ECONOMICS

(Recommended by B.O.S. in Economics, D.U. in its meetings held on 02/04/2024 and approved by UG Board in its meeting held on ……………….and passed by the Academic Council meeting held on…………. and effective from the session August, 2023)

PREAMBLE

As recommended by the University Grants Commission (UGC) and proposed for implementation by Dibrugarh University, the Department of Economics works to implement the relevant components of New Education Policy (NEP), 2020 for Four Year Under Graduate Program (FYUGP). The following facts are taken into consideration when designing the basic structure of the Under Graduate (UG) programme:

- Flexibility to switch between disciplines of study
- Opportunity for learners to select the courses of their interest across all disciplines
- Flexible entry and exit options with UG certificates, UG diplomas, or Bachelor degrees depending on the number of credits earned,
- Flexibility for students to switch between institutions so they can engage in multi- and/or interdisciplinary learning
- Flexibility to switch to alternative modes of learning
- Knowledge required for self-employment initiatives and entrepreneurship mindset
- Ability for complex critical thinking and real-life problem solving
- Capability to understand global issues, multicultural competence and digital literacy
- Capable on research skills, communication skills, community based engagement, environment awareness, responsibility and accountability.

INTRODUCTION

The Under Graduate (UG) syllabus of Economics in light of New Education Policy (NEP), 2020 consists of Major (Core) disciplines, Minor disciplines, Multi-Disciplinary Generic Elective Courses (MDGEC), Ability Enhancement Courses (AEC), Value Added Courses (VAC), Skill Enhancement Courses (SEC), Environmental Education (EE), YOGA, Community Based Engagement (NCC/NSS/Adult Education/Student Mentoring/NGO/Govt. institutions, etc.), Digital and Technological Solutions/Digital Fluency (DTS/DF), Research Ethics and Methodology, Research Project (Development of Project/Research Proposal, Review of related literature), Dissertation (Collection of Data, Analysis and Preparation of Report) and Discipline Specific Electives (DSE).

AIM

The UG Programme in Economics aims to develop students' analytical, logical, and critical thinking skills so they can apply economic reasoning in practical settings. Students who pursue a UG degree in Economics will be exposed to a wide range of fascinating theoretical and applied concepts that will aid in their preparation for a range of Economics-related jobs in business, government, industry, commerce, finance, and research. A wide range of theoretical and practical topics of Economics are covered in the programme.

Along with Economics, the programme also aims to broaden students' knowledge of other subjects that cut across disciplines, such as sociology, history, maths, and statistics. They will be able to use the skills they have learned to situations that happen in the real world by selecting papers from the MDGEC, AEC, SEC, VAC, YOGA, EE, DTS, DSE, community based engagement, etc. Enhancing the ability of students to switch between academic disciplines, institutions, and alternative modes of learning is another goal. The programme aims to inculcate economic thinking among the students in economic decision making by comprehending economic theory. It aims to develop analytical view point among the students about the economic behaviour of people. The objective is to nurture among student a view point of a socially responsible and ethical aware citizen.

GRADUATE ATTRIBUTES

Disciplinary Knowledge
Being able to demonstrate thorough knowledge and coherent understanding of the theoretical as well as applied aspects of Economics along with the interdisciplinary fields of study that have been chosen in a broad multidisciplinary context; being able to link relevant disciplines and modern innovations with the learning disciplines of choice.

Critical Thinking
Ability to identify gaps and logical flaws in arguments; Capability to analyse and synthesise theoretical and applied problems; Capability to acquire knowledge and skills through logical reasoning, analytical thinking, and evaluations; instill a positive outlook on lifelong learning.

Problem Solving
Ability to work independently and conduct extensive research to identify how Economics is used in various facets of life; ability to use creative and innovative thinking and interpersonal skills; ability to

take on a variety of challenges in both familiar and unfamiliar settings, and apply what they have learned to real-world scenarios.

Communication Skills
The ability to use mathematics, statistics, and econometrics effectively as precise languages of communication in Economics; the ability to clearly communicate a variety of economic concepts through computation, graphics, examples, and their geometrical representations; the capacity to pay close attention, read texts and research papers critically; and the capacity to communicate complex information clearly and concisely in a variety of settings.

Research Related Skills
The capacity to develop methodology and research proposals, or to be specific, the capacity to develop pertinent research questions and hypotheses for various branches of Economics as well as other related disciplines; the capacity to present findings, theories, methods, and proofs using knowledge from various branches of Economics and other related disciplines.

Reflective Thinking
Understanding how a researcher/investigator makes use of the information one collects; the capacity to formulate pertinent inquiries regarding the relevant issues in different branches of Economics for inventing and discovering new solutions using the domain knowledge of Economics; the capacity to interpret the findings and use them to solve a variety of problems in various fields of Economics as well as in real-life situations.

Information/Digital Literacy
The capacity to use information and communication technology (ICT) tools and to access, evaluate, and utilize these tools. Ability of comprehending, reading, and using computational methods in relevant disciplines.

Moral and Ethical Awareness/Reasoning
Ability to recognise ethical issues that are important to one's work and to pledge not to act unethically, such as with plagiarism, copyright infringements, or other violations of intellectual property rights; ability to appreciate recent advancements in various fields with honesty and integrity in all aspects.

Multicultural Competence
Capability to collaborate research in various fields of Economics with other researchers from a variety of backgrounds and organizations; capability of effective cooperation and participation in a multicultural setting and effective interaction with diverse groups; knowledge of the values and beliefs of multiple cultures; and a global view to honour diversity.

Cooperation/Team Work
Capacity to work effectively and respectfully with diverse teams; ability to work with individuals from different backgrounds in the interests of a common objective.

PROGRAMME OUTCOMES (POs): After completion of this programme -

PO1-Critical Thinking: Graduates will be able to critically analyze economic theories and models, apply logical reasoning, and understand their implications in real-world contexts.

PO2-Problem Solving: Graduates will acquire enhanced problem-solving skills by applying economic principles and quantitative techniques to address economic issues and policy challenges.

PO3-Effective Communication: Graduates will be able to communicate economic concepts, theories, and findings clearly and effectively.

PO4-Research and Analytical Skills: Graduates will be able to formulate research proposals, specifically to craft relevant research questions and hypotheses; present findings, theories, methods, and proofs utilizing knowledge from multiple branches of Economics and associated fields.

PO5-Technological Proficiency: Graduates will be proficient in using modern technological tools and software for economic analysis, data management, and presentation.

PO6-Ethical Awareness: Graduates will be able to apply ethical principles in economic decision-making, recognizing the societal and environmental impacts of economic activities.

PO7-Global Perspective: Graduates will develop a global outlook on economic issues, understanding the interconnectedness of economies and the implications of global economic policies and events.

PO8-Lifelong Learning: Graduates will foster a commitment to continuous learning and staying updated with the latest developments in the field of economics.

PO9-Interdisciplinary Knowledge: Graduates will be able to integrate knowledge from various disciplines such as statistics, mathematics, political science, sociology, history etc. to provide a comprehensive understanding of economic phenomena.

PO10-Leadership and Teamwork: Graduates will cultivate leadership qualities and the ability to work collaboratively in diverse teams to address complex economic problems.

PROGRAMME SPECIFIC OUTCOMES (PSOs):
The programme specific outcomes of the Undergraduate Programme in Economics are listed below. After completing the programme the students should be able to-

PSO1-Comprehend the behavioral patterns of different economic agents and acquire the competency to apply the fundamentals of Microeconomics and Macroeconomics in understanding the economic aspects of allied sectors.
PSO2-Evaluate the developmental parameters of an economy with the help of economic theories and examine the existing socio-economic issues of developing nations and formulate strategies to pave the way for further development.
PSO3- Analyse and review the historical developments in the economic thoughts propounded by different schools and make a comparative assessment with the contemporary issues in Economics.
PSO4-Identify key issues and formulate ideas to undertake research studies and apply quantitative techniques to address the unresolved issues in Economics and other relevant disciplines.
PSO5-Demonstrate the potential for a variety of challenging careers through innovation, critical thinking, problem solving and lifelong learning, thereby being competitive in the job market by acquiring skills in using statistical software for research, employability and entrepreneurship.

PSO 6-Contribute to the academic advancement of the subject and society at large by pursuing advanced studies in Economics.

TEACHING LEARNING PROCESS:

The programme allows using varied pedagogical methods and techniques both within classroom and beyond.

- Lecture
- Tutorial
- Power point presentation
- Documentary film on related topic
- Project Work/Dissertation
- Group Discussion and debate
- Seminars/workshops/conferences
- Field visits and Report/Excursions
- Mentor/Mentee

ASSESSMENT

- Home assignment
- Project Report
- Class Presentation: Oral/Poster/Power point
- Group Discussions
- In semester examinations
- End Semester examinations

DRAFT STRUCTURE OF FOUR YEAR UNDER GRADUATE PROGRAMMES (FYUGP) IN DIBRUGARH UNIVERSITY AND ITS AFFILIATED COLLEGES AS PER <u>UGC DRAFT RELEASED on 12/12/2022</u>

Year	Semester	Course (Lecture+Tutorial+Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
		Major (Core)	1	ECOC1	Introductory Microeconomics	4	-
		Minor	1	MINECO1	Elementary Microeconomics	4	The course shall be taken by students from disciplines other than Economics
		Multi- Disciplinary Generic Elective Course: Natural Science –I/ Social Science/Humanities-I/Commerce-I	1	GECECO1	Economic History of India	3	The course shall be taken by students from disciplines other than Economics
		AEC Language (MIL/Regional Language)	1			4	Students shall have to take one of the language disciplines offered by Dibrugarh University
1	**1st**	Value Added Course- Understanding India/ Health and Wellness	1	VAC1/ VAC2		2	Students shall have to take any one of the courses offered by Dibrugarh University
		Skill Enhancement Course	1			3	Students shall have to take the course offered by Dibrugarh University
		Total				**20**	

Year	Semester	Course (Lecture+Tutorial+Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
1	2nd	Major (Core)	1	ECOC2	Introductory Macroeconomics	4	-
		Minor	1	MINECO2	Elementary Macroeconomics	4	The course shall be taken by students from disciplines other than Economics
		Multi- Disciplinary Generic Elective Course: Natural Science –II /Social Science/Humanities–II/Commerce-II	1	GECECO2	Contemporary Indian Economy	3	The course shall be taken by students from disciplines other than Economics
		AEC:Language and Communication Skills (English)-II	1			4	Students shall have to take one of the language disciplines offered by Dibrugarh University
		Value Added Course- Environmental Education with emphasis on community-based activities/ Yoga	1	VAC 3/ VAC 4		2	Students shall have to take any one of the courses offered by Dibrugarh University
		Skill Enhancement Course	1			3	Students shall have to take the course offered by Dibrugarh University
		Total				**20**	
		Grand Total (Semester I and II)				**40**	

Students on exit shall be awarded Undergraduate Certificate (in the Field of Study/Discipline) after securing the requisite 40 Credits in Semesters I and II

Year	Semester	Course (Lecture+Tutorial+Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
2	3rd	Major	2	ECOC3	Introductory Mathematical Methods for Economics	4	-
				ECOC4	Indian Economy- Trends in Economic Indicators	4	-
		Minor	1	MINECO3	Basics of Indian Economy	4	The course shall be taken by students from disciplines other than Economics
		Multi- Disciplinary Generic Elective Course: Natural Science/Social Science/Humanities -III/Commerce-III	1	GECECO3	Basic Development Economics	3	The course shall be taken by students from disciplines other than Economics
		Value Added Course-Digital and Technological Solutions/Digital Fluency	1	VAC 5/ VAC 6		2	Students shall have to take the course offered by Dibrugarh University
		Skill Enhancement Course	1			3	Students shall have to take the course offered by Dibrugarh University
		Total				**20**	

Year	Semester	Course (Lecture+Tutorial+Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
2	4th	Major	4	ECOC5	Intermediate Microeconomics	4	-
				ECOC6	Economy of Assam	4	-
				ECOC7	Statistical Methods for Economics	4	-
				ECOC8	Intermediate Mathematical Methods for Economics	4	-
		Minor	1	MINECO4	Mathematical Methods for Economics	4	The course shall be taken by students from disciplines other than Economics
		Total				**20**	
		Grand total (Semester I, II, III and IV)				**80**	
Students on exit shall be awarded Undergraduate Diploma (in the Field of Study/Discipline) after securing the requisite 80 Credits in Semesters I, II, III and IV							

Year	Semester	Course (Lecture+Tutorial+Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
3	**5th**	Major	4	ECOC9	Intermediate Macroeconomics	4	
				ECOC10	Basic Econometrics	4	
				ECOC11	Development Economics I	4	
		Minor		MINECO5	Elementary Econometrics	4	The course shall be taken by students from disciplines other than Economics
		Internship/Community Engagement/Project	-		Internship (2) + Community Engagement (2) Or Internship (4) / (Community Engagement (4)	4	
		Total				**20**	
Year	Semester	Course (Lecture+Tutorial+Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
3	**6th**	Major		ECOC12	Development Economics II	4	
				ECOC13	International Economics	4	
				ECOC14	History of Economic Thought	4	
				ECOC15	Public Finance	4	
		Minor		MINECO6	Public Finance	4	The course shall be taken by students from disciplines other than Economics
		Total				20	
	Grand Total (Semester I, II, III, IV, V and VI)					**120**	

Students on exit shall be awarded Undergraduate Degree (in the Field of Study/Discipline) after securing the requisite 120 Credits in Semesters I, II, III, IV, V and VI

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 1ST SEMESTER

Course Title	:	**Introductory Microeconomics**
Course Code	:	**ECOC1**
Nature of Course	:	**Major**
Total Credits	:	**4 credits**
Distribution of Marks	:	**60 (End-Sem.) + 40 (In-Sem.)**

Course Objectives: The objectives of this Course are:
1. To expose students to the basic principles of microeconomic theory
2. To enlighten the learners about the fundamental economic trade-offs and allocation problems due to scarcity of resources.

Course Outcomes: On completion of this Course, a student will be able to –

CO 1: Comprehend the introductory principles of Microeconomics.

      LO 1.1: Define the meaning of Microeconomics.

      LO 1.2: Discuss how scarcity and the need to make choices are central to economic analysis.

      LO 1.3: Identify and analyze the trade-offs and opportunity costs in decision-making processes.

CO 2: Apply the basics of microeconomics in behaviour patterns of firms and households and relate with the laws of demand and supply.

      LO 2.1: Explain the law of demand, determinants of demand, individual and market demand and shift in demand.

      LO 2.2: Explain the law of supply, determinants of supply, individual and market supply and shift in supply.

CO 3: Apply the fundamentals of microeconomics to understand the behaviour of consumers and attainment of consumer's equilibrium.

      LO 3.1: Define budget constraint.

      LO 3.2: Explain the meaning and properties of an Indifference curve.

CO 4: Apply the principles of microeconomics in relation to production function, costs and revenues and demonstrate the basics of market mechanism and the equilibrium condition of different forms of markets.

      LO 4.1: Define the basics of a firm under perfectly competitive market structure.

      LO 4.2: State the relation between revenue, cost and equilibrium under perfect competition.

      LO 4.3: Explain the characteristics of firms under imperfect market structure.

CO 5: Evaluate the features of input market.

      LO 5.1: Explain the features of firms using one and two variable factors respectively in the short run and long run labour market.

      LO 5.2: Discuss the determination of rent and profit maximizing condition in input market

      LO 5.3: Explain the fundamentals of capital market.

UNITS	COURSE CONTENTS	L	T	P	Total Hours
I	**Exploring the subject matter of Economics:** Why study economics? Scope and method of economics; Scarcity and choice; Types of Microeconomic Analysis, Goals of Microeconomics-Growth and Efficiency; The economic problems: the question of what to produce, how to produce and how to distribute output; Economic models: Verification and general features of economic models ; the basic competitive model - prices, property rights and profits; incentives and information; rationing; economic systems- Command, Free Market and Mixed; Economic systems and the role of Government; reading and working with graphs; Applications of microeconomics.	9	3	-	12
II	**Supply and Demand** Markets and competition; determinants of individual demand/supply; demand/supply schedule and demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, demand and supply together; how prices allocate resources; elasticity and its application; controls on prices; taxes and the costs of taxation; consumer surplus; producer surplus and the efficiency of the markets.	9	3	-	12
III	**The Household Behaviour and Consumer's Choice:** The consumption decision - budget constraint, consumption and income/price changes, demand for all other goods and price changes; description of preferences (representing preferences with indifference curves); properties of in difference curves; consumer's optimum choice; income and substitution effects; labour supply and savings decision-choice between leisure and consumption.	9	3	-	12

IV	**Firm and Market Structure** **Perfect Market Structure** Behaviour of profit maximizing firms and the production process; short run costs and output decisions-Basic concepts, Relationships, output decisions: revenues, costs and profit maximization; costs and output in the long run, Long run costs: economies and diseconomies of scale. **Imperfect Market Structure** Monopoly and anti-trust policy; government policies towards competition; monopolistic and oligopoly competition.	9	3	-	12
V	**Input Markets** **Input Demand: Land and Labour Markets** Input markets: Basic concepts ; Labour markets- Firm using only one variable factor of Production, firm employing Two Variable Factors of Production in the Short and long Run. Land market-Determination of Rent, Rent and the value of Output produced on land, Firm's profit-maximizing condition in input markets, Input demand curves; shifts in input demand curves; Resource Allocation and the Mix of Output in Competitive Markets, Distribution of Income **Input Demand: the capital Market and Investment Decision** Meaning and types of capital; Investment and depreciation; Capital market; Capital Income: interest and Profits; Financial Markets in Action; Capital accumulation and allocation; the Demand for new Capital and the investment decision	9	3	-	12
TOTAL		45	15	-	60

Where,   L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive map of Course outcomes with Bloom's Taxonomy

Cognitive knowledge dimension	Cognitive process dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	CO1	CO1	CO2, CO3			
Conceptual Knowledge	CO1, CO5	CO2, CO3, CO4, CO5	CO2, CO3, CO4		CO5	
Procedural Knowledge			CO3, CO4		CO5	
Metacognitive Knowledge						

Mapping of Course Outcome with Program Outcome:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✔	✔	✔			✔	✔	✔	✔	
CO2	✔	✔	✔	✔		✔		✔		
CO3	✔	✔		✔		✔		✔		
CO4	✔	✔	✔	✔		✔		✔		
CO5	✔	✔	✔	✔		✔	✔	✔	✔	

Suggested Readings:

- Karl E. Case and Ray C. Fair, Principles of Economics, Pearson Education Inc., 8th Edition, 2007.
- N. Gregory Mankiw, Economics: Principles and Applications, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4thedition, 2007.
- Joseph E. Stiglitz and CarlE.Walsh, Economics, W.W.Norton &Company, Inc., New York, International Student Edition, 4th Edition,2007.
- G.S.Maddala and Ellen Miller, Microeconomics:Theory and Applications, McGraw HillEducation, Tenth Reprint, 2013, NewDelhiEdition
- R.S. Pindyck, D.N. Rubinfeld and P.L. Meheta (2009):Microeconomics, 7thEdition, Pearson, NewDelhi
- McConnell, Brue and Flynn, Microeconomics: Principles, Problems, and Policies, McGraw Hill Education(India) Private Limited, 2017

Course Title	:	**Elementary Microeconomics**
Course Code	:	**MINECO1**
Nature of Course	:	**Minor**
Total Credits	:	**4 credits**
Distribution of Marks	:	**60 (End-Sem.) + 40(In-Sem)**

Course Objectives: The objectives of this Course are:
1. To expose students to the basic principles of microeconomic theory.
2. To emphasis on the fundamentals of consumer theory, production behaviour and costs.
3. To use graphical methods to illustrate the application of microeconomic concepts to analyze real-life situations

Course Outcomes: On completion of this Course, a student will be able to –

CO 1: Comprehend the introductory principles of Microeconomics.
   LO 1.1 Describe the meaning of Microeconomics.
   LO 1.2 Define the meaning of scarcity and opportunity cost.
CO 2: Apply the basics of microeconomics in behaviour patterns of firms and households and relate with the laws of demand and supply.
   LO 2.1: Explain the law of demand, determinants of demand, shifts of demand versus movements along a demand curve and market demand.
   LO 2.2: Explain the law of supply, determinants of supply, shifts of supply versus movements along a supply curve and market supply.
   LO 2.3: Explain the condition of market equilibrium.
CO 3: Apply the fundamentals of microeconomics to understand the behaviour of consumers and producers and attainment of producer's and consumer's equilibrium.
   LO 3.1: Define the meaning of budget constraint.
   LO 3.2: Explain the meaning and properties of indifference curve.
   LO 3.3: Explain the fundamentals of utility and its applications in consumer theory.
   LO 3.4: Explain the Production function with one and two variables.
   LO 3.5: State the meaning and properties of an Isoquant and equilibrium in production.
CO 4: Apply the principles of microeconomics in relation to production function, costs and revenues and demonstrate the basics of market mechanism and characteristics of different forms of markets.
   LO 4.1: Explain the features of cost and revenue in the short run and long run respectively.
   LO 4.2: Discuss the features of different forms of markets.
   LO 4.3: Explain the equilibrium condition of firms under perfect competition.

UNITS	COURSE CONTENTS	L	T	P	Total Hours
I	**Introduction** What is Microeconomics; Problem of scarcity and choice: scarcity, choice and opportunity cost; production possibility frontier; economic systems; Demand and supply: law of demand, determinants of demand, shifts of demand versus movements along a demand curve, market demand, law of supply, determinants of supply, shifts of supply versus movements along a supply curve, market supply, market equilibrium; Applications of demand and supply: price rationing, price floors, consumer surplus, producer surplus; idea of dead weight loss; Elasticity: price elasticity of demand; types of elasticity; different methods of calculating elasticities; determinants of demand elasticity, other important elasticities.	9	3	-	12
II	**Consumer Theory** Household choice in output markets; determinants of household demand; Budget constraint; indifference curve: definition, derivation, consumer choice, derivation of Demand curve from indifference curve and budget constraint; the basis of choice: utility, utility maximizing rule, diminishing marginal utility and downward sloping demand; income and substitution effects; household choice in input markets.	9	3	-	12
III	**Theory of Production** Behaviour of profit maximizing firms, production process, production functions with one variable input and with two variable inputs; choice of technology, isoquant and iso-cost lines, cost minimizing equilibrium condition.	9	3	-	12
IV	**Theory of Costs** Economic costs; Costs in the short run, costs in the long run, revenue and profit maximizations, minimizing losses, short run industry supply curve, economies and diseconomies of scale, long run adjustments.	9	3	-	12
V	**Theory of firm: price and output determination** The firm; objectives of business firms; market models: perfect competition, monopoly, monopolistic, oligopoly; price and output determination under perfect competition: short run and long run; firm vs industry.	9	3	-	12
TOTAL		45	15	-	60

Where,   L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive map of Course outcomes with Bloom's Taxonomy

Cognitive knowledge dimension	Cognitive process dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	CO1	CO1				
Conceptual Knowledge	CO1	CO1, CO2	CO2, CO3, CO4			
Procedural Knowledge			CO2, CO3, CO4	CO2, CO3, CO4		
Metacognitive Knowledge						

Mapping of Course Outcome with Program Outcome:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✔	✔	✔			✔	✔	✔	✔	
CO2	✔	✔	✔	✔		✔		✔		
CO3	✔	✔		✔		✔		✔		
CO4	✔	✔	✔	✔		✔		✔		

Suggested Readings:

- Karl E. Case and Ray C. Fair, Principles of Economics, Pearson Education Inc., 8[th]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
- Joseph E. Stiglitz and Carl E. Walsh, Economics, W.W. Norton & Company, Inc., New York, International Student Edition, 4th Edition, 2007
- G.S. Maddala and Ellen Miller, Microeconomics: Theory and Applications, McGraw Hill Education, Tenth Reprint, 2013, New Delhi Edition
- McConnell, Brue and Flynn, Microeconomics: Principles, Problems, and Policies, McGraw Hill Education (India) Private Limited, 2017

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 1ST SEMESTER

Course Title	:	**Economic History of India**
Course Code	:	**GECECO1**
Nature of Course	:	**Generic Elective**
Total Credits	:	**3 credits**
Distribution of Marks	:	**60 (End-Sem.) + 40 (In-Sem.)**

Course Objectives

1. To familiarize the students with the structure of the Indian economy in the colonial context.

2. To enable the students analyze the policies and performance of Indian economy during the colonial rule.

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

CO1: Analyze and evaluate the economic structure and policies of pre-independence India, understanding the factors contributing to economic backwardness.

LO1: Explain the economic structure and policies of pre-independence India.

LO2: Discuss the impact of socio-cultural attitudes and inheritance laws on India's economic development.

LO3: Evaluate the drain theory and its implications on India's economy.

LO4: Compare and contrast the economic ideas of Ranade and Gandhi.

CO2: Examine the agrarian structure, agricultural markets, and institutions, and their impact on India's agricultural productivity and rural economy.

LO1: Describe the agrarian structure and land relations in colonial India.

LO2: Analyze the role of agricultural markets, credit systems, and irrigation in shaping agricultural productivity.

LO3: Assess the causes and consequences of the commercialization of agriculture in colonial India.

LO4: Discuss the issues of rural indebtedness, famines, and the evolution of food policies.

CO3: Evaluate the industrial development and transportation systems in colonial India and their impacts on the economy.

LO1: Describe the state of industrial development in mid-nineteenth century India and the phenomenon of de-industrialization.

LO2: Identify the factors that led to the emergence of modern capitalist industrial enterprises in India.

LO3: Discuss the constraints to industrial breakthrough in colonial India.

LO4: Analyze the development of transportation systems (railways, roadways, waterways) and their economic impact.

CO4: Evaluate the economic policies and priorities under British rule, including foreign capital, trade, and fiscal policies, and their impact on India's economy.

LO1: Explain the imperial priorities and their impact on India's economic development.

LO2: Discuss the role and impact of foreign capital in colonial India.

LO3: Analyze the growth and composition of foreign trade and the nature of public debt during the colonial period.

LO4: Evaluate the government and fiscal policies implemented under British rule and their consequences for the Indian economy.

UNITS	Course contents	L	T	P	Total Hours
I	**Colonial India: Background and Introduction** An Overview of economic structure and policies of pre-independence era, the laws of inheritance; socio-cultural attitudes and India's economic backwardness; drain theory; economic ideas of Ranade and Gandhi. National Income –trend and composition; Population–growth, age structure and sex composition; Changing occupational structure; Poverty.	12			12
II	**Agriculture** Agrarian structure and land relations; agricultural markets and institutions- credits and irrigation; Commercialization of agriculture- its causes and consequences; trends in performance and productivity; problem of rural indebtedness; famines; evolution of the food problem and policies.	10			10
III	**Industry and Transportation** The state of industrial development in mid-nineteenth century in India, the de-industrialization, emergence of modern capitalist industrial enterprise in India; constraints to industrial breakthrough; Transportation development and its impact – Railways, roadways and waterways.	11			11
IV	**Economy and State in the Imperial Context** The imperial priorities and the Indian economy - guided under-development of India under the British rule; Foreign capital in Colonial India; foreign trade-growth and composition, the nature and problem of public debt; government and fiscal policy.	12			12
TOTAL		45	-	-	45

Where,   L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: 40 Marks

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive Mapping of COs with Bloom's Taxonomy:

Cognitive Knowledge Dimensions	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	CO1, CO2, CO3, CO4	CO1, CO2, CO3, CO4				
Conceptual Knowledge		CO1, CO2, CO3, CO4	CO2, CO4	CO3, CO4	CO1, CO2, CO3, CO4	
Procedural Knowledge						
Metacognitive Knowledge						

Mapping of COs with POs:

COs / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓	✓	✓	✓		✓	✓	✓	
CO2	✓	✓	✓	✓	✓			✓	✓	✓
CO3	✓	✓	✓	✓	✓		✓	✓	✓	✓
CO4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Suggested Readings:
- Lakshmi Subramanian, *"HistoryofIndia1707-1857"*, Orient Blackswan, 2010, Chapter4.
- Sumit Guha, 1991, Mortality decline in early 20th century India, *Indian Economic and Social History Review (IESHR),* pp 371-74 and 385-87.
- Tirthankar Roy, *The Economic History of India 1857-1947*, Oxford University Press, 3rd edition, 2011.
- J. Krishnamurty, *Occupational Structure,* Dharma Kumar (editor), The Cambridge Economic History of India, Vol.II, (hence forth referred to as CEHI), 2005, Chapter6.
- Ira Klein, 1984,When Rains Fail: Famine relief and mortality in British India, *IESHR*21.
- Jean Dreze, *Famine Prevention in Indiain Dreze and Sen(eds.) Political Economy of Hunger*, WIDER Studies in Development Economics, 1990,pp.13-35.
- John Hurd, *Railways*, CEHI, Chapter 8, pp. 737-761.
- RajatRay(ed.), *Entrepreneurship and Industry in India*, 1994.
- A.KBagchi,―Deindustrialization in India in the nineteenth century: Some theoretical implications, *Journal of Development Studies*, 1976.
- M.D Morris, *Emergence of an Industrial Labour Force in India*, OUP1965, Chapter11, Summary and Conclusions.
- K.N. Chaudhuri, *Foreign Trade and Balance of Payments*, CEHI, Chapter 10.
- B.R.Tomlison, 1975, *India and the British Empire 1880-1935,* IESHR, Vol.XII.
- Dharma Kumar, *The Fiscal System,* CEHI, Chapter 12.
- Basudev Chatterjee, *Trade, Tariffs and Empire*, OUP1992, Epilogue.
- Kaushal G. *Economic History of India –1757to1966*.Kalyani Publishers,1991.

Background reading for students:
- Irfan Habib, *Indian Economy 1858-1914* (APeoples' History of India), Vol.28, Tulika2006.
- Daniel Thorner, *Agrarian Prospect in India*, 1977.
- L. Visaria and P.Visaria, *Population*. CEHI, Chapter5.

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 2nd SEMESTER

Course Title	:	**Introductory Macroeconomics**
Course Code	:	**ECOC2**
Nature of the Course	:	**Major**
Total Credits	:	**04**
Distribution of Marks	:	**60 (End Sem) + 40 (In-Sem)**

Course Objectives:
1. To help students know the meaning of macroeconomics and how the overall production of economy is computed;
2. To familiarize the students with concepts of aggregate demand and aggregate supply;
3. To introduce the students with the classical and Keynesian theories of employment and output determination;
4. To help students understand the meanings of money and other concepts related to money.

Course Outcomes: After successful completion of this course students will be able to-
CO1: Distinguish between different macroeconomic schools of thought and understand the fundamental objectives and scope of macroeconomics, laying the foundation for advanced macroeconomic analysis.

LO1.1: Differentiate between microeconomics and macroeconomics and understand the evolution of macroeconomics as a distinct field.

LO1.2: Explain the nature and scope of macroeconomics and identify the key objectives of macroeconomic study.
LO1.3: Compare and contrast the different schools of macroeconomic thought: classical, Keynesian, and monetarist.
LO1.4: Analyze the relationship between microeconomic thinking and macroeconomic models and discuss the balance between short-term stabilization and long-term economic growth.

CO2: Define national income and various accounting methods, and assess the limitations and significance of GDP as an indicator of economic health and social welfare.
LO2.1: Understand the importance of measuring economic activity and the various approaches to national income accounting.
LO2.2: Define and differentiate between GDP and GNP, and explain the concepts of stocks and flows.
LO2.3: Describe the circular flow of income in an economy and the methods of measuring GDP: income method, expenditure method, and value added method.
LO2.4: Evaluate the limitations of GDP as a measure of economic activity, including its relationship with the underground economy and social welfare, and understand the significance of sustainable accounting.

CO3: Analyze the components and determinants of aggregate demand and aggregate supply, and understand how these factors interact to influence overall economic activity.

LO3.1: Define aggregate demand and its components, and identify the determinants of consumption, government spending, firm investment, and net exports.
LO3.2: Explain the consumption function, including marginal propensity to consume (MPC) and average propensity to consume (APC), and the determinants of saving, including marginal propensity to save (MPS) and average propensity to save (APS).
LO3.3: Analyze the investment function and the factors that influence investment demand.
LO3.4: Describe the concept of aggregate supply, its determinants, and the factors that can shift the aggregate supply curve.

CO4: Critically evaluate the classical and Keynesian theories of output and employment determination, and apply these concepts to understand historical and contemporary economic fluctuations.

LO4.1: Understand the classical theory of output and employment determination and Say's law of markets.
LO4.2: Analyze the Great Depression of the 1930s and the failure of the classical school, leading to the Keynesian revolution.
Lo4.3: Explain the Keynesian theory, including the equality between output and aggregate demand, the concept of the multiplier, and the determination of equilibrium income.
Lo4.4: Discuss the changes in equilibrium income and the factors that can lead to such changes.

CO5: Explain the functions and types of money, determinants of money supply and demand, and the determination of equilibrium rate of interest.

LO5.1: Define money and its various functions, and describe the different types of money, including fiat money, fiduciary money, metallic money, and paper money.
LO5.2: Explain the supply of money and the role of the central bank, and understand the different measures of money as defined by the RBI.
LO5.3: Discuss the demand for money and the quantity theory of money, including the motives for holding money: transaction, precautionary, and speculative.
LO5.4: Analyze the determination of the equilibrium rate of interest using the Keynesian liquidity preference theory.

UNITS	CONTENTS	L	T	P	Total Hours
I	**Introduction** Microeconomics vs Macroeconomics; Evolution of Macroeconomics as a separate discipline; Nature and scope of macroeconomics; Schools of macroeconomic thought – the classical, the Keynesian and the monetarist; Microeconomic thinking and Macroeconomic models; Objectives of Macroeconomics – short term vs long run, economic growth vs stabilization	10			
II	**National Income Accounting** Measuring the value of economic activity and its importance; Meaning of GDP and GNP; Stocks and flows; Circular flow in an economy; Approaches to measuring GDP – Income method, expenditure method, and value added method; GDP deflator; Real GDP vs Nominal GDP; GDP and the underground economy; GDP and Social welfare; Sustainable accounting and its significance	12			
III	**Introduction to Aggregate Demand and Aggregate Supply** Concept of aggregate demand; Components and determinants of aggregate demand –consumption, government spending, firms' consumption, and net exports; Consumption function – MPC and APC; Saving – determinants of saving – MPS and APS; Investment – determinants of investment demand; investment function; Concept of Aggregate supply; determinants of aggregate supply; factors shifting aggregate supply	10			

IV	**Determination of output and employment** The classical theory of determination of output and employment; Say's law of markets; The Great Depression of 1930s – failure of classical school and the Keynesian revolution; the Keynesian theory – equality between output and aggregate demand, the concept of multiplier, equilibrium income, changes in equilibrium income	14				
V	**Introduction to money and theory of interest** Definition of money; Functions of money; Types of money – money in barter system, fiat money, fiduciary money, metallic money, paper money; Supply of money – Meaning and the role of central bank (money through credit creation not to be included), Vertical money supply curve, Measures of Money (RBI definitions); Demand for money – Meaning; The quantity theory of Money; Motives of demand for money – Transaction, Precautionary and Speculative; Determination of the equilibrium rate of interest – the Keynesian liquidity preference theory	14				
	Total	**60**				

Where,   L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: 40 Marks

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive Map of Course Outcomes with Bloom's Taxonomy:

Cognitive knowledge dimension	Cognitive process dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge						
Conceptual Knowledge		CO1, CO2, CO3, CO4, CO5	CO3, CO4, CO5	CO3, CO4, CO5	CO3, CO4	
Procedural Knowledge		CO2, CO3, CO4, CO5	CO3, CO4, CO5	CO3, CO4,CO5		
Metacognitive Knowledge						

Mapping of COs with POs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓		✓				✓		✓	
CO2	✓	✓	✓	✓	✓	✓				
CO3	✓	✓	✓	✓			✓		✓	
CO4	✓	✓	✓	✓		✓	✓			
CO5	✓	✓	✓	✓	✓		✓		✓	

SUGGESTED READINGS:

- Dornbusch, R., Fischer, S. &Startz, R. (2018). *Macroeconomics* (12thed.). McGraw Hill Education
- Froyen, R.T. (2014). *Macroeconomic Theories and Policies* (10thed.). Pearson Education
- Mankiw, N.G. (2007). *Macroeconomics*(6th ed.). Worth Publishers
- Sikdar, S. (2006). *Principles of Macroeconomics*. Oxford University Press

Title of the Course	:	**Elementary Macroeconomics**
Course Code	:	**MINECO2**
Nature of the Course	:	**Minor**
Total Credits	:	**04**
Distribution of Marks:		**60 (End Sem) + 40 (In-Sem)**

Course Objectives:
1. To help students know the meaning of macroeconomics and how the overall production of economy is computed;
2. To familiarize the students with concepts of aggregate demand and aggregate supply;
3. To introduce the students with the classical and Keynesian theories of employment and output determination; and
4. To help students understand the meanings of money and other concepts related to money.

Course Outcomes: After successful completion of this course students will be able to-
CO1: Describe the distinction between microeconomics and macroeconomics, including the development and objectives of macroeconomic theory.
   LO1.1: Explain the distinctions between microeconomics and macroeconomics.
   LO1.2: Trace the historical evolution of macroeconomics as a distinct discipline.
   LO1.3: Identify and describe the primary schools of macroeconomic thought, including classical, Keynesian, and monetarist perspectives.
   LO1.4: Discuss the objectives of macroeconomics in terms of short-term stabilization and long-term economic growth.
CO2: Gain a comprehensive understanding of how economic activity is measured and the significance of national income accounting.
   LO2.1: Define and differentiate between GDP and GNP, including the concepts of stocks and flows.
   LO2.2: Illustrate the circular flow of income in an economy.
   LO2.3: Compare and contrast the income, expenditure, and value-added approaches to measuring GDP.
   LO2.4: Evaluate the limitations of GDP as a measure of economic activity and its relationship to social welfare.
CO3: Define the concepts of aggregate demand (AD) and aggregate supply (AS) including the identification of factors responsible for the shifts of AD and AS.
   LO3.1: Define aggregate demand and explain its components and determinants.
   LO3.2: Analyze the consumption function, including the concepts of MPC and APC.
   LO3.3: Discuss the determinants of saving and investment, including the functions of MPS, APS, and investment demand.
   LO3.4: Explain the concept of aggregate supply and identify factors that cause shifts in the aggregate supply curve.
CO4: Compare and contrast the classical and Keynesian theories of output and employment determination and their relevance to economic equilibrium.
   LO4.1: Describe the classical theory of output and employment determination and Say's law of markets.
   LO4.2: Analyze the impact of the Great Depression on the classical school and the rise of Keynesian economics.
   LO4.3: Explain the Keynesian theory of equilibrium between output and aggregate demand, including the concept of the multiplier.
   LO4.4: Calculate equilibrium income and understand its implications for macroeconomic stability.

CO5: Elaborate the role of money in the economy, the various types and measures of money, and the causes and effects of inflation.

LO5.1: Define money and its functions, and differentiate between different types of money (fiat, fiduciary, metallic, paper).

LO5.2: Identify and explain the various measures of money supply (M0, M1, M2, M3, M4).

LO5.3: Discuss the quantity theory of money and its implications for prices and inflation.

LO5.4: Analyze the causes and types of inflation, its social costs and benefits, and the relationship between nominal and real interest rates.

UNITS	CONTENTS	L	T	P	Total Hours
I	**Introduction** Microeconomics vs Macroeconomics; Evolution of Macroeconomics as a separate discipline; Nature and scope of macroeconomics; Schools of macroeconomic thought – the classical, the Keynesian and the monetarist; Microeconomic thinking and Macroeconomic models; Objectives of Macroeconomics – short term vs long run, economic growth vs stabilization	9	1		10
II	**National Income Accounting** Measuring the value of economic activity and its importance; Meaning of GDP and GNP; Stocks and flows; Circular flow in an economy; Approaches to measuring GDP – Income method, expenditure method, and value added method; GDP deflator; Real GDP vs Nominal GDP; GDP and the underground economy; GDP and Social welfare;	12			
III	**Introduction to Aggregate Demand and Aggregate Supply** Concept of aggregate demand; Components and determinants of aggregate demand –consumption, government spending, firms' consumption, and net exports; Consumption function – MPC and APC; Saving – determinants of saving – MPS and APS; Investment – determinants of investment demand; investment function; Concept of Aggregate supply; determinants of aggregate supply; factors shifting aggregate supply	9	1		10
IV	**Determination of output and employment** The classical theory of determination of output and employment; Say's law of markets; The Great Depression of 1930s – failure of classical school and the Keynesian revolution; the Keynesian theory – equality between output and aggregate demand, the concept of multiplier, equilibrium income	12	2		14

V	**Introduction to money and inflation** Definition of money; Functions of money; Types of money – money in barter system, fiat money, fiduciary money, metallic money, paper money; Measures of Money – M0, M1, M2,M3, and M4; Quantity theory of money; Money, prices and inflation; Inflation – meaning, types and causes; social costs of inflation; Benefit of inflation; Interest rates – nominal vs real; Nominal interest rate and demand for money	12	2		14
	Total			54	6		60

Where,   *L: Lectures*   *T: Tutorials*   *P: Practicals*

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive Map of Course Outcomes with Bloom's Taxonomy:

Cognitive knowledge dimension	Cognitive process dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	CO1	CO1				
Conceptual Knowledge	CO1, CO2, CO3	CO2, CO3, CO4, CO5	CO3, CO5	CO3, CO4, CO5		
Procedural Knowledge		CO3, CO4, CO5	CO3, CO4	CO3, CO4, CO5	CO4, CO5	
Metacognitive Knowledge						

Mapping of COs with POs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓	✓				✓	✓		
CO2	✓	✓	✓			✓	✓	✓	✓	
CO3	✓	✓	✓	✓			✓	✓	✓	
CO4	✓	✓	✓	✓				✓	✓	
CO5	✓	✓	✓	✓				✓	✓	

SUGGESTED READINGS:

- Dornbusch, R., Fischer, S. &Startz, R. (2018). *Macroeconomics* (12[th]ed.). McGraw Hill Education
- Froyen, R.T. (2014). *Macroeconomic Theories and Policies* (10[th]ed.). Pearson Education
- Mankiw, N.G. (2007). *Macroeconomics*(6[th]ed.). Worth Publishers
- Sikdar, S. (2006). *Principles of Macroeconomics*. Oxford University Press

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 2ND SEMESTER

Course Title	:	**Contemporary Indian Economy**
Course Code	:	**GECECO2**
Nature of Course	:	**Generic Elective**
Total Credits	:	**03**
Distribution of Marks	:	**60 (End-Sem.) + 40 (In-Sem.)**

Course Objectives: The aim of this course is to acquaint the students with the contemporary issues of Indian Economy. Once the students complete the course, they will be able to deal with various issues related to Indian Economy which may help them in further academic endeavours.

Course Outcomes: On completion of this course students will be able to -
CO1: Analyze the key aspects of India's industrial policies, infrastructure development, and their impact on business performance.
    L.O 1.1: Describe the changes in the New Industrial Policy and the impacts of public sector reforms, privatization, and disinvestment.
    L.O 1.2: Evaluate the factors influencing the Ease of Doing Business in India and the performance of MSMEs.
    L.O 1.3: Assess the role of MNCs in India's industrial development and initiatives like "Make in India."
    L.O.1.4: Analyze the development of infrastructure sectors such as health, education, transportation, and power.
CO2: Understand and evaluate the fiscal and monetary policies of India, including recent reforms and their implications on the economy.
    L.O. 2.1: Explain the key aspects of fiscal reforms including Public Debt Management, FRBM Act, and GST.
    L.O. 2.2: Discuss the recommendations of the latest Finance Commissions and their implications.
    L.O 2.3: Analyze the organization of India's money market and recent financial sector reforms.
    L.O 2.4: Review the monetary policy of RBI, the role and functions of SEBI, and the changing roles of the Reserve Bank of India, foreign banks, and non-banking financial institutions.
CO3: Examine the direction, composition, and policies related to India's foreign trade and balance of payments since 1991.
    L.O. 3.1: Analyze the direction and composition of India's foreign trade.
    L.O. 3.2: Discuss the trends in India's balance of payments since 1991, focusing on current and capital account convertibility.
    L.O. 3.3: Evaluate the trends and patterns of FDI and FPI in India.
    L.O. 3.4: Explain India's EXIM policy and the new Foreign Trade Policy.
CO4: Analyze key socio-economic issues in India, including demographic trends, urbanization, the impact of COVID-19, and agricultural policies.
    L.O 4.1: Discuss India's population policy and the concept of demographic dividend.
    L.O4.2: Evaluate the state of human development in India and the initiatives for urbanization such as the Smart City Mission.
    L.O. 4.3: Analyze the economic and social impact of the COVID-19 pandemic and initiatives like Atma Nirbhar Bharat Abhiyan.
    L.O 4.4: Examine agricultural price policy, subsidies, the public distribution system, and initiatives like MGNREGA aimed at doubling farmers' incomes and promoting the non-farm sector.

UNITS	CONTENTS	L	T	P	Total Hours
I	**Industry, Business and Infrastructure** New Industrial Policy and changes; Public sector reforms; Privatization and Disinvestment. Ease of Doing Business; Performance of MSMEs; Role of MNC's in Industrial Development; Make in India, infrastructure development: Health, Education, Transportation and Power.	10			10
II	**Fiscal Policy and Monetary Policy** Fiscal Reforms - Public Debt Management; Fiscal Responsibility and Budget Management (FRBM) Act; GST, Recommendations of the latest Finance Commissions. Organisation of India's Money Market; Financial Sector Reforms; Review of Monetary Policy of RBI, Role and functions of SEBI in India; Changing roles of the Reserve Bank of India; Foreign banks and Non-banking Financial Institutions.	13			13
III	**Foreign trade** Direction and composition of India's Foreign Trade; Balance of Payments since 1991 (trends); Current and Capital Account Convertibility; FDI and FPI– Trends and Patterns; EXIM Policy, India's new Foreign Trade Policy	10			10
IV	**Other Relevant Issues** India's population policy; Demographic Dividend; human development in India. Urbanization and Smart City Mission; Impact of COVID-19 Pandemic; *Atma Nirbhar Bharat Abhiyan* Agricultural Price policy and Subsidies; Public Distribution System; Doubling Farmers' Incomes , MGNREGA; Non-farm sector.	12			12
TOTAL		45	-	-	45

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive Mapping of COs with blooms taxonomy

Cognitive Knowledge Dimensions	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	CO1,CO2, CO3,C04	CO1,CO2,CO3, CO4			CO2	
Conceptual Knowledge		CO1,CO2,CO3, CO4	CO4	CO1,CO3	CO2,CO3	
Procedural Knowledge				CO3	CO3	
Meta-Cognitive Knowledge						

Mapping of Course outcomes with Programme Outcomes:

POs/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO I	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO II	✓	✓	✓	✓		✓	✓	✓	✓	✓
COIII	✓	✓	✓	✓		✓	✓	✓	✓	✓
COIV	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Suggested Readings:

- Mishra S.K & V.K Puri (2001) "Indian Economy and –Its development experience", Himalaya Publishing House
- Dutt Ruddar and K.P.M Sundaram (2001): Indian Economy, S Chand & Co. Ltd. New 53 Delhi
- Bardhan, P.K. (9th Edition) (1999), The Political Economy of Development in India, Oxford University Press, New Delhi.
- Rakesh Mohan, 2010, ―India's Financial Sector and Monetary Policy Reforms, in Shankar Acharya and Rakesh Mohan, (ed.), *India's Economy: Performances and Challenges: Development and Participation*, Oxford University Press
- Shankar Acharya, 2010, ―Macroeconomic Performance and Policies, in Shankar AcharyaandRakesh Mohan, (ed.), *India's Economy: Performances and Challenges: Development and Participation*, Oxford University Press
- Pulapre Balakrishnan, Ramesh Golait and Pankaj Kumar, 2008, ―Agricultural Growth in India Since1991,*RBI DEAP Study no.27*
- Kunal Sen, 2010,―Trade, Foreign Direct Investment and Industrial Transformation in India, ïn Premachandra Athukorala,(ed.), *The Rise of Asia*, Routledge
- Frankel Francine R., (2004), India's Political Economy, Delhi. OUP Jenkins Rob, 2000, Economic Reform in India, Cambridge, CUP

- J. Dennis Rajakumar, 2011,―Size and Growth of Private Corporate Sector in Indian Manufacturing, *Economic and Political Weekly,* April
- Arvind Subramanian*, India'sTurn, Understanding The Economic Transformation*, Oxford University Press.
- Jalan, B. (1996), India's Economic Policy- Preparing for the Twenty First Century, Viking, New Delhi
- Joshi Vijaya and L.M.D. Little, (1998), India's Economic Reform 1991-2001, Delhi
- Kaushik Basu, (ed.), *India's Emerging Economy, Performance and Prospects in the 1990's and Beyond,* Oxford University Press
- Kapila Uma: Indian Economy: Policies and Performances, Academic Foundation
- Mukharji Rahul (ed.) (2007), India's Economic Transition: The Politics of Reforms, edited by Rahul Mukherji, Oxford University Press , New Delhi
- Stuart and John Harris, (2000), Reinventing India, Cambridge Polity
- Relevant institutional reports and policy documents (latest)

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 3ᴿᴰ SEMESTER

Course Title	:	**Introductory Mathematical Methods for Economics**
Course Code	:	**ECOC3**
Nature of Course	:	**Major**
Total Credits	:	**4 credits**
Distribution of Marks	:	**60 (End-Sem.) + 40 (In-Sem.)**

Course Objectives:

The objective of this course is to transmit the knowledge of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this syllabus. In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general.

Course Outcomes: After successful completion of this course students will be able to-
CO1: Explain the foundational concepts like sets, relations and functions, evaluate limits and continuity, and apply these concepts to solve numerical problems.
 LO1.1: Describe different types of sets and perform set operations.
 LO1.2: Explain and construct ordered pairs, Cartesian products, and relations.
 LO1.3: Explain functions, their properties and types, and graph different types of functions
 LO1.4: Evaluate limits and continuity of functions
CO2: Apply matrices and determinants in solving linear equations and performing static and dynamic input-output analysis.
 LO2.1: Perform elementary matrix operations, including addition and multiplication.
 LO2.2: Determine the rank of a matrix and calculate determinants.
 LO2.3: Compute the inverse of a matrix.
 LO2.4: Apply Cramer's rule to solve systems of linear equations.
 LO2.5: Conduct static and dynamic input-output analysis using matrices
CO3: Apply rules of differentiation to analyze economic functions, including demand, cost, and revenue, and interpret their economic significance
 LO3.1: Apply differentiation rules to functions with one independent variable.
 LO3.2: Use derivatives in economic applications such as elasticity of demand and cost/revenue functions.
 LO3.3: Explain the relationship between average and marginal costs using derivatives.
 LO3.4: Compute second and higher-order derivatives and apply them to economic problems
CO4: Use different techniques of integration to solve economic problems, including calculation of producer's and consumer's surplus.
 LO4.1: Understand and apply basic rules of integration.
 LO4.2: Use various techniques of integration including substitution, integration by parts, and partial fraction decomposition.
 LO4.3: Derive total functions from marginal functions through integration.
 LO4.4: Evaluate definite integrals and apply them to compute producer's and consumer's surplus.
CO5: Understand and solve first order linear differential equations and exact differential equations, with applications to economic problems.
 LO1: Identify and solve first order linear differential equations using standard methods and interpret their solutions in the context of economic problems.
 LO2: Determine and solve exact differential equations and apply these solutions to relevant economic scenarios.

UNITS	CONTENTS	L	T	P	Total Hours
I	**Preliminaries** Set: types and operations; Ordered pairs, Cartesian products and relations. Functions and their properties and graphs; Types of functions-polynomial, rational, exponential, and logarithmic; Limit and Continuity of a function.	10	1		12
II	**Matrix, determinant and applications** Matrices-elementary operations: matrix addition, product, rank of a matrix, determinants and their properties, inverse of a matrix, Application of Cramer's rule for solution of a system of linear equations; Input-output analysis: static and dynamic.	10	3		12
III	**Derivatives of Functions of One Independent Variable** Rules of differentiation for a function with one independent variable; Economic application of derivatives; Elasticity of demand, Cost and Revenue functions; Relation between Average and Marginal Costs, Second and higher order derivatives and application in Economics.	10			12
IV	**Integration of functions** Basic Rules of integration; Techniques of integration-substitution rule, integration by parts and partial fraction; Derivation of total functions from marginal functions; Definite integrals and its applications: Producer's surplus and consumer's surplus.	10	5		12
V	**Differential Equation** First order linear differential equations; exact differential equation, economic applications.	5	4		12
TOTAL		45	15		60

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations - **20 Marks**
- Others (Any two) - **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive Mapping of Course Outcomes with Bloom's Taxonomy:

Cognitive knowledge dimension	Cognitive process dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge						
Conceptual Knowledge	CO1, CO2	CO1, CO2, CO3, CO4, CO5	CO1, CO2, CO3, CO4	CO2, CO3, CO4, CO5	CO1, CO4	
Procedural Knowledge		CO1, CO2, CO3, CO4, CO5	CO1, CO2, CO3, CO4, CO5	CO2, CO3, CO4, CO5	CO1, CO4	
Metacognitive Knowledge						

Mapping of Course outcomes with Programme Outcomes:

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓		✓	✓		✓	✓	✓	
CO2	✓	✓		✓	✓		✓	✓	✓	✓
CO3	✓	✓	✓	✓	✓		✓	✓	✓	
CO4	✓	✓	✓	✓	✓		✓	✓	✓	
CO5	✓	✓	✓	✓	✓		✓	✓	✓	

SUGGESTED READINGS:
- K. Sydsaeter and P. Hammond, *Mathematics for Economic Analysis*, Pearson Educational Asia: Delhi, 2002.
- Chiang, A.C.: *Fundamental Methods of Mathematical Economics*, Fourth edition, McGraw Hill 2005.
- Hoy, M., J. Livernois, C. McKena, R.Rees, and T. Stengos: *Mathematics for Economics*, PHI Publishers.
- Barua, Srinath: *Basic Mathematics and Its Applications in Economics*, Second Edition, Laxmi Publications 2013.

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 3RD SEMESTER

Course Title	:	**Indian Economy- Trends in Economic Indicators**
Course Code	:	**ECOC4**
Nature of Course	:	**Major**
Total Credits	:	**4 credits**
Distribution of Marks	:	**60 (End-Sem.) + 40 (In-Sem.)**

Course Objectives: With appropriate analytical frameworks, the aim of this course is to review major trends in economic indicators in India in the post-independence period, with particular emphasis on paradigm shifts and turning points. Emphasis needs to be given in capturing the emerging issues.

Course Outcomes: After successful completion of this course students will be able to-

CO1: To evaluate the trajectory of India's economic development since independence and analyze the shifts in development strategies from import substitution to post-1991 globalization.
    LO 1.1: Identify the key features of the Indian economy on the eve of independence.
    LO 1.2: Compare and contrast the goals and components of alternative development strategies employed by India since independence.
    LO 1.3: Analyze the impact of import substitution and protectionist policies on India's economic development.
    LO 1.4: Evaluate the effectiveness and challenges of the post-1991 globalization strategies, including stabilization and structural adjustment packages.
CO2: To explore the interplay between population dynamics and human development indicators in the context of India, and assess India's standing in the global human development landscape.
    LO 2.1: Describe the demographic features and trends in India, including population size, growth rates, and age-sex composition.
    LO 2.2: Explain the concept of demographic dividend and its implications for economic development in India.
    LO 2.3: Evaluate the effectiveness of the National Population Policy in addressing demographic challenges.
    LO 2.4: Assess India's human development record using indicators such as the Human Development Index and compare it with global benchmarks.
CO3: To analyze the concepts of poverty and inequality in the Indian context, and examine the strategies and policies aimed at poverty alleviation and reducing income inequality.
    LO 3.1: Define and explain the concept of poverty and its incidence in India.
    LO 3.2: Interpret poverty estimates and trends over time, and analyze the relationship between economic growth and poverty reduction.
    LO 3.3: Identify the causes of income inequality in India and assess its magnitude and nature.
    LO 3.4:Evaluate government policies and measures aimed at reducing poverty and addressing income inequality in India.
CO4: To examine the dynamics of India's labour force, occupational patterns, and unemployment trends, and analyze the role of government policies in addressing unemployment challenges.
    LO 4.1: Describe the growth and structure of India's labour force and its relationship with economic development.
    LO 4.2: Analyze the types and nature of unemployment prevalent in India.
    LO 4.3: Evaluate the changing dimensions of unemployment and employment patterns over time.
    LO 4.4: Assess the effectiveness of government policies and measures in addressing unemployment challenges and promoting inclusive growth.
CO5: To analyze India's economic interactions with the world economy and conduct a comparative assessment of India's development experience with high-performing Asian economies.
    LO 5.1: Describe India's economic integration with the global economy and identify key drivers of international economic interactions.

LO 5.2: Compare and contrast India's development strategies with those of high-performing Asian economies such as Singapore, South Korea, and Taiwan.
LO 5.3: Analyze the factors contributing to the economic success of high-performing Asian economies and their relevance to India's development trajectory.
LO 5.4: Evaluate the lessons learned from international comparisons to inform India's future economic policies and strategies.

UNITS	CONTENTS	L	T	P	Total Hours
I	**Economic Development since Independence** Indian Economy on the eve of independence- An overview; Alternative development strategies since independence- goal of self-reliance based on import substitution and protection, the post-1991 globalization strategies based on stabilization and structural adjustment packages..	10			10
II	**Population and Human Development** Demographic features and trends- Size and growth rates of population, trends in birth and death rates, Density of population, Age and Sex Composition, Population as a factor of economic development, Demographic Dividend; National Population Policy; Human Development in India-Human Development indicators, Human Development Index, India's human Development record in global perspective.	14			14
III	**Poverty and inequality** Poverty- Concept and Incidence of Poverty in India, Poverty estimates, Growth and Poverty, Strategy of Poverty Alleviation; Inequality-Income inequality in India: Magnitude and Nature, Growth and Inequality, Causes of income inequality, Government policies and measures.	10			10
IV	**Labour force, occupational pattern and unemployment** Labour force growth, occupational structure and economic development, occupational distribution of labour force; Unemployment-Nature and types of unemployment in India, Magnitude, Changing dimensions of unemployment and employment, Causes of unemployment, Government policies and measures.	14			14
V	**International Comparisons** India's economic interaction with the world economy, A comparative assessment of India's development experience with high performing Asian economies- Singapore, South Korea and Taiwan	12			12
TOTAL		60			60

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

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Cognitive Mapping of COs with blooms taxonomy						
Cognitive Knowledge Dimensions	**Remember**	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Create**
Factual Knowledge	CO1, CO2, CO3, CO4, CO5	CO2, CO3, CO4		CO2, CO3, CO4	CO3, CO4	
Conceptual Knowledge	CO2, CO3	CO1, CO2	CO3	CO2, CO3, CO4	CO1, CO2, CO5	
Procedural Knowledge			CO3			
Meta-Cognitive Knowledge						

Mapping of COs with POs										
CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓	✓		✓	✓	✓	✓	✓	
CO2	✓	✓	✓		✓	✓	✓	✓	✓	
CO3	✓	✓	✓	✓	✓	✓		✓	✓	✓
CO4	✓	✓	✓	✓	✓	✓		✓	✓	✓
CO5	✓	✓	✓			✓	✓	✓	✓	

Suggested Readings:
- Mishra S.K & V.K Puri (2001) "Indian Economy and –Its development experience", Himalaya Publishing House.
- Dutt Ruddar and K.P.M Sundaram (2001): Indian Economy, S Chand & Co. Ltd. New 53 Delhi
- Jalan, B. (1996), India's Economic Policy- Preparing for the Twenty First Century, Viking, New Delhi
- Joshi Vijaya and L.M.D. Little, (1998), India's Economic Reform 1991-2001, Delhi
- Shankar Acharya, 2010, ―Macroeconomic Performance and Policies, in Shankar Acharya and Rakesh Mohan, (ed.), *India's Economy: Performances and Challenges: Development and Participation*, OxfordUniversityPress.
- Kaushik Basu and A.Maertens, (ed.), 2013. *The New Oxford Companion to Economics in India*, Oxford University Press.

- Bimal Jalan*(ed), The Indian Economy, Problems and Prospects*, Penguin Books Ltd.
- Arvind Subramanian*, India'sTurn, Understanding The Economic Transformation*, Oxford University Press.
- Kapila Uma: Indian Economy: Policies and Performances, Academic Foundation
- Kapila Uma: Indian Economy Since Independence, Academic Foundation
- Kaushik Basu, (ed.), *India's Emerging Economy, Performance and Prospects in the 1990's and Beyond,* Oxford University Press.
- Relevant institutional reports and policy documents (latest)

Course Title	:	**Basics of Indian Economy**
Course Code	:	**MINECO3**
Nature of Course	:	**Minor**
Total Credits	:	**4**
Distribution of Marks	:	**60(End-Sem.)+40(In-Sem.)**

Course Objectives: With appropriate analytical frameworks, the aim of this course is to review major trends in economic indicators in India in the post- Independence period, with particular emphasis on paradigm shifts and turning points. Emphasis needs to be given in capturing the emerging issues.

Course Outcomes: After successful completion of this course students will be able to-

CO1: Understand and evaluate the evolution of development strategies in India since independence, focusing on self-reliance, import substitution, protectionism, and post-1991 globalization reforms.
   LO1.1: Describe the key features and goals of India's development strategy immediately after independence.
   LO1.2: Analyze the impact of import substitution and protectionist policies on India's economic development.
   LO1.3: Explain the shift towards globalization post-1991 and the structural adjustment packages implemented.
   LO1.4: Critically evaluate the outcomes of the different development strategies on India's economic growth and development.
CO2: Assess the demographic characteristics and trends in India, including population growth, composition, and policy implications.
   LO2.1: Explain the size and growth rates of India's population and their implications.
   LO2.2: Analyze the trends in birth and death rates in India and their demographic impact.
   LO2.3: Discuss the concept of demographic dividend and its potential in India.
   LO2.4: Evaluate the National Population Policy and its effectiveness in addressing demographic challenges.
CO3: Analyze the nature, incidence, and strategies for alleviating poverty and income inequality in India.
   LO3.1: Define and measure the concept and incidence of poverty in India.
   LO3.2: Assess the relationship between economic growth and poverty levels.
   LO3.3: Identify the causes and magnitude of income inequality in India.
   LO3.4: Evaluate the effectiveness of government policies and measures aimed at reducing poverty and inequality.
CO4: Examine the structure and dynamics of the labor force, occupational patterns, and unemployment in India.
   LO4.1: Describe the growth and distribution of the labor force in India.
   LO4.2: Analyze the occupational structure and its relation to economic development.
   LO4.3: Discuss the nature, types, and magnitude of unemployment in India.
   LO4.4: Evaluate government policies and measures to address unemployment and their effectiveness.
CO5: Evaluate human development indicators and India's performance in human development at both national and global levels.
   LO5.1: Define key human development indicators and their importance.
   LO5.2: Compare human development across different states in India.
   LO5.3: Assess India's human development record in a global context.
   LO5.4: Analyze the factors contributing to variations in human development across different regions and states in India.

UNITS	CONTENTS	L	T	P	Total Hours
I	**Development strategies since Independence** India as a developing economy, Alternative development strategies since independence- goal of self-reliance based on import substitution and protection, the post 1991globalization strategies based on stabilization and structural adjustment packages.				10
II	**Demographic features and trends** - Size and growth rates of population, trends in birth and death rates, Density of population, Age and Sex Composition, Demographic Dividend; National Population Policy				14
III	**Poverty and inequality** Poverty-Concept and Incidence of Poverty in India, Poverty estimates, Growth and Poverty, Strategy of Poverty Alleviation; Inequality-Income inequality in India: Magnitude and Nature, Growth and Inequality, Causes of income inequality, Government policies and measures.				10
IV	**Labour force, occupational pattern and unemployment** Labour force growth, occupational structure and economic development, occupational distribution of labour force; Unemployment-Nature and types of unemployment in India, Magnitude, Changing dimensions of unemployment And employment, Causes of unemployment, Government policies and measures.				14
V	**Human development** Human Development in India- Human Development indicators, Human Development across states; India's human Development record in global perspective.				12
TOTAL					60

Where,   L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: 40 Marks

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive Mapping of COs with blooms taxonomy						
Cognitive Knowledge Dimensions	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	CO1, CO2, CO3, CO4, CO5	CO2		CO2, CO3, CO4, CO5	CO2, CO3, CO5	
Conceptual Knowledge	CO1	CO1, CO3	CO3	CO1, CO2, CO3, CO4	CO1, CO2, CO3, CO4	
Procedural Knowledge			CO3			
Meta-Cognitive Knowledge						

Mapping of COs with POs										
POs/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓		✓			✓	✓	✓	
CO2	✓	✓	✓	✓		✓		✓	✓	
CO3	✓	✓	✓	✓		✓		✓	✓	
CO4	✓	✓	✓	✓				✓	✓	✓
CO5	✓		✓	✓	✓		✓	✓	✓	✓

Suggested Readings:

- Mishra S.K & V.K Puri (2001) "Indian Economy and –Its development experience", Himalaya Publishing House.
- Dutt Ruddar and K.P.M Sundaram (2001): Indian Economy, S Chand & Co. Ltd. New 53 Delhi
- Jalan, B. (1996), India's Economic Policy- Preparing for the Twenty First Century, Viking, New Delhi
- Joshi Vijaya and L.M.D. Little, (1998), India's Economic Reform 1991-2001, Delhi
- Shankar Acharya, 2010, ―Macroeconomic Performance and Policies, in Shankar Acharya and Rakesh Mohan, (ed.), *India's Economy: Performances and Challenges: Development and Participation*, OxfordUniversityPress.
- Kaushik Basu and A.Maertens, (ed.), 2013. *The New Oxford Companion to Economics in India*, Oxford University Press.
- Bimal Jalan*(ed), The Indian Economy, Problems and Prospects*, Penguin Books Ltd.
- Arvind Subramanian*, India'sTurn, Understanding The Economic Transformation*, Oxford University Press.
- Kapila Uma: Indian Economy: Policies and Performances, Academic Foundation
- Kapila Uma: Indian Economy Since Independence, Academic Foundation
- Kaushik Basu, (ed.), *India's Emerging Economy, Performance and Prospects in the 1990's and Beyond,* Oxford University Press.
- Relevant institutional reports and policy documents (latest)

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 3RD SEMESTER

Course Title	:	**Basic Development Economics**
Course Code	:	**GECECO3**
Nature of Course	:	**Generic Elective**
Total Credits	:	**3 credits**
Distribution of Marks	:	**60 (End-Sem.) + 40 (In-Sem.)**

Course Objective:

The objective of this course is to enable the students to learn about some of the key concepts related to growth and development which would help to understand intricacies of growth and development later.

Course Outcomes: After successful completion of this course students will be able to-

CO1: Understand and analyze the concepts of development and underdevelopment, including various theories of economic growth and growth strategies.
>   LO1.1: Distinguish between the concepts of economic growth and development, and explain the development gap.
>   LO1.2: Identify the key features of underdevelopment and the processes of structural change in developing economies.
>   LO1.3: Compare and contrast the major theories of economic growth, including Classical, Harrod-Domar, Lewis, Neo-Classical, and New Growth theories.
>   LO1.4: Evaluate different growth strategies such as balanced growth, unbalanced growth, and the critical minimum thesis.

CO2: Assess the various factors influencing development, different measures of development, and concepts and measures of poverty and inequality.
>   LO2.1: Analyze the role of agriculture, capital, technology, and institutions in the development process.
>   LO2.2: Explain the relationship between population growth and economic development.
>   LO2.3: Compare different measures of development, including GNP per capita, PQLI, and HDI.
>   LO2.4: Evaluate various concepts and measures of poverty and inequality and their implications for development.

CO3: Explore the concepts of capabilities and functionings, human development, and the link between environment and development, including sustainable development and climate change.
>   LO3.1: Describe the concepts of capabilities and functionings and their relevance to human development.
>   LO3.2: Assess the environmental challenges faced by developing and developed countries and their impact on sustainable development.
>   LO3.3: Analyze the linkage between environmental issues such as global warming and climate change and their impact on agriculture and the economy.
>   LO3.4: Evaluate policy options for addressing environmental challenges in both developing and developed countries, considering the SDGs.

CO4: Understand the relationship between trade, globalization, and economic development, including trade policies and the historical perspective of globalization.
>   LO4.1: Explain the role of trade in economic growth and its potential as an engine of growth.
>   LO4.2: Compare import substitution and export promotion as trade policy strategies.
>   LO4.3: Analyze the Terms of Trade with a focus on the Prebisch-Singer Hypothesis.
>   LO4.4: Discuss the historical perspective of globalization and identify the key issues and challenges associated with globalization.

UNITS	CONTENTS	L	T	P	Total Hours
I	**Development and Underdevelopment:** Growth vs Development; Development gap; Features of underdevelopment and structural change; Theories of Economic growth- Classical, Harrod-Domar, Lewis, Neo-Classical and New Growth theory Growth strategies: Balanced growth, Unbalanced growth, critical minimum thesis	11			11
II	**Issues of Development** : I Factors in the development- Agriculture, Capital, Technology and Institution; Population growth and Economic Development; Measures of Development- GNP per capita, PQLI, HDI; Various concepts and measures of poverty and inequality	12			12
III	**Issues of Development II:** Capabilities and Functionings; Human development; Environment-Development Linkage; Environmental problems of the developing and the developed countries; Sustainable development;SDGs; Global Warming and Climate Change; Impact of climate change on agriculture and on Economy; Policy options with developing and developed countries	12			12
IV	**Trade, Globalization and Development:** Trade and Economic Growth; Trade as an engine of growth; Trade Policy: Import substitution vs Export Promotion; Terms of Trade: Prebisch-Singer Hypothesis Globalization in historical perspective; Issues and Challenges of Globalization	10			10
TOTAL		45			45

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
    - Home assignment
    - Viva voce
    - Seminar
    - Group discussion
    - Quiz

Cognitive Mapping of COs with blooms taxonomy						
Cognitive Knowledge Dimensions	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	CO2	CO2,				
Conceptual Knowledge	CO2	CO1,CO2,CO3,CO4	CO2	CO2,CO3,CO4	CO1,CO2,CO3	
Procedural Knowledge						
Meta-Cognitive Knowledge						

Mapping of COs with POs										
POs/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓		✓			✓	✓	✓	
CO2	✓	✓	✓	✓		✓	✓	✓	✓	
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4	✓	✓	✓	✓	✓		✓	✓	✓	✓

Suggested Readings:

- Debraj Ray, Development Economics, Oxford University Press, 1998.
- Thirwall, A.P., Economic Development, Palgrave Macmilan, 2011.
- Todaro, M.P. and Smith, S.C., Economic Development, 2022.
- Abhijit Banerjee, Roland Benabou and DilipMookerjee (eds), Understanding Poverty, Oxford University Press, 2006.
- Sen, Amartya, Development as Freedom, OUP, 2000
- Maddison, A., The World Economy, Academic Foundation, 2007

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 4TH SEMESTER

Course Title	:	**Intermediate Microeconomics**
Course Code	:	**ECOC5**
Nature of the course	:	**Major**
Total Credits	:	**04**
Distribution of Marks	:	**60 (End Sem) + 40 (In-Sem)**

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

Course Objectives: The course is designed to provide a systematic overview of the microeconomic theory with the following objectives:

1. To provide the idea about how individual agents behave.
2. To enable the students to learn about the behaviour of a competitive firm

Course Outcomes: On completion of this Course, a student will be able to –

CO 1: Analyse the behaviour of consumers and apply the tools of economics to evaluate consumer's equilibrium conditions.

LO 1.1: Explain the axioms of rational choice and how they lead to the development of utility functions.
LO 1.2: Illustrate consumer preferences using indifference curves and utility functions.
LO 1.3: Conduct utility maximization analysis graphically in both two-good and n-good cases.
LO 1.4: Describe income and substitution effects of price changes and distinguish between normal, inferior, and Giffen goods.
LO 1.5: Apply Slutsky's equation to analyze consumer choices.
LO 1.6: Distinguish between compensated and ordinary demand curves and their implications.
LO 1.7: Analyze consumer behavior under risk and inter-temporal choices.

CO 2: Use the concepts of marginal revenue and cost to analyze firm profitability.

LO 2.1: Explain production functions and the significance of isoquants.
LO 2.2: Analyze the marginal rate of technical substitution and the elasticity of substitution in production.
LO 2.3: Explore returns to scale and production scenarios with one or multiple variable inputs.
LO 2.4: Evaluate special cases of production functions and their relevance to technical progress.
LO 2.5: Analyze the production transformation curve for multiple products.
LO 2.6: Analyze economies of scale and scope and their implications for firms.
LO 2.7: Evaluate recent developments in cost theory and their practical applications.

CO 3: Apply the model of perfect competition to predict welfare implication of public policy interventions such as taxes and subsidies.

LO 3.1: Analyze the process of profit maximization in perfectly competitive markets.
LO 3.2: Examine short-run and long-run equilibrium in competitive markets.
LO 3.3: Apply concepts such as the invisible hand and analyze the impact of excise taxes and subsidies on competitive markets.

CO 4: Analyse the performance of firms under monopoly and oligopoly market structures.

     LO 4.1: Apply various pricing strategies under monopoly, including price discrimination and peak-load pricing.
     LO 4.2: Understand and evaluate the characteristics and economic implications of monopolistic competition.
     LO 4.3: Analyze different models of oligopoly behavior and their implications for pricing and output decisions.
     LO 4.4: Evaluate collusive behaviors in oligopoly, including cartels and price leadership.

Units		L	T	P	Total Hours
1	**Consumer Theory** Preferences and Utility: Axioms of Rational Choice, Utility, Trades and Substitutions, Indifference Curves, Utility Functions for Specific Preferences, Utility Maximization and Choice; Indirect Utility Function, Income and Substitution Effects of Price Change; Slutsky's equation, Compensated and ordinary demand curves; Choice under risk; Inter-temporal choice; Revealed preference theory.	9	3	-	12
2	**Theories of Production and Cost** Production function, Isoquants, properties of isoquants, Marginal Rate of Technical Substitution, Elasticity of Substitution, Expansion path, returns to scale; Production with One Variable Input (labour) and with Two-Variable Inputs; Special cases of Production Functions; Definition and types of Costs, Traditional and modern theory of cost; Analysis of economies of scale – real and pecuniary; Economies of Scope	9	3	-	12
3	**Perfect Competition** Meaning of perfect competition; characteristics and implications of perfectly competitive markets; profit maximization by a price taking firm; Economic vs accounting profit; Short run and long run equilibrium; Long-run market supply curve; Applications of competitive markets-. Invisible hand, excise taxes and subsidies	9	3	-	12
4	**Monopoly and Monopolistic Competition** Monopoly- definition, output decision of the monopolists; monopoly power, sources of monopoly, Social cost of monopoly power; Price discrimination: first degree, second degree and third degree with examples; peak-load pricing; two-part tariff; Monopolistic competition: definitions, characteristics, output decisions, excess capacity and advertising	9	3	-	12

5	**Oligopoly** Oligopoly- definition and features; short run pricing and output decision; Cournot model; Bertrand model; Edgeworth model, Stackelberg model; Kinked demand model; collusive oligopoly model: Cartels and Price leadership	9	3	-	12
Total		45	15		60

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive mapping of COs with blooms taxonomy

Cognitive Knowledge Dimensions	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	CO1, CO2, CO3	CO1, CO2, CO3				
Conceptual Knowledge		CO1, CO2, CO3	CO1, CO2, CO3	CO2, CO3	CO1, CO2, CO3	
Procedural Knowledge			CO1	CO3	CO3	
Metacognitive Knowledge						

Mapping of Course Outcome with Program Outcome:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
CO2	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
CO3	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
CO4	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

Suggested Readings:

• Karl E. Case and Ray C. Fair, Principles of Economics, Pearson Education Inc., 8th Edition, 2007.

• N. Gregory Mankiw, Economics: Principles and Applications, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4thedition, 2007.

• Joseph E. Stiglitz and CarlE.Walsh, Economics, W.W.Norton &Company, Inc., New York, International Student Edition, 4th Edition,2007.

• G.S. Maddala and Ellen Miller, Microeconomics: Theory and Applications, McGraw Hill Education, Tenth Reprint, 2013, New Delhi Edition

• R.S. Pindyck, D.N. Rubinfeld and P.L. Meheta (2009): Microeconomics, 7thEdition, Pearson, New Delhi

• McConnell, Brue and Flynn, Microeconomics: Principles, Problems, and Policies, McGraw Hill Education (India) Private Limited, 2017

• Varian, H.R., Intermediate Microeconomics: A Modern Approach, WW Norton & Company, Inc., 500 fifth Avenue, New York, NY 10110

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 4TH SEMESTER

Course Title	:	**Economy of Assam**
Course Code	:	**ECOC6**
Nature of the course	:	**Major**
Total Credits	:	**04**
Distribution of Marks:		**60 (End Sem) + 40 (In-Sem)**

Course Description: The Course is designed to provide an overview of the economy of Assam in relation to various developmental parameters.

Course objectives:
1. To acquaint the learners with the characteristics as well as with the current issues of the economy of Assam.
2. To impart awareness regarding the status of Assam in agriculture, industry, infrastructure and fiscal issues**.**

Course outcomes: On completion of this Course, a student will be able to –

CO 1: Critically appraise the performance of the Assam economy in terms of growth of SGDP, employment, poverty and other indicators.
 LO1.1**:** Identify and explain the key natural and human resources of Assam.
 LO1.2: Understand and analyze the trends in GDP and per-capita income in Assam.
 LO1.3: Evaluate the issues of poverty and unemployment in Assam.
 LO1.4: Assess the indicators of human development and inter-district disparities in Assam.
CO 2: Analyse the role of agricultural sector in addressing food security and employment in Assam and evaluate the impact of various policies on agricultural intensification and modernization.
 LO2.1**:** Comprehend the role and performance of agriculture in Assam's economy.
 LO2.2: Analyze the land-use and cropping patterns in Assam.
 LO2.3: Evaluate the trends in area and production of various crops, including food crops, horticulture, and plantation crops.
 LO2.4: Understand the challenges and opportunities in agricultural marketing, finance, pricing, and sustainable agricultural practices in Assam.
CO 3: Examine the performance of the industrial sector in Assam, including its structure, major industries, policies, financial sources, and the challenges and prospects faced by the industry.
 LO3.1**:** Grasp the role and performance of the industrial sector in Assam.
 LO3.2: Identify and discuss the industrial structure, including major industries, MSMEs, and cottage industries.
 LO3.3: Evaluate the policies and programmes aimed at industrial development in Assam.
 LO3.4: Assess the sources of industrial finance and the problems and prospects of the industrial sector in Assam.
CO 4: Assess the state of infrastructure in Assam, covering transport, communication, education, health, power, and irrigation, along with the policies and programmes aimed at infrastructural development.
 LO4.1**:** Gain a comprehensive understanding about the significance of transport and communication infrastructure in Assam.
 LO4.2: Evaluate the status and challenges in the education and health infrastructure in Assam.
 LO4.3: Analyze the power and irrigation infrastructure and their impact on Assam's economy.
 LO4.4: Discuss the policies and programmes designed to enhance infrastructural development in Assam.
CO 5: Describe the fiscal landscape of Assam, the sources of finance, the sharing of central taxes and grants, and the expenditure patterns of the state.
 LO5.1**:** Identify and explain the revenue and non-revenue sources of finance in Assam.
 LO5.2: Comprehend the mechanisms of sharing central taxes and grants-in-aid.

LO5.3: Analyze the expenditure patterns of the Assam government.
LO5.4: Evaluate the fiscal policies and their impact on the economic development of Assam.

Unit	Contents	L	T	P	Total Hours
I	**Overview of Assam Economy** Natural Resources; Human Resource; Trends in GDP and State Per-Capita Income; Poverty and unemployment; Indicators of Human Development; Inter district Disparity in Human Development.	12			12
II	**Agriculture** Role and performance of agriculture; Land-use Pattern in Assam, cropping pattern -Trend in Area and Production of food crops, Horticultural/Plantation Crop, Vegetables-Fruits-Floriculture-Sericulture; Livestock Economy; Agricultural Marketing-Agricultural Finance-Agriculture Prices; modernization and sustainable agriculture, problems of agriculture.	12			12
III	**Industry** Role and performance of Industry sector; Industrial Structure-Major, MSMEs and cottage industries; major industries of Assam; policies and programmes; Sources of Industrial Finance; problems and prospects of Industry sector;	12			12
IV	**Infrastructure** Transport and Communication, Education, Health, power, irrigation; Policies and programmes for Infrastructural Development.	12			12
V	**Fiscal issues** Sources of Finance- Revenue and non-Revenue sources; Sharing of Central Taxes and Grants-in-Aid; Expenditure Pattern.	12			12
	Total	**60**			**60**

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive Map of Course Outcomes with Bloom's Taxonomy:

Cognitive knowledge dimension	Cognitive process dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	✓	✓	✓	✓	✓	
Conceptual Knowledge	✓	✓		✓	✓	
Procedural Knowledge				✓	✓	
Metacognitive Knowledge			✓	✓	✓	✓

Mapping of COs with POs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓		✓				✓		✓	
CO2	✓	✓	✓	✓	✓	✓			✓	✓
CO3	✓	✓	✓	✓	✓	✓			✓	✓
CO4	✓		✓		✓	✓	✓	✓	✓	✓
CO5	✓	✓	✓	✓	✓	✓	✓		✓	✓

Reading List:

- Government of Assam. *Economic Survey, 2021-22.*
- Directorate of Economics & Statistics. *Economic Survey, 2023-24.*
- *Goswami, P. C., Economic Development of Assam.* Asia Publishing House
- Medhi, S. B., *Transport System and Economic Development of Assam.* Publication Board, Assam
- Nayak, P. *Growth and Human Development in Northeast India.* OUP

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 4TH SEMESTER

Course Title	:	**Statistical Methods for Economics**
Course Code	:	**ECOC7**
Nature of the course	:	**Major**
Total Credits	:	**04**
Distribution of Marks:		**60 (End Sem) + 40 (In-Sem)**

Course Description: This is a course on statistical methods for economics. It begins with some basic concepts and terminology that are fundamental to statistical analysis and inference. It then develops the notion of probability, followed by probability distributions of discrete and continuous random variables and of joint distributions. This is followed by a discussion on sampling techniques used to collect survey data. The course introduces the notion of sampling distributions that act as a bridge between probability theory and statistical inference.

Course Objectives:
- To enable the students to apply basic statistical concepts, including measures of central tendency and measures of dispersion in real life situations.
- To acquaint the learners with the understanding and application of probability theory and probability distributions in real world situations.
- To make the learners attain proficiency in correlation and regression analysis.
- To develop an understanding of index numbers and apply index numbers in solving problems.

Course Outcomes: After successful completion of this course students will be able to-
CO1: Apply the fundamental concepts of descriptive statistics to summarize and describe the essential features of data.
  LO1.1: Define and calculate measures of central tendency (mean, median, mode) and explain their significance.
  LO1.2: Describe and compute measures of dispersion (range, quartile deviation, mean deviation, standard deviation).
  LO1.3: Explain and calculate measures of skewness and kurtosis to understand data distribution.
  LO1.4: Understand the concept of moments and their use in statistical analysis.
CO2: Apply probability theory and distribution models to solve problems involving uncertainty and variability.
  LO2.1: Explain basic probability concepts, including classical and empirical definitions, and solve problems using addition and multiplication theorems.
  LO2.2: Analyze and apply conditional probability, independence of events, and Bayes' Rule.
  LO2.3: Define and calculate mathematical expectation, and understand probability mass function and probability density function.
  LO2.4: Understand and apply theoretical distributions (Binomial, Poisson, Normal), and explain Poisson distribution as a limiting case of binomial distribution.
CO3: Conduct sampling and hypothesis testing to draw inferences about populations from sample data.
  LO3.1: Differentiate between sampling and census methods and describe various sampling techniques.
  LO3.2: Identify and distinguish between sampling and non-sampling errors in statistics.
  LO3.3: Define statistical hypotheses, understand the distributions of test statistics, and differentiate between Type I and Type II errors.
  LO3.4: Conduct and interpret hypothesis tests using chi-square, t-test, and F-test.
CO4: Analyze relationships between variables using correlation and regression techniques.
  LO4.1: Explain and calculate covariance and interpret scatter diagrams.
  LO4.2: Compute and interpret Spearman's rank correlation and Karl Pearson's coefficient of correlation.
  LO4.3: Understand the concept of regression, derive regression lines, and use the method of least squares.

LO4.4: Calculate and interpret the coefficient of determination (R²) and standard error of estimate.

CO5: Construct and interpret various types of index numbers for economic and business analysis.

LO5.1: Explain the types and uses of index numbers.

LO5.2: Construct index numbers using the simple aggregate method and the weighted aggregate method (Laspeyres, Paasche, Fisher's price index).

LO5.3: Compute simple and weighted averages of price relatives and discuss the problems involved in constructing index numbers.

LO5.4: Analyze the applications of index numbers in economic and business contexts.

Units		L	T	P	Total Hours
1.	**Basic statistical Concepts:** **A review of Descriptive Statistics:** Measures of Central Tendency and their application: Mean, Median and Mode, Measures of Dispersion: Range, Quartile Deviation, Mean Deviation and Standard Deviation, Measures of Skewness and Kurtosis. The Concept of Moments.	7	1		8
2.	**Probability Theory and Probability Distributions:** Probability: Basic Concepts, Classical and empirical definitions, Addition and Multiplication Theorems; Conditional Probability and Independence of Events; Inverse Probability; Bayes' Rule (concepts only); Mathematical Expectation, Probability Mass Function and Probability Density Function, Theoretical Distributions: Binomial and Poisson distribution-Poisson distribution as a limiting case of binomial distribution, Normal distribution	15	2		17
3.	**Sampling and Testing of Hypothesis:** Sampling vs census**,** Methods of sampling, Errors in statistics: sampling vs. non-sampling errors, Testing of hypotheses: defining statistical hypotheses; distributions of test statistics; Type I and Type II errors; power of a test; Testing of hypothesis: chi square, t test and F test	8	2		10
4	**Correlation and Regression Analysis:** Elementary analysis of linear correlation: Covariance, Scatter Diagram, Spearman's rank correlation, Karl Pearson's coefficient of correlation–Properties and the Method of Calculation The Concept of Regression, Regression Lines, the method Least Squares, The coefficient of determination (R^2) and Standard Error of Estimate.	15	2		17

5	**Index Numbers** Types and uses; methods of constructing index numbers: simple aggregate method, weighted aggregate method – Laspeyres, Paasche and Fisher's price index; simple and weighted average of price relatives; problems in construction of index numbers.	7	1		8
	Total	**52**	**8**		**60**

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive Mapping of COs with Bloom's Taxonomy:

Cognitive Knowledge Dimensions	Cognitive process dimension					
	Remember	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Create**
Factual Knowledge						
Conceptual Knowledge	CO1, CO2, CO3, CO4	CO1, CO2, CO3, CO4, CO5	CO1, CO2, CO3, CO4,	CO2	CO3	
Procedural Knowledge	CO1, CO2	CO1, CO2, CO3	CO1, CO2, CO3, CO5	CO2, CO3, CO4, CO5	CO3, CO4, CO5	CO5
Metacognitive Knowledge						

Mapping of COs with POs:

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓	✓	✓	✓			✓	✓	
CO2	✓	✓	✓	✓	✓		✓	✓	✓	
CO3	✓	✓	✓	✓	✓			✓	✓	
CO4	✓	✓	✓	✓	✓			✓	✓	
CO5	✓	✓	✓	✓	✓		✓	✓	✓	

Reading List:

- Jay L. Devor. *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 Statistics and itsApplications.* Prentice Hall, 2011.
- William G. Cochra. *Sampling Techniques.* John Wiley, 2007.
- Gupta, S.C. *Fundamentals of Statistics*, Himalaya Publishing House
- Gupta, S.P. *Statistical Methods*. Sultan Chand and Sons

Course Title	:	**Intermediate Mathematical Methods for Economics**
Course Code	:	**ECOC8**
Nature of the course	:	**Major**
Total Credits	:	**04**
Distribution of Marks:		**60 (End-Sem.) + 40 (In-Sem.)**

Course Description: This course is the second part of a compulsory two-course sequence. In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general.

Course Objectives:

- To provide basic knowledge of difference equation and its economic application;
- To enable the learners to extend their knowledge of derivatives to functions of several variables as well as their applications;
- To foster a solid understanding of various optimisation techniques and their application in relevant economic fields.

Course Outcomes: After successful completion of this course students will be able to-
CO1: Understand and apply first-order difference equations to model and analyze economic phenomena.
    LO1.1: Define and solve first-order difference equations.
    LO1.2: Interpret the solutions of difference equations in economic contexts.
    LO1.3: Apply difference equations to model economic dynamics, such as inventory control and market equilibrium.
    LO1.4: Analyze the stability of economic models using difference equations.
CO2: Use partial and total differentiation to analyze and solve problems in economics, including production and consumer theory.
    LO2.1: Perform partial and total differentiation of functions involving several variables.
    LO2.2: Apply differentiation techniques to analyze indifference curves and derive expansion paths.
    LO2.3: Evaluate production functions, including homogeneous functions, using Euler's Theorem.
    LO2.4: Analyze and compare the properties of Cobb-Douglas and CES production functions.
CO3: Apply methods of unconstrained optimization to solve economic problems involving single and multiple variables.
    LO3.1: Perform unconstrained optimization for functions of one variable and interpret economic applications.
    LO3.2: Solve unconstrained optimization problems involving multiple variables.
    LO3.3: Analyze economic scenarios such as discriminating monopoly and multiproduct monopoly using optimization techniques.
    LO3.4: Interpret the results of optimization in the context of economic decision-making.
CO4: Use Lagrange multipliers to solve constrained optimization problems and apply these methods to consumer and producer equilibrium.
    LO4.1: Explain the concept of constrained optimization and the role of Lagrange multipliers.
    LO4.2: Apply Lagrange multipliers to solve optimization problems with equality constraints.
    LO4.3: Analyze consumer equilibrium using constrained optimization techniques.
    LO4.4: Apply constrained optimization to determine producer equilibrium and interpret the results.

CO5: Formulate and solve linear programming problems using simplex methods and interpret economic implications of duality.

LO5.1: Explain the assumptions underlying linear programming and formulate linear programming problems.
LO5.2: Solve linear programming problems using simplex method.
LO5.3: Analyze the economic interpretation of duality in linear programming.
LO5.4: Compare and contrast the primal and dual problems in linear programming and their economic implications.

Units		L	T	P	Total Hours
1.	**Difference equation:** First order Difference equation and its Economic Applications.	5	1		6
2.	**Derivatives of Functions of several variables:** Partial and Total differentiation and economicapplications, Indifference curve analysis; Expansion Path, Production Function Analysis- Homogeneous Functionsand Euler's Theorem; Cobb-Douglas Production Function and its Properties; CES Production Function and its properties.	14	2		16
3.	**Unconstrained optimization:** Unconstrained optimization with one variable and Economic Applications; Unconstrained optimization with more than one variableand Economic Applications- Discriminating Monopoly, multiproduct monopoly.	14	2		16
4.	**Constrained optimization with equality constraints:** Lagrange characterization using calculus; applications- consumer's equilibrium and producer's equilibrium.	10	2		12
5	**Constrained optimization with inequality constraints:** Linear Programming: Assumptions, formulation and solution by simplex methods; Duality in LP and its economic interpretation, difference between primal and dual.	8	2		10
Total		**51**	**9**		**60**

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive Mapping of COs with Bloom's Taxonomy:

Cognitive Knowledge Dimensions	Cognitive Process Dimensions					
	Remember	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Create**
Factual Knowledge	CO1					
Conceptual Knowledge	CO1	CO1, CO2, CO3, CO4, CO5	CO1, CO2, CO3, CO4, CO5	CO1, CO2, CO4		
Procedural Knowledge		CO1, CO2, CO3, CO4, CO5	CO1, CO2, CO3, CO4, CO5	CO3, CO5		CO5
Metacognitive Knowledge					CO4	

Mapping of COs with POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓	✓	✓	✓		✓	✓	✓	
CO2	✓	✓	✓	✓	✓		✓	✓	✓	
CO3	✓	✓	✓	✓	✓		✓	✓	✓	
CO4	✓	✓	✓	✓	✓		✓	✓	✓	
CO5	✓	✓	✓	✓	✓		✓	✓	✓	

Reading list:

- K. Sydsaeter and P. Hammond, *Mathematics for Economic Analysis*, Pearson EducationalAsia: Delhi, 2002.
- Chiang, A.C.: *Fundamental Methods of Mathematical Economics*, Fourth edition, McGraw Hill 2005.
- Hoy, M., J. Livernois, C. McKena, R. Rees, and T. Stengos: *Mathematics for Economics*, PHI Publishers.
- Barua, Srinath: *Basic Mathematics and Its Applications in Economics*, Second Edition, Laxmi Publications 2013.
- Taha, Hamdy, A: "Operations Research" , seventh edition, Pearson education
- Natarajan, Balasubramani and Tamilarasi: "Operations research" Pearson

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 4TH SEMESTER

Course Title	:	**Mathematical Methods for Economics**
Course Code	:	**MINECO4**
Nature of the course	:	**Minor**
Total Credits	:	**04**
Distribution of Marks:		**60 (End Sem) + 40 (In-Sem)**

Course Description: The aim of this course is to transmit the body of knowledge of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this syllabus. In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general.

Course objectives:
- To review a few preliminary concepts in Mathematics such as Set theory, relations, functions, evaluation of limit and continuity of functions etc.;
- To offer knowledge of linear algebra (matrix and determinants) and its application in economic problem solving;
- To acquaint the learners with differential and integral calculus and their economic applications.

Course Outcomes: After successful completion of this course students will be able to-
CO1: Understand and apply fundamental mathematical concepts such as sets, relations, and functions to economic models.
    LO1: Define different types of sets and operations on sets.
    LO2: Explain ordered pairs and Cartesian products.
    LO3: Describe the properties and graphs of various functions including polynomial, rational, exponential, and logarithmic functions.
    LO4: Demonstrate the concepts of limit and continuity for a function.
CO2: Utilize matrix algebra and determinants to solve systems of linear equations and analyze economic models.
    LO1: Perform elementary operations on matrices including addition and multiplication.
    LO2: Calculate the rank and inverse of a matrix.
    LO3: Apply determinants and their properties to solve linear equations using Cramer's rule.
    LO4: Solve economic problems involving systems of linear equations using matrix methods.
CO3: Apply differentiation techniques to analyze economic functions such as cost, revenue, and demand.
    LO1: Explain the rules of differentiation for functions of one variable.
    LO2: Calculate elasticity of demand and relate it to economic behavior.
    LO3: Differentiate between average and marginal costs using derivatives.
    LO4: Use second and higher order derivatives to solve economic problems and analyze cost functions.
CO4: Employ integration techniques to derive total functions from marginal functions and solve economic problems.
    LO1: Apply basic rules of integration to solve indefinite integrals.
    LO2: Use substitution rule, integration by parts, and partial fractions to integrate functions.
    LO3: Derive total cost and revenue functions from marginal functions using integration.
    LO4: Solve economic problems involving indefinite integrals.
CO5: Apply definite integrals to compute economic measures such as producer's and consumer's surplus.
    LO1: Explain the concept of definite integrals and their properties.
    LO2: Calculate producer's surplus using definite integrals.
    LO3: Calculate consumer's surplus using definite integrals.
    LO4: Solve economic problems involving definite integrals and interpret the results in economic terms.

UNITS	CONTENTS	L	T	P	Total Hours
I	**Preliminaries** Set: types and operations; Ordered pairs, Cartesian products and relations. Functions and their properties and graphs; Types of functions-polynomial, rational, exponential, and logarithmic; Limit and Continuity of a function.	8	1		9
II	**Matrix, determinant and applications** Matrices-elementary operations: matrix addition, product, rank of a matrix, determinants and their properties, inverse of a matrix, Application of Cramer's rule for solution of a system of linear equations.	10	3		13
III	**Derivative for Functions of One Variable** Rules of differentiation for a function with one independent variable; Economic application of derivatives; Elasticity of demand, Cost and Revenue functions; Relation between Average and Marginal Costs, Second and higher order derivatives and application in Economics.	15	5		20
IV	**Integration of functions: Indefinite Integrals** Basic Rules of integration; Techniques of integration-substitution rule, integration by parts and partial fraction; Derivation of total functions from marginal functions.	10	3		13
V	**Integration of functions: Definite Integrals** Definite integrals and its applications: Producer's surplus and consumer's surplus.	4	1		5
TOTAL		47	13		60

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive Mapping of COs with Bloom's Taxonomy:

Cognitive Knowledge Dimensions	Cognitive Process Dimensions					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	CO1					
Conceptual Knowledge		CO1, CO3				
Procedural Knowledge		CO2	CO2, CO4	CO3, CO4		CO5
Metacognitive Knowledge					CO4, CO5	

Mapping of COs with POs:

COs \ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓						✓	✓	
CO2	✓	✓							✓	✓
CO3	✓	✓							✓	
CO4	✓	✓		✓				✓	✓	
CO5	✓	✓				✓	✓	✓	✓	✓

Suggested Readings:

- K. Sydsaeter and P. Hammond, *Mathematics for Economic Analysis*, Pearson Educational Asia: Delhi, 2002.
- Chiang, A.C.: *Fundamental Methods of Mathematical Economics*, Fourth edition, McGraw Hill 2005
- Hoy, M., J. Livernois, C. McKena, R.Rees, and T. Stengos: *Mathematics for Economics*, PHI Publishers
- Barua, Srinath: *Basic Mathematics and Its Applications in Economics*, Second Edition, Laxmi Publications 2013

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 5ᵗʰSEMESTER

Course Title	:	**Intermediate Macroeconomics**
Course Code	:	**ECOC10**
Nature of the course	:	**Major**
Total Credits	:	**04**
Distribution of Marks	:	**60 (End Sem) + 40 (In-Sem)**

Course Description: The course will provide an exposure to the theories of consumption and investment which are two vital components of aggregate demand. In addition, it attempts to provide an understanding of the short-run macroeconomics and how the interplay between monetary and fiscal policies helps to maintain general equilibrium in goods and money markets. This course also provides an overview of open economy macroeconomics.

Course Objectives: The main objectives of the course are:
- To introduce the students to the theories of consumption and investment;
- To help the students understand how the goods market and money market work;
- To enable the students to analyse the effects of policy in terms of the IS-LM model; and
- To acquaint the students with the basics of open economy macroeconomics.

Course Outcomes: After successful completion of this course students will be able to-
CO 1: Use the various theories of consumption function and investment function to examine the dynamics about aggregate consumption and investment.
   LO1.1: Describe the intertemporal budget constraint and its implications for consumer decision-making over time.
   LO1.2: Explain and compare the Relative Income Hypothesis, Permanent Income Hypothesis, and Life Cycle Hypothesis.
   LO1.3: Discuss the Accelerator Theory and q-Theory of investment, and their implications for investment behavior.

   LO1.4: Analyze the impact of taxation on investment decisions and how taxes influence overall investment spending.
CO 2: Demonstrate the derivation of equilibrium in goods market and money market.
   LO2.1: Explain the Keynesian cross model and how it is used to derive the IS curve.
   LO2.2: Understand the concept of fiscal multipliers and their role in amplifying or dampening the effects of fiscal policy on equilibrium output.
   LO2.3: Analyze the impact of changes in interest rates on investment and derive the IS curve.
   LO2.4: Evaluate the properties of the IS curve, including its slope and shifts, to interpret the effects of exogenous shocks and policy changes.

CO 3: Demonstrate the derivation of equilibrium in goods market and money market.
   LO3.1: Analyze the determinants of money demand and supply, facilitating their comprehension of money market equilibrium and its implications for interest rates.
   LO3.2: Derive the LM curve by integrating money market equilibrium with variations in income levels and interest rate, enabling them to understand the relationship between interest rates and output.
   L03.3: Interpret the LM curve using the Quantity-Equation approach
   LO3.4:Assess the factors causing shifts in the LM curve, such as changes in money supply or income velocity

CO 4:Integrate the IS and LM models to analyze general equilibrium and evaluate the implications of changes in fiscal policy and monetary policy on economic activity.

LO4.1: Integrate the IS and LM curves to form the IS-LM model and explain the concept of general equilibrium in goods and money markets.

LO4.2: Assess the impact of monetary policy shifts on the LM curve and the overall equilibrium.

LO4.3: Evaluate the effectiveness of fiscal policies within the IS-LM model and understand the crowding out effect.

LO4.4: Discuss the appropriate policy mix for stabilizing output and achieving economic objectives using the IS-LM framework.

CO 5:Explain the basic concepts of open economy macroeconomics, including exchange rates, balance of payments, and capital mobility, and evaluate their impact on economic activity.

LO5.1: Differentiate between nominal and real exchange rates and their implications for international trade.

LO5.2: Describe the components of the balance of trade and balance of payments, and analyze their significance in an open economy.

LO5.3: Describe the components of the balance of trade and balance of payments, and analyze their significance in an open economy.

LO5.4: Assess the impact of capital mobility on the balance of payments and overall economic equilibrium, including the choice between domestic and foreign assets.

Units	Units	L	T	P	Total
I	**Theories of Consumption and Investment** Intertemporal budget constraint and consumption; The consumption function revisited; the Psychological Law of Consumption; The Relative Income hypothesis; The Permanent Income Hypothesis; The Life cycle hypothesis. Fluctuations in Investment Spending; Determination of the Rental Price of Capital, Demand for capital and rental price, Lags in the Investment Process – The Accelerator theory; q-theory of investment; Taxes and Investment; Residential Investment; Inventory Investment	10	2		12
II	**Goods Market Equilibrium and the IS curve** The concept of aggregate demand – A review; Equilibrium in the Product market: The Keynesian cross, Investment-saving equilibrium; Fiscal Multipliers; Paradox of thrift; Effects of interest rate on aggregate demand: Deriving the IS curve; Properties of the IS curve: Shifts in IS curve and Slope of the IS curve	10	2		12
III	**Money Market Equilibrium and the LM curve** Money, bonds and portfolio choice; Demand for and Supply of Money; Asset/ Money Market Equilibrium; Income Variations and the interest rate: Deriving the LM curve; A Quantity-Equation Interpretation of the LM curve; Properties of the LM curve: Shifts in LM curve and Slope of the LM curve	10	2		12

IV	**The IS-LM Model and Policy Analysis** General Equilibrium in Goods and Money Markets: The IS-LM model; Dynamics in the IS-LM model; Factors affecting general equilibrium: Monetary Influences (shifts in LM curve) and Real Influences (shifts in IS curve); Analysis of Policy Effectiveness in the IS-LM model; Crowding out effect; The Composition of Output and the Policy Mix; The IS-LM model in Practice	10	2		12
V	**Basics of Open Economy Macroeconomics** Concept of Exchange rate – Nominal vs Real; Concepts and components of balance of trade and balance of payments; Balance of Payments disequilibrium and its adjustment; Aggregate Demand and Equilibrium output in an open economy; Equilibrium output and the trade balance; Exchange rate Depreciation, Trade Balance and Output; Capital mobility: Choice between Domestic and Foreign Assets; Capital mobility and the BoP	10	2		12
Total		50	10		60

Where, L:Lectures   T:Tutorials   P:Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

<u>Cognitive Map of Course Outcomes with Bloom's Taxonomy:</u>

Cognitive knowledge dimension	Cognitive process dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge						
Conceptual Knowledge		CO1, CO2, CO3, CO4, CO5	CO1, CO4, CO5	CO1, CO2, CO3, CO4, CO5	CO1, CO4, CO5	
Procedural Knowledge		CO2, CO3, CO5	CO4, CO5	CO2, CO3, CO4, CO5	CO2, CO3, CO4, CO5	
Metacognitive Knowledge						

Mapping of COs with POs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓	✓	✓		✓	✓			
CO2	✓	✓	✓							
CO3	✓	✓	✓	✓	✓					
CO4	✓	✓	✓	✓		✓	✓			✓
CO5	✓	✓	✓	✓		✓	✓		✓	

<u>**Suggested Readings**</u>**:**

- Abel, A. B., Bernanke, B. S. & Croushore, D. (2014). *Macroeconomics* (8th ed.). Pearson
- Blanchard, O. & Johnson, D. R. (2013). *Macroeconomics* (6th ed.). Pearson
- Case & Fair. (2007). *Principles of Economics.* Pearson
- Dornbusch, R., Fischer, S. & Startz, R. (2018). *Macroeconomics* (12th ed.). McGraw Hill Education
- Froyen, R.T. (2014). *Macroeconomics: Theories and Policies* (10th ed.). Pearson Education
- Mankiw, N.G. (2007). *Macroeconomics* (6th ed.). Worth Publishers
- Rana, K. C. & Verma, K. N. (2016). *Macroeconomic Analysis* (11th ed.). Vishal Publishing Co.
- Sikdar, S. (2006). *Principles of Macroeconomics*. Oxford University Press

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 5ᵗʰ SEMESTER

Course Title	:	**Basic Econometrics**
Course Code	:	**ECOC11**
Nature of the course	:	**Major**
Total Credits	:	**04**
Distribution of Marks	:	**60 (End Sem) + 40 (In-Sem)**

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

Course objectives:
- To introduce Econometrics as a subject, its nature and scope and the basic statistical pre-requisites for a comprehensive understanding of the course content.
- To provide sound understanding of regression analysis and its application in the real-world situations.
- To acquaint the learners with the detection and analysis of the violation of CLRM assumptions and their relevance and remedial measures.
- To offer basic knowledge of specification analysis.

Course Outcomes: After successful completion of this course students will be able to-
CO1: Discuss the fundamental concepts and scope of econometrics, as well as the statistical foundations necessary for econometric analysis.
  LO1.1:Explain the nature and scope of econometrics and differentiate between economic and econometric models.
  LO1.2: Describe the aims and methodology of econometrics and identify its limitations.
  LO1.3: Distinguish between population and sample, and explain the concepts of statistic, parameter, estimate, and estimator.
  LO1.4: Evaluate different methods of parameter estimation, including point and interval estimation, and discuss the properties of estimators.
CO2: Formulating, estimate, and interpret simple and multiple linear regression models, and will be able to assess the goodness of fit and predictive power of these models.
  LO2.1: Differentiate between regression and correlation and explain the stochastic specification and the significance of the error term in regression analysis.
  LO2.2: Apply the ordinary least squares (OLS) method to estimate regression parameters and understand the assumptions underlying the Classical Linear Regression Model (CLRM).
  LO2.3: Evaluate the goodness of fit of regression models using R-squared and R-bar squared, and test the significance of estimated coefficients.
  LO2.4: Examine reported regression results in applied academic papers and interpret the results in a non-technical manner for someone who is not trained in econometrics.
CO3: Identify, assess, and correct for heteroscedasticity and autocorrelation in regression models, ensuring the reliability of their econometric analysis.

LO3.1: Understand the problem and consequences of heteroscedasticity in regression analysis.

LO3.2: Conduct tests to detect heteroscedasticity and apply alternative methods of estimation to address it.

LO3.3: Identify the sources and consequences of autocorrelation in regression models.

LO3.4: Perform tests to detect autocorrelation and implement remedial measures to correct for it.

CO4: Diagnose and address multicollinearity in regression models, ensuring accurate estimation and inference.

LO4.1: Explain the nature and sources of multicollinearity in regression analysis.

LO4.2: Differentiate between perfect and imperfect multicollinearity and understand their consequences.

LO4.3: Detect multicollinearity using appropriate diagnostic tests.

LO4.4: Apply remedies to mitigate the effects of multicollinearity in regression models.

CO5: Conduct specification analysis in econometric models, identifying and correcting for omitted variables, irrelevant variables, and specification errors.

LO5.1: Analyze the consequences of omitting relevant variables from a regression model.

LO5.2: Assess the impact of including irrelevant variables in a regression model.

LO5.3: Perform tests to detect specification errors in econometric models.

LO5.4: Address errors in variables to ensure accurate model specification and estimation.

Units		L	T	P	Total hours
1.	**Nature and Scope of Econometrics and Basic Statistical Pre- requisites** Nature and Scope of Econometrics: What is Econometrics? Economic and Econometric Models; The Aims and Methodology of Econometrics; Limitations of econometrics. Statistical Concepts: Population vs Sample; Statistic and parameter; Estimate and estimators; estimation of parameters – point estimation vs interval estimation; properties of estimators.	5	1		6
2	**Linear Regression Model:** Two variable case; Regression vs Correlation; Linearity vs Non-linearity; Stochastic specification: The significance of the error term; Estimation: The Principle of ordinary least squares; Assumptions under CLRM; BLUE Properties of estimators: The Gauss Markov theorem; Goodness of fit – R-squared and R-bar squared; Testing the significance of estimated coefficients; confidence intervals; Prediction and Forecasting. k variable linear regression model: Estimation of parameters; Qualitative (dummy) independent variables – Dummy variable trap.	20	5		25
3	**Violations of Classical Assumptions: Consequences,Detection and Remedies-I** Heteroscedasticity: Problem and consequences; tests, detectionand alternative methods of estimation. Autocorrelation: Sources, consequences, tests of autocorrelation,remedial measures.	10	3		13

4	**Violation of Classical Assumptions: Consequences,Detection and Remedies-II** Multicollinearity: Nature of the problem; Sources, Perfect multicollinearity vs Imperfect multicollinearity, its consequences; Detection and remedies of multicollinearity	5	1		6
5	**Specification Analysis** Omission of relevant variables; Inclusion of irrelevant variables;Tests of specification errors; Errors in variables.	8	2		10
	Total	48	12		60

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive Map of Course Outcomes with Bloom's Taxonomy:

Cognitive knowledge dimension	Cognitive process dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge						
Conceptual Knowledge	CO1,CO2	CO1, CO2, CO3, CO4, CO5	CO2, CO3, CO4, CO4		CO2, CO3, CO4, CO5	
Procedural Knowledge	CO2, CO3, CO5	CO2,CO3, CO4, CO4	CO2, CO3, CO4, CO5		CO2, CO3, CO4, CO5	
Metacognitive Knowledge						

Mapping of COs with POs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓	✓	✓				✓	✓	
CO2	✓	✓	✓	✓	✓			✓	✓	
CO3	✓	✓	✓	✓	✓			✓	✓	
CO4	✓	✓	✓	✓	✓			✓	✓	
CO5	✓	✓	✓	✓	✓			✓	✓	

Reading List:

1. Jay L. Devore, *Probability and Statistics for Engineers,* Cengage Learning, 2010.
2. John E. Freund, *Mathematical Statistics*, Prentice Hall, 1992.
3. Richard J. Larsen and Morris L. Marx, *An Introduction to Mathematical Statistics and its Applications,* Prentice Hall, 2011.
4. D. N. Gujarati and D.C. Porter, *Essentials of Econometrics,* McGraw Hill, 4th edition, International Edition, 2009.
5. Christopher Dougherty, *Introduction to Econometrics*, Oxford University Press, 3rd edition, Indian edition, 2007.
6. Jan Kmenta, *Elements of Econometrics*, Indian Reprint, Khosla Publishing House, 2nd edition, 2008.
7. Maddala, G.S.: *Introduction to Econometrics*, Wiley India, 3rd Edition 2010.

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 5ᵗʰ SEMESTER

Course Title	:	**Development Economics -I**
Course Code	:	**ECOC12**
Nature of the course	:	**Major**
Total Credits	:	**04**
Distribution of Marks	:	**60 (End Sem) + 40 (In-Sem)**

Course Description: This is the first part of a two-part course on economic development. The course begins with a discussion of alternative conceptions of development and their justification. It then proceeds to aggregate models of growth and cross-national 22 comparisons of the growth experience that can help evaluate these models. The axiomatic basis for inequality measurement is used to develop measures of inequality and connections between growth and inequality are explored. The course ends by linking political institutions to growth and inequality by discussing the role of the state in economic development and the informational and incentive problems that affect state governance.

Course Objectives:
1. To impart the ideas of growth and development among the learners;
2. To acquaint the students about different growth strategies and models;
3. To familiarize the students with the concepts and implications of poverty and inequality; and
4. To provide the students with the knowledge of various institutional structures under which various development policies have to be adopted.

Course Outcomes: After successful completion of this course students will be able to-

CO1: Understand the fundamental concepts and distinctions between economic growth and development, and evaluate the factors influencing economic development.
   LO 1.1:Define economic development and underdevelopment, and distinguish between economic growth and development.
   LO 1.2: Identify and explain the various indicators and measurements used to assess economic development.
   LO 1.3: Analyze the factors that affect economic growth, including the roles of agriculture, industry, and infrastructure.
   LO 1.4: Evaluate the historical evolution of development economics and its impact on contemporary economic policies.
CO2: Analyze various development strategies and their implications for achieving sustainable economic growth.
   LO 2.1: Explain the stages of economic growth as proposed by Rostow and their relevance to modern economies.
   LO 2.2: Discuss the low-level equilibrium trap and the critical minimum effort hypothesis.
   LO 2.3: Compare and contrast the big push theory with the concepts of balanced and unbalanced growth.
   LO 2.4: Assess the implications of choosing different techniques and strategies for economic development.
CO3: Understand and apply various economic growth models to analyze long-term economic performance.
   LO 3.1: Describe the classical growth model and its foundational principles.
   LO 3.2: Analyze the Harrod-Domar model and its application to economic planning.
   LO 3.3: Evaluate the contributions of Kaldor, Solow, Meade, and endogenous growth models (such as Romer's version) to growth theory.
   LO 3.4: Apply growth models to understand real-world economic growth scenarios and predict future trends.
CO4: Understand the concepts and measurement of poverty and inequality, and explore their relationship with economic development.

LO 4.1: Define and differentiate various measures of poverty, including head count ratio, Sen's Index, HPI, and MPI.

LO 4.2: Explain and calculate inequality measures such as the Gini coefficient and Lorenz curve.

LO 4.3: Analyze the relationship between inequality and economic development, identifying key mechanisms that generate poverty traps.

LO 4.4: Discuss the concept of path dependence in growth processes and its implications for policy making.

CO5: Evaluate the role of political institutions and governance in shaping economic development and performance.

LO 5.1: Identify the determinants of democracy and their impact on economic performance.

LO 5.2: Compare alternative institutional trajectories and their relationship with economic outcomes.

LO 5.3: Analyze the relationship between democracy and economic development within different country contexts.

LO 5.4: Assess the effects of state ownership, regulation, government failures, and corruption on economic development

Units		L	T	P	Total Hours
1	**Conceptions of growth and development:** Evolution of Development Economics; Meaning of economic development and underdevelopment; distinction between economic growth and development; measurement and indicators of economic development; factors affecting growth; importance of agriculture; industry and infrastructure in economic development	9	3	-	12
2	**Strategies of Development:** Stages of Economic growth- Rostow; Low level equilibrium trap, The critical minimum effort hypothesis; Big push theory, Balanced vs. Unbalanced growth; Choice of Technique	9	3	-	12
3	**Growth Models :** Classical growth model; Harrod-Domar model; Kaldor's Model, Solow model and its variants, Meade Model, Endogenous growth model- Romer's Version.	9	3	-	12
4	**Poverty and Inequality:** Concept and Measures of poverty- Head count ratio, Sen's Index, HPI, MPI. Inequality measures- Gini Coefficient and Lorenz Curve; Connections between inequality and development; Mechanisms that generate poverty traps and path dependence of growth processes	9	3	-	12

5	**Political Institutions and the Functioning of the State** Determinants of democracy; Alternative institutional trajectories and their relationship with economic performance; Relationship between democracy and economic development; Within-country differences in the functioning of state institutions; State ownership and regulation; Government failures and Corruption.	9	3	-	12
Total		45	15		60

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

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Cognitive Mapping of COs with blooms taxonomy						
Cognitive Knowledge Dimensions	**Remember**	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Create**
Factual Knowledge	CO4					
Conceptual Knowledge		CO1,CO3	CO2,CO3, CO4	CO1,CO3	CO5	
Procedural Knowledge		CO3	CO4			
Meta-Cognitive Knowledge						

Mapping of Course outcomes with Program outcomes

POs/COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓	✓	✓		✓	✓	✓	✓	
CO2	✓	✓	✓	✓		✓	✓	✓	✓	
CO3	✓	✓	✓	✓		✓	✓	✓	✓	
CO4	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO 5	✓	✓	✓	✓		✓	✓	✓	✓	✓

Reading List:

- Debraj Ray, Development Economics, Oxford University Press, 2009.

- Partha Dasgupta, Economics, A Very Short Introduction, Oxford University Press, 2007.

- Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, Understanding Poverty, Oxford University Press, 2006.

- Thomas Schelling, Micro motives and Macro behavior, W. W. Norton, 1978.

- Albert O. Hirschman, Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations and States, Harvard University Press, 1970.

- Raghuram Rajan, Fault Lines: How Hidden Fractures Still Threaten the World Economy, 2010.

- Elinor Ostrom, Governing the Commons: The Evolution of Institutions for Collective Action, Cambridge University Press, 1990.

- Dani Rodrik, The Globalization Paradox: Why Global Markets, States and Democracy Can't Coexist, Oxford University Press, 2011.

- Michael D. Bordo, Alan M. Taylorand Jeffrey G. Williamson (ed.), Globalization in Historical Perspective, University of Chicago Press, 2003.

- Yujiro Hayami and Yoshihisa Godo : Development Economics, Oxford Publication,2009

- A. P. Thirlwall : Economics of Development, Palgrave Macmillan, 2011

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 5ᵗʰ SEMESTER

Course Title	:	**Elementary Econometrics**
Course Code	:	**MINECO5**
Nature of the course	:	**Minor**
Total Credits	:	**04**
Distribution of Marks	:	**60 (End Sem) + 40 (In-Sem)**

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

Course Objectives:
- To introduce Econometrics as a subject, its nature and scope and the basic statistical pre-requisites for a comprehensive understanding of the course content.
- To provide basic knowledge of probability theory and distributions and their application in practical scenario.
- To familiarise the learners with linear regression model and its application in the real-world situations;
- To acquaint the learners with the detection and analysis of the violation of CLRM assumptions and their relevance and remedial measures.

Course Outcomes: After successful completion of this course students will be able to-
CO1: Describe the fundamental concepts of econometrics, including its scope, methodology, and essential statistical foundations necessary for econometric analysis.
> LO1.1: Define and explain the nature, scope, and aims of econometrics and differentiate between economic and econometric models.
> LO1.2: Distinguish between population and sample, and understand the concepts of statistics and parameters.
> LO1.3: Explain the methods of parameter estimation, including point and interval estimation, and identify the properties of good estimators.
> LO1.4: Formulate statistical hypotheses, understand Type I and Type II errors, and perform hypothesis testing using chi-square, t, and F-tests.

CO2: Discuss probability theory and its applications in econometrics, including key probability distributions.
> LO2.1: Explain the basic concepts of probability, including classical and empirical definitions, and apply the addition and multiplication theorems.
> LO2.2: Understand and apply the concepts of conditional probability and independence of events, and explain Bayes' Rule.
> LO2.3: Define and compute mathematical expectation, probability mass function, and probability density function.
> LO2.4: Describe and utilize theoretical probability distributions, including the binomial, Poisson, and normal distributions, and understand the relationship between binomial and Poisson distributions.

CO3: Formulate and estimate linear regression models, understanding their assumptions, and evaluating their performance.

> LO3.1: Differentiate between regression and correlation, and between linearity and non-linearity in the context of econometric modeling.
>
> LO3.2: Explain the stochastic specification of econometric models and the significance of the error term in regression analysis.
>
> LO3.3: Apply the principle of ordinary least squares (OLS) for parameter estimation and understand the assumptions underlying the Classical Linear Regression Model (CLRM).
>
> LO3.4: Assess the goodness of fit of regression models using R-squared and R-bar squared, and test the significance of estimated coefficients. Understand the use and implications of qualitative (dummy) independent variables and avoid the dummy variable trap.

CO4: Identify and address issues arising from heteroscedasticity and autocorrelation in regression models, understanding their consequences and remedies.

> LO4.1: Understand the problem of heteroscedasticity, its consequences on regression analysis, and various tests for detecting it.
>
> LO4.2: Explore alternative methods for estimating regression models in the presence of heteroscedasticity.
>
> LO4.3: Identify the sources and consequences of autocorrelation in regression models.
>
> LO4.4: Apply tests for detecting autocorrelation and implement remedial measures to address it.

CO5: Discuss the nature, consequences, detection, and remedies of multicollinearity in regression analysis.

> LO5.1: Explain the nature of the multicollinearity problem and distinguish between perfect and imperfect multicollinearity.
>
> LO5.2: Identify the sources and consequences of multicollinearity in regression models.
>
> LO5.3: Detect multicollinearity using various diagnostic tests.
>
> LO5.4: Implement remedial measures to address multicollinearity and improve the reliability of regression estimates.

Units		L	T	P	Total Hours
1.	**Nature and Scope of Econometrics and Basic Statistical Pre-requisites** Nature and Scope of Econometrics: What is Econometrics? Economic and Econometric Models; The Aims and Methodology of Econometrics. Statistical Concepts: Population vs Sample; Statistic and parameter; Estimate and estimators; estimation of parameters – point estimation vs interval estimation; properties of estimators. Defining statistical hypotheses; Type I and Type II errors; Testing of hypotheses: chi square, t and F.	8	2		10

2	**Probability Theory and Distributions** Basic Concepts, Classical and empirical definitions, Addition and Multiplication Theorems; Conditional Probability and Independence of Events; Inverse Probability; Bayes' Rule (concepts only); Mathematical Expectation, Probability Mass Function and Probability Density Function, Theoretical Distributions: Binomial and Poisson distribution-Poisson distribution as a limiting case of binomial distribution, Normal distribution.	10	2		12
3	**Linear Regression Model:** Two variable case; Regression vs Correlation; Linearity vs Non-linearity; Stochastic specification: The significance of the error term; Estimation: The Principle of ordinary least squares; Assumptions under CLRM; BLUE Properties of estimators: The Gauss Markov theorem; Goodness of fit – R-squared and R-bar squared; Testing the significance of estimated coefficients. Qualitative (dummy) independent variables – Dummy variable trap.	20	3		23
4	**Violations of Classical Assumptions: Consequences, Detection and Remedies-I** Heteroscedasticity: Problem and consequences; tests, detectionand alternative methods of estimation. Autocorrelation: Sources, consequences, tests of autocorrelation, remedial measures.	8	2		10
5	**Violations of Classical Assumptions: Consequences, Detection and Remedies-II** **Multicollinearity:** Nature of the problem; Sources, Perfect multicollinearity vs Imperfect multicollinearity, its consequences; Detection and remedies of multicollinearity;	4	1		5
	Total	**50**	**10**		**60**

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive Map of Course Outcomes with Bloom's Taxonomy:

Cognitive knowledge dimension	Cognitive process dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge						
Conceptual Knowledge	CO1,CO2	CO1, CO2, CO3, CO4, CO5	CO2, CO3, CO4, CO4		CO2, CO3, CO4, CO5	CO2, CO3
Procedural Knowledge	CO1, CO2, CO3, CO5	CO2,CO3, CO4, CO4	CO2, CO3, CO4, CO5		CO2, CO3, CO4, CO5	
Metacognitive Knowledge						

Mapping of COs with POs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓	✓	✓			✓	✓	✓	
CO2	✓	✓	✓	✓				✓	✓	
CO3	✓	✓	✓	✓	✓			✓	✓	
CO4	✓	✓	✓	✓	✓			✓	✓	
CO5	✓	✓	✓	✓	✓			✓	✓	

Reading List:

- 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 Statistics and its Applications,* Prentice Hall, 2011.
- D. N. Gujarati and D.C. Porter, *Essentials 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 Reprint, Khosla Publishing House, 2nd edition, 2008.
- Maddala, G.S.: *Introduction to Econometrics*, Wiley India, 3rd Edition 2010.

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 6th SEMESTER

Course Title	:	**Development Economics -II**
Course Code	:	**ECOC12**
Nature of the course	:	**Major**
Total Credits	:	**04**
Distribution of Marks	:	**60 (End Sem) + 40 (In-Sem)**

Course Description: This is the second module of the economic development sequence. It begins with basic demographic concepts and their evolution during the process of development. The structure of markets and contracts is linked to the particular problems of enforcement experienced in poor countries. The governance of communities and organizations is studied and this is then linked to questions of sustainable growth. The course ends with reflections on the role of globalization and increased international dependence on the process of development

Course Objectives:

1. To acquaint the learners about the relationship between demography and development
2. To provide an idea about the land, labour and credit markets.
3. To impart knowledge about the environment and the need for environmental conservation through the sustainable development
4. To acquaint the learners with the role of community in economic development, and
5. To help the learners to examine the role of trade and globalization on development.

Course Outcomes: After successful completion of this course students will be able to-

CO 1: Analyze the stages of demographic transitions in the context of economic development.
    LO 1.1: Explain and calculate demographic measures including birth rates, death rates, fertility rates, and mortality rates.
    LO 1.2: Describe the phases of demographic transition and their implications for economic development.
    LO 1.3: Analyze the evidence of gender bias in demographic preferences and outcomes within households.
    LO 1.4: Evaluate the connections between economic variables such as income and fertility choices, and their impact on human capital.
    LO 1.5: Analyze the causes and consequences of migration on both sending and receiving regions.
CO 2: Evaluate the relationships between income, mortality, fertility choices, and human capital accumulation.
    LO 2.1: Explain the connections between income levels and fertility choices in different socio-economic contexts.
    LO 2.2: Analyze the impact of mortality rates on economic development and human capital accumulation.
    LO 2.3: Assess how variations in fertility choices influence human capital development.
CO 3: Examine the role of land, labour and credit market on economic development.
    LO 3.1: Evaluate the impact of improved nutrition on labor productivity in rural areas.
    LO 3.2: Analyze the dynamics of tenant-landlord relationships and their impact on rural economies.
    LO 3.3: Assess the impact of microfinance on rural economic development.
CO 4: Analyze the impact of economic activity on climate change.
    LO 4.1: Define and discuss the concept of sustainability for renewable resources.
    LO 4.2: Explain the challenges and strategies in managing common-pool resources
    LO 4.3: Evaluate the effectiveness of state regulations in managing environmental externalities.

LO 4.4: Evaluate the economic and social consequences of climate change.
CO 5: Evaluate the role of communities in economic development.
    LO 5.1: Explain the economic roles played by communities in rural development.
    LO 5.2: Analyze the impact of community failures on economic development.
CO 6: Evaluate the role of trade and globalization on economic development.
    LO 6.1: Explain the connection between trade and economic growth, including both static and dynamic gains.
    LO 6.2: Discuss the Prebisch-Singer Thesis and its implications for global inequality.
    LO 6.3: Analyze the effectiveness of foreign aid in promoting economic growth.

Units		L	T	P	Total Hours
1	**Demography and development:** Demographic concepts; birth and death rates, age structure, fertility and mortality; demographic transitions during the process of development; gender bias in preferences and outcomes and evidence on unequal treatment within households; connections between income, mortality, fertility choices and human capital accumulation; migration.	9	3	-	12
2	**Land, labour and credit Markets:** The distribution of land ownership; land reform and its effects on productivity; contractual relationships between tenants and landlords; land acquisition; nutrition and labor productivity; informational problems and credit contracts; microfinance; inter-linkages between rural factor markets.	9	3	-	12
3	**Environment and Sustainable Development:** Defining sustainability for renewable resources; a brief history of environmental change; common-pool resources; environmental externalities and state regulation of the environment; economic activity and climate change.	9	3	-	12
4	**Communities and Economic Development:** The economic functions of Community; Collective intervention in Rural economies: Management of Common Property Resources; Impact of Community failure, Overcoming the community failure; Experience from Asian Economies	9	3	-	12
5	**Trade, Globalization and Development**: Trade and growth; gains from trade- static and dynamic; Trade as a vent for surplus; import substitution vs export promotion; Trade, liberalization and growth; advantages and disadvantages of free trade for development; Tariffs vs subsidies; The Prebisch-Singer Thesis; trade, production patterns and world inequality; Role of Foreign Capital and Foreign Aid in Economic Development; Trade policy for development	9	3	-	12
Total		45	15		60

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive Mapping of COs with blooms taxonomy						
Cognitive Knowledge Dimensions	**Remember**	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Create**
Factual Knowledge	CO4	CO6		CO6	CO6	
Conceptual Knowledge		CO1,CO3	CO2,CO3, CO4	CO1,CO3	CO5, CO6	
Procedural Knowledge		CO3	CO4		CO5, CO6	
Meta-Cognitive Knowledge						

Mapping of Cos and POs:

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓	✓	✓		✓	✓	✓	✓	
CO2	✓	✓	✓	✓		✓	✓	✓	✓	
CO3	✓	✓	✓	✓		✓	✓	✓	✓	
CO4	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO 5	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO6	✓	✓	✓	✓		✓	✓	✓	✓	✓

Reading List:

- Debraj Ray, Development Economics, Oxford University Press, 2009.
- Partha Dasgupta, Economics, A Very Short Introduction, Oxford University Press, 2007.
- Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, Understanding Poverty, Oxford University Press, 2006.

- Thomas Schelling, Micro motives and Macro behavior, W. W. Norton, 1978.
- Albert O. Hirschman, Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations and States, Harvard University Press, 1970.
- Raghuram Rajan, Fault Lines: How Hidden Fractures Still Threaten the World Economy, 2010.
- Elinor Ostrom, Governing the Commons: The Evolution of Institutions for Collective Action, Cambridge University Press, 1990.
- Dani Rodrik, The Globalization Paradox: Why Global Markets, States and Democracy Can't Coexist, Oxford University Press, 2011.
- Michael D. Bordo, Alan M. Taylorand Jeffrey G. Williamson (ed.), Globalization in Historical Perspective, University of Chicago Press, 2003.
- Yujiro Hayami and Yoshihisa Godo : Development Economics, Oxford Publication,2009
- A. P. Thirlwall : Economics of Development, Palgrave Macmillan, 2011

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 6th SEMESTER

      Course Title   :   **International Economics**
      Course Code   :   **ECOC13**
      Nature of the course   :   **Major**
      Total Credits   :   **04**
      Distribution of Marks: **60 (End Sem) + 40 (In-Sem)**

Course description: This course develops a systematic exposition of models that try to explain the composition, direction, and consequences of international trade, and the determinants and effects of trade policy. It then builds on the models of open economy macroeconomics, focusing on national policies as well as international monetary systems. It concludes with an analytical account of the causes and consequences of the rapid expansion of international financial flows in recent years. Although the course is based on abstract theoretical models, students will also be exposed to real-world examples and case studies.

Course Objectives:
1. To familiarize the learners with what international economics is about.
2. To explain the principles governing the composition, direction, and consequences of international trade.
3. To acquaint the learners with the trade policy debate.
4. To enable the students understand the key concepts of balance of payments and exchange rate and the link between the two.
5. To provide a historical overview of the international monetary system.

Course Outcome: After successful completion of this course students will be able to-
CO1: State and analyze the fundamental theories of international trade and their implications for global trade practices.
      LO1: Explain the subject matter of international economics and the historical views of Mercantilists on trade.
      LO2: Describe Adam Smith's absolute advantage theory and Ricardo's theory of comparative advantage.
      LO3: Analyze the concepts of reciprocal demand, offer curves, and terms of trade.
      LO4: Discuss the opportunity cost theory and its relevance to international trade.
CO2: Evaluate the role of factor endowments in international trade and the impact of trade on income distribution.
      LO1: Explain the Heckscher-Ohlin theorem and its significance in international trade.
      LO2: Discuss the Factor Price Equalization theorem and the sources of its disruptions.
      LO3: Analyze the effect of trade on income distribution using the Stolper-Samuelson theorem and the specific factors model.
      LO4: Understand the Leontief paradox and its implications for trade theory.
CO3: Assess various trade policies and their impact on international trade.
      LO1: Explain the arguments for and against free trade.
      LO2: Discuss the political economy of protectionism and its implications.
      LO3: Analyze the instruments of trade policy, including tariffs, quotas, subsidies, and voluntary export restraints.
      LO4: Understand the objectives and major agreements of the World Trade Organization (WTO).
CO4: Comprehend and analyse the concepts of balance of payments and exchange rates and their impact on international economic relations.
      LO1: Explain the principles of balance of payments accounting and the difference between balance of payments and balance of trade.
      LO2: Describe the concept of exchange rates, including spot and forward exchange rates.
      LO3: Analyze the determination of equilibrium exchange rates and evaluate the fixed and flexible exchange rate systems.

LO4: Understand the purchasing power parity theory and the relationship between exchange rates and balance of payments.

CO5: Evaluate the evolution of the international monetary system and the role of international financial institutions.

LO1: Describe the historical context and functioning of the Gold Standard and the interwar years (1918-1939).

LO2: Explain the Bretton Woods System and its significance in the international monetary system.

LO3: Analyze the managed floating regime and its impact on global monetary stability.

LO4: Understand the objectives, functions, achievements, and failures of the International Monetary Fund (IMF).

Unit	Contents	L	T	P	Total Hours
I	**International Economics and Trade Theories:** The subject matter of international economics; The Mercantilists' views on trade; Adam Smith's absolute advantage theory, Ricardo's theory of comparative advantage; Reciprocal demand, Offer curves and terms of trade; Opportunity cost theory.	12			12
II	**Factor abundance as basis for international trade:** Heckscher-Ohlin theorem, Factor Price Equalization theorem and its sources of disruptions; Effect of trade on income distribution – Stolper-Samuelson theorem, The specific factors model, Leontief paradox.	12			12
III	**Trade Policy:** Free trade – arguments for and against free trade; Political economy of protectionism; Instruments of trade policy: Tariff -Partial equilibrium effects of tariff, Non-tariff barriers- Quota, Subsidy, Voluntary export restraints; WTO – Objectives, major agreements	12			12
IV	**Balance of payments and Exchange Rate:** Balance of payments and Balance of trade, Balance of payments accounting principles; Concept of exchange rate, Spot and Forward exchange rates; Determination of equilibrium Exchange Rate; Fixed and flexible exchange rate systems – Case for and against fixed and flexible exchange rate systems; Purchasing power parity theory- relative and absolute versions; Relationship between exchange Rate and Balance of payments.	12			12
V	**International Monetary System:** Gold Standard, The interwar years (1918-1939); Bretton Woods System, Managed floating regime; International Monetary Fund (IMF) - Objectives, functions, achievements and failures.	12			12
	Total	60			60

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive Mapping of COs with Bloom's Taxonomy:

Cognitive Knowledge Dimensions	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	CO5	CO2		CO1		
Conceptual Knowledge	CO1, CO2,	CO1, CO2, CO3, CO4, CO5	CO1, CO2, CO3, CO4, CO5	CO3, CO4	CO2, CO3, CO4, CO5	
Procedural Knowledge	CO3, CO4	CO2	CO3, CO4	CO5	CO2, CO5	
Metacognitive Knowledge						

Mapping of COs with POs:

COs \ Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓	✓	✓	✓		✓	✓	✓	
CO2	✓	✓	✓	✓	✓			✓	✓	
CO3	✓	✓	✓	✓	✓		✓	✓	✓	
CO4	✓	✓	✓	✓	✓		✓	✓	✓	
CO5	✓	✓	✓	✓	✓		✓	✓	✓	

Reading Lists:

- Paul Krugman, Maurice Obstfeld, and Marc Melitz, *International Economics: Theory and*
- *Policy*, Addison-Wesley (Pearson Education Indian Edition), 10th edition, 2018.
- Dominick Salvatore, *International Economics: Trade and Finance*, John Wiley
- International Student Edition, 10th edition, 2011.
- K.C. Rana and K.N. Verma: *International Economics,* Vishal Publishing Co.
- Sodersten, Bo: *International Economics*, Macmillan Press Ltd.
- Cherunillam, F.: *International Economics*, Tata McGraw Hill.
- Manur, H.G.: *International Economics*, Vikas Publishing House Pvt. Ltd.
- Vaish, M.C. & Singh, S.: *International Economics*, Oxford & IBH Publishing Co. Pvt.

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 6th SEMESTER

Course Title	:	**History of Economic Thought**
Course Code	:	**ECOC14**
Nature of the course	:	**Major**
Total Credits	:	**04**
Distribution of Marks	:	**60 (End Sem) + 40 (In-Sem)**

Course Description: The objective of this course is to acquaint the learners with the historical developments in the economic thoughts propounded by different schools.

Course Objectives:
1. To understand the evolution of economics ideas over time; and
2. To explore the contributions of key economic thinkers and schools of thought.

Course Outcomes : After learning this course, the learner will be able to

CO 1: Comprehend the basic tenets of Mercantilism and evaluate the contributions of the classical economists.

> LO 1.1: Explain the basic tenets of Mercantilism and Physiocracy.
> LO 1.2: Discuss the contributions of Adam Smith, David Ricardo, T.R. Malthus, J.B. Say, and J.S. Mill to Classical economic theory.
> LO 1.3: Evaluate the relevance and influence of Classical economic theories in contemporary economic contexts.

CO 2: Analyze the ideas of the historical school and the main tenets of state socialism and scientific socialism.

> LO 2.1: Describe the Positive and Critical ideas of the Historical School in reaction to Classicism.
> LO 2.2: Explain the principles of State Socialism as proposed by J.K. Rodbertus and F. Lassalle.
> LO 2.3: Outline the main tenets of Marxian Thought and its critique of Classical economics

CO 3: Identify the factors giving rise to subjectivism and marginalism.

> LO 3.1: Identify the factors that led to the rise of Subjectivism and Marginalism in economics.
> LO 3.2: Discuss the economic ideas of Léon Walras and Carl Menger.
> LO 3.3: Evaluate the contributions of Alfred Marshall and Knut Wicksell to Neo-Classical economic theory.

CO 4: Examine the contributions of neo-classicism and evaluate the Keynesian and post-Keynesian developments in economic thought.

> LO 4.1: Explain the salient features of Keynes' General Theory of Employment, Interest, and Money.
> LO 4.2: Discuss the concept of the multiplier and the theory of employment according to Keynes.
> LO 4.3: Evaluate the contributions of Post-Keynesian economists such as Friedman, Tobin, and Samuelson.

CO 5: Analyze the historical and contemporary relevance of Indian economic ideas.

> LO 5.1: Discuss the development of Indian economic thought and its historical context.
> LO 5.2: Explain the economic ideas of Kautilya, Dadabhai Naoroji, Mahatma Gandhi, and D.R. Gadgil.
> LO 5.3: Evaluate the influence of Indian economic thought on modern economic policies and practices.

Units		L	T	P	Total hours
1.	**Pre-Classical and Classical Economic Thought:** Basic tenets of Mercantilism and Physiocracy, Contributions of Adam Smith, David Ricardo, T.R. Malthus, J.B. Say, J.S. Mill's Restatement of Classicism.	12			12
2.	**Reaction against Classicism:** Positive and Critical ideas of the Historical School; State Socialism– Ideas of J.K. Rodbertus and F. Lassalle; Scientific Socialism- Main tenets of Marxian Thought	12			12
3.	**The Reconstruction of Economic Science:** Subjectivism and Marginalism – Factors giving rise to Subjectivism and Marginalism, Economic ideas of Walras and Carl Menger; Neo-Classicism – Contributions of Alfred Marshall, Knut Wicksell..	12			12
4.	**Keynesian Economics and Post-Keynesian Developments in Economic Thought:** Keynes' Departure from Classical Economics, Salient Features of the General Theory of Employment, Interest and Money, Concept of Multiplier, Theory of Employment, Keynes' Influence on Public Policy, Keynesian Economics and Underdeveloped Countries, Post-Keynesian Developments in Economic Thought- Contributions of Friedman, Tobin, and Samuelson	12			12
5.	**Indian Economic Thought** Development of Indian Economic Thought; Economic ideas of Kautilya, D. Naoroji, M. Gandhi, D.R. Gadgil,	12			12
Total		**60**			**60**

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
    - Home assignment
    - Viva voce
    - Seminar
    - Group discussion
    - Quiz

Cognitive Mapping of COs with Bloom's Taxonomy:

Cognitive Knowledge Dimensions	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	CO1, CO2, CO3, CO4	CO1, CO2, CO3, CO4				
Conceptual Knowledge		CO1, CO2, CO3, CO4	CO2, CO4	CO3, CO4, CO5	CO1, CO2, CO3, CO4, CO5	
Procedural Knowledge						
Metacognitive Knowledge						

Mapping of COs with POs:

COs \ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓	✓	✓			✓	✓	✓	
CO2	✓	✓	✓	✓				✓	✓	✓
CO3	✓	✓	✓	✓			✓	✓	✓	✓
CO4	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO5	✓	✓	✓	✓		✓	✓	✓	✓	✓

Reading list:

- Charles Gide and Charles Rist: *A History of Economic Doctrines*, Oxford University Press.

- Lewis H. Haney: *History of Economic Thought*, Surjeet Publications.

- T.N. Hajela: *History of Economic Thought*, Konark Publishers Pvt. Ltd.

- H.L. Bhatia: *History of Economic Thought*, Vikash Publications.

- P.S. Loknathan: *History of Economic Thought*, Kalyani Publishers.

- Ghosh and Ghosh: *History of Economic Thought*, Himalaya Publishing House.

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 6ᵗʰ SEMESTER

Course Title	:	**Public Finance**
Course Code	:	**ECOC15**
Nature of the course	:	**Major**
Total Credits	:	**04**
Distribution of Marks	:	**60 (End-Sem.) + 40 (In-Sem.)**

Course Description: This course deals with the nature and scope of public finance. It incorporates a formal analysis of public revenue, public expenditure, public debt, government budgeting, fiscal policy and fiscal federalism with special reference to India.

Course Objectives:
1. To acquaint the learners about the basics of Public finance.
2. To impart concepts to the students about Public Revenue, public expenditure, public debt and government budget.

Course Outcomes: After learning this course, the learner will be able to

CO 1: Evaluate the subject matter of Public Finance.
   LO1.1: Explore the role of public finance in market economies and the characteristics of public goods versus private goods.
   LO 1.2: Analyze the Free Rider problem and its implications for public goods provision.

CO 2: Analyse the characteristics of a good tax system, assess the distribution of the burden of taxation and analyze the effects of taxation.
   LO 2.1: Identify and classify various sources of tax and non-tax revenue.
   LO 2.2: Apply principles of taxation to real-world scenarios and understand the effects and incidence of taxation.
   LO 2.3: Analyze India's tax system and evaluate its main features.

CO 3: Assess the role of public expenditure and public debt and examine the reasons for their growth.
   LO 3.1: Explain the theories and effects of public expenditure and its role in economic growth.
   LO 3.2: Discuss the significance of public expenditure in India.
   LO 3.2: Discuss the mechanisms, sources, and effects of public debt and analyze the growth of public debt in India.

CO 4: Examine the role of government budget.
   LO 4.1: Analyze budgetary policies in India, including components of revenue and capital budgets, and trends in central government receipts and expenditure.
   LO 4.2: Evaluate the latest Union Budget of India.

CO 5: Evaluate the role of fiscal policy in developed and less developed countries.

   LO 5.1: Discuss fiscal federalism, including the principles for efficient division of financial resources and methods of resource transfer.
   LO 5.2: Explain the Centre-State financial relations in India.

Units	L	T	P	Total hours
1 **Nature and Scope of Public Finance:** Origin and development of public finance, meaning and subject matter, public finance versus private finance, role of public finance, need for public sector in market economies, public goods – characteristics, type of public goods, public versus private goods, the Free Rider problem.	10			10
2 **Public Revenue:** Tax and non-tax revenue, sources of tax and non-tax revenue, base of a tax, buoyancy and elasticity of tax, characteristics of a good tax system, rate schedules of taxation, principles of taxation – the Benefit Principle and Ability to Pay principle, effects of taxation, impact shifting and incidence of taxation, theories of shifting and incidence – the Concentration Theory, the Diffusion Theory, the Modern Theory, Main features of India's tax system.	14			14
3 **Public Expenditure and Public Debt:** **Public Expenditure:** Meaning and nature of public expenditure, Wagner's Law of Increasing State Activities, Wiseman-Peacock Theory, Critical Limit Hypothesis, canons of public expenditure, effects of public expenditure, public expenditure as a compensatory mechanism and promoter of growth, growth of public expenditure in India. **Public Debt:** Meaning and classification of public debt, mechanism of public borrowing, sources of public borrowing, reasons for the growth of public debt, effects of public debt, redemption of public debt, growth of public debt in India.	14			14
4 **Government Budgeting:** Meaning and role of budget, budget framing, types of government budget, concepts of deficit – revenue deficit, budgetary deficit, fiscal deficit and primary deficit, budgetary policy in India – components of revenue and capital budget, budgetary trends of receipts and expenditure of central government, Study of the latest Union Budget.	10			10
5 **Fiscal Policy and Fiscal Federalism :** **Fiscal Policy:** Meaning and evolution of fiscal policy, objectives of fiscal policy in developed and less developed economies, major fiscal reforms in India **Fiscal Federalism:** Definition, nature and formative factors of federation, principles for efficient division of financial resources, methods of resource transfer, Centre-State financial relations in India – an overview.	12			12
Total	60			60

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive mapping of Course outcomes with Bloom's Taxonomy:

Cognitive knowledge dimension	Cognitive process dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	CO1	CO1, CO3	CO2, CO3		CO1	
Conceptual Knowledge	CO1, CO2	CO1, CO2, CO3		CO2	CO5	
Procedural Knowledge		CO4, CO5	CO3, CO4	CO4, CO5	CO5	
Metacognitive Knowledge						

Mapping of Course Outcome with Program Outcome:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✔	✔	✔			✔	✔	✔	✔	
CO2	✔	✔	✔	✔		✔		✔		
CO3	✔	✔		✔		✔		✔		
CO4	✔	✔	✔	✔		✔		✔		
CO5	✔	✔	✔	✔		✔	✔	✔	✔	

Reading List:
- Musgrave, R.A. and Musgrave, P.B., *Public Finance in Theory & Practice,* McGraw Hill Publications, 5thedition,1989.
- Hindriks, J. G. and Myles, D., *Intermediate Public Economics*, Prentice Hall of India
- Mukherjee, M. , *Simple Analytics of Public Finance*, Books and Allied, Pvt. Ltd.
- Choudhry, R.K.(2004), *Public Finance and Fiscal Policy*, Kalyani Publishers.
- Prest, A.R.(1971), *Public Finance in Theory and Practice*, Vikash Publications Ltd.
- Bhatia, H.L*., Public Finance*, Vikash Publishing House Pvt. Ltd.
- *Latest Union Budget*, Government of India
- *Economic Survey*, Government of India (Latest).

Course Title	:	**Public Finance**
Course Code	:	**MINECO6**
Nature of the course	:	**Minor**
Total Credits	:	**04**
Distribution of Marks	:	**60 (End Sem) + 40 (In-Sem)**

Course Description: This course deals with the nature and scope of public finance. It incorporates a formal analysis of public revenue, public expenditure, public debt, government budgeting, fiscal policy and fiscal federalism with special reference to India.

Course Objectives:
1. To acquaint the learners about the basics of Public finance.
2. To impart concepts to the students about Public Revenue, public expenditure, public debt and government budget.

Course Outcomes: After learning this course, the learner will be able to

CO 1: Evaluate the subject matter of Public Finance.
    LO1.1: Explore the role of public finance in market economies and the characteristics of public goods versus private goods.
    LO 1.2: Analyze the Free Rider problem and its implications for public goods provision.

CO 2: Analyse the characteristics of a good tax system, assess the distribution of the burden of taxation and analyze the effects of taxation.
    LO 2.1: Identify and classify various sources of tax and non-tax revenue.
    LO 2.2: Apply principles of taxation to real-world scenarios and understand the effects and incidence of taxation.
    LO 2.3: Analyze India's tax system and evaluate its main features.

CO 3: Assess the role of public expenditure and public debt and examine the reasons for their growth.
    LO 3.1: Explain the theories and effects of public expenditure and its role in economic growth.
    LO 3.2: Discuss the significance of public expenditure in India.
    LO 3.3: Discuss the mechanisms, sources, and effects of public debt and analyze the growth of public debt in India.

CO 4: Examine the role of government budget.
    LO 4.1: Analyze budgetary policies in India, including components of revenue and capital budgets, and trends in central government receipts and expenditure.
    LO 4.2: Evaluate the latest Union Budget of India.

CO 5: Evaluate the role of fiscal policy in developed and less developed countries.

    LO 5.1: Discuss fiscal federalism, including the principles for efficient division of financial resources and methods of resource transfer.

LO 5.2: Explain the Centre-State financial relations in India.

	Units	L	T	P	Total Hours
1	**Nature and Scope of Public Finance:** Origin and development of public finance, meaning and subject matter, public finance versus private finance, role of public finance, need for public sector in market economies, public goods – characteristics, type of public goods, public versus private goods, the Free Rider problem.	10			10
2	**Public Revenue:** Tax and non-tax revenue, sources of tax and non-tax revenue, base of a tax, buoyancy and elasticity of tax, characteristics of a good tax system, rate schedules of taxation, principles of taxation – the Benefit Principle and Ability to Pay principle, effects of taxation, impact shifting and incidence of taxation, theories of shifting and incidence – the Concentration Theory, the Diffusion Theory, the Modern Theory, Main features of India's tax system.	14			14
3	**Public Expenditure and Public Debt:** **Public Expenditure:** Meaning and nature of public expenditure, Wagner's Law of Increasing State Activities, Wiseman-Peacock Theory, Critical Limit Hypothesis, canons of public expenditure, effects of public expenditure, public expenditure as a compensatory mechanism and promoter of growth, growth of public expenditure in India. **Public Debt:** Meaning and classification of public debt, mechanism of public borrowing, sources of public borrowing, reasons for the growth of public debt, effects of public debt, redemption of public debt, growth of public debt in India.	14			14
4	**Government Budgeting:** Meaning and role of budget, budget framing, types of government budget, concepts of deficit – revenue deficit, budgetary deficit, fiscal deficit and primary deficit, budgetary policy in India – components of revenue and capital budget, budgetary trends of receipts and expenditure of central government, Study of the latest Union Budget.	10			10
5	**Fiscal Policy and Fiscal Federalism :** **Fiscal Policy:** Meaning and evolution of fiscal policy, objectives of fiscal policy in developed and less developed economies, major fiscal reforms in India **Fiscal Federalism:** Definition, nature and formative factors of federation, principles for efficient division of financial resources, methods of resource transfer, Centre-State financial relations in India – an overview.	12			12
	Total	60			60

Where, L: Lectures   T: Tutorials   P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: **40 Marks**

- Two Internal Examinations   -   **20 Marks**
- Others (Any two)   -   **20 Marks**
  - Home assignment
  - Viva voce
  - Seminar
  - Group discussion
  - Quiz

Cognitive mapping of Course outcomes with Bloom's Taxonomy:

Cognitive knowledge dimension	Cognitive process dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	CO1	CO1, CO3	CO2, CO3		CO1	
Conceptual Knowledge	CO1, CO2	CO1, CO2, CO3		CO2	CO5	
Procedural Knowledge		CO4, CO5	CO3, CO4	CO4, CO5	CO5	
Metacognitive Knowledge						

Mapping of Course Outcome with Program Outcome:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✔	✔	✔			✔	✔	✔	✔	
CO2	✔	✔	✔	✔		✔		✔		
CO3	✔	✔		✔		✔		✔		
CO4	✔	✔	✔	✔		✔		✔		
CO5	✔	✔	✔	✔		✔	✔	✔	✔	

Reading List:

- Musgrave, R.A.and Musgrave, P.B., *Public Finance in Theory & Practice,*McGraw Hill Publications, 5thedition,1989.
- Hindriks, J. G. and Myles, D., *Intermediate Public Economics*, Prentice Hall of India
- Mukherjee, M. , *Simple Analytics of Public Finance*, Books and Allied, Pvt. Ltd.
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- Prest, A.R.(1971), *Public Finance in Theory and Practice*, Vikash Publications Ltd.
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- *Latest Union Budget*, Government of India
- *EconomicSurvey*, Government of India (Latest).