SYLLABUS

DIBRUGARH UNIVERSITY

FYUGP 2020

ECONOMICS

Recommended by BoS in Economics, D.U. in its meetings held on 03/11/2025 and approved by UG Board in its meeting held on …….and passed by the Academic Council meeting held on…..

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: These assessment tools of the programme are systematically designed to develop and integrate domain-specific skills, disciplinary competencies, and transferable real-world skills, fostering holistic learner development in alignment with diverse professional and societal requirements.

- Home assignment
- Project Report/ Dissertation
- 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 UGC DRAFT RELEASED on 12/12/2022

Year	Semester	Course (Lecture+Tutorial+Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
		Major (Core)	1	ECOC1	Introductory Microeconomics	4	-
1	1st	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
		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	3	ECOC9	Intermediate Macroeconomics	4	
				ECOC10	Basic Econometrics	4	
				ECOC11	Introduction to Development Economics	4	
		Minor	1	MINECO5	Elementary Development Economics	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	4	ECOC12	Economics of Growth and Development	4	
				ECOC13	International Economics	4	
				ECOC14	History of Economic Thought	4	
				ECOC15	Public Finance	4	
		Minor	1	MINECO6	Statistics for Economics	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							

Year	Semester	Course (Lecture+Tutorial+Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
4	7th	Major	3	ECOC16	Indian Economy: Policies and Performance	4	
				ECOC17	Public Economics	4	
				ECOC18	Mathematics for Economics	4	
		Minor	1	MINECO7	Public Finance	4	The course shall be taken by students from disciplines other than Economics
		Research Methodology	1		Research Methodology and Ethics	4	
		Total				**20**	
Year	**Semester**	**Course (Lecture+Tutorial+Practical)**	**No. of Courses**	**Course Code**	**Name of the Course**	**Credit**	**Remarks**
4	8th	Major	2	ECOC19	Money and Financial Markets	4	
				ECOC20	Introductory Environmental Economics	4	
		Minor	1	MINECO8	Money and Banking	4	The course shall be taken by students from disciplines other than Economics
		Discipline Specific Elective OR Dissertation	2	ECODSE1	Econometric Methods	4	Two DSEs of 4 credits each OR dissertation of 8 credits
				ECODSE2	Economics of Social Sector	4	
				ECODSE3	Rural Development and Management	4	
		Total				20	
	Grand Total (Semester I, II, III, IV, V, VI, VII and VIII)					**160**	
Students on exit shall be awarded Bachelor of (in the Field of Study/Discipline) OR (Honours with Research) (4 years) after securing the requisite 160 Credits on completion of Semester VIII							

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 and related concepts.

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

LO 3.3: Discuss and analyse consumer's optimum choice; income and substitution effects; labour supply and savings decision; choice between leisure and consumption.

CO 4: Analyze the behavior of profit-maximizing firms in both short run and long run production processes, and evaluate cost structures and output decisions for optimal production.

LO4.1: Explain the fundamental concepts of production, cost structures, and the behavior of firms aiming to maximize profit in the short run.

LO4.2**:** Analyze the relationships between revenue, costs, and profit maximization, and make informed output decisions in different market conditions.

LO4.3**:** Evaluate long-run cost behaviors, including economies and diseconomies of scale, and apply these concepts to real-world firm decision-making.

CO 5: Evaluate functioning of input markets, including labour and capital markets, and analyze the impact of market structures and government interventions on equilibrium outcomes

LO 5.1: Describe the concept of derived demand in input markets and examine how labour and capital markets determine equilibrium prices and quantities.

LO 5.2: Analyze the effects of monopsony, minimum wage laws, and trade unions on labour market outcomes.

LO 5.3: Evaluate the role of government intervention in input markets, particularly in capital allocation and labour regulation.

UNITS	COURSE CONTENTS	L	T	P	Total Hours
I	**Exploring the subject matter of Economics:** Meaning, Scope and method of economics; Positive and normative approaches; Inductive and deductive approaches; Principles of economics - Decision making, People's interaction and working of the Economy; Economic Problems: Scarcity, Choice and Opportunity cost; Types of Microeconomic Analysis, Goals of Microeconomics; Economic models.	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	**The production process: the behaviour of profit maximizing firms** 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.	9	3	-	12

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

V	**Input Markets** Key concepts of input markets; Derived demand; Labour market: labour supply and labour demand, equilibrium in the labour market, Monopsony, minimum wage, trade union; Capital Market: Demand for capital, supply of capital, Government interventions in the input market.	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, New Delhi Edition
- 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

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

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 and imperfect 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***

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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., 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, 4th edition, 2007
- Joseph E. Stiglitz and Carl E. Walsh, Economics, W.W. Norton & Company, Inc., New York, International Student Edition, 4th Edition, 2007
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- McConnell, Brue and Flynn, Microeconomics: Principles, Problems, and Policies, McGraw Hill Education (India) Private Limited, 2017

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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

Course Title	**:**	***Economic History of India*[1]**
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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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* (A Peoples" History of India), Vol.28, Tulika2006.
- Daniel Thorner, *Agrarian Prospect in India*, 1977.
- L. Visaria and P.Visaria, *Population*. CEHI, Chapter5.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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 learn 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 learn the fundamental objectives and scope of macroeconomics, laying the foundation for advanced macroeconomic analysis.

LO1.1: Differentiate between microeconomics and macroeconomics and learn 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: Learn 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 learn the significance of sustainable accounting.

CO3: Analyze the components and determinants of aggregate demand and aggregate supply, and learn 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: Discuss 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	2		12
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	10	2		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	2		12

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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	10	2		12
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	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

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

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

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 learn the concept 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 explain 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	✓	✓	✓	✓				✓	✓	

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

SUGGESTED READINGS:

- Dornbusch, R., Fischer, S. &Startz, R. (2018). *Macroeconomics* (12th ed.). McGraw Hill Education
- Froyen, R.T. (2014). *Macroeconomic Theories and Policies* (10th ed.). Pearson Education
- Mankiw, N.G. (2007). *Macroeconomics*(6th 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 endeavors.

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: 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: Evaluate 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 MNCs 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*[1] 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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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,CO 3, 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 Acharya and Rakesh 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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

- J. Dennis Rajakumar, 2011,―Size and Growth of Private Corporate Sector in Indian Manufacturing, *Economic and Political Weekly*, April
- Arvind Subramanian, *India's Turn, 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***[2]
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: Apply the 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: 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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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.

LO 1.5: explain how indigenous ideas of self-reliance and balanced growth.

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.

LO3.5: Analyze indigenous concept of equity and redistribution.

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; *Indigenous ideas of self-reliance and balanced growth*[1]	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; *Indigenous concept of equity and redistribution*[1], 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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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, 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*, Oxford University Press.
- Kaushik Basu and A. Maertens, (ed.), 2013. *The New Oxford Companion to Economics in India*, Oxford University Press.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

- 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	**:**	**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: 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.
LO 1.5: explain how indigenous ideas of self-reliance and balanced growth.

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.
LO3.5: Analyze indigenous concept of equity and redistribution.

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.
LO5.5: Interpret the Holistic view of human well-being in Indian philosophy

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. *Indigenous ideas of self-reliance and balanced growth*[1]	10			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			14
III	**Poverty and inequality** Poverty-Concept and Incidence of Poverty in India, Poverty estimates, Growth and Poverty, Strategy of Poverty Alleviation; *Indigenous concept of equity and redistribution*[1] 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	**Human development** Human Development in India- Human Development indicators, Human Development across states; India's human Development record in global perspective. *Holistic view of human well being in Indian philosophy*[1]	14			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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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*, Oxford University Press.
- 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's Turn, 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: Analyze the concepts of development and underdevelopment, and evaluate 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, 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: Analyze 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, Neo-Classical – Solow model; Ideas of New Growth theory Growth strategies: Balanced growth and Unbalanced growth	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*[3]	12			12
III	***Issues of Development II*[3]*:*** 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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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 and understand the revealed preference theory.

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.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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

LO 4.1: Apply various pricing strategies under monopoly, including price discrimination and peak-load pricing.

LO 4.2: Analyze the characteristics and economic implications of monopolistic competition.

CO-5: Analyse the performance of firms under oligopoly market structures.

LO 5.1: Analyze different models of oligopoly behavior and their implications for pricing and output decisions.

LO 5.2: 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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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, CO4	CO2, CO3, CO4	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	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
CO5	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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 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
- R.S. Pindyck, D.N. Rubinfeld and P.L. Meheta (2009): Microeconomics, 7th Edition, 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: 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: Analyze 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*[1] -Trend in Area and Production of food crops, Horticultural/Plantation Crop, Vegetables-Fruits-Floriculture-Sericulture; Livestock Economy; Agricultural Marketing, Agricultural Finance – Agriculture Prices; Modernization; *Sustainable agriculture*[1], problems of agriculture.	12			12
III	**Industry** Role and performance of Industry sector; Industrial Structure-Major, *MSMEs and cottage industries*[1]; 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[2]***
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. The course is structured to equip students with the essential skills to effectively apply statistical concepts in research, academia, and related professional domains.

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: Apply the concept of moments 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: 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 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: Derive regression lines, and use the method of least squares.

LO4.4: Calculate and interpret the coefficient of determination (R^2) 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 (concept 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, Goodness of fit: R^2 and R^2; 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: Practical

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	✓	✓	✓	✓	✓		✓	✓	✓	

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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 its Applications.* 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

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

Course Title	**:**	***Intermediate Mathematical Methods for Economics[2]***
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: Use partial and total differentiation to analyze and solve problems in economics, including production and consumer theory.

LO1.1: Perform partial and total differentiation of functions involving several variables.

LO1.2: Apply differentiation techniques to analyze indifference curves and derive expansion paths.

LO1.3: Evaluate production functions, including homogeneous functions, using Euler's Theorem.

LO1.4: Analyze and compare the properties of Cobb-Douglas and CES production functions.

CO2: Apply methods of unconstrained optimization to solve economic problems involving single and multiple variables.

LO2.1: Perform unconstrained optimization for functions of one variable and interpret economic applications.

LO2.2: Solve unconstrained optimization problems involving multiple variables.

LO2.3: Analyze economic scenarios such as discriminating monopoly, multiplant and multiproduct monopoly using optimization techniques.

LO2.4: Interpret the results of optimization in the context of economic decision-making.

CO3: Use Lagrange multipliers to solve constrained optimization problems and apply these methods to consumer and producer equilibrium.

LO3.1: Explain the concept of constrained optimization and the role of Lagrange multipliers.

LO3.2: Apply Lagrange multipliers to solve optimization problems with equality constraints.

LO3.3: Analyze consumer equilibrium using constrained optimization techniques.

LO3.4: Apply constrained optimization to determine producer equilibrium and interpret the results.

CO4: Apply first-order difference equations to model and analyze economic phenomena.

LO4.1: Define and solve first-order difference equations.

LO4.2: Interpret the solutions of difference equations in economic contexts.

LO4.3: Apply difference equations to model economic dynamics, such as inventory control and market equilibrium.

LO4.4: Analyze the stability of economic models using difference equations.

Units		L	T	P	Total Hours
1.	**Derivatives of Functions of several variables:** Partial and Total differentiation and economic applications, Indifference curve analysis; Expansion Path, Production Function Analysis- Homogeneous Functions and Euler's Theorem; Cobb-Douglas Production Function and its Properties; CES Production Function and its properties.	8	2		10
2.	**Unconstrained optimization:** Unconstrained optimization with one variable and Economic Applications; Unconstrained optimization with more than one variable and Economic Applications- Discriminating Monopoly, multiplant and multiproduct monopoly.	16	2		18
3.	**Constrained optimization with equality constraints:** Lagrange characterization using calculus; applications- consumer's equilibrium and producer's equilibrium.	16	2		18
4.	**Difference equation:** First order Difference equation and its Economic Applications.	12	2		14
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 Dimensions					
	Remember	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Create**
Factual Knowledge	CO1					
Conceptual Knowledge	CO1	CO1, CO2, CO3, CO4	CO1, CO2, CO3, CO4	CO1, CO2, CO4		
Procedural Knowledge		CO1, CO2, CO3, CO4	CO1, CO2, CO3, CO4	CO3		
Metacognitive Knowledge					CO4	

Mapping of COs with POs:

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

Reading list:

- 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 4TH SEMESTER

Course Title	**:**	***Mathematical Methods for Economics*[2]**
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: 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 Cramers 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 Process Dimensions					
Cognitive Knowledge 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 5th SEMESTER

Course Title	**:**	**Intermediate Macroeconomics**
Course Code	**:**	**ECOC9**
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: Discuss 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.

LO3.3: 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 explain 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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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

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	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						

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

Mapping of COs with POs:

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

Suggested Readings:

- 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*^{2}**
Course Code	**:**	**ECOC10**
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. The course is structured to equip students with the essential skills to effectively apply econometric tools in research, academia, and related professional domains.

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 explain 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.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

LO3.1: Discuss 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 explain 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, detection and alternative methods of estimation. Autocorrelation: Sources, consequences, tests of autocorrelation, remedial measures.	10	3		13

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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	✓	✓	✓	✓	✓			✓	✓	

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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.
- Douglas A. Lind, William G. Marchal & Samuel A. Wathen. (2021). *Statistical Techniques in Business & Economics*, McGraw Hill

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

Course Title	**:**	**Introduction to Development Economics**
Course Code	**:**	**ECOC11**
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 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: Analyze the 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: 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: Analyze and evaluate 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; *measures of economic development*[2,3]*- Conventional, PQLI,HDI,GD*I ; 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***[2,3]**:** 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

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	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	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO5	✓	✓	✓	✓		✓	✓	✓	✓	✓

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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. Taylor and 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 Development Economics**
Course Code	**:**	**MINECO5**
Nature of the course	**:**	**Minor**
Total Credits	**:**	**04**
Distribution of Marks	**:**	**60 (End Sem) + 40 (In-Sem)**

Course Description: 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 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.

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; and
3. To familiarize the students with the concepts and implications of poverty and inequality.

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

CO1: Analyze the 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: 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: Analyze and evaluate 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.

Units		L	T	P	Total Hours
1	**Concepts of growth and development:** Evolution of Development Economics; Meaning of economic development and underdevelopment; distinction between economic growth and development; *measures of economic development*[2,3]*- Conventional, PQLI,HDI,GD*I; factors affecting growth; importance of agriculture; industry and infrastructure in economic development	12	3	-	15
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	12	3	-	15
3	**Growth Models:** Classical growth model; Harrod-Domar model; Kaldor's Model, Solow model, Endogenous growth model- Romer's Version.	12	3	-	15
4	***Poverty and Inequality***[2, 3]**:** 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	12	3	-	15
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 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,	CO4	
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	

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.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

- 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. Taylor and 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	**:**	**Economics of Growth and Development**
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.
- LO 1.6: Analyze the impact of mortality rates on economic development and human capital accumulation.
- LO 1.7: Assess how variations in fertility choices influence human capital development.

CO 2: Examine the role of land, labour and credit market on economic development.
- LO 2.1: Evaluate the impact of improved nutrition on labor productivity in rural areas.
- LO 2.2: Analyze the dynamics of tenant-landlord relationships and their impact on rural economies.
- LO 2.3: Assess the impact of microfinance on rural economic development.

CO 3: Analyze the impact of economic activity on climate change.
- LO 3.1: Define and discuss the concept of sustainability for renewable resources.
- LO 3.2: Explain the challenges and strategies in managing common-pool resources
- LO 3.3: Evaluate the effectiveness of state regulations in managing environmental externalities.
- LO 3.4: Evaluate the economic and social consequences of climate change.

CO 4: Evaluate the role of communities in economic development.
- LO 4.1: Explain the economic roles played by communities in rural development.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

LO 4.2: Analyze the impact of community failures on economic development.

CO 5: Evaluate the role of trade and globalization on economic development.

LO 5.1: Explain the connection between trade and economic growth, including both static and dynamic gains.

LO 5.2: Discuss the Prebisch-Singer Thesis and its implications for global inequality.

LO 5.3: 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*[3]:** 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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO5	✓	✓	✓	✓		✓	✓	✓	✓	✓

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.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

- 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 evaluate 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: Explain 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 evaluate its implications.
- LO3: Analyze the instruments of trade policy, including tariffs, quotas, subsidies, and voluntary export restraints.
- LO4: Discuss 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: Explain 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: Discuss 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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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 analyze the evolution of economic 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: Analyze the basic tenets of Mercantilism and evaluate the contributions of the classical economists.

LO 1.1: Analyze 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.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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***[1] 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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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 explain 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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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.
- Rosen, H. and Gayer, T.(2014), Public Finance, McGraw Hill Education.
- Hyman, D. (2013), Public Finance A Contemporary Application of Theory to Policy, 11th Edition, Harcourt College Publishers.
- 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).

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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

Course Title	**:**	***Statistics for Economics*[2]**
Course Code	**:**	**MINECO6**
Nature of the course	**:**	**Minor**
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. The course is structured to equip students with the essential skills to effectively apply statistical concepts in research, academia, and related professional domains.

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: Apply the concept of moments in statistical analysis.

CO2: Apply probability theory and distribution models to solve problems involving uncertainty and variability.
LO2.1: Explain basic probability concepts, and solve problems using addition and multiplication theorems.
LO2.2: Apply conditional probability and independence of events.
LO2.3: Define and calculate mathematical expectation, and understand probability mass function and probability density function.
LO2.4: Apply theoretical distributions (Binomial, Poisson, Normal).

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 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: Derive regression lines, and use the method of least squares.

LO4.4: Calculate and interpret goodness of fit 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	7	1		8
2.	**Probability Theory and Probability Distributions:** Probability: Basic Concepts; Addition and Multiplication Theorems. Conditional Probability and Independence of Events; Mathematical Expectation; Theoretical Distributions: Binomial and Poisson distribution, Normal distribution	15	2		17
3.	**Sampling and Test of Hypothesis:** Sampling vs census**,** Methods of sampling, Errors in statistics: sampling vs. non-sampling errors, Sampling distribution; Hypotheses: Definition; Type I and Type II errors; Level of Significance; Testing of hypothesis: chi square, *t* test and F test	8	2		10
4	**Correlation and Regression Analysis:** Elementary analysis of linear correlation: Scatter Diagram, Covariance, Karl Pearson's coefficient of correlation, Spearman's rank correlation The Concept of Regression, Regression Lines, the method of Least Squares, Goodness of fit: R^2 and $\bar{R}^2$; 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; Problems in construction of index numbers.	**7**	1		8
	Total	**52**	**8**		**60**

Where, L: Lectures T: Tutorials P: Practical

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 its Applications.* 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

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 7th SEMESTER

Course Title	**:**	**Indian Economy: Policies and Performance**
Course Code	**:**	**ECOC16**
Nature of Course	**:**	**Major**
Total Credits	**:**	**4 credits**
Distribution of Marks	**:**	**60 (End-Sem.) + 40 (In-Sem.)**

Course description: This course offers an in-depth exploration of India's economic development, with a focus on the transformation from pre-liberalization to post-liberalization periods. It examines various aspects of growth, including sectoral contributions to the economy, demographic trends, and the key issues of poverty, inequality, and unemployment. The course looks at the performance of agriculture, industry, and the service sector, analyzing government policies and strategies in each area. Additionally, it delves into macroeconomic policies post-liberalization, including fiscal policy reforms, trade policies, and the impact of financial sector reforms on the Indian economy.

Course Objectives:

1. To assess the evolution of India's development strategies since independence, with a particular focus on the sectoral composition of growth, demographic trends, and key economic challenges like poverty, inequality, and unemployment.
2. To analyze the performance of India's agriculture sector, examining policies related to productivity, foodgrain management, pricing, procurement, and agricultural reforms.
3. To explore the industrial and service sectors in India, focusing on industrial policy reforms, the role of MSMEs, the growth of India's service sector, and the debate surrounding service-led growth.
4. To examine the impact of post-liberalization macroeconomic policies, including fiscal, trade, and financial sector reforms, and their effect on the broader Indian economy.

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

CO 1: Analyze the development strategies, growth performance, and key economic issues faced by India since independence, focusing on sectoral growth, demographic trends, poverty, inequality, and unemployment.

LO1. 1: Examine the development strategies adopted since independence and assess the performance during the pre and post-liberalization periods.

LO 1.2: Evaluate the sectoral composition of output and its contribution to economic growth, with a focus on demographic trends and their impact on economic development.

LO 1.3: Analyze key issues like poverty, inequality, and unemployment in India, and assess the effectiveness of policies designed to address these challenges.

CO 2: Analyze the growth and performance of agriculture in India, with a focus on technological innovations, agricultural policies, and recent reforms in the sector.

LO 2.1: Evaluate the role of technology, mechanization, and modernization in driving agricultural growth and productivity.

LO 2.2: Examine the land relations, land reforms, and policies aimed at enhancing capital formation in agriculture.

LO 2.3: Assess the effectiveness of agricultural policies related to food grain management, pricing, procurement, and the Public Distribution System (PDS).

CO 3: Explore the strategies for industrial development and the growth and performance of India's service sector, identifying key issues and policy challenges in both areas.

LO 3.1: Analyze the industrial policy reforms and identify industries where India has a comparative advantage, including the IT and textile sectors.

LO 3.2: Examine the role of MSMEs, privatization, and disinvestment in India's industrial sector, assessing

their impact on economic performance.

LO 3.3: Investigate the growth and performance of India's service sector, with a focus on FDI, trade, and sustainability of service-led growth.

CO 4: Critically assess the macroeconomic policies implemented post-liberalization, focusing on fiscal policy, trade policy, and financial sector reforms.

LO 4.1: Analyze the fiscal reforms in India, focusing on their implications on government spending, taxation, and overall economic growth.

LO 4.2: Evaluate the changes in India's foreign trade policy and its impact on the country's economic relations with the world.

LO 4.3: Assess the reforms in India's capital markets and financial sector, and analyze their implications on the domestic economy.

Unit	Contents	L	T	P	Total hours
1	**Development Strategies, Growth Performance and Basic Issues** Development Strategies Since Independence; Pre and Post liberalisation period- an assessment of performance, major aspects of transformation and recent development; Sectoral composition of output, Sectoral contribution to economic growth; Demographic trends and issues; *poverty; inequality and unemployment- Trends and policies*[3]	15			15
2	**Performance and policies in Agriculture** Agricultural Growth and productivity; role of technology and incentives- mechanization and modernization of agriculture sector; land relations and land reform; capital formation; Trade in agriculture; *Sustainable agriculture- Indian Knowledge System and Sustainable agriculture*[1]; Agriculture development policies- foodgrain management- pricing and procurement, PDS and its recent development; Policies related to productivity, crop insurance, credits and marketing.	15			15
3	**Industry and service sector** Strategy of Industrial development: Industrial Policy Reforms; Identification of industries having India's Comparative Advantage –IT Industry, Textile Industry; MSMEs- Performance, policies and issues; privatization and disinvestments; Service sector: Growth and performance of India's service sector; FDI and trade in India's service sector- composition and direction; outsourcing of services, Debate on sustainability of Service led growth.	15			15

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

4.	**Post liberalisation Macroeconomic Policies and Their Impact** Fiscal Policy: Fiscal reforms and their implications on the Indian Economy; Trade policy: Foreign trade policy and its recent changes, Reforms in External sector and their impact on the economy; Capital market reforms and recent changes; Financial sector reforms and their impact on the domestic economy	15			15
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 blooms taxonomy						
Cognitive Knowledge Dimensions	**Remember**	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Create**
Factual Knowledge	CO1, CO2, CO3, CO4	CO2		CO2, CO3, CO4	CO2, CO3	
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	✓	✓	✓	✓				✓	✓	✓

Reading list:

1. Bibek Debroy, Ashley J. Tellis, Reece Trevor (2014), Getting India Back on Track- An Action Agenda for Reform.
2. Brahmananda, P.R. and Panchamukhi, V.R., "The Development Process of Indian Economy", Himalaya.
3. Basu, Kaushik (Ed), "India's Emerging Economy" OUP.
4. Datt, R. and Sundharam, K.P.M.: Indian Economy, S. Chand.
5. Jalan, Bimal (Ed), "The Indian Economy – Problems and Prospects", Viking.
6. Kapila, Uma (Ed), "Indian Economy- Performance and Policies", Academic Foundation.
7. Kapila, U.: Indian Economy since Independence, Academic Foundation
8. Sen, A. and Dreeze, J., "Economic Development and Social Opportunities", OUP.
9. Wadhwa, C. (Ed), "Some Problems of India's Economic Policy", Tata McGraw Hill.
10. Vaidyanathan A: "AGRICULTURAL GROWTH IN INDIA: The Role of Technology, Incentives, and Institutions" OUP
11. Banik Nilanjan. (2015) Indian Economy: A Macroeconomic Perspective, N Delhi Sage.
12. Joshi, Vijay and Little, IMD, "India's Economic Reforms 1991-2001", Oxford University Press

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 7th SEMESTER

Course Title	**:**	**Public Economics**
Course Code	**:**	**ECOC17**
Nature of Course	**:**	**Major**
Total Credits	**:**	**4 credits**
Distribution of Marks	**:**	**60 (End-Sem.) + 40 (In-Sem.)**

Course description: This course explores the economic functions of government, focusing on public choice theories, taxation, public expenditure, public debt, fiscal policy, and fiscal federalism. It begins with an examination of the major roles of government in the economy, including its legal, allocation, distribution, and stabilization functions. The course delves into public choice theories, the role of public goods, and externalities, offering insights into their impact on market efficiency. It also covers key aspects of taxation, including incidence, excess burden, and optimal taxation, and further explores public expenditure theories and public debt management. The course concludes with a focus on government budgeting systems and fiscal policies, including the integration of monetary and fiscal policies, as well as a study of fiscal federalism, with a specific focus on India's Centre-State financial relations.

Course Objectives:

1. To analyze the major economic functions of government and the theoretical foundations of public choice, including voting paradoxes and the provision of public goods and externalities.
2. To analyze the incidence and burden of taxation, explain modern views on taxation efficiency, and explore the concepts of optimal taxation and the Laffer curve.
3. To explore theories of public expenditure and the management of public debt, focusing on the burden of debt, intergenerational equity, and the role of public debt in economic growth and stabilization.
4. To examine government budgeting systems, fiscal policy theories, and the relationship between fiscal policy and monetary policy, with a particular focus on fiscal federalism and India's fiscal system.

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

CO1: Analyze the economic functions of government and their role in market economies.

LO 1.1: Define and explain the major economic functions of government, including the allocation, distribution, and stabilization functions.

LO 1.2: Analyze the role of the legal framework in establishing a market economy.

LO 1.3: Explore the concepts of public goods, externalities, and the inefficiency of externalities, including remedies for externalities.

CO2: Assess the principles of taxation and its economic impacts.

LO2.1: Explain tax incidence in partial and general equilibrium, along with modern views on its measurement.

LO2.2: Assess the excess burden of tax, including its neutrality, efficiency, and equity, with reference to the Laffer curve.

LO2.3: Compare and contrast commodity tax and income tax systems in terms of optimal taxation principles.

CO3: Evaluate the theories and implications of public expenditure and public debt.

LO 3.1: Analyze the classical and modern theories of public expenditure, including the principle of maximum social advantage.

LO 3.2: Discuss the burden of public debt and its effects on future generations, with reference to theories like

capital stock transfer theory and intergenerational equity.
LO 3.3: Evaluate the role of public debt in regulating the economy and its impact on economic growth.

CO4: Analyze government budgeting processes and their role in economic policy.
LO 4.1: Explain classical and modern theories of government budgeting and the framing of budgets.
LO 4.2: Compare incremental budgeting with zero-based budgeting and assess their applications.
LO 4.3: Analyze the latest Union Budget and its role as an instrument of economic policy.

CO5: Define fiscal policy and analyze its role in economic stabilization.
LO 5.1: Analyze the classical, neo-classical, and modern views on fiscal policy.
LO 5.2: Discuss the limitations of fiscal policy and the integration of monetary and fiscal policies.
LO 5.3: Explain the principles of fiscal federalism and the challenges of inter-government financial relations.
LO 5.4: Discuss the principles of federal finance and inter-government resource transfers.
LO 5.5: Analyze the Centre-State financial relations in India and their implications on fiscal federalism.

Units		**L**	**T**	**P**	**Total hours**
1	**Government and the Economy** Major Economic Functions of the Government: establishing the legal framework for the market economy, the allocation function, the distribution function, the stabilization function. Public Choice Theories: Meaning, Outcomes of Collective Choice, the choice process- unanimity, majority rule, cyclical voting and the voting paradox, Arrow's theorem. **Public Goods and Externalities** Private versus public goods, club goods, local public goods, Tiebout Hypothesis. Externalities and inefficiency of externalities, remedies for externalities.	14			14
2	**Taxation** Tax Incidence: Partial equilibrium view of product and factor taxes, incidence in general equilibrium, modern views on incidence, measure of incidence. Excess Burden of Tax: Meaning and types, neutrality, efficiency and equity of taxation, the Laffer curve. Optimal Taxation: Commodity tax and income tax.	12			12
3	**Public Expenditure and Public Debt:** **Public Expenditure:** The classical theory of minimum expenditure, principle of maximum social advantage, Lindahl's model of voluntary exchange, Samuelson's theory of public expenditure. **Public Debt**: Burden of public debt, debt burden and future generation - capital stock transfer theory, welfare attitude theory, intergeneration equity theory; Safe limits of public debt, public debt management, public debt as a means of regulating the economy, public debt and economic growth.	14			14

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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

4	**Budget System and Policy** Classical and modern theories of government budgeting, budget framing, incremental budgeting and zero base budgeting, programme and performance budgeting, budget as an instrument of economic policy, study of the latest Union Budget.	10			10	**MODES OF IN-**
5	**Fiscal Policy and Fiscal Federalism:** **Fiscal Policy:** Classical, Neo-classical and modern views on fiscal policy; contracyclical and compensatory fiscal policy, limitations of fiscal policy; integration of monetary and fiscal policies. **Fiscal Federalism:** Principles of federal finance, inter-government resource transfer, advantages and limitations of decentralization. Centre-State Financial Relations – the Indian experience: An overview.	10			10	
Total		60			**60**	

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**

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

CO1	✔	✔	✔			✔	✔	✔	✔	
CO2	✔	✔	✔	✔		✔		✔		
CO3	✔	✔		✔		✔		✔		
CO4	✔	✔	✔	✔		✔		✔		
CO5	✔	✔	✔	✔		✔	✔	✔	✔	

Reading List:

- Musgrave, R. A. and Musgrave, P. B. (1989), Public Finance in Theory and Practice, 5th Edition, McGraw Hill Book Co.
- Rosen, H. and Gayer, T.(2014), Public Finance, McGraw Hill Education.
- Hyman, D. (2013), Public Finance A Contemporary Application of Theory to Policy, 11th Edition, Harcourt College Publishers.
- Hindriks, J. and Myles, G. (2007), Intermediate Public Economics, Prentice Hall of India.
- Samuelson, P.A.and Nordhaus, W.D.(1992), Economics, 14th Edition, McGraw Hill Book Co.,
- Samuelson, P.A. (1955), "Diagrammatic Exposition of a Theory of Public Expenditure", Review of Economics and Statistics, Vol. 37.
- Prest, A. R.. (1971), Public Finance in Theory and Practice, Vikash Publications Ltd.
- Choudhry, R. K. (2004), Public Finance and Fiscal Policy, Kalyani Publishers
- Rao, M. G. (2005), "Changing Contours of Federal Fiscal Arrangements in India", in Amaresh Bagchi (ed.), Readings in Public Finance, Oxford University Press.
- Rao, M. G. (2011), "Goods and Services Tax : A Gorilla, Chimpanzee or a Genius like Primates ? ", Economic and Political Weekly, February 12-18.
- Economic Survey, Government of India (Latest)

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 7th SEMESTER

Course Title	**:**	***Mathematics for Economics[2]***
Course Code	**:**	**ECOC18**
Nature of Course	**:**	**Major**
Total Credits	**:**	**4 credits**
Distribution of Marks	**:**	**60 (End-Sem.) + 40 (In-Sem.)**

Course description: This course introduces students to the application of advanced mathematical techniques in economics, focusing on dynamic analysis, growth theories, linear and non-linear programming, and game theory. The first part of the course covers dynamic models, such as second-order difference and differential equations, used to understand market stability. It then explores the application of these equations in growth theory, including key models like Harrod-Domar, Solow, Kaldor's, and others. Students will learn about linear programming techniques for solving maximization problems, including the simplex method, and understand duality in linear programming. The course also addresses non-linear programming, focusing on the differences between linear and non-linear problems. Finally, game theory is introduced, covering concepts such as Nash equilibrium, strategies, and applications to economic problems, including zero-sum games and mixed strategies.

Course Objectives:

1. To develop an understanding of dynamic analysis using difference and differential equations and their application in analyzing market stability and growth models.
2. To explore the application of difference and differential equations in economic growth theories, including the Harrod-Domar, Solow, and Kaldor models.
3. To master linear programming techniques, including the formulation and solution of maximization problems using the simplex method, and understand duality and its economic interpretation.
4. To gain proficiency in non-linear programming techniques, including graphical solutions and Kuhn-Tucker conditions, and apply game theory to analyze economic decision-making and strategy, including Nash equilibrium and zero-sum game.

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

CO1: Discuss the role of dynamic analysis in economic modeling by analyzing second-order difference and differential equations and applying dynamic stability concepts to market equilibrium.

LO1.1 Define second-order difference and differential equations.

LO1.2 Solve these equations using analytical and numerical methods.

LO1.3 Apply these techniques to analyze the stability of dynamic economic systems, particularly in market contexts.

CO2: Explain the mathematical structure of growth models using differential equations and apply difference and differential equations to economic growth theories.

LO2.1 Analyze the key growth models and their mathematical representations.

LO2.2 Analyze the impact of changes in economic parameters using difference/differential equations.

LO2.3 Solve dynamic growth models and interpret their implications

CO 3: Formulate and solve Linear Programming problems using the Simplex method, explain duality and its economic interpretation, and analyze the relationship between primal and dual problems**.**

LO 3.1: Explain the assumptions underlying linear programming and formulate linear programming problems.

LO 3.2: Solve linear programming problems using simplex method.

LO 3.3: Analyze the economic interpretation of duality in linear programming.

LO 3.4: Compare and contrast the primal and dual problems in linear programming and their economic implications.

CO4: Distinguish between linear and non-linear programming problems, solve non-linear programming problems graphically, and apply the Kuhn-Tucker conditions to non-linear programming problems.

LO 4.1: Explain the nature of optimization problems and differentiate between linear and non-linear programming.

LO 4.2: Solve non-linear programming problems using graphical methods and interpret the results.

LO 4.3: Apply the Kuhn-Tucker conditions to solve non-linear programming problems and understand their significance.

CO5: Apply the fundamental principles of game theory, analyze different strategic interactions, determine Nash Equilibria in various games, and solve optimization problems using game-theoretic concepts and linear programming techniques.

LO5.1: Define key concepts of game theory, including games, players, strategies, and payoffs.

LO5.2: Describe and explain the different types of games in game theory (e.g., Prisoner's Dilemma, Battle of Sexes, Matching Pennies).

LO5.3: Identify and explain the concept of Nash Equilibrium in the context of various games.

LO5.4: Apply the Nash Equilibrium concept to solve real-world game theory problems, both in pure and mixed strategies.

LO5.5: Calculate and analyze the saddle point.

Unit	Contents	L	T	P	Total hours
1	**Dynamic Analysis** Second Order Difference and Differential Equations and solution –applications to dynamic stability of market	8	2		10
2	**Application of difference and differential equations in understanding growth theories** Harrod-Domar Growth model, Neo-classical growth models, Solow and Meade, Kaldor's growth model with technological progress, Kalecki and Philips models, Samuelson- Hicks model of Multiplier and Accelerator	10	2		12
3	**Linear Programming** Linear Programming: Assumptions, formulation and solution by simplex method; Duality in LP and its economic interpretation, difference between primal and dual.	10	2		12
4	**Non-linear Programming** Nature of the problem, Linear vs non-linear programming, Graphic solution and Kuhn-Tucker conditions.	10	2		12
5	**Game theory** Concept of a game, strategies and payoffs, Nash Equilibrium: definition and examples, Nash equilibrium in the context of some common games – Prisoners' Dilemma, Zero-sum games- maxmin and minmax solutions, Saddle point, Pure strategies, mixed strategies- games without saddle point- n*m rectangular games- graphical solution, the rules of dominance- the two-person conversion of game theory and linear programming problem.	12	2		14
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 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:

- Sydsaeter, K. and Hammond, P., 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
- Allen, R.G.D., Mathematical Analysis for Economists, Macmillan India, Madras.
- Allen, R.G.D., Mathematical Economics, ELBS, London.
- Chow, G.C., Analysis and Control of Dynamics Economic Systems, John Wiley, New York.
- Gandolfo, G: Economic Dynamics
- Michael D. Intriligator: Mathematical Optimisation and Economic Theory, PHI
- J.M. Henderson and R.E. Quandt : Microeconomic Theory : A Mathematical Approach, McGraw – Hill.
- Hamdy A. Taha : Operations Research, Macmillan India Limited.
- Subik, M.: Game Theory in the Social Sciences, MIT Press, Cambridge.

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 7th SEMESTER

Course Title	**:**	**Public Finance**
Course Code	**:**	**MINECO7**
Nature of Course	**:**	**Minor**
Total Credits	**:**	**4 credits**
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 explain 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.	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. **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.	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, 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 **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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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. (1989), Public Finance in Theory and Practice, 5th Edition, McGraw Hill Book Co.
- Hindriks, J. and Myles, G. (2007), Intermediate Public Economics, Prentice Hall of India.
- Samuelson, P.A.and Nordhaus, W.D.(1992), Economics, 14th Edition,. McGraw Hill Book Co.,
- Samuelson, P.A. (1955), "Diagrammatic Exposition of a Theory of Public Expenditure", Review of Economics and Statistics, Vol. 37.
- Prest, A. R..(1971), Public Finance in Theory and Practice, Vikash Publications Ltd.
- Choudhry, R. K. (2004), Public Finance and Fiscal Policy, Kalyani Publishers
- Rao, M. G. (2005), "Changing Contours of Federal Fiscal Arrangements in India", in Amaresh Bagchi (ed.), Readings in Public Finance, Oxford University Press.
- Rao, M. G. (2011), "Goods and Services Tax : A Gorilla, Chimpanzee or a Genius like Primates ? ", Economic and Political Weekly, February 12-18.
- Economic Survey, Government of India

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 7TH SEMESTER

Course Title	**:**	**Research Methodology and Ethics**
Course Code	**:**	
Nature of Course	**:**	
Total Credits	**:**	**4 credits**
Distribution of Marks	**:**	**60(End-Sem.)+40(In-Sem.)**

Course objective: The objectives of this Course are:

- To introduce students to the fundamental concepts, types of research.
- To equip students with the skills to formulate research problems, objectives, and hypotheses.
- To demonstrate the effective methods for collecting and evaluating primary and secondary data.
- To enable students to analyze data, perform hypothesis testing, and present findings in structured reports.
- To develop an understanding of research ethics, integrity and scientific misconduct.

Course Outcome: On completion of this Course, a student will be able to-

CO1: Discuss and understand the fundamentals of research, including its definitions, characteristics, importance, and different types of research approaches.

LO 1.1: Define research, identify its importance, and describe the key characteristics and objectives of research.
LO 1.2: Distinguish between various types of research.
LO 1.3: Explain the differences between research methodology and research methods.

CO2: Develop the ability to plan and formulate research problems, construct research objectives, and establish hypotheses for their research.

LO 2.1: Define and identify research problems and formulate research objectives.
LO 2.2: Conduct a comprehensive literature review and identify research gap.
LO 2.3: Formulate research hypotheses, research questions, and discuss their types and characteristics.

CO3: Acquire practical knowledge on data collection methods and develop the skills to analyze data, apply hypothesis testing techniques, and create a well-organized research report

LO 3.1: Distinguish between primary and secondary data and apply the methods of collecting primary data.
LO 3.2: Explain the differences between census and sampling, and select appropriate sampling techniques.
LO 3.3: Represent data using graphs, diagrams, and perform univariate and bivariate analysis.
LO 3.4: Discuss the steps involved in hypothesis testing and identify common errors in hypothesis testing.
LO 3.5: Prepare a well-structured research report, including a proper layout and organization.

CO4: Apply ethical principles and research integrity to ensure responsible conduct in academic and scientific research.

LO4.1 Define ethics, moral philosophy, and their role in guiding responsible research practices.
LO4.2 Identify and evaluate different types of scientific misconduct, including falsification, fabrication, plagiarism, redundant publication, and selective reporting.
LO4.3 Demonstrate an understanding of ethics related to data collection.

Unit	Contents	L	T	P	Total Hours
1	**Foundations of Research Methodology** Meaning and characteristics of research, Importance of research, Objectives of research, Types of research- Descriptive vs Analytical, Applied vs Fundamental, Quantitative vs Qualitative, Conceptual vs Empirical; Research methodology and research methods; Research process.	15			15
2	***Planning of Research***[2] Identification and formulation of research problem, Review of literature, Statement of research objectives, Formation of research hypothesis and research questions - types and characteristics of hypothesis.	12			12
3	***Collection and representation of Data***[2] Primary and secondary data; Census and sample; Types of sampling: Probability and Non-probability sampling; methods of collecting primary data- observation, interview, questionnaire, schedules. Graphs and Diagrams; Univariate and bivariate analysis – cross tabulation; Steps involved in hypothesis testing; Errors in hypothesis testing. Report writing – Characteristics of a good report.	18			18
4	**Ethics in Research** Ethics: definition, nature and philosophy; Intellectual honesty and research integrity; Ethical concerns in data collection- informed consent, anonymity and confidentiality, deception, adherence to Institutional and Legal guidelines; Scientific misconduct: falsification, fabrication and plagiarism; Selective reporting and misrepresentation of data.	15			15
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	CO1	CO1	CO2,CO3, CO5			
Conceptual Knowledge	CO1	CO1, CO2,CO3, CO4	CO2,CO3, CO4,	CO3	CO4	
Procedural Knowledge			CO3,CO4	CO3	CO4	CO3
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	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

Reading list:

- Good and Hatt. *Methods in Social Research*. McGraw Hill.
- Panels P.Forcesses. *Social Research Methods*. Prentice Hall.
- Kothari,C.R. and Garg,G. *Research Methodology:Methods and Techniques*.5th Edition, New Age International Publishers
- P. Chaddah, (2018).*Ethics in Competitive Research: Do not get scooped; do not get plagiarized*.
- National Academy of Sciences, National Academy of Engineering and Institute of Medicine. (2009). *On being a Scientist: A Guide to Responsible Conduct in Research*. Third Edition. National Academies Press.
- Resnik, D.B. (2011). *What is ethics in research & why is it important*. National Institute of Environmental Health Sciences, 1-10
- Bryman, et. al. B*ryman's Social Research Methods,* Oxford University Press
- Babbie, Earl. (2015). The Basics of Social Research. India : Wadesworth, a part of cengage Learning
- Clarke, Steve. (1999). "Justifying Deception in Social Science Research". Journal of Applied Philosophy Vol. 16.No. 2 (1999) pp. 151-166
- Dooley, David. (2001). Social Research Methods (4th edition). New Delhi: Prentice- Hall of India private ltd.
- Guthrie, Gerard. (2010). Basic Research Methods: An Entry to Social Science Research. India: Sage Publication
- Wiesel E. (2005). "Without Conscious". N Engl J.Med. 352: 1511-1513

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 8th SEMESTER

Course Title	**:**	**Money and Financial Markets**
Course Code	**:**	**ECOC19**
Nature of Course	**:**	**Major**
Total Credits	**:**	**4 credits**
Distribution of Marks	**:**	**60 (End-Sem.) + 40 (In-Sem.)**

Course description: This course provides an in-depth analysis of the key concepts related to money, banking, and financial markets. It covers the functions and demand for money, theories of money supply, and interest rate determination. Students will explore the relationship between money and prices, examining inflation, its causes, and its effects on the economy, including the Philips curve. The course also delves into trade cycles, providing an understanding of various theories related to economic fluctuations. Additionally, it covers the structure and functioning of banking systems, the process of credit creation, and the role of central banks in monetary policy. Finally, the course explores the characteristics, types, and functions of financial markets, focusing on money and capital markets, the stock market, and the functioning of securities markets.

Course Objectives:

1. To analyze the fundamental functions of money, theories of money demand, and supply, and the determination of interest rates in both classical and Keynesian frameworks.
2. To analyze inflation, its causes, effects, and control methods, as well as explore the relationship between inflation and unemployment through the Philips curve.
3. To examine trade cycles, their types and phases, and gain insight into key theories such as Hawtrey's monetary theory and Keynesian views on economic fluctuations.
4. To explore the structure and functions of banking and financial markets, including the roles of commercial and central banks, credit creation, monetary policy, and the functioning of money and capital markets.

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

CO1: Discuss and analyze the functions, types, and theories of money, and the relationship between money supply and demand.
LO1.1: Define and explain the various functions and types of money and how they are measured. LO1.2: Analyze the classical and Keynesian views on the demand for money, including Friedman's restatement of the quantity theory.
LO1.3: Evaluate the classical and Keynesian theories of interest rate determination.

CO2: Evaluate the relationship between money supply and price levels, and the economic impacts of inflation and deflation.
LO2.1: Examine the Quantity Theory of Money and the Keynesian theory of money and prices.
LO2.2: Analyze the causes and types of inflation, including demand-pull, cost-push inflation, and the inflationary gap.
LO2.3: Evaluate the effects of inflation, control measures, deflation, and the relationship between inflation and unemployment through the Philips curve.

CO3: Evaluate the causes and phases of trade cycles, and the various theories explaining economic fluctuations. LO3.1: Define the trade cycle and its different phases, including the concept of economic booms and recessions. LO3.2: Analyze Hawtrey's monetary theory, Keynesian views, and other theories explaining trade cycles (Innovation Theory, Cobweb Theory, Hicks' Theory).
LO3.3: Evaluate the practical implications of these trade cycle theories in understanding economic fluctuations.

CO4: Analyze the role of banking systems and financial markets in the economy, including monetary policy and credit

creation.
LO4.1: Explain the functions of commercial banks, the process of credit creation, and the limitations of this process.
LO4.2: Analyze the functions of central banks, their monetary policy objectives, instruments, and their role in monetary management in an open economy.
LO4.3: Discuss the characteristics, functions, and structure of both money markets and capital markets, including the roles of primary and secondary markets and stock market indices.

Unit	Contents	L	T	P	Total Hours
I	**Money and its Supply and Demand** Functions of money, types of money, Measurement of money supply, High powered money and money multiplier, Demand for money – Classical view (Quantity theory of money approach), Keynesian theory; Friedman's restatement of the quantity theory of money; Interest Rates Determination – Classical theory, Keynesian theory.	15			15
II	**Money and Prices** Quantity theory of money Keynesian theory of money and prices; Inflation – meaning, types, causes of inflation - Demand-pull and Cost-push inflation, Inflationary gap; Measurement of inflation – price indices, deflator; Effects of inflation, Control of inflation; Deflation – meaning and remedies, Stagflation; Inflation and unemployment relationship-Philips curve	15			15
III	**Trade Cycle** Trade cycle – meaning, types and phases; Theories of trade cycle – Hawtrey's monetary theory, Keynesian views on trade cycle, Innovation Theory, Cobweb theory, Hicks' theory.	15			15
IV	**Banking and Financial Markets** Meaning and types; Functions of commercial banks; The process of credit creation and its limitations**;** Balance sheet and portfolio management. Central Banking: Function of the Central Bank, Monetary policy: objectives, indicators and instruments of monetary control; Monetary management in an open economy. Financial Markets – Types, characteristics and functions, Characteristics and functions of money market, Structure and instruments of money market Functions of capital market, Structure and instruments of capital market, Functions of Primary and secondary market for securities, Importance of Stock Market Index.	15			15
	Total	**60**			**60**

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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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, CO3, CO4	CO1	CO3, CO4	CO3, CO4	
Conceptual Knowledge	CO2	CO1, CO2, CO3, CO4		CO1, CO3, CO4	CO2, CO3, CO4	
Procedural Knowledge		CO3	CO3			
Metacognitive Knowledge						

Mapping of COs with POs

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

Reading List:

- Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition, 2010.
- N. Gregory Mankiw. *Macroeconomics*, Worth Publishers, 7th edition, 2010.
- Richard T. Froyen, *Macroeconomics*, Pearson Education Asia, 2nd edition, 2005.
- R.R. Paul, *Money, Banking and International Trade, Kalyani Publishers*, Edition 2021
- K.C. Rana and K.N. Verma, Macro Economic Analysis, Vishal Publishing Co. Eleventh edition
- F. S. Mishkin and S. G. Eakins, *Financial Markets and Institutions*, Pearson Education, 6th edition, 2009.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

- Bharati V. Pathak, The Indian Financial System : Markets, Institutions and Services, Pearson Education India, 2007
- F. J. Fabozzi, F. Modigliani, F. J. Jones, M. G. Ferri, *Foundations of Financial Markets and Institutions*, Pearson Education, 3rd edition, 2009.
- M. Y. Khan, *Indian Financial System*, Tata McGraw Hill, 7th edition, 2011.
- R.B.I. Bulletin, Annual Report and Report on Currency and Finance (latest)

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 8th SEMESTER

Course Title	**: *Introductory Environmental Economics*[3]**
Course Code	**: ECOC20**
Nature of Course	**: Major**
Total Credits	**: 4 credits**
Distribution of Marks	**: 60 (End-Sem.) + 40 (In-Sem.)**

Course Description: This course explores the basics of environmental economics, externalities, and sustainable development, along with global environmental challenges. Contents of this course closely align with several SDGs. It highlights policy instruments, sustainability indicators, and traditional practices from the Indian Knowledge System, such as, the Angami Irrigation System, for sustainable resource management and development. *This course encourages preparation of field-based project reports. The course teacher may assign projects related to the Indian Knowledge System (IKS) or Sustainable Development Goals (SDGs) relating to the topics of the course, wherever possible. This may be incorporated as an internal assessment alongside other evaluation tools*.

Course Objectives:

1. To acquaint students with the evolution of environmental economics, its market connections, and sustainability concepts.
2. To familiarize students with market failures, externalities, property rights, and possible policy solutions.
3. To equip students with the skills to evaluate environmental policies, including economic instruments and traditional knowledge (IKS), for sustainable development.
4. To empower students to analyze global environmental challenges such as climate change, trade effects, and international sustainability initiatives.

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

CO1: Analyze the fundamental concepts of environmental economics and its relationship with ecology, economy, and development.
- LO1.1: Define environmental economics and explain its evolution.
- LO1.2: Analyze the interlinkages between the economy and the environment.
- LO1.3: Examine trade-offs between economic growth and environmental quality using the Environmental Kuznets Curve.
- LO1.4: Apply microeconomic and welfare economic principles to environmental issues.

CO2: Comprehend and evaluate the concept of externalities, their impact on market efficiency, and possible policy solutions.
- LO2.1: Define externalities and classify their types.
- LO2.2: Explain how externalities lead to market failure and Pareto inefficiency.
- LO2.3: Evaluate the role of property rights and the Coase theorem in addressing externalities.
- LO2.4: Assess real-world examples of externalities and policy responses.

CO3: Evaluate environmental policies, economic instruments, and traditional knowledge systems (IKS) for sustainable development.
- LO3.1: Identify key environmental policy tools such as Pigouvian taxes, tradable permits, and liability rules.
- LO3.2: Differentiate between strong and weak sustainability and assess their implications.
- LO3.3: Evaluate sustainability measurement indicators such as the Pearce–Atkinson indicator and sustainable accounting frameworks.
- LO3.4: Analyze sustainable development strategies, including environmental impact assessment and micro-planning.
- LO3.5: Examine traditional water management practices like the Angami Irrigation System and their role in sustainability.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

CO4: Analyze global environmental challenges and international policy responses for sustainable development.

LO4.1: Explain the economic implications of global environmental problems such as climate change and ozone depletion.

LO4.2: Assess the relationship between trade and the environment, including the Pollution Haven Hypothesis.

LO4.3: Evaluate international agreements and interventions for addressing environmental issues.

LO4.4: Discuss the role of global cooperation in achieving sustainable development goals.

Units	Contents	L	T	P	Total Hours
1	**Introduction:** Basic Concepts: Ecology, Environment and Economy; what is environmental economics: Definition and evolution of the subject; Environmental economics and Resource economics; The economy and the environment: Inter-linkages; Environment and Development trade off: Environmental Kuznet curve; Review of microeconomics and welfare economics: Pareto optimality, Public good and Private good, Common property resources, Private and Social cost, Public Good and Bad	14			14
2	**The Theory of Externalities:** Externality: Meaning and types; Pareto optimality and market failure in the presence of externalities; solution to market failure: property rights and the Coase theorem.	12			12
3	**The Design and Implementation of Environmental Policy and Sustainable Development:** Environmental Policies: Overview; Economic instruments of environmental policies: Pigouvian taxes and effluent fees, tradable permits, liability rules; Conventional methods – Command and Control. Sustainable Development: Concept; Notions of Sustainability: Strong and Weak sustainability, Measurement and indicators of sustainability: The Pearce–Atkinson indicator. Sustainable Accounting – United Nations' System of Environmental and Economy Accounting; Environmental Impact Assessment; Micro planning for Eco-preservation – Watershed and Joint Forest Management; The Angami Irrigation System of Nagaland – A Traditional Water Management Practice in India.	18			18
4	**International Environmental Problems:** Trans-boundary environmental problems as problems of international externalities: Global warming, Ozone layer depletion; economics of climate change; trade and environment; Pollution Haven Hypothesis. Global intervention for sustainable development	16			16
Total		60			60

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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

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

- Two Internal Examinations - 20 Marks
- Field Based Project Report - 20 Marks

Or

Any two of the following: - 20 Marks

- Home Assignments
- 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, CO3, CO4	CO1	CO3, CO4	CO3, CO4	
Conceptual Knowledge	CO2	CO1, CO2, CO3, CO4		CO1, CO3, CO4	CO2, CO3, CO4	
Procedural Knowledge		CO3	CO3			
Metacognitive Knowledge						

Mapping of COs with POs

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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

Suggested Readings:

- Bhattarcharya, R. (Ed), "Environmental Economics: An Indian Perspective", Oxford University Press
- Kolstad, Charles D., "Environmental Economics", Oxford University Press
- Baumol, W.J. and Oates, W.E., "The Theory of Environmental Policy", Cambridge university Press
- Hanley, Shogren and White, "Environmental Economics in Theory and Practice", Macmillan
- Perman, R., Ma, Y., McGilvray, J. and Common, M., "Natural Resource and Environmental Economics", Pearson
- Sankar, U, "Environmental Economics", Oxford University Press
- Tietenberg, T., "Environmental Economics and Policy", Harper Collins
- Neli, V. (2022), "Terrace Rice Fields: A Cultural Heritage of the Angami Nagas", in *The Cultural Heritage of Nagaland*, Routledge.
- Singh, R.A. and Gupta, R.C. (2002), "Traditional land and water management systems of North-East hill region". *Indian Journal of Traditional Knowledge*, Vol. 1(1).

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 8th SEMESTER

Course Title	**:**	***Econometric Methods²***
Course Code	**:**	**ECODSE1**
Nature of Course	**:**	**DSE**
Total Credits	**:**	**4 credits**
Distribution of Marks	**:**	**60 (End-Sem.) + 40 (In-Sem.)**

Course description: This course provides an advanced understanding of econometric techniques used for analyzing complex data. It covers a range of topics, starting with regression analysis and its potential violations, including non-spherical disturbances, specification analysis, and alternative estimators. The course then explores models for discrete choice and limited dependent variables, such as the Logit, Probit, and Tobit models, focusing on their application and goodness of fit. The course also introduces simultaneous equation models, discussing the challenges of endogeneity and estimation techniques like Instrumental Variables. Finally, the course examines time series analysis, including univariate models like AR, MA, ARMA, and ARIMA, as well as methods for dealing with unit roots and co-integration, equipping students with the tools necessary for advanced data modeling and interpretation in economics. The course is structured to equip students with the essential skills to effectively apply econometric tools in research, academia, and related professional domains.

Course Objectives:

1. To develop an understanding of the generalized regression model, the consequences of violations of CLRM assumptions, and alternative estimators for addressing these violations.
2. To analyze models for discrete choice and limited dependent variables, with a focus on binary choice models such as Logit, Probit, and Tobit, and learn techniques for model specification and testing.
3. To explore simultaneous equation models, addressing endogeneity, simultaneous equation bias, and various estimation techniques such as Indirect Least Squares and Two-Stage Least Squares.
4. To provide a foundation in time series analysis, including univariate models, unit root tests, co-integration, and methods like VAR for analyzing economic data over time.

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

CO 1: Apply advanced regression techniques, addressing violations of classical linear regression assumptions, model selection, and estimation methods.

LO 1.1: Analyze the consequences of violations of CLRM assumptions and apply alternative estimators to mitigate them.

LO 1.2: Evaluate model selection criteria and build appropriate regression models through specification analysis.

LO 1.3: Apply instrumental variable methods to address measurement errors in regression models.

CO 2: Develop proficiency in working with models for discrete choice and limited dependent variables, including Logit, Probit, and Tobit models.

LO 2.1: Apply the Linear Probability Model, Logit, and Probit models to analyze binary choice data.

LO 2.2: Evaluate the goodness of fit and conduct specification tests for binary choice models.

LO 2.3: Implement the Tobit model to analyze limited dependent variable data and interpret its result.

CO 3: Gain a comprehensive understanding of simultaneous equation models, their identification issues, and estimation techniques.

LO 3.1: Identify and explain the nature of simultaneous equation bias and endogeneity in econometric models.

LO 3.2: Evaluate different estimation techniques, such as Indirect Least Squares and Two-Stage Least Squares, in solving simultaneous equation bias.

LO 3.3: Apply instrumental variable techniques to resolve identification problems in simultaneous equation models.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

CO 4: Apply time series analysis techniques, including univariate models, unit root tests, and cointegration methods.

LO 4.1**:** Identify the properties of stationary and non-stationary processes in time series data.

LO 4.2: Apply AR, MA, ARMA, and ARIMA models to univariate time series data and assess model adequacy.

LO 4.3: Conduct unit root tests and apply the Engel-Granger cointegration method to detect spurious regressions in time series data.

Unit	Contents	L	T	P	Total Hours
I	**Topics in Regression Analysis** Non spherical disturbances – The Generalized Regression model; Violations of CLRM assumptions: Consequences, tests, and alternative estimators; Specification analysis and model building; Model Selection criteria; Measurement error and the methods of instrumental variables; Nonlinear regression models –Properties of non-linear Least squares, Hypothesis testing, and alternative estimators of Nonlinear regression models	16			16
II	**Models for Discrete Choice and Limited Dependent variables** Dummy Dependent Variable; Linear Probability Model; Logit model; Probit Model; Goodness of fit for binary choice models; Specification test for binary choice models; Tobit Model.	12			12
III	**Simultaneous Equation Model** Meaning and Nature; Simultaneous Equation Bias; Identification problem; Endogeneity; Types of simultaneous equation models; Estimation techniques: Indirect Least Squares, Two Stage Least Squares, Instrumental variable technique	16			16
IV	**Introduction to Time Series Analysis** Basic concepts – Stochastic and Deterministic processes, Stationary Process and Non-stationary process; Random Walk Process; Integrated Process; Univariate time series models – AR, MA, ARMA and ARIMA; The concept of Unit Root, Unit root tests; Spurious Regression and Engel-Granger Co-integration method; VAR	16			16
	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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

- 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	CO2, CO3, CO4, CO4		CO2, CO3, CO4	
Procedural Knowledge	CO2, CO3	CO2, CO3, CO4, CO4	CO2, CO3, CO4		CO2, CO3, CO4	
Metacognitive Knowledge						

Mapping of COs with POs:

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

Reading Lists:

- Enders, W. (2014). *Applied Econometric Time Series* (3rd Ed.), John Wiley & Sons
- Greene, W. (). *Econometric Analysis*, Pearson Education
- Intrilgator, M. D., Bodkin, R. G. & Hsiao, C. (1996). *Econometric Models, Techniques, and Applications*, Prentice Hall
- Johnston, J. (1972). *Econometric Methods* (2nd ed.), McGraw Hill Inc.
- Kmenta, J. (1986). *Elements of Econometrics* (2nd ed.), Macmillan Publishing Company, New York
- Pyndick, R. S. & Rubinfeld, D. L. (1991). *Econometric Models and Economic Forecasts* (3rd ed.), McGraw Hill Inc.
- Richardson, H. & Sollis, R. (2006). *Applied Time Series Modelling and Forecasting*, John Wiley & Sons

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 8th SEMESTER

Course Title	**:**	***Economics of Social Sector[3]***
Course Code	**:**	**ECODSE2**
Nature of Course	**:**	**DSE**
Total Credits	**:**	**4 credits**
Distribution of Marks	**:**	**60 (End-Sem.) + 40 (In-Sem.)**

Course description: This course offers an exploration of the economics behind healthcare and education systems, focusing on their implications for development and policy. Contents of this course closely align with several SDGs. It begins with an introduction to health economics, analyzing the relationship between health outcomes and economic performance, and the determinants and measures of health status. The course delves into healthcare markets, including demand, supply, insurance, and market failures. The latter half of the course shifts to the economics of education, discussing education as both a consumption and investment good, human capital, and the economic effects of education. Additionally, the course covers the financing of education, exploring public vs private provision, fiscal federalism, and the role of government in educational funding.

Course Objectives:

1. To explain the key concepts, scope, and importance of health economics, with a focus on the relationship between health outcomes and economic development.
2. To analyze the healthcare market, including the demand for and supply of healthcare services, the role of health insurance, and issues related to market failure in health systems.
3. To explore the economics of education, considering education as a consumption and investment good, its impact on economic development, and the demand and supply dynamics in the education sector.
4. To examine the financing of education, comparing private and public provision, the role of fiscal federalism, and the implications of centralization versus decentralization in educational finance.

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

CO 1: Explain the fundamentals of health economics, and evaluate the relationship between health and economic development, measures of health status, and health project evaluation techniques.
LO 1.1: Analyze the relationship between health outcomes and macroeconomic performance, emphasizing the role of health in economic development.
LO 1.2: Evaluate different health status measures, including Disease Burden (DALY) and Quality-Adjusted Life Years (QALY), for assessing health projects.
LO 1.3: Discuss the impact of gender bias in health, specifically through the concept of "Missing Women."

CO 2: Analyze health care market dynamics, including the demand and supply of health care, the economics of health insurance, and market failures in health care.
LO 2.1: Apply Grossman's model of health demand to understand how individuals demand health care and the factors influencing their decisions.
LO 2.2: Assess the efficiency vs. equity debate in public vs. private healthcare systems and the role of health insurance in these markets.
LO 2.3: Identify and analyze the sources of market failure in health insurance and the implications for policy.

CO 3: Evaluate the economic principles related to education, including the role of education in economic development, human capital, and the cost-benefit analysis of education.
LO 3.1: Evaluate education as both a consumption and investment good and its role in fostering economic development.
LO 3.2:Analyze the demand and supply of education and distinguish between private and social costs and benefits of education.
LO 3.3: Discuss inequality in education and its impact on employment opportunities and educational demand.

CO 4: Analyze the financing mechanisms in education, including the comparison of public vs. private funding, fiscal federalism, and the centralization vs. decentralization debate.
LO 4.1: Examine the advantages and disadvantages of private versus public provision of education and the determinants of funding.
LO 4.2: Analyse the empirical evidence regarding public and private sector interactions in educational finance.
LO 4.3: Discuss the principles of fiscal federalism and its application to education finance, including centralization and decentralization.

Units	Content	L	T	P	Total Hours
I	**Introduction to Health Economics** Rationale and Scope of Health Economics; Health and Economic development: Health outcomes and their relationship with macroeconomic performance; Investment in Health. Determinants of Health Status; Measures of Health Status: Disease Burden – DALY, Cost effectiveness analysis: Choice of alternative health projects – QALY; Consequences of Gender Bias in Health-Concept of Missing Women.	15			15
II	**Health Care Market** Demand for Health care – Grossman model of health demand; Supply of health care; Healthcare delivery system: Public vs Private – Equity vs Efficiency debate; Economics of Health Insurance – Uncertainty and Insurance – Fair and Unfair insurance – Full and Partial insurance; Market failure in health insurance and sources.	15			15
III	**Introduction to Economics of Education** Concept and scope of Economics of Education; Education as consumption and investment goods; Markets in Education; Role of education in Economic development, Human Capital-Human Capital Vs Physical Capital; Demand and Supply of Education; Cost of education- private costs and social cost, direct and indirect cost; Benefits of education-Direct and indirect benefits, private and social benefits; inequality in education; the Relationship between Employment Opportunities and Educational Demand.	15			15

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

IV	**Financing of Education** Private versus public provision of education; Empirical evidence on the determinants of public versus private funding, Interactions between public and private sector, Centralization versus decentralization of educational finance; Fiscal federalism in education finance.	15			15
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, CO3, CO4	CO1	CO3, CO4	CO3, CO4	
Conceptual Knowledge	CO2	CO1, CO2, CO3, CO4		CO1, CO3, CO4	CO2, CO3, CO4	
Procedural Knowledge		CO3	CO3			
Metacognitive Knowledge						

Mapping of COs with POs

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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

Reading List

- William, J. (1999). *Principles of Health Economics for Developing Countries*. World Bank Publications.
- Phelps, C.E. (2017). *Health Economics*. Routledge.
- Bhattacharya, J., Hyde, T. & Tu, P. (2014). *Health Economics*. Palgrave Macmillan.
- Folland, S., Goodman, A.C. &Stano, M. (2017). *The Economics of Health and Healthcare*. Routledge.
- World Development Report (1993). *Investing in Health*. The World Bank.
- Grossman, M. (1999). *The Human Capital Model of the Demand for Health*. Working paper, National Bureau of Economics Research. Cambridge
- Meier, G.M. & Rauch, J.E. (2005). *Leading Issues in Economic Development*. Oxford University Press.
- Todaro, M.P. & Smith, S.C. (2005). *Economic Development*. Pearson Education
- Human Development Reports, Technical Notes. UNDP-various issues
- George Psacharpoulos (1987): Economics of Education, Pergaman Press
- Blaug, M. (1972): Introduction to Economics of Education, Penguin, London.
- Checchi, D, The Economics of Education, Cambridge University Press
- Johnes, G. and Johnes, J., (Ed.) International Handbook on the Economics of Education, Edward Elgar Publishing Ltd.
- Tilak(2006), Economics of Inequality in Education
- Nalla Gounden A.M. (1998), Education and Economic Development

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 8th SEMESTER

Course Title	**:**	**Rural Development and Management**
Course Code	**:**	**ECODSE3**
Nature of Course	**:**	**DSE**
Total Credits	**:**	**4 credits**
Distribution of Marks	**:**	**60 (End-Sem.) + 40 (In-Sem.)**

Course description: The course provides an in-depth understanding of rural development, its key concepts, and the role of various stakeholders and institutions in rural transformation. It explores the socio-economic factors influencing rural development, with a focus on India, including the challenges faced in agricultural growth, rural industrialization, and infrastructure development. The course examines different approaches to rural development, including voluntary agencies, NGOs, and local governance structures such as Panchayati Raj Institutions. It also covers rural development policies, current government programs, and the planning and management of rural development projects, equipping students with practical knowledge on project formulation, appraisal, and implementation.

Course Objectives:

1. To discuss the concept and importance of rural development, with a focus on its key issues, determinants, and theories.
2. To analyse the socio-economic aspects of rural India and critically evaluate the rural development policies and current programs aimed at improving agricultural growth, rural industrialization, and infrastructure.
3. To examine the role of institutions such as NGOs, SHGs, Panchayati Raj Institutions, and microfinance in rural development, and develop skills in planning, managing, and evaluating rural development projects.

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

CO 1: Analyze the concept, importance, and key issues of rural development, and analyze different approaches and theories, particularly from an Asian perspective.

LO 1.1: Define rural development and explain its importance in promoting socio-economic growth in rural areas.
LO 1.2: Evaluate the key issues and determinants that influence rural development in different regions.
LO 1.3: Analyze various approaches and theories of rural development, focusing on new paradigms and practices, particularly in Asia.

CO 2: Analyze the socio-economic aspects of rural development in India, including agricultural and industrial growth, and understand rural development policies and current programs.

LO 2.1: Examine the rural demographic structure of India and understand the challenges and opportunities in rural development.
LO 2.2: Assess the growth, problems, and policies related to agricultural and rural industrial development in India.
LO 2.3: Evaluate current rural development programs in India aimed at agricultural development, poverty alleviation, and employment generation.

CO 3: Analyze the key institutions and organizations involved in rural development, including NGOs, cooperatives, Panchayati Raj Institutions, and microfinance institutions.

LO 3.1: Explain the role and functions of voluntary agencies and NGOs in rural development.

LO 3.2: Analyze the significance and functioning of Panchayati Raj Institutions (PRIs) and cooperatives in rural development.
LO 3.3: Explore the concept of microfinance and evaluate the role of Micro Finance Institutions (MFIs) and Self Help Groups (SHGs) in rural economic growth.

CO 4: Learn and assess the planning and management processes involved in rural development, including project identification, formulation, and evaluation.

LO 4.1: Discuss the different levels of rural development planning, including micro-level, district, and block planning.
LO 4.2: Comprehend the components of rural development projects, including project identification, formulation, and appraisal, focusing on technical, economic, and financial feasibility.
LO 4.3: Assess the management process of rural development projects, including implementation, monitoring, and evaluation.

Unit	Contents	L	T	P	Total Hours
1	**Concept of Rural Development** Concept and definition of Rural Development, Importance of rural development, key Issues in rural Development, Determinants of Rural Development, Different Approaches to Rural Development, Theories of Rural Development, New Paradigm and Practices. Rural Development Experiences: An Asian Perspective	15			15
2	**Rural Development in India** Socio-economic Aspects- Rural demographics of India; Economic Structure –Agricultural Development in India- Growth – Problems – Policies ;Rural Industrialization- Growth – Problems – Policies; Rural Infrastructure and Social Sector. Rural development policies in India ; Current Rural Development Programmes for agricultural sector, Social Sectors, Poverty removal and employment generation programmes in rural India.	16			16

3	**Institutions for Rural development** Voluntary effort in Rural Development – Voluntary agency, NGOs, Objectives and Functions, Panchayati Raj Institutions (PRIs), Cooperatives, Self Help Groups (SHGs), Rural financial institutions, Micro Finance- Micro Finance Institutions (MFIs)	14			14
4.	***Planning and management for Rural Development***[2] Planning Process – Micro level Planning, District Planning, Block Planning; Components of rural development planning – Project Dimension, Identification and Formulation; Project Appraisal – Technical Feasibility – Economic Viability – Financial Feasibility; Management of Rural Project – project implementation, Monitoring Development Projects, Project Evaluation	15			15
Total		60			60

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

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

- Two Internal Examinations - **20 Marks**
- **Field based project report** - **20 marks**

OR

Any two of the following - **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, CO3, CO4	CO1	CO3, CO4	CO3, CO4	
Conceptual Knowledge	CO2	CO1, CO2, CO3, CO4		CO1, CO3, CO4	CO2, CO3, CO4	
Procedural Knowledge		CO3	CO3			
Metacognitive Knowledge						

Mapping of COs with POs

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

Reading list:

1. Singh Katar: 'Rural Development, Principles, Policies and Management', Sage Publication

2. Sundaram, Satya,I.: 'Rural Development', Himalaya Publishing

3. Desai Vasant: 'Rural Development- Programmes and Strategies', Himalaya Publishing House, Mumbai

4. Reddy, Venkata. K.: 'Agriculture and Rural Development (A Gandhian Perspective)', Himalaya Publishing House.

5. Karalay, G.N.: 'Integrated Rural Development', Concept Publishing company

FOUR YEAR UNDERGRADUATE PROGRAMME IN ECONOMICS (NEP)

DETAILED SYLLABUS OF 8th SEMESTER

Course Title	**:**	**Money and Banking**
Course Code	**:**	**MINECO8**
Nature of Course	**:**	**Minor**
Total Credits	**:**	**4 credits**
Distribution of Marks	**:**	**60 (End-Sem.) + 40 (In-Sem.)**

Course description: This course provides an in-depth understanding of monetary economics, focusing on the functions of money, theories of money supply and demand, the relationship between money and prices, the trade cycle, and the banking system. It covers classical and Keynesian views on the demand for money and interest rates, analyze various theories of inflation, and the dynamics of the trade cycle. The course also includes functions of central and commercial banks, the process of credit creation, and the tools of monetary policy in an open economy. Through this course, students will gain a comprehensive understanding of how monetary and banking systems influence the broader economy.

Course Objectives:

1. To Explore the types, measurement, and supply-demand functions of money and how interest rates are determined in classical and Keynesian frameworks.
2. To analyze the relationship between money and prices.
3. To explain the trade cycle and its theories.
4. To examine the banking system and monetary policy.

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

CO 1: Explain the functions and types of money, and to analyse the theories related to money supply and demand, and how interest rates are determined.

- LO1.1: Define the functions and types of money and explain how money supply is measured.
- LO1.2: Analyze the classical and Keynesian views on the demand for money and the quantity theory of money.
- LO1.3**:** Discuss the determination of interest rates according to classical and Keynesian theories.

CO2: Examine the relationship between money and prices, inflationary trends, and economic theories concerning inflation and unemployment.

- LO2.1: Explain the quantity theory of money and its impact on prices, based on Keynesian theory.
- LO2.2: Identify the causes and types of inflation, and discuss methods for measuring and controlling inflation.
- LO2.3: Analyze the relationship between inflation and unemployment, with reference to the Phillips curve.

CO3: Analyze the trade cycle, its phases, and the various economic theories explaining its occurrence.

- **LO3.1:** Define the trade cycle and explain its various types and phases.
- **LO3.2:** Compare and contrast different theories of trade cycles, such as Hawtrey's monetary theory and Keynesian views.
- **LO3.3:** Analyze other trade cycle theories like Innovation Theory, Cobweb Theory, and Hicks' Theory.

CO4: Learn the functions and types of banks, the process of credit creation, and the role of central and commercial banks in monetary policy.

- **LO4.1:** Describe the different types of banks and explain the functions of central and commercial banks.
- **LO4.2:** Explain the process of credit creation and its limitations in the banking system.
- **LO4.3:** Discuss the objectives, indicators, and instruments of monetary policy and how monetary management operates in an open economy.

Unit	Contents	L	T	P	Total Hours
I	**Money and its Supply and Demand** Functions of money, types of money, Measurement of money supply, High powered money and money multiplier, Demand for money – Classical view (Quantity theory of money approach), Keynesian theory; Friedman's restatement of the quantity theory of money; Interest Rates Determination – Classical theory, Keynesian theory.	15			15
II	**Money and Prices** Quantity theory of money Keynesian theory of money and prices; Inflation – meaning, types, causes of inflation - Demand-pull and Cost-push inflation, Inflationary gap; Measurement of inflation – price indices, deflator; Effects of inflation, Control of inflation; Deflation – meaning and remedies, Stagflation; Inflation and unemployment relationship-Philips curve	15			15
III	**Trade Cycle** Trade cycle – meaning, types and phases; Theories of trade cycle – Hawtrey's monetary theory, Keynesian views on trade cycle, Innovation Theory, Cobweb theory, Hicks' theory.	15			15
IV	**Banking** Meaning and types; Central Banking: Function of the Central Bank; Functions of commercial banks; The process of credit creation and its limitations**;** Balance sheet and portfolio management. Monetary policy: objectives, indicators and instruments of monetary control; Monetary management in an open economy.	15			15
	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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – Sustainable Development Goals (SGDs)

Cognitive Mapping of Course Outcomes with Bloom's Taxonomy:

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

Mapping of COs with POs

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

Reading List:

- Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition, 2010.
- N. Gregory Mankiw. *Macroeconomics*, Worth Publishers, 7th edition, 2010.
- Richard T. Froyen, *Macroeconomics*, Pearson Education Asia, 2nd edition, 2005.
- R.R. Paul, *Money, Banking and International Trade, Kalynai Publishers*, Edition 2021
- K.C. Rana and K.N.Verma, Macro Economic Analysis, Vishal Publishing Co. Eleventh edition
- F. S. Mishkin and S. G. Eakins, *Financial Markets and Institutions*, Pearson Education, 6th edition, 2009.
- Bharati V. Pathak, The Indian Financial System : Markets, Institutions and Services, Pearson Education India, 2007
- F. J. Fabozzi, F. Modigliani, F. J. Jones, M. G. Ferri, *Foundations of Financial Markets and Institutions*, Pearson Education, 3rd edition, 2009.
- M. Y. Khan, *Indian Financial System*, Tata McGraw Hill, 7th edition, 2011.
- R.B.I. Bulletin, Annual Report and Report on Currency and Finance (latest)