SYLLABI FOR FOUR-YEAR UNDERGRADUATE PROGRAMME

IN

ECONOMICS

AS PER NATIONAL EDUCATION POLICY (NEP) 2020

Recommended by the 1st meeting of the Board of Studies (BoS), Department of Economics, and approved by the 1st meeting of the Academic Council of Lakhimpur Girls' College (A), held on 28 June 2026, vide Resolution No. AC/1/2026/05.

LAKHIMPUR GIRLS' COLLEGE (AUTONOMOUS)

NORTH LAKHIMPUR, LAKHIMPUR -787031, ASSAM

Endorsed syllabi of Dibrugarh University as model syllabi for the development of syllabi of the Department of Economics, Lakhimpur Girls' College (A), with necessary modifications and additions, keeping in view the context and academic requirements.

INTRODUCTION

In accordance with the National Education Policy (NEP) 2020, the Undergraduate (UG) Economics syllabus comprises Major (M) and Minor (Min) disciplines, Multi-Disciplinary Generic Elective Courses (GEC), Skill Enhancement Courses (SEC), Discipline Specific Electives (DSE), Research Ethics and Methodology, Research Project — including development of the research proposal and review of related literature — and a Dissertation involving data collection, analysis, and report preparation.

AIM

The UG Programme in Economics aims to build students' analytical, logical, and critical thinking skills so they can apply economic reasoning to real-world situations. Students are introduced to a broad range of theoretical and applied concepts that prepare them for careers in business, government, industry, commerce, finance, and research. The programme covers diverse areas of economics while also expanding knowledge of interdisciplinary subjects like sociology, history, mathematics, and statistics. Through papers in MDGEC, AEC, SEC, VAC, YOGA, EE, DTS, DSE, and community engagement, students learn to apply their skills to practical contexts. Another key goal is to enhance students' flexibility to move across disciplines, institutions, and modes of learning. The programme seeks to instill economic thinking for decision-making by grounding students in economic theory, develop an analytical understanding of human economic behavior, and nurture socially responsible, ethically aware citizens.

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

Communication Skills

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

Research Related Skills

The capacity to develop methodology and research proposals, or to be specific, the capacity to develop

pertinent research questions and hypotheses for various branches of Economics as well as other related disciplines; the capacity to present findings, theories, methods, and proofs using knowledge from various branches of Economics and other related disciplines.

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

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

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

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

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

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

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

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

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

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

PO5-Technological Proficiency: Graduates will be proficient in using modern technological tools and

software for economic analysis, data management, and presentation.

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

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

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

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

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

PROGRAMME SPECIFIC OUTCOMES (PSOs):

The programme specific outcomes of the Undergraduate Programme in Economics are listed below. After completing the programme the students should be able to-

PSO1-Comprehend the behavioral patterns of different economic agents and acquire the competency to apply the fundamentals of Microeconomics and Macroeconomics in understanding the economic aspects of allied sectors.

PSO2-Evaluate the developmental parameters of an economy with the help of economic theories and examine the existing socio-economic issues of developing nations and formulate strategies to pave the way for further development.

PSO3- Analyse and review the historical developments in the economic thoughts propounded by different schools and make a comparative assessment with the contemporary issues in Economics.

PSO4-Identify key issues and formulate ideas to undertake research studies and apply quantitative techniques to address the unresolved issues in Economics and other relevant disciplines.

PSO5-Demonstrate the potential for a variety of challenging careers through innovation, critical thinking, problem solving and lifelong learning, thereby being competitive in the job market by acquiring skills in using statistical software for research, employability and entrepreneurship.

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

TEACHING LEARNING PROCESS:

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

- Lecture

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

ASSESSMENT

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

DRAFT STRUCTURE OF FOUR YEAR UNDER GRADUATE PROGRAMMES (FYUGP) IN DIBRUGARH UNIVERSITY AND ITS AFFILIATED COLLEGES AS PER 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	ECO-MAJ-4-101	Introductory Microeconomics	4	-
1	1st	Minor	1	ECO-MIN-4-101	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	ECO-GEC-3-101	Basics of Economics	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	ECO-SEC-3-101		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	ECO-MAJ-4-201	Introductory Macroeconomics	4	-
		Minor	1	ECO-MIN-4-201	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	ECO-GEC-3-201	Essentials of Economics	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	ECO-SEC-3-201		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	ECO-MAJ-4-301	Introductory Mathematical Methods for Economics	4	-
				ECO-MAJ-4-302	Indian Economy- Trends in Economic Indicators	4	-
		Minor	1	ECO-MIN-4-301	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	ECO-GEC-3-301	Indian Economy with Regional Context of Assam[1]	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	ECO-SEC-3-301		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	ECO-MAJ-4-401	Intermediate Microeconomics	4	-
				ECO-MAJ-4-402	Economy of Assam	4	-
				ECO-MAJ-4-403	Statistical Methods for Economics	4	-
				ECO-MAJ-4-404	Intermediate Mathematical Methods for Economics	4	-
		Minor	1	ECO-MIN-4-401	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							

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

Course Title	**:**	**Introductory Microeconomics**
Course Code	**:**	**ECO-MAJ-4-101**
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	**Introduction of Microeconomics:** Meaning, Scope and method of economics; Positive and normative approaches; Principles of Economics Microeconomics vs Macroeconomics, Economic Problems: Scarcity, Choice and Opportunity cost; Production possibility curve (PCC)-Meaning, properties and Shifting, Types of Microeconomic Analysis, Goals of Microeconomics; Economic models.	9	3	-	12
II	**Supply and Demand** Concepts of Demand, determinants of individual demand/supply; Law of Demand/supply, demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, demand and supply together; elasticity- definition, types and application; controls on prices; consumer surplus; producer surplus and the efficiency of the markets.	9	3	-	12
III	**Consumer's Behaviour:** Concepts of Utility- cardinal utility and Ordinal Utility, The consumption decision - budget constraint, consumption and income/price changes, demand for all other goods and price changes; indifference curves; properties of in difference curves; consumer's optimum choice; income and substitution effects	9	3	-	12
IV	**Producers Behavior:** Production function; production function with a single variable input; production function with two variable inputs; Isoquants; MRTS; Choice of technology. Behaviour of profit maximizing firms and the production process: Profits and Economic costs; Short run costs and output decisions- Fixed Costs, Variable costs, Total Costs; Revenue, Costs and Profit Maximization; Long-run Costs and output decisions; Economies and diseconomies of scale; Shape of LAC-Flat or U shaped.	9	3	-	12
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	**:**	**ECO-MIN-4-101**
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 behaviors 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 of Microeconomics:** Meaning, Scope and method of economics; Positive and normative approaches; Principles of Economics, Microeconomics vs Macroeconomics, Economic Problems: Scarcity, Choice and Opportunity cost; Production possibility curve (PCC)-Meaning, properties and Shifting, Types of Microeconomic Analysis, Goals of Microeconomics; Economic models.	9	3	-	12
II	**Supply and Demand** Concepts of Demand, determinants of individual demand/supply; Law of Demand/supply, demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, demand and supply together; elasticity- definition, types and application; controls on prices; consumer surplus; producer surplus and the efficiency of the markets.	9	3	-	12
III	**Consumer's Behaviour:** Concepts of Utility- cardinal utility and Ordinal Utility, The consumption decision - budget constraint, consumption and income/price changes, demand for all other goods and price changes; indifference curves; properties of in difference curves; consumer's optimum choice; income and substitution effects	9	3	-	12
IV	**Producers Behavior:** Production function; production function with a single variable input; production function with two variable inputs; Isoquants; MRTS; Choice of technology. Behaviour of profit maximizing firms and the production process: Profits and Economic costs; Short run costs and output decisions- Fixed Costs, Variable costs, Total Costs; Revenue, Costs and Profit Maximization; Long-run Costs and output decisions; Economies and diseconomies of scale; Shape of LAC-Flat or U shaped.	9	3	-	12
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

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., 8thEdition,2007.
- N. Gregory Mankiw, Economics: Principles and Applications, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4th edition, 2007
- Joseph E. Stiglitz and Carl E. Walsh, Economics, W.W. Norton & Company, Inc., New York, International Student Edition, 4th Edition, 2007
- G.S. Maddala and Ellen Miller, Microeconomics: Theory and Applications, McGraw Hill Education, Tenth Reprint, 2013, New Delhi Edition
- McConnell, Brue and Flynn, Microeconomics: Principles, Problems, and Policies, McGraw Hill Education (India) Private Limited, 2017

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

Course Title : Basics of Economics
Course Code : ECO-GEC-3-101
Nature of Course : Generic Elective
Total Credits : 3 credits
Distribution of Marks: 60 (End-Sem.) +40 (In-Sem.)

Course Objectives:

1. To introduce students to the fundamental principles of microeconomics and macroeconomics for understanding economic decision-making at individual and aggregate levels.
2. To develop analytical ability to interpret production behaviour, market structures, and national income concepts using basic economic tools.
3. To enable students to understand macroeconomic issues such as inflation, unemployment, and stabilization policies, and their relevance to real-world economic management.

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

CO1: Apply the fundamental concepts of microeconomics including scarcity, consumer behaviour, and demand–supply analysis.

LO1: Understand the nature and scope of economics, central economic problems, and the distinction between microeconomics and macroeconomics.
LO2: Apply the concepts of scarcity, opportunity cost, and Production Possibility Frontier (PPF) to economic choice.
LO3: Analyze demand and supply functions, determinants, and price elasticity of demand.
LO4: Explain consumer behaviour using utility analysis, budget constraints, and indifference curve.

CO2: Analyze production decisions, cost structures, and different forms of market organization.

LO1: Explain the law of variable proportions, returns to scale, and returns to factors in production.
LO2: Compute and interpret cost and revenue concepts such as TC, AC, MC, TR, AR, and MR. LO3: Examine profit behaviour and cost-output relationships of firms.
LO4: Compare features of perfect and imperfect competition.

CO3: Analyze macroeconomic concepts, national income measurement, and the limitations of macroeconomic analysis.

LO1: Discuss the nature and scope of macroeconomics and distinguish between normative vs. positive and static vs. dynamic analysis.
LO2: Apply and calculate national income accounting concepts such as GDP, GNP, Personal Income, and Disposable Income.
LO3: Analyze the circular flow of income in two sector model.
LO4: Critically evaluate the limitations of GDP and macroeconomic aggregates as measures of welfare.
LO5: Understand the concept of aggregate demand and aggregate supply and disequilibrium in macroeconomic activity.

CO4: Understand and analyze fiscal policy, public finance concepts, government budgeting, public debt management, and monetary policy including the role and functions of the central bank.

LO1: Explain the meaning and objectives of fiscal policy, components of public expenditure, sources of government revenue (tax and non-tax), and the concept and methods of repayment of public debt.
LO2: Describe the structure of the public budget, distinguish between balanced, surplus, and deficit budgets, and analyze measures of government deficits (revenue deficit, fiscal deficit, and primary deficit).
LO3: Understand the concept and significance of zero base budgeting and evaluate its role in improving financial planning and resource allocation.
LO4: Explain the functions and role of the central bank and analyze the objectives and instruments of monetary policy, including Open Market Operations (OMOs), CRR, SLR, Bank Rate, Repo Rate, and Reverse Repo Rate.

UNITS	Contents	L	T	P	Total Hours
I	**Microeconomic Foundations** Foundations of economics: central economic problems; Normative vs. positive economics; micro vs. macro, scarcity and choice, opportunity cost, and PPF; Demand and Supply – Laws and determinants; Price elasticity of demand; Consumer behaviour: cardinal utility – TU and MU; Ordinal utility: concept of Indifference curve; Budget constraint,	11			11
II	**Production, Costs, and Market Structure** Production function, Law of variable proportions, Concepts of returns to scale; Concepts of Costs- – Fixed vs. variable, TC, MC, AC; Concept of Revenue- TR, AR & MR; Concept of Profits; Market structures and their features– perfect and imperfect competition (monopoly and monopolistic).	12			12
III	**Macroeconomic Foundations – Measurement and Problems** Macroeconomics – Nature and Scope; Static analysis vs. dynamic analysis; Concept and measurement of GDP, GNP, Personal income, personal disposable income; circular flow in a two-sector economy; Limitations of GDP; Concept of Aggregate demand and aggregate supply; Disequilibrium in macroeconomic activity – Demand shocks, supply shocks, and its consequences	9			9
IV	**Government intervention for economic stability** Objectives of fiscal policy; Public expenditure, Sources of revenue: tax and non-tax; Different type of Budget; Concept of zero-base budgeting; Concepts of government deficits: revenue deficit, fiscal deficit, primary deficit. Functions and role of central bank; Objectives of Monetary policy; Instruments of monetary policy: OMOs, CRR, SLR, Bank rate, Repo rate, Reverse repo rate.	13			13
TOTAL		45	-	-	45

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

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

(1) Two Internal Examinations 20 marks

(2) Any two of the following activities listed below- 20 marks

- Home assignment
- Viva voce
- Seminar

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

- Group discussion
- Quiz

Cognitive Mapping of COs with Bloom's Taxonomy

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

1. Mankiw, N.G. *Economics: Principles and Applications*, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited
2. Mankiw, N.G. *Principles of Macroeconomics*. Cengage India
3. Mankiw, N.G. *Principles of Microeconomics*. Cengage India
4. Karl E. Case and Ray C. Fair. *Principles of Economics*. Pearson Education Inc.
5. Nguyen,B and Wait, A. *Essentials of Microeconomics*. Routledge
6. Sikdar, S. *Principles of Macroeconomics*. Oxford University Press
7. Choudhury, R.K., *Public Finance and Fiscal Policy*, Kalyani Publishers
8. Musgrave, R.A. and Musgrave, P.B., *Public Finance in Theory and Practice*, McGrawhill

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

Course Title	**:**	**Introductory Macroeconomics**
Course Code	**:**	**ECO-MAJ-4-201**
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; Meaning of Macroeconomics; Evolution of Macroeconomics; Nature and scope of macroeconomics; Schools of macroeconomic thought – the classical, the Keynesian and the monetarist; Objectives of Macroeconomics – short term vs long run, economic growth vs stabilization, Significance of Macro Economics	10	2		12
II	**National Income Accounting** Related aggregates of National Income: GDP at market prices vs factor cost, GNP, Personal Income and Personal Disposable Income; 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, Difficulties in the measurement of National Income	10	2		12
III	**Theory of output and employment** The classical theory of determination of output and employment; Say's law of markets; Limitation of Classical Theory, The Keynesian theory – Theory of Effective Demand, Concept of aggregate demand; Components and determinants of aggregate demand; The concept of multiplier, equilibrium income, changes in equilibrium income.	10	2		12

IV	**Introduction to Aggregate Demand and Aggregate Supply** Consumption function – Keynes Psychological Law of Consumption, MPC and APC; Saving – determinants of saving – MPS and APS, Derivation of Saving Function from Consumption Function; Investment – determinants of investment demand; investment function; Types of Investment, Concept of Aggregate supply; determinants of aggregate supply; factors shifting aggregate supply.	10	2		12
V	**Introduction to money and theory of interest** The Barter System, Definition of money; Functions of money; Types of money; Supply of money, Measures of Money (RBI definitions), Narrow Money and Broad money, Meaning and the role of central bank Vertical money supply curve; 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	**:**	**ECO-MIN-4-201**
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; Meaning of Macroeconomics; Evolution of Macroeconomics; Nature and scope of macroeconomics; Schools of macroeconomic thought – the classical, the Keynesian and the monetarist; Objectives of Macroeconomics – short term vs long run, economic growth vs stabilization, Significance of Macro Economics	10	2		12
II	**National Income Accounting** Related aggregates of National Income: GDP at market prices vs factor cost, GNP, Personal Income and Personal Disposable Income; 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, Difficulties in the measurement of National Income	10	2		12
III	**Theory of output and employment** The classical theory of determination of output and employment; Say's law of markets; Limitation of Classical Theory, The Keynesian theory – Theory of Effective Demand, Concept of aggregate demand; Components and determinants of aggregate demand; The concept of multiplier, equilibrium income, changes in equilibrium income**.**	10	2		12
IV	**Introduction to Aggregate Demand and Aggregate Supply** Consumption function – Keynes Psychological Law of Consumption, MPC and APC; Saving – determinants of saving – MPS and APS, Derivation of Saving Function from Consumption Function; Investment – determinants of investment demand; investment function; Types of Investment, Concept of Aggregate supply; determinants of aggregate supply; factors shifting aggregate supply.	10	2		12
V	**Introduction to money and theory of interest** The Barter System, Definition of money; Functions of money; Types of money; Supply of money, Measures of Money (RBI definitions), Narrow Money and Broad money, Meaning and the role of central bank Vertical money supply curve; 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	CO1	CO1				
Conceptual Knowledge	CO1, CO2, CO3	CO2, CO3, CO4, CO5	CO3, CO5	CO3, CO4, CO5		
Procedural Knowledge		CO3, CO4, CO5	CO3, CO4	CO3, CO4, CO5	CO4, CO5	
Metacognitive Knowledge						

Mapping of COs with POs:

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

SUGGESTED READINGS:

- Dornbusch, R., Fischer, S. &Startz, R. (2018). *Macroeconomics* (12thed.). McGraw Hill Education
- Froyen, R.T. (2014). *Macroeconomic Theories and Policies* (10thed.). Pearson Education
- Mankiw, N.G. (2007). *Macroeconomics*(6thed.). 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	**:**	**Essentials of Economics**
Course Code	**:**	**ECO-GEC-3-201**
Nature of Course	**:**	**Generic Elective**
Total Credits	**:**	**3 credits**
Distribution of Marks:		**60 (End-Sem.) +40 (In-Sem.)**

Course Objectives:

1. To familiarize students with market functioning, sources of market failure, and the role of government intervention.
2. To introduce key concepts of development economics, including measurement of development, poverty, and inequality.
3. To build understanding of international economic transactions through Balance of Payments and exchange rate mechanisms.

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

CO1: Analyze market equilibrium under different market structures and understand the causes of market failure.

LO1: Illustrate equilibrium in perfect competition, monopoly, and monopolistic competition.

LO2: Compare price and output determination across different market structures.

LO3: Analyze the concept of market failure and its economic implications.

LO4: Identify causes of market failure with special reference to public goods and externalities.

CO2: Explain the nature of economic development and evaluate various measures and determinants of development**.**

LO1: Distinguish between economic growth and economic development.

LO2: Describe the meaning, scope, and importance of development economics.

LO3: Calculate and interpret development indicators such as Per Capita Income (PCI), PQLI, and HDI.

LO4: Examine the role of human capital and explain the concept of sustainable development in the development process.

CO3: Assess key development issues such as poverty and income inequality using basic analytical tools**.**

LO1: Explain the meaning and types of poverty, including absolute, relative poverty and multi-dimensional poverty

LO2: Compare different measures of poverty.

LO3: Describe the concept of income inequality and its socio-economic implications.

LO4: Apply simple measures of inequality to interpret disparities in income distribution.

CO4: Understand the structure of Balance of Payments and analyze exchange rate concepts and their trade implications**.**

LO1: Explain the meaning, importance, and components of the Balance of Payments.

LO2: Distinguish between Current Account and Capital Account transactions.

LO3: Describe the meaning and types of exchange rates and analyze how exchange rate changes influence exports and imports

LO4: Explain the concept of depreciation and devaluation.

UNITS	Contents	L	T	P	Total Hours
I	**Market** Equilibrium in Perfect and imperfect product markets (monopoly and monopolistic); Market failure – concept, causes of market failure – public goods and externality.	11			11
II	**Introduction to Development Economics**[3] Growth vs. Development; Meaning and scope of development economics; Various Measures of Development[2] – PCI, HDI; Characteristics of Developing Economies; Human Capital and Development; Concept of Sustainable development and Sustainable Development Goals.	12			12
III	**Issues of Development**[3] Poverty – Meaning of poverty, Income Poverty: Absolute and relative poverty; Multidimensional Poverty; Measures of Poverty[2]: Head count ratio, poverty gap index; Income inequality – basic idea, measures of inequality, unemployment- meaning and types.	11			11
IV	**Introduction to Balance of Payments and Exchange rate** Meaning and importance of BoP; Structure of Balance of Payments – Current Account and Capital Account; Meaning and Types of exchange rate; Concept of depreciation and devaluation; Effects of changes in exchange rate on exports and imports.	11			11
	Total	45			45

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

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

(1) Two Internal Examinations 20 marks

(2) Any two of the following activities listed below- 20 marks

- Home assignment, Viva voce, Seminar, Group discussion, Quiz

Cognitive Mapping of COs with Bloom's Taxonomy

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

1. Mankiw, N.G. *Economics: Principles and Applications*, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited
2. Mankiw, N.G. *Principles of Microeconomics.* Cengage India

3. Karl E. Case and Ray C. Fair, *Principles of Economics*, Pearson Education Inc.

4. Nguyen,B and Wait, A. *Essentials of Microeconomics*, Routledge

5. Sikdar, S. *Principles of Macroeconomics*. Oxford University Press

6. Todaro, M.P. and Smith, S.C. *Economic Development*.

7. Hayami, Y., & Godo, *Y. Development economics: From the poverty to the wealth of nations*. Oxford University Press.

8. Salvatore, D.: International Economics, John Wiley and Sons, New York.

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

Course Title	**:**	**Introductory Mathematical Methods for Economics**
Course Code	**:**	**ECO-MAJ-4-301**
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; Venn Diagram, Ordered pairs, Cartesian products and relations. Functions and their properties and graphs; Types of functions-polynomial, rational, exponential, and logarithmic; Graphical interpretation of demand, supply, cost and revenue functions; 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, Hawkins-Simon Conditions	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 Cost and Revenue Second and higher order derivatives and its Economic applications.	10	2		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.	7	5		12
V	**Differential Equation** First order linear differential equations; exact differential equation, economic applications.	5	4		9
TOTAL		42	15		60

Where, L: Lectures T: Tutorials P: Practicals

MODES OF IN-SEMESTER ASSESSMENT: 40 Marks

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

Cognitive Mapping of Course Outcomes with Bloom's Taxonomy:

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

Mapping of Course outcomes with Programme Outcomes:

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

SUGGESTED READINGS:

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

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

Course Title	**:**	**Indian Economy- I**
Course Code	**:**	**ECO-MAJ-4-302**
Nature of Course	**:**	**Major**
Total Credits	**:**	**4 credits**
Distribution of Marks	**:**	**60 (End-Sem.) + 40 (In-Sem.)**

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

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

CO1: To evaluate the trajectory of India's economic development since independence and analyze the shifts in development strategies from import substitution to post-1991 globalization.

LO 1.1: Identify the key features of the Indian economy on the eve of independence.

LO 1.2: Compare and contrast the goals and components of alternative development strategies employed by India since independence.

LO 1.3: Analyze the impact of import substitution and protectionist policies on India's economic development.

LO 1.4: Evaluate the effectiveness and challenges of the post-1991 globalization strategies, including stabilization and structural adjustment packages.

CO2: To explore the interplay between population dynamics and human development indicators in the context of India, and assess India's standing in the global human development landscape.

LO 2.1: Describe the demographic features and trends in India, including population size, growth rates, and age-sex composition.

LO 2.2: Explain the concept of demographic dividend and its implications for economic development in India.

LO 2.3: Evaluate the effectiveness of the National Population Policy in addressing demographic challenges.

LO 2.4: Assess India's human development record using indicators such as the Human Development Index and compare it with global benchmarks.

CO3: To analyze the concepts of poverty and inequality in the Indian context, and examine the strategies and policies aimed at poverty alleviation and reducing income inequality.

LO 3.1: Define and explain the concept of poverty and its incidence in India.

LO 3.2: Interpret poverty estimates and trends over time, and analyze the relationship between economic growth and poverty reduction.

LO 3.3: Identify the causes of income inequality in India and assess its magnitude and nature.

LO 3.4:Evaluate government policies and measures aimed at reducing poverty and addressing income inequality in India.

CO4: To examine the dynamics of India's labour force, occupational patterns, and unemployment trends, and analyze the role of government policies in addressing unemployment challenges.

LO 4.1: Describe the growth and structure of India's labour force and its relationship with economic development.

LO 4.2: Analyze the types and nature of unemployment prevalent in India.

LO 4.3: Evaluate the changing dimensions of unemployment and employment patterns over time.

LO 4.4: Assess the effectiveness of government policies and measures in addressing unemployment challenges and promoting inclusive growth.

CO5: To analyze India's economic interactions with the world economy and conduct a comparative assessment of India's development experience with high-performing Asian economies.

LO 5.1: Describe India's economic integration with the global economy and identify key drivers of international economic interactions.

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

UNITS	CONTENTS	L	T	P	Total Hours
I	**Economic Development since Independence** Indian Economy on the eve of independence- An overview; Development strategies since independence- Evolution of Indian Economy Since Independence, Indian Economy during the post reforms period	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, Strategy of Poverty Alleviation; Inequality-Income inequality in India: Magnitude and Nature, 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-Meaning, Nature and types of unemployment in India, Magnitude, changing dimensions of unemployment, 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, China and South Korea	12			12
TOTAL		60			60

MODES OF IN-SEMESTER ASSESSMENT: 40 Marks

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

.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.
- 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	**:**	**ECO-MIN-4-301**
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.

CO2: Assess the demographic characteristics and trends in India, including population growth, composition, and policy implications.

LO2.1: Explain the size and growth rates of India's population and their implications.
LO2.2: Analyze the trends in birth and death rates in India and their demographic impact.
LO2.3: Discuss the concept of demographic dividend and its potential in India.
LO2.4: Evaluate the National Population Policy and its effectiveness in addressing demographic challenges.

CO3: Analyze the nature, incidence, and strategies for alleviating poverty and income inequality in India.

LO3.1: Define and measure the concept and incidence of poverty in India.
LO3.2: Assess the relationship between economic growth and poverty levels.
LO3.3: Identify the causes and magnitude of income inequality in India.
LO3.4: Evaluate the effectiveness of government policies and measures aimed at reducing poverty and inequality.

CO4: Examine the structure and dynamics of the labor force, occupational patterns, and unemployment in India.

LO4.1: Describe the growth and distribution of the labor force in India.
LO4.2: Analyze the occupational structure and its relation to economic development.
LO4.3: Discuss the nature, types, and magnitude of unemployment in India.
LO4.4: Evaluate government policies and measures to address unemployment and their effectiveness.

CO5: Evaluate human development indicators and India's performance in human development at both national and global levels.

LO5.1: Define key human development indicators and their importance.
LO5.2: Compare human development across different states in India.
LO5.3: Assess India's human development record in a global context.
LO5.4: Analyze the factors contributing to variations in human development across different regions and states in India.

UNITS	CONTENTS	L	T	P	Total Hours
I	**Development strategies since Independence** India as a developing economy, Alternative development strategies since independence- goal of self-reliance based on import substitution and protection, the post 1991globalization strategies based on stabilization and structural adjustment packages.	10			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; 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.	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

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 UNDERGRADAUTE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 3rd SEMESTER

Course Title	**:**	**Indian Economy with Regional Context of Assam[1]**
Course Code	**:**	**ECO-GEC-3-301**
Nature of Course	**:**	**Generic Elective**
Total Credits	**:**	**3**
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, a student will be able to –

CO 1: Analyse the trajectory and factors influencing economic development in India since its independence, including sectoral shifts, globalization, demographic dividend, and other issues.

LO 1.1: Analyze the growth patterns and sectoral composition of India's national income in pre and post globalization.

LO 1.2: Assess the impact of globalization on India's occupational structure.

LO 1.3: Assess the potential and challenges of India's demographic dividend and its impact on economic growth and development.

LO 1.4: Critically evaluate contemporary policies addressing unemployment, poverty and inequality

CO 2: Evaluate the role of technology, policy, and institutional changes in shaping the agriculture and industrial sectors in India.

LO 2.1: Examine the role of technology and institutions in transforming Indian agriculture.

LO 2.2: Analyze recent trends in industrial growth in India and the impact of industrial policy changes, including public sector reforms.

LO 2.3: Critically assess the implications of privatization and disinvestment on the Indian economy and public sector.

LO 2.4: Explain the significance of MSMEs

CO3: Evaluate the growth dynamics of the services sector and the evolving landscape of India's foreign trade policies and practices.

LO 3.1**:** Evaluate the growth and composition of the services sector in India and identify the key drivers of its rapid expansion.

LO 3.2**:** Analyze the direction and composition of India's foreign trade, balance of payments, and the trends and patterns of FDI and FPI.

LO 3.3**:** Examine the implications of India's new Foreign Trade Policy on the economy and international trade relations.

CO 4: Analyze the growth of Assam's economy with reference to GSDP, sectoral performance, tourism development, and progress toward Sustainable Development Goals (SDGs).

LO 4.1**:** Examine the trend in Gross State Domestic Product (GSDP) and state per capita income of Assam, and interpret their implications for economic growth and living standards.

LO 4.2: Assess the role and performance of the agricultural sector in Assam's economy.

LO 4.3: Analyze the production and growth of key industries of Assam such as Tea, Oil and Natural Gas and evaluate their contribution.

LO4.4: Assess the role of Handloom and textiles and food processing in Assam

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

UNITS	CONTENTS	L	T	P	Total Hours
I	**Economic Development since Independence** India as a developing economy, Growth and Sectoral composition of national income and changes in Occupational Structure- pre and post globalization. India's Demographic Dividend; The problem of unemployment, poverty and inequality -Contemporary policies and measures in India.	8			8
II	**Agriculture and Industry[1,3]** Role of technology in agriculture- Green revolution; Agricultural Price policy; agricultural credit; Diversification of agriculture; Regenerative agricultural Practices, Recent trends in industrial growth in India; Industrial Policy and changes; Public sector reforms- Privatization and Disinvestment; Significance of MSMEs.	14			14
III	**Services and Foreign trade[1]** Growth and composition of services sector in India; Reasons for rapid growth in services; Direction and composition of India's Foreign Trade; Balance of Payments; Current and Capital Account Convertibility; FDI and FPI– Trends and Patterns; India's new Foreign Trade Policy.	15			15
IV	**Economy of Assam[1]** Trend in GSDP and state per capita income; role and performance of agriculture; Production and growth of key industries of Assam: Tea, Oil and Natural Gas; Role of handloom and textiles, food processing; role of service sector; Growth of Tourism in Assam, Act East Policy.	8			8
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 – SDG

Cognitive mapping of COs with Bloom's Taxonomy						
Cognitive knowledge dimensions	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge	CO2, 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	✓	✓	✓	✓				✓	✓	✓

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

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

Course Title	**:**	**Intermediate Microeconomics**
Course Code	**:**	**ECO-MAJ-4-401**
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 – SDG

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, Hicksian 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, 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 economies and Diseconomies 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; Perfect competition and welfare maximization; Applications of competitive markets-. Invisible hand, excise taxes and subsidies	9	3	-	12
4	**Monopoly and Monopolistic Competition** Meaning of Imperfect 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; Difference between Monopoly and Monopolistic competition.	9	3	-	12
5	**Oligopoly** Oligopoly- definition and features; short run pricing and output decision; Cournot model; Bertrand model; Edgeworth model, Stackelberg model; Kinked demand model; collusive oligopoly model: Cartels and Price leadership; Concept of Game theory and Prisoners' Dilema	9	3		12
	Total	45	15		60

Where, L: Lecture T: Tutorials P: Practicals

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

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 – SDG

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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

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

Course Title	**:**	**Economy of Assam**
Course Code	**:**	**ECO-MAJ-4-402**
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.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

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** Basic characteristics of the economy of Assam, Resources of Assam: Natural Resources; Human Resource; Migration; 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** Characteristics of Assam Agriculture, Role and performance of agriculture; Land-use Pattern in Assam, cropping pattern -Trend in Area and Production of food crops, Horticultural/Plantation Crop, Vegetables-Fruits-Floriculture-Sericulture; Livestock Economy; Agricultural Marketing – Agricultural Finance- Agriculture Prices; Mechanization and modernization of agriculture, sustainable agriculture through local believes and practices, problems of agriculture.	12			12
III	**Industry** Role and performance of Industry sector; Industrial Structure-Major, MSMEs and cottage industries; major industries of Assam; policies and programmes; Sources of Industrial Finance; problems and prospects of Industry sector; Advantage Assam	12			12
IV	**Infrastructure** Transport and Communication, Education, Health, power, irrigation; Recent 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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

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
- Dhar, P. K. *Economy of Assam*

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

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

Course Title	**:**	**Statistical Methods for Economics**
Course Code	**:**	**ECO-MAJ-4-403**
Nature of the course	**:**	**Major**
Total Credits	**:**	**04**
Distribution of Marks:		**60 (End Sem) + 40 (In-Sem)**

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

Course Objectives:

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

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

CO1: Apply the fundamental concepts of descriptive statistics to summarize and describe the essential features of data.
- LO1.1: Define and calculate measures of central tendency (mean, median, mode) and explain their significance.
- LO1.2: Describe and compute measures of dispersion (range, quartile deviation, mean deviation, standard deviation).
- LO1.3: Explain and calculate measures of skewness and kurtosis to understand data distribution.
- LO1.4: 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.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

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:** Data Presentation: Tabulation and Graph, 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.	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; 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:** Population and Sample, Sampling vs census**,** Methods of sampling, Errors in statistics: sampling vs. non-sampling errors, Level of confidence and Degree of Freedom, 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 $\bar{R}^2$; 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; simple and weighted average of price relatives; problems in construction of index numbers.	7	1		8
	Total	52	8		60

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

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

Course Title	**:**	**Intermediate Mathematical Methods for Economics**
Course Code	**:**	**ECO-MAJ-4-404**
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.

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

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.	12	2		14
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.	8	2		10
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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

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.
- Taha, Hamdy, A: "Operations Research" , seventh edition, Pearson education
- Natarajan, Balasubramani and Tamilarasi: "Operations research" Pearson

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

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

Course Title	**:**	**Statistical Methods for Economics**
Course Code	**:**	**ECO-MIN-4-401**
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.

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,

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..

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

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:** 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.	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; 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 (Concepts only)	15	2		17
3.	**Sampling and Testing of Hypothesis:** Population and Sample, Sampling vs census**,** Methods of sampling, Errors in statistics: sampling vs. non-sampling errors, Level of confidence and Degree of Freedom, 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,	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 and Regression Lines, Methods of least square, Coefficient of Determination (R square).	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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

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

Codes: 1 – Indian Knowledge System (IKS); 2 – Skill; 3 – SDG

LAKHIMPUR GIRLS' COLLEGE (AUTONOMOUS)
UNDER DIBRUGARH UNIVERSITY

FOUR YEAR UNDER-GRADUATE PROGRAMME (FYUGP) IN ECONOMICS

Syllabus of SEC 1- First Semester
First Semester

Course Title:	**Women and Entrepreneurship**
Course Code:	**ECO-SEC -3-101**
Nature of Course:	**Skill Enhancement Course (SEC)**
Total Credits:	**3 Credits**
Distribution of Marks:	**60 (End-Sem.) + 40 (In-Sem.)**

Course Objective: The instructional objectives of this Course are:

1. To develop foundational understanding on women entrepreneurship
2. To develop entrepreneurial skills
3. To orient students with entrepreneurial scope and opportunities

Course Outcome (Cos):

Students will be able to

CO1: Demonstrate knowledge women entrepreneurship

LO1.1: Discuss the key aspects on women entrepreneurship

LO1.2: Understand the scope of women entrepreneurship

LO1.3: Explain the key elements and approaches women entrepreneurship

CO2: Demonstrate the knowledge on entrepreneurial skills

LO2.1: Learn and understand the entrepreneurial skills

LO2.2: Discuss the policies and schemes of women entrepreneurship

LO2.3: Discuss the issues and challenges on women entrepreneurship

CO3: Demonstrate understanding of the policy-making and development process of the gender analysis framework.

LO3.1: Discuss the development process, policy making and planning through gender analysis

LO3.2: Identify the problems encountered in gender analysis.

LO3.3: Examine the gender analysis framework.

CO4: Discuss and analyze the women employment opportunities

ILO4.1: Understand the livelihood opportunities particular to women

ILO4.2: Examine the employment generating programmes concerning women.

CO5: Apply and identify the entrepreneurial skills and employment opportunities

ILO5.1: Apply the entrepreneurial skills

ILO5.2: Identify the employment opportunities available for women.

Cognitive Map of Course Outcomes with Blooms Taxonomy

Knowledge Dimension	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual Knowledge	CO1, CO2, CO3	CO1, CO2, CO3				
Conceptual Knowledge	CO1, CO2, CO3	CO1, CO2, CO3		CO2	CO4, CO5	
Procedural Knowledge	CO5	CO5	CO5	CO2	CO4, CO5	
Metacognitive Knowledge						

UNITS – Based on End Sem. Marks*	**COURSE CONTENTS**	**L**	**T**	**P**	**LTP** ***(45 hrs.)***
Unit – I (15 Marks)	**Concept of Women Entrepreneurship** Nature and development of Women Entrepreneurship; Types and structure of Women Entrepreneurship; Future prospects of women entrepreneurship	10	01	-	11
Unit – II (15 Marks)	**Entrepreneurship Skills- Issues and Challenges** Learning the Entrepreneurship Skills- how to start a business; Policies, Schemes, and Institutional finances to entrepreneurs; Challenges faced by Women Entrepreneur	10	02	-	12
Unit – III (15 Marks)	**Women Employment Opportunities** Employment and livelihood opportunities for women in rural and urban areas: Various agencies supporting women entrepreneurship; Income generating programmes for women entrepreneurs	10	01	-	11

Unit – IV (15 Marks)	**Impact of Women's Development Programs and policy measures on Women's Entrepreneurship** International level National level State Level	10	01	-	11
	Total	40	05		45

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

MODES OF IN-SEMESTER ASSESSMENT:	**40 Marks**
• Two Internal Examination- (10x2)	**20 Marks**
• Others (Any one) o Group Discussion o Seminar presentation on any of the relevant topics o Debate	**20 Marks**

Learning Outcomes:

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

- understand the role of women entrepreneurship in different facets of society
- examine various livelihood supports for women Employment opportunities.

Suggested Readings:

1. Jose Paul, N. Ajith Kumar. Entrepreneurship Development
2. P. Saravanavel, Entrepreneurship Development
3. M.A. Khan, Entrepreneurship Development Programmes in India-
4. Vasanth Desai, Dynamics of entrepreneur Development and Management
5. Hisrich, Robert D., Michael Peters and Dean Shepherded, Entrepreneurship.
6. Peter F. Drucker, Innovation and Entrepreneurship, Innovation and Entrepreneurship
7. Donald L. Sexton & Raymond, W. Smilor, The Art and Science of Entrepreneurship
8. Clifford M. Baumback & Joseph R. Mancuso, Entrepreneurship

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Syllabus of SEC 2
SECOND SEMESTER, DEPARTMENT OF ECONOMICS

Course Title:	**STARTUPS AND ENTREPRENEURSHIP**
Course Code:	**ECO-SEC-3-201**
Nature of Course:	**Skill Enhancement Course (SEC)**
Total Credits:	**3 Credits**
Distribution of Marks:	**60 (End-Sem.) + 40 (In-Sem.)**

Course objectives:

1. To introduce the students to the concept of Startups and Entrepreneurship.
2. To provide the knowledge of becoming an entrepreneur by identifying business opportunities and developing business plans.

UNITS	Contents	L	T	P
Unit 1 (20 marks)	**Introduction:** Importance of Entrepreneurship, Factors influencing entrepreneurship, characteristics and types of entrepreneurship, objectives of entrepreneurship development, Startups- Definition, Types, Startup ecosystem	6		2
Unit 2 (15 marks)	**Entrepreneurship Development Skills:** Types of entrepreneurial skills - team work and leadership skill, analytical and problem-solving skills, critical thinking skills, branding, marketing and networking skills.	9		2
Unit 3 (15 Marks)	**Institutions supporting Entrepreneurs:** Various Central and State Level Organizations which Help the Entrepreneurs, Banks and non-banking financial organisations, Fund Collection for Entrepreneurship	9		2
Unit 4 (15 marks)	**Entrepreneurial opportunity and enterprise planning:** Sensing entrepreneurial opportunities, selecting the right opportunity, Site Selection, Feasibility Analysis	6		4
Unit 5 (15 marks)	**Preparation of Business model/Plan:** Business plan – concept and components of business plan; Significance of Business Plan; Making of a Business plan	5		4
	Total	35		14

L = Lecture, T= Tutorial, P= Practical

Mode of In Semester Assessment: (40 Marks)

- One sessional examination 20 Marks
- Others (any one) 20 Marks
  Group Discussion
  Assignment
  Seminar Presentation any of the relevant topics

Course Outcome:

At the end of this course, the students will be able to start his/ her own business by understanding the opportunities that are lying in front of them.

He / she will learn how to make a business plan and how to approach funding agencies for getting their loans sanctioned.

Recommended Books

1. Kathleen R Allen, *Launching New Ventures, An Entrepreneurial Approach*, Cengage Learning.
2. Anjan Raichaudhuri, *Managing New Ventures Concepts and Cases*, Prentice Hall International.
3. S. R. Bhowmik & M. Bhowmik, *Entrepreneurship*, New Age International.
4. Steven Fisher, Ja-nae' Duane, *The Startup Equation -A Visual Guidebook for Building Your Startup*, Indian Edition, Mc Graw Hill Education India Pvt. Ltd.
5. Byrd Megginson, *Small Business Management An Entrepreneur's Guidebook,* 7th ed, McGrawHill
6. A Fayolle *Entrepreneurship and new value creation,* Cambridge, Cambridge University Press

LAKHIMPUR GIRLS' COLLEGE (AUTONOMOUS)
UNDER
DIBRUGARH UNIVERSITY

FOUR YEAR UNDER-GRADUATE PROGRAMME (FYUGP) IN ECONOMICS

Syllabus of SEC – 3- Third Semester

Third Semester

Course Title:	**Women and Rural Development**
Course Code:	**ECO-SEC-3-301**
Nature of Course:	**Skill Enhancement Course (SEC)**
Total Credits:	**3 Credits**
Distribution of Marks:	**60 (End-Sem.) + 40 (In-Sem.)**

Course Objective: The instructional objectives of this Course are:

1. To introduce the basics of rural development and women.
2. To explain women's role and participation in various aspects of rural development.
3. To demonstrate women's contribution and participation in rural development.

Course Outcome (COs):

Students will be able to

CO1: Demonstrate knowledge on rural development and women.

LO1.1: Discuss the key definitions on rural development

LO1.2: Understand the interlinkages between rural development and women

LO1.3: Explain the key elements and approaches on women and rural development.

CO2: Analyze women's role and participation in rural development and women

LO2.1: Identify the different roles and participation of women in rural development

LO2.2: Analyze the contributions of women in rural development.

CO3: Demonstrate understanding of women's contribution in maintaining and earning through livestock

LO3.1: Discuss the gender roles in livestock farming

LO3.2: Discuss the occupational hazard of women in conducting livestock farming

CO4: Analyze the decision-making ability of women in rural development

ILO4.1: Examine the decision-making ability of women in rural development

ILO4.2: Identify the obstacles erupting in the exercise of agency of women in rural development.

CO5: Analyze the gender framework involved in women in agriculture, live-stock, handloom and handicraft.

ILO5.1: Examine gender framework involved in women and agriculture

ILO5.2: Examine gender framework involved in women and live-stock

ILO5.3: Examine gender framework involved in women and handloom

ILO5.4: Examine gender framework involved in women and handicraft.

Cognitive Map of Course Outcomes with Blooms Taxonomy

Knowledge Dimension	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual Knowledge	CO1, CO3	CO1, CO3				
Conceptual Knowledge		CO1, CO3		CO2, CO4, CO5	CO2, CO4, CO5	
Procedural Knowledge				CO2, CO4, CO5	CO2, CO4, CO5	
Metacognitive Knowledge						

UNITS – Based on End Sem. Marks*	**COURSE CONTENTS**	**L**	**T**	**P**	**LTP** ***(45 hrs.)***
Unit – I (15 Marks)	**Women and Agriculture** Role of women in agriculture- Decision making in agriculture, Women's agricultural knowledge and skills; Women and land rights; Access to resources and institutions; Policies and schemes	10	01	-	11
Unit – II (15 Marks)	**Women and Live-stock** Women's role in Livestock Farming – Access to Resources and Institutions; Women's Knowledge and Skills; Decision making in Livestock farming; Occupational hazards and drudgery reduction	10	02	-	12
Unit – III (15 Marks)	**Women and Handloom** Gender perspectives of handloom; Women and economy of handloom; Policies and schemes	10	01	-	11
Unit – IV (15 Marks)	**Women and Handicraft** Gender perspectives of handicrafts; Women and economy of handicrafts; Policies and schemes	10	01	-	11
	Total	40	05		45

Where, L: Lectures T: Tutorials P: Practical

MODES OF IN-SEMESTER ASSESSMENT:	40 Marks
• Two Internal Examination- (10x2)	**20 Marks**
• Others (Any one) o Group Discussion o Seminar presentation on any of the relevant topics o Debate	**20 Marks**

Learning Outcomes:

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

- develop an understanding on the basics of rural development and women.
- identify women's role and participation in various aspects of rural development.
- acquire knowledge on scopes of development of rural women

Suggested Readings

1. Castillo, C.T (1977), The Changing Role of women in rural societies: A summary of trends and issues, Seminar report No.12, Agricultural development Council, New York
2. Gopalan A and S.N. Saha, Gender in Agriculture Developed under AP CESS Research Scheme, Hyderabad: National Academy of Agricultural Research Management, August, 2003
3. United Nations (1975), World Conference of the United Nations Decade for Women: Equality, Development and Peace Document A/CONF.94/19. Nairobi, Kenya.
4. Galab, S. and Rao, C. (2003) Women self-help groups: poverty alleviation and empowerment.
5. Government of India (1998) Ministry of Rural Areas and Employment, Report of the Committee for Gender Equality in Land Devolution in Tenurial Laws, New Delhi
6. IFAD (2009) Gender and Livestock: Tools for Design. Rome: IFAD.
7. Shicai, S. and Jie, Q. (2009) Livestock projects in southwest China: women participate, everybody benefits. Leisa Magazine 25(3 Sept).
8. Castillo, C.T (1977) The Changing role of women in rural societies: A summary of trends and issues, Seminar report No.12, Agricultural Development Council, New York
9. Kabeer N (2003) Gender Mainstreaming in Poverty Eradication and the Millennium Development Goals: A Handbook for Policy Makers and Other Stakeholders. Ottawa: International Development Research Centre

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