industries/start-ups.

**Readings:**

- Dominic Salvatore, *Managerial Economics, In a Global Economy*. 4<sup>th</sup> Edition. Thompson-South Western.2001
- Dominic Salvatore *Adapted by Ravikesh Salvatore, Managerial Economics Principles and Worldwide Applications*, 7th Edition. Oxford University Press.
- Sampat Mukherjee, *Business and Managerial Economics (in the Global Context)* NCBA
- D N Dwivedi, *Managerial Economics*. Vikas Publishing House Pvt Ltd
- E Mansfield: *Managerial Economics: Theory, Application and Cases*.1996. W W Norton & Co., New York.
- Allen, R.G.D: *Mathematical Analysis for Economists*. Macmillan, London,1956

**Skill Enhancement Course (SEC)  
An Introduction to Survey Research  
Course Code: ECO23SEC002**

**Credit: 03 (L+T+P= 2+0+1)**

**Learning outcome:**

The course will give an idea about the process of data collection and its different methods. Students are expected to master different ways to collect data under different circumstances. At the end of the course, a student is expected to construct a questionnaire/schedule to study a particular research problem.

**Learning objectives:**

- To help students understand the process of survey and its different steps
- To give idea about different survey methods

**Unit 1: Fundamental of survey research (10)**

What is a survey; when is a survey best; prerequisites of success of survey research: questions and responses, sample survey and design, planning for data analysis, pilot testing, response rate, reporting results; choice between self-administered questionnaire and interview; a survey continuum: from specific to general use; ethical issues; children and survey ethics

**Unit 2: Different types of survey methods (10)**

Content; defining the terms; selecting information needs; types of survey questions and choice; rating scales

**Unit 3: types of survey research (10)**

Interviews; focus group discussion; panel survey; telephone survey; mail-in survey and online survey and kiosks survey

**Unit 4: Application** - Students will choose any topic and prepare a questionnaire/schedule. The student will also administer the same on a small group (to be determined by the instructor) and write a report.

**Readings**

de Leeuw, E. D., Hox, J. J., & Dillman, D. A. (Eds.). (2008). International Handbook of Survey Methodology. Taylor & Francis Group/Lawrence Erlbaum Associates

Fink, A. (2003). How to Ask Survey Questions. Sage Publications Inc (second edition)

(The course instructor may use any book of his/her choice. The instructor will explain different methods of data collection and related issues.)

**Semester III**

<b>Paper</b>	<b>Paper Title</b>	<b>Paper Code</b>	<b>Level</b>	<b>Credits</b>	<b>Credit Distribution (L+T+P)</b>
Core 3	Microeconomics	ECO23C301	200	4	3+1+0
Core 4	Mathematical Methods for Economics	ECO23C302	200	4	3+1+0
Minor 3	Microeconomics	ECO23M301	200	4	3+1+0
MDE 3	Economics and Environmental management	ECO23MDE301	--	3	3+0+0
SEC 3	Academic and Project Writing	ECO24SEC003	200	4	3+1+0

**Economics Core Course-3  
MICROECONOMICS  
Course Code: ECO23C301**

**Credits: 4  
(L+T+P=4+0+0)**

**Course Objectives:**

To put forth an understanding of the functioning of the product and input markets in order to train learners to analyse the strategic decision-making procedures in these markets. The learners will be apprised of the issues relating to general equilibrium to facilitate the recognition of the efficiency and welfare indicators in the economy.

**CO1:** ability to decipher the functioning of and decision-making procedures in the different market types.

**CO2:** Familiarisation with theoretical aspects of input markets with regard to pricing and market behaviour in order to facilitate replication in practical fields.

**CO3:** understanding and evaluating welfare implications of economic processes.

**CO4:** evaluate and assess market inefficiencies induced by externalities and asymmetric information.

**Unit 1: Revenue Concepts (8)**

Total Revenue (TR), Average Revenue (AR) and Marginal Revenue (MR); Relationships between elasticity of demand, price (AR), TR and MR. AR and MR under perfect and imperfect competition.

**Unit 2: Market with Perfect Competition (10)**

Profit Maximisation of a competitive firm; Short run profit maximisation by a competitive firm; Short run supply curve and Long run supply curve under perfect competition; Market supply curve; Long Run profit maximization.

**Unit 3: Markets with Imperfect Competition (24)**

Monopoly: Equilibrium under monopoly, multi-plant monopoly, price discrimination (profitability and equilibrium), dumping, Regulation of monopoly

Monopolistic competition: group equilibrium, equilibrium with selling costs, excess capacity, welfare issues. Importance of advertisement in Monopolistic competition.

Oligopoly: Collusive oligopoly (cartels and price leadership), non-collusive oligopoly; Cournot Model; Stackelberg's Model; Game theory: competitive strategy, normal form and extensive form games, dominant and dominated strategy, prisoner's dilemma, Nash equilibrium.

**Unit 4: Input Markets (12)**

Labour markets –Marginal productivity theory of labour, marginal revenue product under conditions of imperfect competition; Euler’s theorem; Demand for labour; input demand curves; shifts in input demand curves; competitive labour markets; bilateral monopoly; labour markets and public policy; Trade unions, Minimum wages - efficiency considerations; Monopsony.

**Unit 5: General Equilibrium Analysis (10)**

Equilibrium and efficiency in exchange and production; overall efficiency (input and output Markets); Existence, uniqueness and stability of equilibrium; Walras’s law; Welfare economics: Concepts of Equity, Social welfare function and the theory of second best.

**Readings:**

- Henderson and Quandt, *Microeconomic Theory: A Mathematical Approach*, McGraw-Hill Inc.
- Hal R. Varian, *Intermediate Microeconomics, a Modern Approach*, 8<sup>th</sup> edition, W.W. Norton and Company/Affiliated East-West Press (India), 2010. The workbook by Varian and Bergstrom could be used for problems.
- C. Snyder and W. Nicholson, *Fundamentals of Microeconomics*, Cengage Learning (India), 2010.
- Karl E. Case and Ray C. Fair, *Principles of Economics*, Pearson Education Inc., 8th Edition, 2007.
- Rubinfeld and Pindyck, *Microeconomics*, Pearson
- N. Gregory Mankiw, *Economics: Principles and Applications*, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4th edition, 2007.

**Core 4**  
**Mathematical Methods for Economics**  
**Course Code: ECO23C302**

**Credits 4**  
**(L+T+P=3+1+0)**

**Course Objective:**

The course has been designed to enable students to apply mathematical tools in economics.

**Course Outcome (Cos)**

**CO1:** Develop skills of using calculus in optimum decision making and evaluation of economic welfare issues.

**CO2:** Learn application of matrix algebra to economic problems involving simultaneous equation systems

**Unit 1: Differentiation and Unconstraint Optimization (20)**

Partial and total Differentiation, Chain Rule of Differentiation, Applications of Partial Differentiation; Geometric interpretation of optimization ; Unconstraint optimization with single explanatory variable- economic applications; Cost Revenue, Tax Revenue, Profit and Firm's Equilibrium.

**Unit2: Integration (22)**

Integration of a function – Basic rules of Integration (Indefinite Integration), simple numerical problems and simple Economic applications of Indefinite Integrals ; Definite integrals; applications in the case of consumer's surplus and producer's surplus; Methods of integration - integration by parts, integration by substitution

**Unit3: Matrix and Determinants (22)**

Elements of Matrix algebra- Definition, Types of Matrices, Matrix operations- Addition of Matrices Subtraction of Matrices, scalar multiplication, Matrix multiplication, Transpose of a Matrix, Rank of a Matrix.

Determinants – Definition, Matrix Inversion, properties of Determinants – solution of simultaneous equation system- Cramer’s Rule; Application to partial equilibrium market Model: Market models, Simple National Income Model.

**Readings:**

1. A. C. Chiang & K. Wainwright (2005) Fundamental Methods of Mathematical Economics, Mcgraw Hill Education.
2. K. Sydsaeter P. Hammond, Mathematics for Economic Analysis , Pearson Educational Asia: Delhi,2002.
3. Prof. S. Barua, (2000), Basic Mathematics and its Economic Applications, Macmillan.
4. D. Salvatore: Mathematics and Statistics, Schaum’s Series Tata McGraw Hill
1. K. Sydsaeter P. Hammond, Mathematics for Economic Analysis , Pearson Educational Asia: Delhi,2002

**MINOR 3  
MICROECONOMICS  
Course Code: ECO23M301**

**Credits: 4 (L+T+P=4+0+0)**

**Course Objectives:**

To put forth an understanding of the functioning of the product and input markets in order to train learners to analyse the strategic decision-making procedures in these markets. The learners will be apprised of the issues relating to general equilibrium to facilitate the recognition of the efficiency and welfare indicators in the economy.

**CO1:** ability to decipher the functioning of and decision-making procedures in the different market types.

**CO2:** Familiarisation with theoretical aspects of input markets with regard to pricing and market behaviour in order to facilitate replication in practical fields.

**CO3:** understanding and evaluating welfare implications of economic processes.

**CO4:** evaluate and assess market inefficiencies induced by externalities and asymmetric information.

**Unit 1: Revenue Concepts (8)**

Total Revenue (TR), Average Revenue (AR) and Marginal Revenue (MR); Relationships between elasticity of demand, price (AR), TR and MR. AR and MR under perfect and imperfect competition.

**Unit 2: Market under Perfect Competition (10)**

Profit Maximisation of a competitive firm; Short run profit maximisation by a competitive firm; Short run supply curve and Long run supply curve under perfect competition; Market supply curve; Long Run profit maximization.

**Unit 3: Markets with Imperfect Competition (24)**

Monopoly: Equilibrium under monopoly, multi-plant monopoly, price discrimination (profitability and equilibrium), dumping, Regulation of monopoly

Monopolistic competition: group equilibrium, equilibrium with selling costs, excess capacity, welfare issues. Importance of advertisement in Monopolistic competition.

Oligopoly: Collusive oligopoly (cartels and price leadership), non-collusive oligopoly; Cournot Model; Stackelberg's Model; Game theory: competitive strategy, normal form and extensive form games, dominant and dominated strategy, prisoner's dilemma, Nash equilibrium.

**Unit 4: Input Markets (12)**

Labour markets –Marginal productivity theory of labour, marginal revenue product under conditions of imperfect competition; Euler’s theorem; Demand for labour; input demand curves; shifts in input demand curves; competitive labour markets; bilateral monopoly; labour markets and public policy; Trade unions, Minimum wages - efficiency considerations; Monopsony.

**Unit 5: General Equilibrium Analysis (10)**

Equilibrium and efficiency in exchange and production; overall efficiency (input and output Markets); Existence, uniqueness and stability of equilibrium; Walras’s law; Welfare economics: Concepts of Equity, Social welfare function and the theory of second best.

**Readings:**

- Henderson and Quandt, *Microeconomic Theory: A Mathematical Approach*, McGraw-Hill Inc.
- Hal R. Varian, *Intermediate Microeconomics, a Modern Approach*, 8<sup>th</sup> edition, W.W. Norton and Company/Affiliated East-West Press (India), 2010. The workbook by Varian and Bergstrom could be used for problems.
- C. Snyder and W. Nicholson, *Fundamentals of Microeconomics*, Cengage Learning (India), 2010.
- Karl E. Case and Ray C. Fair, *Principles of Economics*, Pearson Education Inc., 8th Edition, 2007.
- Rubinfeld and Pindyck, *Microeconomics*, Pearson
- N. Gregory Mankiw, *Economics: Principles and Applications*, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4th edition, 2007.
- N. Gregory Mankiw, *Economics: Principles and Applications*, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4th edition, 2007.

**MDE-3****Economics and Environmental management  
Course Code: ECO23MDE301****Credits 3****(L+T+P): 3+0+0****Course Objective:**

The objective of the course is to acquaint the learners with role of economics in environmental management, market failure and its solution

**Course Outcomes:**

CO1: Understand the relation between environment and economics

CO2: Analyse market failure in allocating environmental resources

CO3: Discuss the remedial measures to the problem of market failure

**Unit 1: The Role of Economics in Environmental Management (16)**

Economics and environment: Circular flow model, Materials balance model, Understanding environmental damage, Climate change, Carbon emission and carbon trading (concepts only), Sustainable development, Biodiversity

**Unit 2: Modelling Market Failure (16)**

Environmental Problems: A market failure, Environmental Quality: A public good, characteristics of public goods, Modelling a public goods market for environmental quality environmental problems: Externalities, Modelling environmental damage as a negative; The absence of property rights: The Coase theorem

**Unit 3: Solution to environmental problems (16)**

Conventional Solutions to Environmental Problems: The command and control approach,

Economic solutions to environmental problems: The market approach and types of market instruments.

**References:**

Hanley, N; Shogren, J. and White, B. (2006) Environmental Economics: In Theory & Practice, Second Edition 2nd ed., Palgrave, McMillan

Thomas, J.M and Callan, S.C. (2007). Environmental Economics, Cengage Learning

### SEC 3

#### Academic and Project Writing

ECO24SEC003

Credit: 4 (3+0+1)

Level: 200

#### Learning objectives

1. To help students to familiarise with the idea of academic writing
3. To integrate theoretical research knowledge with practical skills that will help students to undertake research.

#### Learning Outcomes:

1. Students will learn to undertake writing in scientific way
2. Students will learn how to search materials for academic writing
3. Students will be able to write projects for funding

#### Unit I: Academic writing (15)

Academic writing, types of academic writing, Academic Integrity, The Elements of Academic Writing, types of Academic Writing, the Writing Process, Research article (eg. perspective section of the EPW) vs scientific research papers (published in reputed journals)

#### Unit II: Sources of Information (15)

Finding/Gathering information for research, using information, using research tools, using Library and electronic databases, literature review,

#### Unit III: Ethical issues in collecting data (15)

Ethics, stakeholders in research, ethical issues concerning participants, seeking consent, providing incentives, confidentiality, bias, incorrect reporting, issues with sponsoring organizations.

#### Unit IV: Project writing (15)

What's a Project: reading-based, field work-based project: how to pick a topic for the project; background reading, Structure of a Project, How to write a project to apply for fund, how to write project report after completion

#### Readings:

1. K Samantray, Academic and Research Writing: A Course for Undergraduates, Orient BlackSwan
2. Leo Jones (1998) Cambridge Advanced English: Student's Book New Delhi: CUP
3. Stanley Fish (2011) How to Write a Sentence
4. Wilson, J.R. (2020). Academic writing. Harvard University. Available at <https://wilson.fas.harvard.edu>

**SYLLABUS****Semester IV**

<b>Paper</b>	<b>Paper Title</b>	<b>Paper Code</b>	<b>Level</b>	<b>Credits</b>	<b>Credit Distribution (L+T+P)</b>
Core 5	Macroeconomics	ECO23C401	200	4	4+0+0
Core 6	Statistical Methods For Economics	ECO23C402	200	4	4+0+0
Core 7	Indian Economy	ECO23C403	200	4	4+0+0
Minor 4	Macroeconomics	ECO23M401	200	4	4+0+0

## **Core 5: Macroeconomics**

**Course Code: ECO23C401**

**Credit 4**

**(L+T+P=4+0+0=4)**

### **Course Objectives (Co)**

To impart knowledge of the macroeconomic growth theories and to enable students to analyze monetary and fiscal policies from theoretical points of view

### **Course Outcomes (COs)**

CO1: Learn the important growth models in economics

CO2: Learn about what determines investment in an economy.

CO3: Learn the relationship between inflation and unemployment, and the role of expectations on it.

CO4: Be able to analyze the fiscal and monetary policies

### **Unit 1: Economic Growth (20)**

Harrod-Domar model; Solow model; golden rule; technological progress and elements of Endogenous growth

### **Unit 2: Expectation models (12)**

Expectation models – Rational Expectation and Adaptive Expectation model; Automatic stabiliser (concept only)

### **Unit 3: IS-LM model (12)**

Goods market vs. money market, Simultaneous equilibrium using IS-LM framework, Effects of fiscal and monetary policies on output level.

### **Unit 4: Fiscal and Monetary Policy (20)**

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

### **References:**

A.P. Thirlwal, *Growth and Development*, McMillan

Eroll D'Souza, *Macroeconomics*, Pearson

Dornbush, Fischer and Startz, *Macroeconomics*, McGraw Hill

# STATISTICAL METHODS FOR ECONOMICS

Course Code: ECO23C402

Credit 4

(L+T+P=4+0+0=4)

## Course Objective

To provide the basics of statistics and its applications in economics

## Course Outcomes:

CO1: Provide a strong foundation of Probability Theory

CO2: Ability to analyze variable relationship and prediction using correlation, regression and time series analysis

CO3: Evaluate changes of economic phenomena and compatibility over space and time using Index Numbers.

## Course Outline

### 1. Elementary Probability Theory (16)

Meaning and related concepts; sample spaces and events: different approaches to probability: classical approach, statistical approach and axiomatic approach; conditional probability and independence of events; theorems on probability-addition and multiplication

(Simple numerical problems);

### 2. Correlation (10)

Correlation: meaning, types, methods of studying correlation: scatter diagram, Karl

Pearson's coefficient of correlation; properties of correlation coefficient; Interpretation of correlation; coefficient of determination; rank correlation

### 3. Regression (12)

Meaning, linear and non-linear regression (concept only) regression lines, regression coefficients, properties of regression coefficients

### 4. Time Series Analysis (14)

Time series: meaning, components, fitting of a trend: least square method and moving average method.

## 5. Index Numbers (12)

Concept of an Index number; Laspeyres', Paasche's and Fisher's Ideal Index number; Time reversal, factor reversal and circular tests; Problems in the construction of an index number; Consumer's Price index number-concept and constructions: wholesale Price Index number (Concept only), uses of Index number.

### Readings:

Jay L. Devore, Probability and Statistics for Engineers, Cengage learning, 2010

John E Freund, Mathematical Statistics, Prentice Hall, 1992

Richard J Larsen and Morris L. Marx, An Introduction to Mathematical Statics.

D. Salvator: Mathematics and Statistics, Schaum's Series Tata McGraw Hill.

S.P. Gupta Statistical Methods, Sultan Chand and Sons.

S.C. Gupta and V.K. Kapoor, Fundamentals of Applied Statistics Sultan Chand and Sons

Murray R Spiegel, Larry J. Stephens(2007), Schaum's Outline of Statistics McGraw Hill Professional.

Dominick Salvatore, Derrick Reagle(2001) Schaum's Outline of Statistics and Econometrics. McGraw Hill Professional

N G Das, Statistical Methods, McGraw Hills Publications, Latest Edition

**Paper: Indian Economy****Course Code: ECO23C403****Core-07****Credits 4****(L+T+P=4+0+0)**

**Course objectives:** This paper will introduce students to the basic issues of Indian economy and also enlighten them on the recent changes in policy initiatives taken by government.

**Course outcomes**

CO1: Develop an understanding of some basic issues of Indian economy

CO2: Assess the sectoral performance of Indian economy, along with the emerging issues and relevant policy measures

CO 3: Analyze the pattern of public expenditure and debt as well as their management

CO4: Gain an insight of India's development experiences and initiatives

**Course Outline****Unit1: Basic issues of Indian Economy (10)**

Major issues of development: Population, poverty, income inequality, unemployment (concept and policy related issues), environmental issues of India: Forest degradation and land degradation

**Unit 2: Policies and Performance in Agriculture (10)**

New agricultural strategy, crop insurance, Liberalization of Indian agriculture; emerging issues of Indian agriculture, agricultural export, agricultural subsidies and role of WTO

**Unit 3: Policies and Performance in Industry (10)**

Policy reforms in industrial sector; performance since reforms; disinvestment in the public sector, expansion of private and the joint sector; MSMEs- growth and performance

**Unit 4: India's Service Sector (10)**

Growth and performance; trade in services; prospects and challenges

**Unit 5: Public expenditure and public debt in India (10)**

Growth of public expenditure in India, causes and policies

Magnitude of public debt, causes, consequences, remedial measures, liquidation of public debt

**Unit 6: India's economic reforms (14)**

Economic crises-background to economic reforms; policy response: the IMF resistance; policy reform measures: Structural reforms and macroeconomic stabilization measures; impact of economic reforms; the current government initiatives: Make in India, Skill India, Digital India, start up India, Pradhan Mantri Jan Dhan Yojana

**References:**

Mukherjee, D. (2017). Indian economy since independence. New Central Book Agency

Puri, V.K and Misra, S.K (2015).Indian Economy. Himalaya Publishing House

Dutta, G. and A. Mahajan. *Indian Economy*, S. Chand, 72<sup>nd</sup> Edition

Kapila, U. 2017. *Indian Economy: Performance and policies*, Academic Foundation, 18<sup>th</sup> edition

**Minor 4:****Paper: Macroeconomics****Course Code: ECO23M401****Credit 4 (L+T+P=4+0+0=4)****Course Objectives (CO)**

To impart knowledge of the macroeconomic growth theories and to enable students to analyze monetary and fiscal policies from theoretical points of view

**Course Outcomes (COs)**

CO1: Learn the important growth models in economics

CO2: Learn about what determines investment in an economy.

CO3: Learn the relationship between inflation and unemployment, and the role of expectations on it.

CO4: Be able to analyze the fiscal and monetary policies

**Unit 1: Economic Growth (20)**

Harrod-Domar model; Solow model; golden rule; technological progress and elements of Endogenous growth

**Unit 2: Expectation models (12)**

Expectation models – Rational Expectation and Adaptive Expectation model; Automatic stabiliser (concept only)

**Unit 3: IS-LM model (12)**

Goods market vs. money market, Simultaneous equilibrium using IS-LM framework, Effects of fiscal and monetary policies on output level.

**Unit 4: Fiscal and Monetary Policy (20)**

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

Monetary policy frameworks of India

**References:**

A.P. Thirlwal, *Growth and Development*, McMillan

Eroll D'Souza, *Macroeconomics*, Pearson

Dornbush, Fischer and Startz, *Macroeconomics*, McGraw Hill

**SYLLABUS****Semester V**

Paper	Paper Title	Paper Code	Level	Credits	Credit Distribution (L+T+P)
Core 8	Development Economics	ECO23C501	300	4	3+1+0
Core 9	Introductory Econometrics	ECO23C502	300	4	3+1+0
Core 10	Monetary Economics and Financial Markets	ECO23C503	300	4	3+1+0
Core 11	Public Economics	ECO23C504	300	4	3+1+0
Minor 5	Indian Economy	ECO23M501	200	4	3+1+0

**Core 8: Development Economics****Course Code: ECO23C501****Credits (L+T+P): 3+1+0****Credits: 04****Learning outcome**

This course enables students to understand the concept of development and its dimensions. At the end of the course students will have comprehensive understanding of various theories of development and issues. Students will also be able to understand the relation between inequality and poverty along with the relation between and health, education and development.

**Learning outcomes**

- Understand the concept and indicators of development
- Analyse the fundamental theories of development
- Analyse and evaluate the concept of inequality its measurement and consequences emphasizing on empirical considerations
- Evaluate the role of human capital in economic development with special reference to education and health
- Evaluate and assess the effectiveness of health care facilities

**Unit 1: Development- concept and measurement (10)**

Meaning and alternative measures of development: Traditional economic measures, The new economic view of development, MDGs and SDGs; Sen's capability approach; UNDP development measures – Human Development Index (HDI), Human Poverty Index (HPI), Multidimensional Poverty Index (MPI), Gender Development Index (GDI)

## **Unit 2: Population and development (10)**

Population Growth and Quality of Life; The Demographic Transition; The theory of demographic dividend; Causes and Consequences of High Fertility in Developing Countries; Policy options

## **Unit 3: Theories of Development (12)**

Classic theories of development: Rostow, Harrod-Domar, Lewis model, Neocolonial, False paradigm, dualistic development thesis and the neoclassical counter revolution

## **Unit 4: Inequality and Poverty (13)**

Concept of poverty and economic inequality; measuring economic inequality- criteria for inequality measurement; Concepts of inequality measures - Lorenz curve and Gini coefficient, Coefficient of Variation (CV); Atkinson Index, Theil's Index, Robin Hood index, Pietra Index, Palma Ratio

Measures of poverty – Head count ratio, Poverty Gap Index, Squared poverty gap – ~~Sen's~~  
~~Poverty Index~~

## **Unit 5: Education and Health in Economic Development (15)**

The central role of education and health, education and health as joint investment, international trends and convergence in health and education, improving health and education, human capital approach, child labour; educational system and development; health system and development- measurement and distribution, disease burden.

### **Readings:**

- Debraj Ray, *Development Economics*, Oxford University Press, 2009.
- Prabhu, K. Seeta (1998) - Social Sectors in Economic Development, [from
- <https://www.researchgate.net/publication/305985325>, accessed on 17-03-2021]
- Woodhall, M (1974) The Investment Approach to Educational Planning, Lecture Discussion Series No. 32, UNESCO: International Institute for Educational Planning
- Dreze, J (2005) Education and Development: An Unfinished Discovery, in Kumar, R., Sethi, A., and Sikka, S. (eds.) School, Society, Nation: Popular Essays in Education (New Delhi: Orient Longman).

- Psacharopoulos, G., and H. A. Patrinos (2004). "Human capital and rates of return"; in *International Handbook on the Economics of Education*, edited by G. Johnes and J. Johnes. Cheltenham: Edward Elgar Publishing Ltd. 2004.
- Weisbrod, BA (1962) Education and Investment in Human Capital, *The Journal of Political Economy*, Vol. LXX, No.5, Part 2 [from <http://www.nber.org/chapters/c13575>]
- Marmot & R. G. Wilkinson (Eds.), *Social Determinants of Health* (2nd ed., pp. 224-237). Oxford, UK: Oxford University Press.
- Mushkin, SJ (1962) Health as an Investment, *The Journal of Political Economy*, Vol. LXX, No. 5, Part 2,
- Changik Jo (2014) Cost-of-illness studies: concepts, scopes, and methods, *Clinical and Molecular Hepatology*, Vol 20, pp327-337
- Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, *Understanding Poverty*, Oxford University Press, 2006.
- Kaushik Basu, *The Oxford Companion to Economics in India*, OUP, 2007.
- Michael P Todaro and Smith, Stephen C. *Economic Development in The Third World*, Fourth Edition, Orient Longman, 2018.

Core 9: Introductory Econometrics

**Course Code: ECO23C502**

Credits: L+T+P= 3+1+0

4 credits

**Course Objective**

The main objective of the course is to give students idea about application of econometric tools in economic analysis while dealing with database.

**Course Outcomes (CO)**

**CO1:** Develop the understanding of statistical distribution of numerical information.

**CO2:** Apply simple linear regression in empirical analysis.

**CO3:** Familiarize with sampling techniques and statistical inference in research.

**Unit 1: Probability Distribution and Related concepts(15)**

Concept of discrete and continuous random variable; mathematical expectation-basic concepts related to discrete random variable; addition and multiplication rule, standard probability distribution: Binomial and Poisson Distribution-basic concepts; derivation of probability mass function, derivation of mean and variance (Simple numerical problems) Normal distribution-concepts, properties and uses.

**Unit 2: Statistical concepts- An overview (15)**

Sampling techniques: Simple random sampling- with replacement and without replacement; stratified sampling; systematic sampling; sampling errors and non-sampling errors; large samples and small samples; concepts of sampling distribution and standard error of statistics: maximum likelihood method (concept only).

**Unit 3: Theory of Estimation and testing of Hypothesis (15)**

Characteristics of a good estimator; test of significance: meaning; null hypothesis; alternative hypothesis; point estimation and interval estimation: confidence interval, level of significance, power of a test, one-tailed test, two-tailed test, type-I error and type II error. Large sample test: test of significance for a single mean, test of significance for difference of means. Student's t distribution: definition, properties: test for single mean and test for difference of means.

**Unit 4: Simple Linear Regression Model (15)**

Two variable linear regression model; OLS estimation of the simple linear regression model; properties of ordinary least squares estimators - Gauss-Markov theorem; Goodness of fit – coefficient of determination; Test of significance of regression coefficients.

**Readings**

- William G. Cochran, Sampling Techniques, John Wiley, 2007
- John E Freund, Mathematical Statistics, Prentice Hall, 1992.
- Richard J. Larsen and Morris L. Marx, An Introduction to Mathematical Statistics and its Application, Prentice hall, 2011.
- D.N. Gujarati and D.C. Porter, Essential of Econometrics, McGraw Hill, 4th edition, International Edition, 2009
- Christopher Dougherty, Introduction to Econometrics, Oxford University Press, 3rd edition, Indian edition, 2007.
- Jan Kmenta, Elements of Econometrics, Indian, Khosla Publishing House, 2nd edition, 2008.
- S.C.Gupta, Fundamentals of Statistics, Himalaya Publishing House, revised edition.

**Core 10****Monetary Economics and Financial Markets****Course Code: ECO23C503****4 Credits (L+T+P): 3+1+0****Course objective:**

Understanding the fundamentals of money, banking and financial markets

**Course Outcomes:**

CO1: Understand the structure and functioning of central bank and financial markets

CO2: Critically analyze monetary policies

**Course Outline****Unit 1: Money (10)**

Concept, functions, measure of money supply; Multiplier Model of the Money Supply Process

**Unit 2: Central Banking and Monetary Policy (15)**

Central Bank's Balance Sheet, Control of Monetary base, Determinants of money supply, Balance sheet of RBI; goals, targets, indicators and instruments of monetary control; Monetary policy framework in India

**Unit 3: Financial Markets (15)**

Introduction to Financial Market, Meaning and Behaviour of interest rate, the risk and term structure of interest rates, The Stock Market, The Theory of Rational Expectation

**Unit 4: Financial Institutions in India (20)**

Organisational Structure of Financial Institutions in India, Role and Functions of Development Financial Institutions (Industrial Finance Corporation of India Limited, The Small Industries Development Bank of India, The Export Import Bank of India, National Bank for Agriculture and Rural Development); Banking and Non-Banking Institutions; Mutual Funds, Insurance

## Readings

- F. S. Mishkin and S. G. Eakins, *Financial Markets and Institutions*, Pearson Education, 6<sup>th</sup> edition, 2009
- F. J. Fabozzi, F. Modigliani, F. J. Jones, M. G. Ferri, *Foundations of Financial Markets and Institutions*, Pearson Education, 3<sup>rd</sup> edition, 2009.
- M. R. Baye and D. W. Jansen, *Money, Banking and Financial Markets*, AITBS, 2006
- Rakesh Mohan, *Growth with Financial Stability- Central Banking in an Emerging Market*, Oxford University Press, 2011.
- L. M. Bhole and J. Mahukud, *Financial Institutions and Markets*, Tata McGraw Hill, 5<sup>th</sup> edition, 2011
- M. Y. Khan, *Indian Financial System*, Tata McGraw Hill, 7<sup>th</sup> edition, 2011.
- N. Jadhav, *Monetary Policy, Financial Stability and Central Banking in India*,
- Pathak B. V. *Indian Financial System*, Pearson Education, Singapore;Macmillan, 2006
- Maureen Burton and Bruce Brown: *The Financial System and The Economy*, Fifth Edition, PHI Learning Private Limited, 2009
- R.B.I. – *Report of the Working Group: Money Supply Analytics and Methodology of Compilation*, 1998.
- Dua, P. Monetary policy framework in India. *Ind. Econ. Rev.* 55, 117–154 (2020). <https://doi.org/10.1007/s41775-020-00085-3>
- R.B.I. Bulletin, Annual Report and Report on Currency and Finance (latest).

**Core 11**  
**PUBLIC ECONOMICS**  
**Course Code: ECO23C504**

**Level 300**  
**Credits: L+T+P= 3+1+0**

**Learning outcome**

This course enables students to understand the concept of public economics and its dimensions. At the end of the course students will have understanding of various concepts of public economics, theories of optimal provision of public goods, policy measures to deal with externalities and the Indian tax system.

**Learning outcomes**

After completing this course, students will be able to-

- Explain the scope of public economics and theories relating to public goods and taxations.
- Discuss issues pertaining to taxation, public goods provision and public debts.
- Discuss the issues and evolution of tax system in India

**Unit I: Public Economics – An overview (10)**

Nature and scope; fiscal functions - allocation, distribution and stabilization; notions of equity; equity and efficiency

**Unit II: Optimal Provision of Public Goods (15)**

Public goods - pure and impure public goods; models of efficient allocation - Samuelson, Lindahl, Tiebout; public goods and free riding problem; voting- majority voting, median voter theorem; voting paradox.

**Unit III: Taxation (10)**

Characteristics of tax; direct and indirect taxes; canons of taxation; principles of taxation - benefit principle and ability to pay principle; economic effects of taxation - dead weight loss and distortion; incidence of indirect taxes

**Unit IV: The public debt (12)**

Budget deficit – concept and alternative measures; deficit financing; public debt sources and redemption; intra and intergenerational equity considerations; sustainability of public debt

**Unit V: Indian tax system (10)**

Structure, direct and indirect taxes, evolution of tax regime in India with special reference to GST

**Readings:**

J. Hindriks, G. Myles: *Intermediate Public Economics*, MIT Press, 2006.

H. Rosen, T. Gayer: *Public Finance*, 9 th ed., McGraw-Hill/Irwin, 2009.

R.K. Choudhury, *Public Finance and Fiscal Policy*; Kalyani Publisher

R.A. Musgrave and P.B. Musgrave, *Public Finance in Theory &Practice*, McGraw Hill Publications, 5 th edition, 1989.

Joseph E. Stiglitz, *Economics of the Public Sector*, W.W. Norton & Company, 3 rd edition, 2000.

Report of the 14th Finance commissions and TOR of the 15th Finance Commission

Finance Commission of India. Govt. India

## **Indian Economy**

**Course Code: ECO23M501**

**Minor 5**

**Credits 4**

**(L+T+P=3+1+0)**

**Course objectives:** This paper will introduce students to the basic issues of Indian economy and also enlighten them on the recent changes in policy initiatives taken by government.

### **Course outcomes**

CO1: Develop an understanding of some basic issues of Indian economy

CO2: Assess the sectoral performance of Indian economy, along with the emerging issues and relevant policy measures

CO 3: Analyze the pattern of public expenditure and debt as well as their management

CO4: Gain an insight of India's development experiences and initiatives

### **Course Outline**

#### **Unit1: Basic Features of Indian Economy (12)**

India's GDP and sector wise composition, National Income and PCI: Growth and Trends, India's global position by GDP and PCI, Gender disparity in labour and work force participation.

#### **Unit 2: Poverty, Unemployment and Inequality (12)**

Poverty: measurements, trends, recent policies

Unemployment: Types and measurements, current status, recent policies

Income Inequality: Extent and dynamics of income inequality

#### **Unit 3: Contemporary Issues in Indian Economy (20)**

Agriculture: Role and Crisis; land reform, green revolution, agricultural marketing and credit; Economic Reforms and impact on agriculture

Industry: An assessment of industrial development during plan period and post reform period; MSME, disinvestment in the public sector

Services Sector: Growth and performance; different segments, trade in services

#### **Unit 4: India's economic reforms (20)**

Rational for reforms; structural and stabilization measures; impact of economic reforms in agriculture, industry and services; Impact of WTO on Indian Economy; Foreign Investment and Multinational Corporations; Privatisation and Competition

#### **Readings**

Bardhan, P. (1999) "The Political Economy of Development of India", OUP

Sen, A. and Dreeze, J. (1999) "Economic Development and Social Opportunities", OUP

Rakshit, M. (2010). Macroeconomics of Post-Reform India, OUP

Mukherjee, D. (2017). Indian economy since independence. New Central Book Agency

Puri, V.K and Misra, S.K (2015). Indian Economy. Himalaya Publishing House

Dutta, G. and A. Mahajan. *Indian Economy*, S. Chand, 72<sup>nd</sup> Edition

Kapila, U. 2017. *Indian Economy: Performance and policies*, Academic Foundation, 18<sup>th</sup> edition

Government of India (Various Issues) Economic Survey, Ministry of Finance, Government of India

### Semester VI

Paper	Paper Title	Paper Code	Level	Credits	Credit Distribution (L+T+P)
Core 12	Economy of NE with special reference to Assam	ECO23C601	300	4	3+1+0
Core 13	Environmental Economics: Issues and perspectives	ECO23C602	300	4	3+1+0
Core 14	Financial Economics	ECO23C603	300	4	3+1+0
Core 15	International Economics	ECO23C604	300	4	3+1+0
Minor 6	Monetary Economics and Financial Markets	ECO23M601	200	4	3+1+0

**Core: 12: Economy of NE with special reference to Assam****Course Code: ECO23C601****Level: 400****Credits: L+T+P= 3+1+0**

Learning objectives:

This paper will enable students to get ideas about the economy of NE and its different problems. Students will also learn about Assam economy, its different components and various institutional measures taken by the government.

Course outcomes:

CO1: Remember and revise the socio-economic profile and issues of the NE

CO2: Understand the structure of the economy of Assam

CO3: Evaluate the existing infrastructural facilities

CO4: Analyse various flagship programs implemented for rural development of Assam

**Course outline:**

Unit 1: North Eastern Region: Economic, social and demographic profile, Environmental problems with special reference to climate change, mountain agriculture and sustainability issue (12)

Unit 2: The rural sector in NE: Poverty eradication in the rural areas of NE, the rural sector: basic crops, tea plantation in NE and other cash crops, rural development, non-farm rural employment, irrigation and flood control Industry, tourism and service sector (12)

Unit 3: The economy of Assam: An overview, population, state income, Economic activities in Assam: Agriculture, industry and mining, livestock and animal husbandry, forest, fisheries (12)

Unit 4: Infrastructure in Assam: Power, transport and communication, banking sector (12)

Unit 5: Institutional support for development: Panchayat and rural development: Schemes, social sectors and progress of different schemes (12)

**References**

Dhar, P.K., Economy of Assam, Kalyani Publication, 2018

Gogoi , P. The mirror of Assam economy, Eastern Readers Publication. Publication, 2020

GOI., Economic Survey of Assam, 2022-23

NEC.North Eastern Region, Vision 2020.

## **Core 13: Environmental Economics: Issues and perspectives**

**Course Code: ECO23C602**

**Level: 300**

**Credits: L+T+P= 3+1+0**

### **Learning objectives:**

The paper is a systematic exposition of environmental and natural resource economics. Principles essential for understanding environmental issues and control have been discussed in this paper. Issues relating environment have been considered in a broad and interdisciplinary way so that students become capable of applying them in real life.

It presents the economic and ecological principles essential for a clear understanding of contemporary environmental and natural resource issues and policy considerations.

Environmental and natural resource issues are considered in a broad, interdisciplinary context that does not treat them as just another subset of applied economics

### **Course outcome:**

CO1: analyse how policies are instrumental in controlling pollution

CO2: understand the economic rationale for environmental regulation

CO3: understand the relevant theorems and regulatory instruments related to environmental economics

**Unit 1: Fundamentals of the economics of environmental resources:** The economic process and the assimilative capacity of the natural environment; Common property resources; external costs and market failure; Common property resources and the economic problem; Environmental externalities and their economic consequences; Internalizing externality using the Pigouvian tax approach; The macroeconomic effects of environmental regulations: an overview (12)

**Unit 2: Ecology and the economics of nature:** The concept of natural resources: an ecological perspective; Ecosystem structure ; Ecosystem function ; Materials recycling ; Succession, equilibrium, stability, resilience and complexity ; The laws of matter and energy ; The basic lessons of ecology ; Humanity as the breaker of climaxes (12)

**Unit 3: The economics of environmental resources:** Public policies and cost-benefit estimations of environmental Damage: The economic theory of pollution control: the optimal level of pollution; Minimization of waste disposal costs; Pollution control (abatement) costs; Pollution damage costs

**Unit 4: Valuation of environment:** Travel cost method, Contingent valuation method, hedonic pricing (12)

**Unit 5: The economics of environmental regulations:** Pollution tax and markets for pollution permits; Learning Introduction; Effluent charges; Transferable emission permits, Property rights or Coasian approach; Emission standards (12)

## References

Ahmed M.Hussen.*Principles of environmental economics, Economics, ecology and public policy*, Routledge,2000

Tom Tietenberg and Lynne Lewis (latest edition): *Environmental and Natural resource economics*: The Pearson Series in Economics

Nick Hanley, Jason F. Shogren and Ben White. *Environmental Economics: Theory and Practice* (Macmillan texts in economics),1996

Charles Kolstad, *Intermediate Environmental Economics*, Oxford University Press, 2nd edition, 2010.Robert N. Stavins (ed.), *Economics of the Environment: Selected Readings*, W.W.Norton, 5 th edition, 2005.

Roger Perman, Yue Ma, James McGilvray and Michael Common, *Natural Resource and Environmental Economics*, Pearson Education/Addison Wesley, 3 rd edition, 2003

**Core Course: 14****Financial Economics****Course Code: ECO23C603****4 Credits (L+T+P): 3+1+0**

**Course objective:** To familiarize students with macroeconomic aggregates, financial markets and valuation of financial assets.

**Course Outcomes:**

**CO1:** Comprehend and analyse the status of macroeconomic aggregates with price fluctuations.

**CO2:** Understand and evaluate interest rate determination in the financial market.

**CO3:** Understand and analyse issues pertaining to financial services.

**CO4:** Develop skills to calculate financial asset prices

**Course outline:****Unit-1: Money, Inflation, Interest (15)**

The price level and Real Output; Inflation and Economic Growth; Meaning of Interest Rate; The Time Value of Money; The Real Interest Rate, After Tax Interest Rate

**Unit-2: Supply and Demand in Financial Markets (15)**

Demand for Fee Based Financial Services, Supply of Fee Based Financial Services, Equilibrium in the Market; Changes in the Equilibrium: Applications to the Insurance Market

**Unit-3: Valuation of Financial Assets (15)**

Valuation of Debt Instruments: Debt instruments sold on a discount basis, Coupon Bonds and Other Interest-Bearing Debt Instruments; Valuation of Stocks: Income Stocks, Growth Stocks; Equilibrium Price and Volume of Financial Asset Transactions The significance of EPS and P/E ratio

**Unit-4: Risk, Uncertainty and Portfolio Choice (15)**

Uncertainty and Risk: Expected Value, Variance, Risk Preference; Valuing Risky Financial Assets: Default Risk, Liquidity Risk, Interest Rate Risk and Call Risk, The Inflation Premium and Inflation Risk, Tax Risk; Minimizing Financial Risk: Diversification, Future Markets, Option Markets

**Readings:**

- Pathak B. V. Indian Financial System, Pearson Education, Singapore.
  - Alexander G J, Sharpe W F & Bailey J V. 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.
  - M. R. Baye and D. W. Jansen, Money, Banking and Financial Markets, AITBS,1996.
  - Maureen Burton and Bruce Brown: The Financial System And The Economy, Fifth Edition, PHI Learning Private Limited, 2009
  - 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
-

**CORE 15: INTERNATIONAL ECONOMICS****Course Code: ECO23C604****4 Credits (L+T+P): 3+1+0****Lecture Hours: 60****Course Objective:**

A comprehensive introduction to international economics, covering prominent theories, policy issues and institutions

**Course Outcomes:**

**CO1:** Understand the traditional core theories of international trade

**CO2:** Analyse about empirical challenges to traditional theories and exposure to alternative explanations of trade

**CO3:** Evaluate trade policies with reference to effective gain and world welfare

**CO4:** Evaluate the issues that dominate the international financial system

**Course Outline:****Unit 1: Introduction (10)**

International Economics - Subject Matter, Importance; Current International Economic Problems and Challenges

**Unit 2: Theories of International Trade (15)**

Gains from Trade, Terms of Trade, Absolute Cost Advantage Theory, Comparative Cost Advantage Theory of Ricardo, Heckscher-Ohlin Theory of International Trade, Factor Price Equalization Theorem

**Unit 3: Alternative Trade Theories and Empirical Testing (20)**

Leontief Paradox, Specific Factors Model, Alternative Theories: Monopolistic Competition and International Trade, Imitation Gap Theory, Product Cycle Theory

**Unit 4: Trade and Commercial Policy (15)**

Tariff: Types, Partial Equilibrium Analysis of Tariff, Optimum Tariff, Effective Rate of Protection, Commercial Policy Instruments: Export Taxes and Subsidies, Quantitative Restrictions, International Cartels, Dumping, Regional Economic Groupings- ASEAN, EU.

**Readings:**

- Paul Krugman, Maurice Obstfeld, and Marc Melitz, *International Economics: Theory and Policy*, Addison-Wesley (Pearson Education Indian Edition), 9th edition, 2012
- Dominick Salvatore, *International Economics: Trade and Finance*, John Wiley International Student Edition, 10th edition, 2011
- Miltiades Chacholiades, *International Economics*, McGraw-Hill Publishing Company, 1990
- Bo Sodersten, *International Economics*, 2nd Edition, Macmilan Education Limited, 1989

**MINOR 6****Monetary Economics and Financial Markets****Course Code: ECO23M601****4 Credits (L+T+P): 3+1+0****Course objective:**

Understanding the fundamentals of money, banking and financial markets

**Course Outcomes:**

CO1: Understand the structure and functioning of central bank and financial markets

CO2: Critically analyze monetary policies

**Course Outline****Unit 1: Money (10)**

Concept, functions, measure of money supply

**Unit 2: Central Banking and Monetary Policy (15)**

Functions of central banks, goals, targets, indicators and instruments of monetary control;

Balance sheet of RBI

**Unit 3: Financial Markets and Instruments (15)**

Structure of Financial Markets: Concepts of Money market and capital market; Call money market, Treasury bill market, commercial bill market, stock market

**Unit 4: Financial Institutions in India (20)**

Organisational Structure of Financial Institutions in India (Post Nineties), Functions of Development Financial Institutions, The Small Industries Development Bank of India, The Export Import Bank of India, Banking and Non-Banking Institutions; Mutual Funds, Insurance

**Readings**

F. S. Mishkin and S. G. Eakins, *Financial Markets and Institutions*, Pearson Education, 6<sup>th</sup> edition, 2009

F. J. Fabozzi, F. Modigliani, F. J. Jones, M. G. Ferri, *Foundations of Financial Markets and Institutions*, Pearson Education, 3<sup>rd</sup> edition, 2009.

M. R. Baye and D. W. Jansen, *Money, Banking and Financial Markets*, AITBS, 1996

Rakesh Mohan, *Growth with Financial Stability- Central Banking in an Emerging Market*, Oxford University Press, 2011.

L. M. Bhole and J. Mahukud, *Financial Institutions and Markets*, Tata McGraw Hill, 5<sup>th</sup> edition, 2011

M. Y. Khan, *Indian Financial System*, Tata McGraw Hill, 7<sup>th</sup> edition, 2011.

N. Jadhav, *Monetary Policy, Financial Stability and Central Banking in India*,

Pathak B. V. *Indian Financial System*, Pearson Education, Singapore; Macmillan, 2006

Maureen Burton and Bruce Brown: *The Financial System and The Economy*, Fifth Edition, PHI Learning Private Limited, 2009

R.B.I. – *Report of the Working Group: Money Supply Analytics and Methodology of Compilation*, 1998.

Dua, P. Monetary policy framework in India. *Ind. Econ. Rev.* **55**, 117–154 (2020).  
<https://doi.org/10.1007/s41775-020-00085-3>

R.B.I. Bulletin, Annual Report and Report on Currency and Finance (latest).

Gupta, S. B. (2009) *Monetary Economics Institutions, Theory and Policy*, New Delhi: S Chand

## SYLLABUS

### Semester VII

Paper	Paper Title	Paper Code	Level	Credits	Credit Distribution (L+T+P)
Core 16	Advanced Microeconomics	ECO23C701	400	4	3+1+0
Core 17	Advanced Mathematical Economics	ECO23C702	400	4	3+1+1
Core 18	Research Methodology for Social Sciences	ECO23C703	400	4	3+1+1
Core 21*	Environmental Economics: Modeling problems and solutions	ECO23C704	400	4	3+1+1
Minor 7	Development Economics	ECO23M701	300	4	3+1+1

*\*This course is to be taken by students who will be awarded Honors without Research.*

## Course 16

### Advanced Microeconomics

**Course Code: ECO23C701**

**Level: 400**

**Credits (L+T+P): 3+1+0**

#### Course Objectives:

- To render thorough knowledge about optimal consumption choices and consumers' optimal decision making with the use of economic tools
- Acquaint students with welfare implications of consumer choice preferences
- To understand the role of production functions and cost function in optimisation of firm behaviour
- An understanding of firm behaviour in the face of ownership-management divides.
- To understand different aspects of auctions and game theory as applied in the domain of auctions.
- Knowledge about general equilibrium concepts in the context of welfare analysis.
- Introduction to theoretical deliberations on welfare
- Learn about welfare maximisation, efficient outcomes and equity in the presence of market failures.

#### Course outcomes (CO)

**CO1:** Examine alternative approaches to the analysis of consumer's behaviour, production and market using mathematical tools.

**CO2:** Analyse the functioning and behaviour of firms under different market conditions.

**CO3:** Apply game theory strategies in conducting auctions.

**CO4:** Appraise and analyse welfare implications of economic phenomena through sound theoretical conceptualisations.

#### Course outline:

##### Unit – I: Consumer's Behaviour (15)

The violation of the premises of the indifference curves approach; Satiation and Lexicographical ordering; Linear expenditure systems, separable and additive utility functions, Choice of an utility index–indirect utility function; Ray's identity and duality in consumption; dual properties of utility and expenditure functions.

##### Unit –II: Game theory (15)

Auctions: elements of auctions; Classification and types; Bidding strategies; Private-value auctions and applications; Auction as a Game-Auction design; Problems with auction-the winner's curse.

**Unit –III: Further Topics in Production Function (15)**

Technical Progress and Production function: Forms of Production Function; Cobb-Douglas, CES and Fixed coefficient type and properties, elasticity of substitution, Derivation of Cost Function and Production Function.

**Unit -V: Further concepts in Market: (10)**

Monopsony: pricing and output, Duopoly- Bertrand and Stackelberg.

**Unit –VI: Welfare economics (12)**

Welfare functions; Walrasian equilibrium; 1<sup>st</sup> and 2<sup>nd</sup> theorem of welfare economics, sources of market failure; externalities; Pigou and Coase solution to externalities; Public Good; Asymmetric information, Adverse selection, Moral hazards Principal-Agent Problem; economics of insurance

**Readings:**

Henderson, J. and Quandt, R.E. (1980) *Microeconomic Theory: A Mathematical Approach*. McGraw-Hill Inc., USA; 3rd revised edition

Varian, H.R. (2009) *Intermediate Microeconomics: A Modern Approach*, Eighth Edition

Nicholson, W. Snyder, C. (2014) *Microeconomic Theory Basic Principles and Extensions*, Cengage; 11th edition

Perloff, J. M. Mason, C. Robert, Whaples, M. (2013) *Microeconomics Theory & Applications with Calculus*, Pearson Education Inc.

Snyder, C. and Nicholson, W. (2010) *Fundamentals of Microeconomics*, Cengage Learning (India)

## Core Course 17

### Advanced Mathematical Economics

**Course Code: ECO23C702**

**Level: 400**

**Credits: L+T+P= 3+1+0**

#### **Course Objectives:**

- Impart knowledge about mathematical tools relevant to solving economic problems.

#### **Course Outcomes:**

CO1: Understanding of advanced mathematical tools used in economics

CO2: Application of mathematical tools for optimisation in economics.

#### **Course Outline:**

##### **Unit 1: Unconstrained optimization: (12)**

Unconstrained maxima and minima with more than one explanatory variables- economic application: equilibrium of discriminating monopoly in the case of two and three variables; Multi – product equilibrium, Multi-plant equilibrium, equilibrium of firm with advertisement expenditure.

##### **Unit 2: Optimization with equality constraint: (12)**

Constrained optimization with equality constraints: Lagrange characterization using calculus and economic applications: Utility maximization and consumer's behaviour, least cost combination of inputs.

##### **Unit 3: Matrix Algebra: (12)**

Idempotent matrix, orthogonal matrix, definiteness of matrix – positive and negative, Quadratic form of matrix, random matrices, Hessian matrix, Bordered Hessian matrix, Jacobian matrix; Applications in economics

##### **Unit –4: Differential Equation and Economic Applications (12)**

First order differential equation and its solutions – application to dynamic stability of market and simple growth process (Harrod-Domar).

##### **Unit 5: Difference Equation and Economic Applications (12)**

First order difference equation and its solution - application of difference equation – lagged market model (Cobweb) and Harrod's model of growth.

**Recommended Readings:**

- A.C. Chiang, “Fundamental Methods of Mathematical Economics”, McGraw Hill.
- 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.

**Core Course: 18****Research Methodology for Social Sciences****Course Code: ECO23C703****Level 400****Credits: L+T+P= 3+1+0****Course objective:** To provide fundamentals of research to enable learners for research work**Course outcomes:**

CO1: Understand and differentiate between the different types of research approaches

CO2: Evaluate a research problem from scratch and configure its different components

CO3: Analyse a research plan to carry out the study

CO4: Create skill for data collection, and writing report

**Course outline:****Unit–1: Meaning and types of research (10)**

Meaning, Research methods versus methodology, Research approaches-Types of research Descriptive vs. Analytical, Applied vs. Fundamental, Quantitative vs. Qualitative, Conceptual vs. Empirical, Other types of research, Qualities of a researcher, Significance of research and types of research: Quantitative, qualitative, mixed method

**Unit2: The research process (10)**

Steps in formulating a research problem; formulation of research problem in quantitative research, Formulation of objectives and hypothesis; types of hypothesis, Data Collection and Sampling- Types of sampling, Determination of the size of sample, Sampling Procedure, Choice of Sampling Technique,

**Unit–3: Research Design (08)**

Meaning and feature of good research design; Types of research design-exploratory research design-descriptive and diagnostic research design hypothesis-testing research design; Characteristics of a good research design

**Unit–4: Data collection and preparation (10)**

Experiment and survey; collection of primary data ;collection of secondary data; criteria for selection of appropriate method for data collection ;case study method ;steps in data preparation;

Applications of basic statistical tools in research problems: measures of central tendency; measures of dispersion; measures of skewness and kurtosis; covariance; correlation; chi-

square test; hypothesis test for mean, Small sample Large sample test; chi-square test; Analysis of variance.

### **Unit-5: Report writing an presentation (07)**

Structure and component of a research report, characteristics of a good report-framework of a report parts of a research report; Format and presentation of a report;

Research Ethics: Intellectual property rights, informed-consent rules, confidentiality and privacy.

### **Recommended Readings**

Bhandarkar,P.L. and T.S.Wilkinson, *Methodology And Techniques of Social Research*.  
Himalaya Publishing

Kothari,C.R.,*ResearchMethodology:MethodsandTechniques*,NewAgeInternational

Druckman, Daniel, *Doing Research*, Sage

**Course 21\*****Environmental Economics: Modeling problems and solutions****Course Code: ECO23C704****Level 400****Credits: L+T+P= 3+1+0****Learning objectives:**

The main objective of the course is to train students to see environmental issues from the perspective of an economist. Environmental quality has become scarce day by day and thus belongs to the category of economic goods. Proper management of environmental resources needs planning and for that evaluation of costs and benefits from such decision making is important. Therefore, this paper has been framed in such a way that it will enable students to make decision in environmental planning and management.

**Course outcome:** After completing this course, students will -

CO1: understand why natural resource belongs to the domain of economics and how to model environmental problems

CO2: understand environmental problems and develop skills to model solutions to these problems

CO3: Evaluate alternative environmental valuation techniques and environmental decision making process.

**Course outline:****Unit 1: Economics of natural resources (13)**

Resource taxonomy, managing exhaustible resources, resource scarcity, managing renewable resources like forests, natural environment as a natural resource, irreversibility and uncertainty in environmental process

**Unit 2: Modeling environmental problems (17)**

The role of Economics in environmental management: economics and the environment, fundamental concepts in environmental economics, identifying environmental objectives, environmental policy planning

Modeling the market process: Market models of demand and supply and market equilibrium, economic criteria of efficiency, welfare measurement

Modeling market failure: Environmental quality as a public good, modeling a public goods market for environmental quality, Externality and property rights

### **Unit 3: Modeling solution to environmental problems (15)**

Conventional solution to environmental problem: The command and control approach, Economic solutions to environmental problems: The market approach: pollution charges, environmental subsidies, deposit refund system, pollution permit trading system

### **Unit 4: Analytical tools for environmental planning (15)**

Assessing benefits for environmental decision making: environmental benefits and conceptual issues, approaches to measuring environmental benefits: Physical linkage approach by damage function method; behavioral linkage approach: Contingent valuation method, Averting expenditure method, Travel cost method, Hedonic pricing method

Assessment of costs: Environmental costs and conceptual issues, explicit environmental costs and implicit environmental cost, cost classification by economic sector and environmental media

### **Unit 5: Decision making in environment (15)**

Environmental risk analysis: risk and its assessment, task of risk management

Benefit-cost analysis in environmental decision making: Time adjustment to environmental benefits and costs, comparing environmental benefits and costs, reservation about the use of benefits and costs analysis

### **References**

- Bhattacharya, R.N.(Eds). Environmental Economics: An Indian Perspectives  
 Ahmed, M.Hussen. Principles of Environmental Economics, Economics, ecology and public policy, Routledge,2000  
 Titenberg,T. and L. Lewis. Environmental and Natural resource economics: The Pearson Series in Economics  
 HanleyN., J. F. Shogren and B.White. Environmental Economics: Theory and Practice (Macmillan texts in economics),1996  
 Kolstad, C. Intermediate Environmental Economics, Oxford University Press, 2nd edition, 2010. Robert  
 N. Stavins (ed.), Economics of the Environment: Selected Readings, W.W.Norton, 5<sup>th</sup> edition, 2005.  
 Roger Perman, Yue Ma, James McGilvray and Michael Common, Natural Resource and Environmental Economics, Pearson Education/Addison Wesley, 3 rd edition, 2003  
 Thomas, J.M. and S..Callan: Environmental Economics, South Western Cengage Learning, 2007

*\*This course is to be taken by students who will be awarded Honors without Research.*

**Development Economics****Course Code: ECO23M701****Credits (L+T+P): 3+1+0****Credits: 04****Learning outcome**

This course enables students to understand the concept of development and its dimensions. At the end of the course students will have comprehensive understanding of various theories of development and issues. Students will also be able to understand the relation between inequality and poverty along with the relation between and health, education and development.

**Learning outcomes**

- Understand the concept and indicators of development
- Analyse the fundamental theories of development
- Analyse and evaluate the concept of inequality its measurement and consequences emphasizing on empirical considerations
- Evaluate the role of human capital in economic development with special reference to education and health
- Evaluate and assess the effectiveness of health care facilities

**Unit 1: Development- concept and measurement (10)**

Meaning and alternative measures of development: Traditional economic measures, The new economic view of development, MDGs and SDGs; Sen's capability approach; UNDP development measures – Human Development Index (HDI), Human Poverty Index (HPI), Multidimensional Poverty Index (MPI), Gender Development Index (GDI)

## **Unit 2: Population and development (10)**

Population Growth and Quality of Life; The Demographic Transition; The theory of demographic dividend; Causes and Consequences of High Fertility in Developing Countries; Policy options

## **Unit 3: Theories of Development (12)**

Classic theories of development: Rostow, Harrod-Domar, Lewis model, Neocolonial, False paradigm, dualistic development thesis and the neoclassical counter revolution

## **Unit 4: Inequality and Poverty (13)**

Concept of poverty and economic inequality; measuring economic inequality- criteria for inequality measurement; Concepts of inequality measures - Lorenz curve and Gini coefficient, Coefficient of Variation (CV); Atkinson Index, Theil's Index, Robin Hood index, Pietra Index, Palma Ratio

Measures of poverty – Head count ratio, Poverty Gap Index, Squared poverty gap

## **Unit 5: Education and Health in Economic Development (15)**

The central role of education and health, education and health as joint investment, international trends and convergence in health and education, improving health and education, human capital approach, child labour; educational system and development; health system and development- measurement and distribution, disease burden.

### **Readings:**

- Debraj Ray, *Development Economics*, Oxford University Press, 2009.
- Prabhu, K. Seeta (1998) - Social Sectors in Economic Development, [from
- <https://www.researchgate.net/publication/305985325>, accessed on 17-03-2021]
- Woodhall, M (1974) The Investment Approach to Educational Planning, Lecture Discussion Series No. 32, UNESCO: International Institute for Educational Planning

- Dreze, J (2005) Education and Development: An Unfinished Discovery, in Kumar, R., Sethi, A., and Sikka, S. (eds.) School, Society, Nation: Popular Essays in Education (New Delhi: Orient Longman).
- Psacharopoulos, G., and H. A. Patrinos (2004). "Human capital and rates of return" in International Handbook on the Economics of Education, edited by G. Johnes and J. Johnes. Cheltenham: Edward Elgar Publishing Ltd. 2004.
- Weisbrod,BA (1962) Education and Investment in Human Capital, The Journal of Political Economy, Vol. LXX, No.5, Part 2 [from <http://www.nber.org/chapters/c13575>]
- Marmot & R. G. Wilkinson (Eds.), Social Determinants of Health (2nd ed., pp. 224-237). Oxford, UK: Oxford University Press.
- Mushkin, SJ (1962) Health as an Investment, The Journal of Political Economy, Vol. LXX, No. 5, Part 2,
- Changik Jo (2014) Cost-of-illness studies: concepts, scopes, and methods, Clinical and Molecular Hepatology, Vol 20, pp327-337
- Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, *Understanding Poverty*, Oxford University Press, 2006.
- Kaushik Basu, *The Oxford Companion to Economics in India*, OUP, 2007.
- Michael P Todaro and Smith, Stephen C. *Economic Development in The Third World*, Fourth Edition, Orient Longman, 2018.

## SYLLABUS

### Semester VIII

<b>Paper</b>	<b>Paper Title</b>	<b>Paper Code</b>	<b>Level</b>	<b>Credits</b>	<b>Credit Distribution (L+T+P)</b>
Core 19	Advanced Macroeconomics	ECO23C801	400	4	3+1+0
Core 20	Advanced Econometrics	ECO23C802	400	4	3+0+1
Core 22*	Demography	ECO23C803	400	4	3+1+0
Core 23*	Rural development	ECO23C804	400	4	3+1+0
Minor 8	Environmental Economics: Issues and perspectives	ECO23M801	300	4	3+1+0

*\*This course is to be taken by students who will be awarded Honors without Research*

**Core 19**  
**Advanced Macroeconomics**  
**Course Code: ECO23C801**

**Level 400**  
**Credits: L+T+P=3+1+0**

**Course objectives**

To impart knowledge about the fundamental macroeconomic components of consumption, investment and macroeconomic policies in open economies, along with the modern views on the factors of economic growth.

**Course Outcome:**

CO1: Understand and analyse the consumption and investment behaviour in an economy

CO2: Apply different approaches to reconcile empirical evidence arising from short run and cross sectional, and long run time series data pertaining to consumption

CO3: Evaluate the basics of fiscal and monetary policies and issues that surround the policy decisions

CO4: Understand the functioning of open economies and modern views on economic growth

**Course Outcome:**

**Course outline:**

**Unit-1: National Income Determination (12)**

Income Determination with Government sector and Foreign Trade, Foreign Trade Multiplier

**Unit-2: Consumption (12)**

The Consumption Data; The Absolute Income Hypothesis, The Relative Income Hypothesis; The Permanent Income Hypothesis; The Life Cycle Hypothesis; Random Walk Hypothesis; Consumption as a Random Walk; Further Aspects of Consumption Behaviour

**Unit-3: Investment (12)**

Fixed Investment; Rental Price of Capital; Cost of Capital and Determination of Investment; the Accelerator Model, Multiplier Accelerator Interaction Process; Flexible accelerator; Tobin's q theory

**Unit-4: Open Economy Macroeconomics (12)**

The Open Economy IS-LM Model; BP Line, the Mundell-Fleming Model, extension of Mundell-Fleming Model to flexible exchange rate regime; Effectiveness of monetary and fiscal policies in open economies

**Unit 5: Further Issues in Growth Theory (12)**

The Convergence Debate; Role of Technical Progress; Learning by Doing; Human Capital, Immigration and the Solow puzzles; Endogenous Growth Theories, Accounting for Sources of Economic Growth.

**Reference:**

Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition, 2010

N. Gregory Mankiw. *Macroeconomics*, Worth Publishers, 7th edition, 2010

Olivier Blanchard, *Macroeconomics*, Pearson Education, Inc., 5th edition, 2009

Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education, Inc., 7<sup>th</sup> edition, 2011

Errol D'Souza, *Macroeconomics*, Pearson Education, 2009

Paul R. Krugman, Maurice Obstfeld and Marc Melitz, *International Economics*, Pearson Education Asia, 9th edition, 2012.

**Core 20**  
**Advanced Econometrics**  
**Course Code: ECO23C802**

**Credits: L+T+P=3+0+1**

**Course objectives**

- To familiarize learners with the application of econometric tools.

**Course outcomes**

CO1: Develop understanding of advanced econometric tools.

CO2: Application of econometric tools in data analysis

**Course outline:**

**Unit 1: Classical Linear Regression (10)**

Concept; The General Linear Regression Model, Least square assumptions – OLS estimators and their properties- The coefficient of Determination – Test of Hypothesis about Regression coefficients; Prediction; Dummy variable and its uses

**Unit 2: Specification Errors and Multicollinearity (10)**

Specification Errors and its types; Multicollinearity- causes, consequences and Remedies

**Unit-3: Heteroscedasticity and Autocorrelation (12)**

Heteroscedasticity – causes, consequences and remedies.

Autocorrelation- causes, consequences and remedies.

**Unit 4: Time Series Analysis (13)**

The Idea of a Stochastic Time Series - Stationary and Non-stationary – Random Walk Without drift and Random Walk with Drift–Unit Root Test – Spurious Regression–Integrated Series and Co-integration (concept only)

**Unit 5: Introduction to Data Analysis Software Packages (Practical) (15)**

Stata/SPSS/E-VIEWS/GRETL/R/SAS (anyone)

**Recommended Readings:**

- D.N. Gujarati and D.C. Porter, Essential of Econometrics, McGraw Hill, 4th edition, International Edition, 2009
- Christopher Dougherty, Introduction to Econometrics, Oxford University Press, 3rd edition, Indian edition, 2007.

**CORE 22\***  
**Demography**  
**Course Code: ECO23C803**

**Credits 4: L+T+P: 3+1+0**

**Course objectives**

- To enable learners acquire adequate knowledge on population dynamics.
- To help learners understand Population- development symbiosis.
- To encourage learners develop interest for further studies in areas having socio-economic relevance.
- To sensitize learners on gender issues.

**Course outcome:**

CO1: Understand and analyse population data on fertility, mortality and migration.

CO2: Understand, analyse and evaluate population trends and theories of population changes.

CO3: Apply vital statistics to examine socio-economic impact of demographic processes.

CO4: Examine and assess women-centric policies relating to education, health, empowerment and participation in the labour market.

**Unit1: Introduction to Population studies (15)**

Background of population trends in developed and developing countries; Theories: Malthus, Pearl and Reed, Leibenstein, Theory of Optimum Population. Policy issues affecting fertility and mortality in an economy. Population policy instruments introduced in India, with special reference to Assam.

Sources of population data: population census, uses and limitations; Vital Registration System; National Sample Survey, Sample Registration System and Demographic Health Surveys.

**Unit 2: Vital Statistics (15)**

Fertility: Importance of fertility study in population dynamics; pattern of fertility transition in developing countries; Causes of high fertility in Asia and Africa; Fertility measures (CBR, GFR, ASFR, TFR, GRR, NRR)

Mortality- Need and importance of study of mortality; Definition of deaths and foetal deaths according to WHO; Sources of mortality data and its quality with respect to developing countries; Measure of mortality: CDR, ASDR, Infant Mortality rates: pre-natal, neo-natal, post-natal. Need and importance of studying infant mortality rate. Concept of MMR; Life table- concept, types and relationship between different life table functions.

**Unit3: Migration (15)**

Concepts of mobility and migration; census definition of migrants; Types of migration: Internal migration- types, determination, consequences, measures; international migration-

types, determinants and consequences, categories of international migrants (concepts only)- permanent, temporary labour migrants, highly skilled, asylum seekers, forced migration, family members, refugee, illegal, brain drain; Harris-Todaro deliberation on migration.

#### **Unit4: Economics of health and education (15)**

Role of health and education in population dynamics; Human capital: concepts; Education and Labour market; Population, development, environment and gender sensitization. Issues relating to gender - gender budgeting; Dynamics of female work force participation rate.

Recommended Readings:

Bhende and Kanitkar, *Population Studies*

Ramakumar, R., *Technical Demography*

Pathak, K. B. & Ram, F., *Techniques of Demographic Analysis*. • Psacharopoulos, G., *Economics of Education, Research and Studies*. • Census of India, Population Census, 2001, 2011.

Todaro, M.P. *Development Economics*

*\*This course is to be taken by students who will be awarded Honors without Research.*

**Core 23\***  
**Rural development**  
**Course Code: ECO23C804**

**Credits 4: L+T+P=3+1+0**

**Course objectives:**

The course will enable students to understand the genesis of rural development and the theories and conceptual ideas behind it. Students are expected to get knowledge of different policies and programs of rural development. At the end of the course students will be able to implement action plan for rural development.

**Course outcomes:**

CO1: Introduction to the basic idea of rural development and why rural development is necessary

CO2: Understanding the nature of rural development in India

CO3: Understand different theories of rural development

CO4: Analyse action plan and different programs of rural development

**Unit 1: Introduction (10)**

Concepts and basic elements of Elements of Rural Development, Growth versus Development, Why Rural Development, Rising Expectations and Development, Development and Change, Human Beings as the Cause and Consequence of Development, Some Dilemmas in Development

**Unit 2: Rural Economy of India (10)**

Introduction, Size and Structure of the Rural Economy, the Characteristics of the Rural Sector, the Role of the Agricultural Subsector, the Role of the Non-agricultural Subsector, Challenges and Opportunities

**Unit 3: Some Paradigms of Rural Development (12)**

The Modernisation Theory, The Dependency Theory of the Marxist School, Theory of the Big Push, Critical Minimum Effort Thesis , Lewis' Model , Gunnar Myrdal's 'Spread and

Backwash' Effects, The Human Capital Model of Development, The Gandhian Model, Development Theories from Other Social Sciences

#### **Unit 4: Rural Development Policies (10)**

Freedom, Control and Public Policy, Need for a Rural Development Policy, Goals of Rural Development Policy, Hierarchy of Policy Goals, Rural Development Policies in India, Globalisation and Rural Development,

#### **Unit 5: Policy Instruments of Rural Development (08)**

A Conceptual Framework, an Action System, Policy Instruments

#### **Unit 6: Organising for Rural Development (10)**

A Detour to Organisational Models, Criteria for Designing an Appropriate Organisation, Government Organisations, Panchayati Raj Institutions (PRIs), Cooperatives, Voluntary Agencies / Non-governmental Organisations, Corporations and Rural Development

#### **References**

- Chambers, Robert. Rural development: Putting the last first. Routledge, 2014.
- G.Sreedhar and D.Rajasekhar. Rural Development in India: Strategies and Processes, Concept ,New Delhi,2014
- Indira Gandhi National Open University, Course Material on “Rural Development- Indian Context” Block 2, School of Continuing Education, IGNOU, New Delhi, 2005:
- Singh, Kartar. Rural Development Principles, Policies and Management, SAGE Publications India Pvt Ltd, New Delhi, 2009. Seers, Dudley. “The meaning of development”. New Delhi, 2010
- Todaro, Michael P. Economics for a developing world: An introduction to principles, problems and policies for development. No. 04; HC59. 7, T6. London: Longman, 2000.
- WCED, Special Working Session. World commission on environment and development. Our common future, 17.1 (1987): 1-91.

***\*This course is to be taken by students who will be awarded Honors without Research.***

**Minor**  
**Environmental Economics: Issues and perspectives**  
**Course Code: ECO23M801**

**Level: 300**  
**Credits: L+T+P= 3+1+0**

**Learning objectives:**

The paper is a systematic exposition of environmental and natural resource economics. Principles essential for understanding environmental issues and control have been discussed in this paper. Issues relating environment have been considered in a broad and interdisciplinary way so that students become capable of applying them in real life.

It presents the economic and ecological principles essential for a clear understanding of contemporary environmental and natural resource issues and policy considerations.

Environmental and natural resource issues are considered in a broad, interdisciplinary context that does not treat them as just another subset of applied economics

**Course outcome:**

CO1: analyse how policies are instrumental in controlling pollution

CO2: understand the economic rationale for environmental regulation

CO3: understand the relevant theorems and regulatory instruments related to environmental economics

**Unit 1: Fundamentals of the economics of environmental resources:** The economic process and the assimilative capacity of the natural environment; Common property resources; external costs and market failure; Common property resources and the economic problem; Environmental externalities and their economic consequences; Internalizing externality using the Pigouvian tax approach; The macroeconomic effects of environmental regulations: an overview (12)

**Unit 2: Ecology and the economics of nature:** The concept of natural resources: an ecological perspective; Ecosystem structure ; Ecosystem function ; Materials recycling ; Succession, equilibrium, stability, resilience and complexity ; The laws of matter and energy ; The basic lessons of ecology ; Humanity as the breaker of climaxes (12)

**Unit 3: The economics of environmental resources:** Public policies and cost-benefit estimations of environmental Damage: The economic theory of pollution control: the optimal level of pollution; Minimization of waste disposal costs; Pollution control (abatement) costs; Pollution damage costs

**Unit 4: Valuation of environment:** Travel cost method, Contingent valuation method, hedonic pricing (12)

**Unit 5: The economics of environmental regulations:** Pollution tax and markets for pollution permits; Learning Introduction; Effluent charges; Transferable emission permits, Property rights or Coasian approach; Emission standards (12)

### References

Ahmed M.Hussen.*Principles of environmental economics, Economics, ecology and public policy*, Routledge, 2000

Tom Tietenberg and Lynne Lewis (latest edition): *Environmental and Natural resource economics*: The Pearson Series in Economics

Nick Hanley, Jason F. Shogren and Ben White. *Environmental Economics: Theory and Practice* (Macmillan texts in economics),1996

Charles Kolstad, *Intermediate Environmental Economics*, Oxford University Press, 2nd edition, 2010.Robert N. Stavins (ed.), *Economics of the Environment: Selected Readings*, W.W.Norton, 5 th edition, 2005.

Roger Perman, Yue Ma, James McGilvray and Michael Common, *Natural Resource and Environmental Economics*, Pearson Education/Addison Wesley, 3 rd edition, 2003

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