

Final Resolution of the 2nd BoS meeting/Approval of the final syllabus

FYUGP in Economics (NEP)

Meeting Reference:

This resolution was adopted in the 2nd Board of Studies meeting held on 21/06/2025 in online mode, chaired by Dr. Mamoni Sharma, Chairperson, BoS, Department of Economics, Digboi College (Autonomous)

Expert Members:

1. Prof. Amar Jyoti Mahanta, HoD, Department of Economics, Dibrugarh University
2. Prof. Nissar A Barua, Department of Economics, Gauhati University
3. Prof. Mrinal Kanti Dutta, Department of Humanities and Social Sciences, IIT, Guwahati
4. Dr. Gautom Purkayastha, Associate Prof., Margherita College
5. Mr. Rajarshi Gogoi, Proprietor, The Assam Computers, Tinsukia

Preamble:

In accordance with the academic requirements and the need for curriculum updating, the syllabus of FYUGP in Economics (NEP) was reviewed and revised by the syllabus committee constituted for the purpose. The revised syllabus has been designed to align with the [e.g., NEP 2020 guidelines / CBCS / industry standards], ensuring academic rigour and relevance.

Resolution:

After due deliberation and review, it is resolved that the revised syllabus for the course [FYUGP in Economics (NEP)], semester-wise (or paper-wise), is hereby approved. It is done after incorporating all the suggestions, modifications and advises given by the BoS experts in the first BoS meeting held on 26.06.25. The revised syllabus shall be implemented from the academic session [e.g., 2025–2026] onwards.

Final Course Structure after modifications:

Year	Semester	Course (Lecture+ Tutorial+ Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
		Major(Core)	1	CECO101	Introductory Microeconomics	4	-
1	1 st	Minor	1	MINECO101	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	MDCECO101	Indian Economy: Evolution and its Contemporary State	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 Digboi College
		Value Added Course-	1	VAC1/ VAC2	Understanding India/Health and Wellness	2	Students shall have to take any one of the courses of offered by Digboi College
		Skill Enhancement Course	1			3	Students shall have to take the course offered by Digboi College
		Total	6			20	

Year	Semester	Course (Lecture +Tutorial+ Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
1	2 nd	Major(Core)	1	CECO202	Introductory Macroeconomics	4	-
		Minor	1	MINECO202	Elementary Macroeconomics	4	The course shall be taken by students from disciplines other than Economics
		Multi-Disciplinary Generic Elective Course: Natural	1	MDCECO202	Basic Development 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 Digboi College
		Value Added Course-	1	VAC3/ VAC 4	Environmental Education with emphasis on community- based activities/ Yoga	2	Students shall have to take any one of the courses offered by Digboi College
		Skill Enhancement Course	1	SEC202	Agriculture and Rural Marketing	3	Students shall have to take the course offered by Digboi College
		Total	6			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	3 rd	Major	2	CECO303	Introductory Mathematical Methods for Economics	4	-
				CECO304	Indian Economy-Trends in Economic indicators	4	-
		Minor	1	MINECO303	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	MDCECO303	Operational Economics	3	The course shall be taken by students from disciplines other than economics
		Value Added Course-	1	VAC5 / VAC6	Digital and Technological Solutions/Digital Fluency	2	Students shall have to take the Course offered by Digboi College
		Skill Enhancement Course	1	SEC303		3	Students shall have to take the Course offered by Digboi College
			Total	6			20
Year	Semester	Course (Lecture+ Tutorial+ Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
2	4 th	Major	4	CECO405	Essentials of Microeconomics	4	-
				CECO406	Economy of Assam	4	-
				CECO407	Statistical Methods for Economics	4	-
				CECO408	Intermediate Mathematical Methods for Economics	4	-
		Minor	1	MINECO404	Statistical Methods for Economics	4	The course shall be taken by students from disciplines other than Economics
		Total	5			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 80Credits in Semesters I, II, III and IV							

Year	Semester	Course (Lecture +Tutorial+ Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
3	5th	Major	4	CECOC509	Intermediate Macroeconomics	4	
				CECO510	Basic Econometrics	4	
				CECO511	Development Economics I	4	
		Minor	1	MINECO505	Mathematical Methods in Economics	4	The course shall be taken by students from disciplines other than Economics
		Internship/ Community Engagement/Project	1		Internship(2)+Comm unity Engagement (2) Or Internship(4)/(Comm unity Engagement (4)	4	
		Total				20	
Year	Semester	Course(Lecture+ Tutorial+Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
3	6th	Major	4	CECO612	Environmental Economics	4	
				CECO613	International Economics	4	
				CECO614	History of Economic Thought	4	
				CECO615	Public Finance	4	
		Minor	1	MINECO606	Public Finance	4	The course shall be taken by Students from disciplines other than Economics
		Total	5			20	
	Grand Total (Semester I,II,III,IV,V and VI)					120	
Students on exit shall be awarded Undergraduate Degree (in the Field of Study/Discipline) after securing the requisite 120 Credits in Semesters I, II, III, IV, V and VI							

Year	Semester	Course(Lecture +Tutorial+ Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
4	7th	Major	3	CECOC716		4	
				CECOC717		4	
				CECOC718		4	
		Minor	1	MINECO707		4	

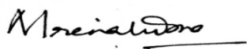
					Research Methodology	4	
		Total	4			20	
Year	Semester	Course (Lecture+Tutorial+ Practical)	No. of Courses	Course Code	Name of the Course	Credit	Remarks
4	8th	Major	2	CECO819		4	
				CECO820		4	
					Dissertation/DSE 1 &DSE2	8/4+4	
		Minor	1	MINECO808		4	
		Total	3			20	
	Grand Total(Semester I, II, III, IV, V, VI, VII and VIII)					160	
Students be awarded Graduate with Honours Degree (in the Field of Study/Discipline) after securing the requisite 160 Credits in Semesters I, II, III, IV, V, VI, VII and VIII							

Signature of the experts: (Online Mode)

1. Prof. Nissar A. Barua, Dept. of Economics, Gauhati University



2. Prof. Mrinal Kanti Dutta, Dept. of Humanities and Social Sciences, IIT, Guwahati



3. Prof. Amarjyoti Mahanta, Dept. of Economics, Dibrugarh University



4. Dr. Gautam Purkayastha, Dept. of Economics, Margherita College



5. Mr. Rajarshi Gogoi, Proprietor, The Assam Computers, Tinsukia



DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)

DETAILED SYLLABUS OF 1ST SEMESTER
Course Title Course Title: **Introductory Microeconomics**
Course Code: **CECO101**
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 introduce students to the core concepts and principles of microeconomic theory.
- 2.To help learners understand the key economic trade-offs and allocation challenges arising.

Course Outcome: Upon completing this course, students will be able to:

- CO1:** Develop an understanding of the foundational concepts of Microeconomics.
LO1 .1 Describe the meaning and scope of Microeconomics.
LO1.2 Explain how scarcity and the necessity of making choices are fundamental to economic reasoning
- CO2:** Apply basic microeconomic principles to analyze the behavior of firms and households, focusing on the laws of demand and supply.
LO 2.1 Elaborate on the law of demand, its determinants, and the factors influencing individual and market demand, including shifts in demand.
LO 2.2 Illustrate the law of supply, its determinants, and analyze individual and market supply, along with factors causing supply shifts.
- CO3:** Utilize microeconomic concepts to assess consumer behavior and determine consumer equilibrium.
LO3.1 Explain the concept of a budget constraint and its role in consumer choice.
LO3.2 Describe the properties and significance of indifference curves in consumer preference analysis.
- CO4:** Apply microeconomic theories to understand production processes, producer's behaviour, producer's equilibrium.
LO4.1 Explain production functions and isoquants
LO4.2 Examine the marginal rate of technical substitution
LO4.3 Analyze returns to scale in production
LO4.4 Describe producer's equilibrium and producer's surplus.
- CO5:** Apply microeconomic theories to understand cost and revenue.
LO5.1 Introduce concept of costs and types of costs
LO5.2 Explain short run and long run cost with diagrams
LO5.3 Evaluate economies of scale and diseconomies of scale.
LO5.4 Assess recent developments in cost theory.
LO5.5 Analyse the concepts of revenue.

UNITS	COURSE CONTENTS	L	T	P	Total Hours
I	Basics of Microeconomics: Need of studying Microeconomics; Scope and method; Definition of Scarcity and choice; Types of Microeconomic Analysis, Goals of Microeconomics-Growth, Efficiency and Equity; The basic economic problems: what to produce, how to produce and how to distribute output; Economic models: Definition; Verification and general features of economic models ; Applications of microeconomics in different practical field	9	3	-	12
II	Demand and Supply Definition of Market, Demand and Supply; market versus individual demand/supply; determinants of individual/ Market demand; Determinants of Individual/ Market supply; demand/supply schedule and demand/supply curve; Change and shift in the demand /supply curve; demand-supply equilibrium; how prices allocate resources; price elasticity and its application, methods of calculating price elasticity, concept of cross elasticity and income elasticity	9	3	-	12
III	Consumer's Behavior The consumption decision – the cardinal utility theory- law of diminishing marginal utility, equilibrium of the consumer, consumer's surplus, the ordinal utility theory- indifference curve: definition and description of preference; properties of indifference curves, Marginal Rate of substitution; Budget line, consumer's equilibrium, income and substitution effect (concept only), Balancing Work, Leisure, and Consumption	9	3	-	12
IV	Producer's Behaviour Production function, Iso-quants and its properties, Marginal Rate of Technical Substitution, Elasticity of Substitution, Expansion path, returns to scale; Production with One and with Two-Variable Inputs, producer's equilibrium- output maximisation and cost minimization, producer's supply	9	3	-	12
V	Cost and revenue Definition and types of cost, cost function and its properties, cost in the short run and long run, short run and long run cost curves, traditional and modern theories of cost, economies and diseconomies of scale, production with two outputs- economies of scope, concept of revenue- total revenue, average revenue, marginal revenue	9	3	-	12
TOTAL		45	15	-	60

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

MODES OF IN-SEMESTERASSESSMENT:**40 Marks**

- Two Internal Examinations - 20 Marks
- Any two from the following: 20 marks
Assignment/Group Discussion/Seminars/Project/
Field Survey/departmental activities

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	
Meta cognitive 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, 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.
- R. S. Pindyck, D. N. Rubinfeld, and P. L. Mehta, *Microeconomics*, 7th Edition, Pearson, New Delhi, 2009.
- Mc Connell, Brue, and Flynn, *Microeconomics: Principles, Problems, and Policies*, McGraw Hill Education (India) Private Limited, 2017.

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)

DETAILED SYLLABUS OF 1ST SEMESTER

Course Title : **Elementary Microeconomics**

Course Code: **MINECO101**

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 help students understand the basic concepts in Economics.
- 2.To develop analytical, reasoning, and graphical presentation skills.
- 3.To enable students to appreciate the utility of economics in day-to-day life.

Course Outcome: Upon completing this course, students will be able to:

CO1: Comprehend the introductory principles of Microeconomics..

LO1 .1 Describe the meaning of Microeconomics.

LO1.2 Define the meaning of scarcity and opportunity cost.

CO2: Apply the basics of microeconomics in analyzing the behavior patterns of firms and households and relate them 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.

LO2.3 Explain the condition of market equilibrium.

CO3: Apply the fundamentals of microeconomics to understand the behavior of consumers and producers and the attainment of producer's and consumer's equilibrium.

LO3.1 Define the meaning of budget constraint.

LO3.2 Explain the meaning and properties of an indifference curve.

LO3.3 Explain the fundamentals of utility and its applications in consumer theory.

LO3.4 Explain the production function with one and two variables.

LO3.5 State the meaning and properties of an isoquant and equilibrium in production.

CO4: Apply the principles of microeconomics in relation to the production function, costs and revenues and demonstrate the basics of market mechanism and characteristics of different forms of markets

LO4.1 Explain the features of cost and revenue in the short run and long run respectively.

LO4.2 Discuss the features of different forms of markets.

LO4.3 Explain the equilibrium condition of firms under perfect competition.

CO5: To develop an understanding of the behavior of firms under different market structures and how prices and outputs are determined in each, with special emphasis on perfect competition, monopoly, monopolistic competition, and oligopoly.

LO5.1 Explain the basic objectives of business firms and distinguish between different types of firm behavior.

LO5.2 Identify and differentiate the characteristics of various market models—perfect competition, monopoly, monopolistic competition, and oligopoly.

LO5.3 Analyze the mechanisms of price and output determination under perfect competition in the short run and long run.

LO5.4 Compare and contrast the price-output outcomes under monopoly, monopolistic competition, and oligopoly with those under perfect competition.

LO5.5 Understand the conceptual differences between a firm and an industry in terms

of market functioning and decision-making.

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

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

MODES OF IN-SEMESTER ASSESSMENT: 40 Marks

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

Cognitive map of Course outcomes with Bloom's Taxonomy

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

Mapping of Course Outcome with Program Outcome:

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

Suggested Readings:

- Karl E. Case and Ray C. Fair, *Principles of Economics*, Pearson Education Inc., 8th Edition, 2007.
- N. Gregory Mankiw, *Economics: Principles and Applications*, India edition by South Western (Cengage Learning), 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.
- Mc Connell, Brue, and Flynn, *Microeconomics: Principles, Problems, and Policies*, McGraw Hill Education (India) Private Limited, 2017.

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 1ST SEMESTER
Course Title Course Title: **Indian Economy: Evolution and
its Contemporary State**
Course Code: **MDCECO101**
Nature of Course: **Multidisciplinary Generic Elective**
Total Credits: **3 credits**
Distribution of Marks : **60 (End-Sem.)+40(In-Sem.)**

Course Objectives: The objectives of this course are:

- 1.To acquaint students with the structure of the Indian economy in the colonial era and various contemporary issues
- 2.To equip students with the ability to analyze the policies and economic performance of India during British rule and compare it with present era.

Course Outcome: Upon completing this course, students will be able to:

CO1: Assess and critically examine the economic structure and policies of pre-independence India, recognizing the factors that contributed to economic stagnation.

LO1.1 Describe the economic structure and policies of pre-independence India.

LO1.2 Discuss how socio-cultural attitudes and inheritance laws influenced India's economic development.

LO1.3 Analyze the drain theory and its effects on the Indian economy.

LO1.4 Analyse the economic ideas of M. K. Gandhi.

CO2: Investigate the agrarian system, agricultural markets, and institutions, green revolution etc. along with India's industrial development status, constraints and reforms.

LO 2.1 Explain the agrarian structure of India.

LO 2.2 Examine the impact of agricultural markets and institutions on commercialization of agriculture.

LO2.3 Assess the Green Revolution and goal of self reliance in India.

LO2.4 Discuss state of industrial development in India along with its constraints and reforms.

CO3: Analyze the state of service sector and foreign trade in India and their effects on the economy.

LO3.1 Outline the trend and composition of service sector in India and their role in the economy

LO3.2 Discuss the direction and composition of foreign trade in India

LO3.3 Examine the trend of BoP after the implementation of LPG policy

LO3.4 Analyze India's foreign trade policy

CO4: Assess , analyze and compare the various contemporary issues in Indian economy.

LO4.1 Explain the India's population policy and in light of demographic dividend.

LO4.2 Discuss the status and importance of human development in India.

LO4.3 Evaluate policies and activities like urbanization and smart city mission, digital India etc.

Analyze various aspects of agricultural price policy, subsidy and public distribution system

UNITS	Course contents	L	T	P	Total Hours
I	History of Indian Economy An Overview of economic structure and policies of pre-independence era, drain theory; economic ideas of M.K. Gandhi. National Income in British Period–trend and composition; Population–growth, age structure and sex composition; Poverty.	12			12
II	Agricultural and Industry Sector of India Agrarian structure; agricultural markets and institutions; Green Revolution and Self-Reliance, Commercialization of agriculture; The state of industrial development in India, constraints to industrial development; Industrial Policy Reforms.	10			10
III	Service Sector and Foreign Trade in India Trend and Composition of Service Sector in India; Role of Service Sector in Indian Economy; India's Foreign Trade: Direction and composition; Trends of BoP after LPG Policy; India's Foreign Trade Policy.	11			11
IV	Contemporary Issues of Indian Economy India's population policy; Demographic Dividend; Human Development in India. Urbanization and Smart City Mission: Success and Challenges, Digital India, Agricultural Price policy and Subsidies; Public Distribution System	12			12
TOTAL		45	-	-	45

Where,

L: Lectures

T: Tutorials

P:Practicals

MODES OF IN-SEMESTER ASSESSMENT:

40 Marks

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

Cognitive Mapping of COS with Bloom's Taxonomy:

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

Mapping of COs with POs

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

Suggested Readings:

- Lakshmi Subramanian, *History of India 1707–1857*, Orient Blackswan, 2010, Chapter 4.
- Sumit Guha, 1991, *Mortality Decline in Early 20th Century India*, *Indian Economic and Social History Review (IESHR)*, pp. 371–374 and 385–387.
- Tirthankar Roy, *The Economic History of India 1857–1947*, Oxford University Press, 3rd edition, 2011.
- J. Krishnamurty, *Occupational Structure*, in Dharma Kumar (ed.), *The Cambridge Economic History of India, Vol. II* (referred to as CEHI), 2005, Chapter 6.
- Ira Klein, 1984, *When Rains Fail: Famine Relief and Mortality in British India*, *Indian Economic and Social History Review (IESHR)*, Vol. 21.
- Jean Drèze, *Famine Prevention in India*, in Drèze and Amartya Sen (eds.), *Political Economy of Hunger*, WIDER Studies in Development Economics, 1990, pp. 13–35.
- John Hurd, *Railways*, in CEHI, Chapter 8, pp. 737–761.
- Rajat Ray (ed.), *Entrepreneurship and Industry in India*, 1994.
- A. K. Bagchi, *Deindustrialization in India in the Nineteenth Century: Some Theoretical Implications*, *Journal of Development Studies*, 1976.
- M. D. Morris, *Emergence of an Industrial Labour Force in India*, Oxford University Press, 1965, Chapter 11, "Summary and Conclusions."
- K. N. Chaudhuri, *Foreign Trade and Balance of Payments*, CEHI, Chapter 10.
- B. R. Tomlinson, 1975, *India and the British Empire 1880–1935*, *Indian Economic and Social History Review (IESHR)*, Vol. XII.
- Dharma Kumar, *The Fiscal System*, CEHI, Chapter 12.
- Basudev Chatterjee, *Trade, Tariffs and Empire*, Oxford University Press, 1992, Epilogue.

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 2ND SEMESTER

Course Title: **Introductory Macroeconomics**

Course Code: **CECO202**

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

Course Outcome: Upon completing this course, students will be able to:

CO1: Distinguish between different macroeconomic schools of thought and understand the fundamental objectives and scope of macroeconomics, laying the foundation for advanced macroeconomic analysis.

- LO1.1 Differentiate between microeconomics and macroeconomics and understand the evolution of macroeconomics as a distinct field.
- LO1.2 Explain the nature and scope of macroeconomics and identify the key objectives of macroeconomic study.
- LO1.3 Compare and contrast 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.

- LO 2.1 Understand the importance of measuring economic activity and the various approaches to national income accounting.
- LO 2.2 Define and differentiate between GDP and GNP, and explain the concepts of stocks and flows.
- LO2.3 Describe the circular flow of income in an economy and the methods of measuring GDP: Income Method, Expenditure Method, and Value Added Method.
- LO2.4 Evaluate the limitations of GDP as a measure of economic activity, including its relationship with the underground economy and social welfare, and understand the significance of sustainable accounting.

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

- LO3.1 Define aggregate demand and its components, and identify the determinants of consumption, government spending, firm investment, and net exports.
- LO3.2 Explain the consumption function, including marginal propensity to consume

(MPC) and average propensity to consume (APC), and the determinants of saving, including marginal propensity to save (MPS) and average propensity to save (APS).

LO3.3 Analyze the investment function and the factors that influence investment demand.

LO3.4 Describe the concept of aggregate supply, its determinants, and the factors that can shift the aggregate supply curve

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

LO4.1 Understand the classical theory of output and employment determination and Say's Law of Markets.

LO4.2 Analyze the Great Depression of the 1930s and the failure of the classical school, leading to the Keynesian revolution.

LO4.3 Explain the Keynesian theory, including the equality between output and aggregate demand, the concept of the multiplier, and the determination of equilibrium income.

LO4.4 Discuss 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 the 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	Total Hours
I	Introduction Microeconomics vs Macroeconomics; Nature and scope of macroeconomics; Objectives of Macroeconomics – short term vs long run, economic growth vs stabilization	10
II	National Income Accounting Measuring the value of economic activity and its importance; Meaning of GDP and GNP; Stocks and flows; Circular flow in an economy; Approaches of measuring GDP– Income method, expenditure method, and value added method; Real GDP vs Nominal GDP; GDP deflator; GDP and Social welfare; Sustainable accounting and its significance	12
III	Introduction to Aggregate Demand and Aggregate Supply Concept of aggregate demand; Components and determinants of aggregate demand; Consumption function –MPC and APC; Saving – determinants of saving – MPS and APS; Investment – determinants of investment demand; investment function; Concept of Aggregate supply; determinants of aggregate supply; factors shifting aggregate supply	10
IV	Determination of output and employment The classical theory of determination of output and employment; Say's law of markets; The Great Depression of 1930s – failure of classical school and the Keynesian revolution; the Keynesian theory – equality between output and aggregate demand, the concept of multiplier, equilibrium income, changes in equilibrium income	14
V	Introduction to money and theory of interest Definition of money; Functions of money; Types of money –Supply of money – Meaning and the role of central bank (money through credit creation not to be included), Vertical money supply curve, Measures of Money (RBI definitions); Demand for money – Meaning; The quantity theory of Money; Motives of demand for money – Transaction, Precautionary and Speculative; Determination of the equilibrium rate of interest – Classical theory of interest and the Keynesian liquidity preference theory	14
	Total	60

MODES OF IN-SEMESTERASSESSMENT:

40 Marks

- Two Internal Examinations - 20 Marks
- Assignment/Group Discussion/Seminars/Project etc. - 10 marks
- Field Survey and other departmental activities (Group)- 10 marks

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		
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:

- 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

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 2ND SEMESTER

Course Title: **Elementary Macroeconomics**
Course Code: **MINECO202**

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

Course
Outcome:

Upon completing 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.
- LO 2.1 Define and differentiate between GDP and GNP, including the concepts of stocks and flows.
 - LO 2.2 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 Marginal Propensity to Consume (MPC) and Average Propensity to Consume (APC).
 - LO3.3 Discuss the determinants of saving and investment, including the functions of Marginal Propensity to Save (MPS), Average Propensity to Save (APS), and investment demand.

- LO3.4 Explain the concept of aggregate supply and identify factors that cause shifts in the aggregate supply curve.
- CO4:** Compare and contrast the classical and Keynesian theories of output and employment determination and their relevance to economic equilibrium.
 - LO4.1 Describe the Classical theory of output and employment determination and Say's Law of Markets.
 - LO4.2 Analyze the impact of the Great Depression on the classical school and the rise of Keynesian economics.
 - LO4.3 Explain the Keynesian theory of equilibrium between output and aggregate demand, including the concept of the multiplier.
 - LO4.4 Calculate equilibrium income and understand its implications for macroeconomic stability.
- CO5:** Elaborate the role of money in the economy, the various types and measures of money, and the causes and effects of inflation.
 - LO5.1 Define money and its functions, and differentiate between different types of money (fiat money, fiduciary money, metallic money, and paper money).
 - LO5.2 Identify and explain the various measures of money supply (M0, M1, M2, M3, M4).
 - LO5.3 Discuss the quantity theory of money and its implications for prices and inflation.
 - LO5.4 Analyze the causes and types of inflation, its social costs and benefits, and the relationship between nominal and real interest rates.

UNITS	CONTENTS	L	T	P	Total Hours
I	Introduction Microeconomics vs Macroeconomics; Evolution of Macroeconomics as a separate discipline; Nature and scope of macroeconomics; Schools of macroeconomic thought – the classical, the Keynesian and the monetarist; Objectives of Macroeconomics – short term vs long run, economic growth vs stabilization	9	1		10
II	National Income Accounting Measuring the value of economic activity and its importance; Meaning of GDP and GNP; Stocks and flows; Circular flow in an economy; Approaches to measuring GDP – Income method, expenditure method, and value added method; GDP deflator; Real GDP vs Nominal GDP; GDP and Social welfare;	12			
III	Introduction to Aggregate Demand and Aggregate Supply Concept of aggregate demand; Components and determinants of aggregate demand –consumption, government spending, firms' consumption, and net exports; Consumption function – MPC and APC; Saving – determinants of saving – MPS and APS; Investment – determinants of investment demand; investment function; Concept of Aggregate supply; determinants of aggregate supply; factors shifting aggregate supply	9	1		10
IV	Determination of output and employment The classical theory of determination of output and employment; Say's law of markets; The Great Depression of 1930s – failure of classical school and the Keynesian revolution; the Keynesian theory – equality between output and aggregate demand, the concept of multiplier, equilibrium income	1 2	2		14
V	Introduction to money and inflation Definition of money; Functions of money; Types of money– Measures of Money – M0, M1, M2,M3, and M4; Money, prices and inflation; Inflation – meaning, types and causes; social costs of inflation	1 2	2		14
Total		54	6		60

Where,

L: Lectures

T: Tutorials

P:Practicals

MODES OF IN-SEMESTER ASSESSMENT: 40 Marks

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

Cognitive Map of Course Outcomes with Bloom's Taxonomy:

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

- 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.

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 2ND SEMESTER

Course Title: **Basic Development Economics**
Course Code: **MDCECO203**

Nature of Course: Multidisciplinary Generic Elective

Total Credits: **3 credits**

Distribution of Marks :**60 (End-Sem.)+40(In-Sem.)**

Course Objectives:

The objectives of this course are:

This course aims to help students grasp essential concepts of growth and development, providing a foundation for understanding their complexities in the future.

Course Outcome:

Upon completing this course, students will be able to:

CO1: Develop a comprehensive understanding of development and underdevelopment by analyzing various economic growth theories and strategies.

LO1.1 Differentiate between economic growth and development, and describe the concept of the development gap.

LO1.2 Recognize the main characteristics of underdevelopment and understand the structural transformation processes in developing economies.

LO1.3 Analyze and compare prominent economic growth theories, including Classical, Harrod-Domar, Lewis, Neo-Classical, and New Growth models.

LO1.4 Assess different growth strategies such as balanced growth, unbalanced growth, and the critical minimum effort thesis.

CO2: Evaluate the key factors affecting development, explore various development measures, and understand the concepts and indicators of poverty and inequality.

LO 2.1 Examine the significance of agriculture, capital, technology, and institutions in the development process.

LO 2.2 Explain how population growth influences economic development.

LO2.3 Compare different development indicators, such as GNP per capita, PQLI, and HDI.

LO2.4 Assess various concepts and measures of poverty and inequality, analyzing their impact on development.

CO3: Examine the concepts of capabilities and functioning, understand human development, and explore the relationship between the environment and development, with a focus on sustainable development and climate change.

LO3.1 Explain the concepts of capabilities and functioning and their significance in human development.

LO3.2 Evaluate the environmental challenges faced by both developing and developed countries and their implications for sustainable development.

LO3.3 Analyze the effects of environmental issues, including global warming and climate change, on agriculture and the economy.

LO3.4 Assess policy options to address environmental challenges in developing and developed countries, considering the Sustainable

Development Goals (SDGs).

CO4: Gain an understanding of the relationship between trade, globalization, and economic development, exploring trade policies and the historical context of globalization.

LO4.1 Describe the role of trade in promoting economic growth and its potential as a driver of development.

LO4.2 Compare and contrast import substitution and export promotion as strategies of trade policy.

UNITS	CONTENTS	L	T	P	Total Hours
I	Basic Issues of Development: Growth vs Development; Development gap; Characteristics of a Developing Economy; Growth strategies: Balanced growth and Unbalanced growth	11			11
II	Issues of Development: I Factors in the development- Agriculture, Capital, Technology and Institution; Population growth and Economic Development; Measures of Development- GDP/GNP per capita, PQLI, HDI: Comparative Analysis; Poverty and inequality: Concepts and measures	12			12
III	Sustainable Development Capabilities and Functioning's; Human development; Environment- Development Linkage; Environmental Issues of the developing and the developed countries, Sustainable development; SDGs; Global Warming and Climate Change	12			12
IV	Trade, Globalization and Development: Trade and Economic Growth; Trade Policy: Import substitution vs Export Promotion; Terms of Trade: Globalization: Concept and Present scenerio; Issues and Challenges	10			10
TOTAL		45			45

MODES OF IN-SEMESTER ASSESSMENT: 40 Marks

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

Cognitive Mapping of COs with blooms taxonomy

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

Mapping of Cos with Pos

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

Suggested Readings:

- Ray, Debraj (1998). *Development Economics*. Oxford University Press.
- Thirlwall, A.P. (2011). *Economic Development*. Palgrave Macmillan.
- Todaro, M.P. & Smith, S.C. (2022). *Economic Development*. Pearson Education.
- Banerjee, Abhijit, Roland Benabou & Dilip Mookerjee (eds.) (2006). *Understanding Poverty*. Oxford University Press.
- Sen, Amartya (2000). *Development as Freedom*. Oxford University Press.
- Maddison, Angus (2007). *The World Economy: A Millennial Perspective*. Academic Foundation.

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 2ND SEMESTER

Course Title **Course Title: Agriculture and Rural marketing**
Course Code: **SEC 202**

Nature of Course: **Skill Enhancement Course**

Total Credits: **3 credits**

Distribution of Marks :**60 (End-Sem.)+40(In-Sem.)**

Course Objectives:

The objectives of this course are:

- 1.To provide practical and value-based education that helps transfer classroom knowledge to real-life rural settings.
- 2.To contribute towards inclusive growth by addressing regional disparities and reducing income inequality.
- 3.To develop critical thinking abilities for designing effective strategies in agriculture and rural development.
- 4.To build students' analytical skills to identify problems, form hypotheses, assess outcomes, and draw logical conclusions.
- 5.To encourage continuous learning and the development of skills that support professional work and job creation.

Unit	Contents	L	T	P
1 (20 Marks)	Basics of Agriculture and Rural Marketing: Definition, nature and scope, classification of rural markets, rural v/s urban markets. marketing environment, infrastructure facilities, rural credit institutions, rural retail outlets.	09	01	
2 (20 Marks)	Rural Consumer Behaviour and Market Research: Understanding Rural Consumer Behaviour; Key factors influencing rural consumer behaviour: Social, Technological, Economic and Political factors; Characteristics of Rural Consumers: Age and life cycle stages, Occupation and income levels, Economic conditions, Lifestyle patterns, Personality traits and brand perception, Rise of Consumerism, Researching Rural Market: Sensitizing rural market.	08	01	04
3 (20 Marks)	Agricultural Marketing: Inputs and Outputs: Different agricultural inputs-a brief overview, Marketing strategies for inputs. Indian agricultural produces marketing, challenges in marketing of agricultural produce and inputs, Strategies to promote marketing, Problems and Prospects of agriculture and rural marketing, strategies for rural marketing, Need for marketing finance and source of marketing finance	08		04

4 (20 Marks)	Standardization and Grading, processing and packaging: Inspection of quality control --- Consumer Protection Act 1986. Public Distribution System (PDS). Different aspects of processing and packaging. Institutional Support to Agriculture and Rural Marketing – The National Co-operative Development Corporation (NCDC), Food Corporation of India (FCI), State Agriculture Marketing Boards, Assam --- Future of Rural marketing in Assam, Recent policies for agriculture.	10		04
		35	02	12

Where L=Lecture 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

Reference Books:

1. Badi R V Badi N.V: Rural Marketing
2. Acharya SS Agarwal: Agriculture Marketing in India
3. Economy of Assam: P.K.Dhar
4. Rural Marketing: CSG Krishnamacharyulu
5. Agricultural Economics: R.K. Lekhi

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 3RD SEMESTER

Course Title: **Mathematical Methods for Economics I**
Course Code: **CECOC303**

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:

The objective of this course is to diffuse the knowledge of basic mathematics that enables the students to apply mathematical tools in various theories of economics.

Course Outcome:

Upon completing 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.
- LO 2.1 Perform elementary matrix operations, including addition and multiplication.
 - LO 2.2 Determine the rank of a matrix and calculate determinants.
 - LO2.3 Compute the inverse of a matrix.
 - LO2.4 Apply Cramer's rule to solve systems of linear equations.
 - LO2.5 Conduct static and dynamic input-output analysis using matrices
- CO3:** Apply rules of differentiation to analyze economic functions, including demand, cost and revenue and interpret their economic significance
- LO3.1 Apply differentiation rules to functions with one independent variable.
 - LO3.2 Use derivatives in economic applications such as elasticity of demand and cost/revenue functions.
 - LO3.3 Explain the relationship between average and marginal costs using derivatives.
 - LO3.4 Compute second and higher-order derivatives and apply them to economic problems
- CO4:** Use different techniques of integration to solve economic problems, including calculation of producer's and consumer's surplus
- LO4.1 Understand and apply basic rules of integration.
 - LO4.2 Use various techniques of integration including substitution, integration by parts, and partial fraction decomposition.
 - LO4.3 Derive total functions from marginal functions through integration.
 - LO4.4 Evaluate definite integrals and apply them to compute producer's and consumer's surplus.

CO5: Understand and solve first order linear differential equations and concept of exact differential equations, with applications to economic problems.

LO5.1 Identify and solve first order linear differential equations using standard methods and interpret their solutions in the context of economic problems.

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

Where, L: Lectures T: Tutorials P:Practicals

MODES OF IN-SEMESTERASSESSMENT:

40 Marks

- Two Internal Examinations - 20 Marks
- Assignment/Group Discussion/Seminars/Project etc. - 10 marks
- Field Survey and other departmental activities (Group)- 10 marks

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.

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 3RD SEMESTER

Course Title **Course Title: Indian Economy-Trends in Economic Indicators**

Course Code: CECOC304

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:

This course aims to examine major trends in India's economic indicators in the post-independence period using appropriate analytical frameworks, with a special focus on paradigm shifts and turning points. Emphasis is placed on capturing emerging economic issues.

Course Outcome:

Upon completing this course, students will be able to:

- CO1:** Assess India's economic development trajectory since independence and analyze the transition in development strategies from import substitution to post-1991 globalization.
- LO1.1 Identify the key characteristics of the Indian economy at the time of independence.
 - LO1.2 Compare and contrast the objectives and components of different development strategies adopted in India since independence.
 - LO1.3 Analyze the impact of import substitution and protectionist policies on India's economic progress.
 - LO1.4 Evaluate the effectiveness and challenges of the post-1991 globalization policies, including stabilization and structural adjustment programs.
- CO2:** Examine the relationship between population dynamics and human development indicators in India and assess the country's position in the global human development framework.
- LO 2.1 Describe India's demographic trends, including population size, growth rates, and age-sex composition.
 - LO 2.2 Explain the concept of the demographic dividend and its implications for India's economic growth.
 - LO2.3 Assess the effectiveness of the National Population Policy in addressing demographic challenges.
 - LO2.4 Evaluate India's human development performance using indicators such as the Human Development Index and compare it with global standards.
- CO3:** Analyze the issues of poverty and income inequality in India and evaluate the policies and strategies aimed at poverty reduction and reducing income disparities.
- LO3.1 Define and explain the concept of poverty and its prevalence in India.
 - LO3.2 Interpret poverty estimates and trends over time and analyze the relationship between economic growth and poverty alleviation.
 - LO3.3 Identify the causes of income inequality in India and assess its extent and characteristics.
 - LO3.4 Evaluate government policies and measures designed to reduce poverty and address income inequality in India.

- CO4:** Study the dynamics of India's labor force, occupational structures, and unemployment trends, and assess the role of government policies in tackling unemployment.
- LO4.1 Describe the growth and structure of India's labor force and its relationship with economic development.
 - LO4.2 Analyze the different types and nature of unemployment in India.
 - LO4.3 Examine the changing patterns of employment and unemployment over time.
 - LO4.4 Assess the effectiveness of government policies in addressing unemployment challenges and promoting inclusive economic growth.
- CO5:** Analyze India's economic engagement with the global economy and conduct a comparative study of India's development experience with high-performing Asian economies.
- LO5.1 Describe India's integration into the global economy and identify key factors driving its international economic relations.
 - LO5.2 Compare and contrast India's development strategies with those of high-performing Asian economies such as Singapore, South Korea, and Taiwan.
 - LO5.3 Analyze the factors contributing to the economic success of high-performing Asian economies and their relevance to India's growth strategy.
 - LO5.4 Evaluate the lessons drawn from international comparisons to guide India's future economic policies and strategies.

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

MODES OF IN-SEMESTER ASSESSMENT:

40 Marks

- Two Internal Examinations - 20 Marks
- Assignment/Group Discussion/Seminars/Project etc. - 10 marks
- Field Survey and other departmental activities (Group)- 10 marks

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 – Its Development Experience*, Himalaya Publishing House.
- Dutt, Ruddar and K.P.M. Sundaram (2001), *Indian Economy*, S. Chand & Co. Ltd., New Delhi.
- Jalan, B. (1996), *India's Economic Policy – Preparing for the Twenty-First Century*, Viking, New Delhi.
- Joshi, Vijay 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 (eds.), *India's Economy: Performance and Challenges: Development and Participation*, Oxford University Press.

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 3RD SEMESTER

Course Title **Basics of Indian Economy**

Course Code: MINECO303

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:

To enhance the knowledge of the students about the features of Indian economy in different phases of growth, trends in basic economic parameters and to discuss the fundamental problems being faced by the economy.

Course Outcome: Upon completing this course, students will be able to:

- CO1:** Comprehend and assess the evolution of development strategies in India since independence and in different phases of the history till date.
- CO2** Evaluate the demographic characteristics and trends in India, including population growth, composition, and policy implications.
- CO3** Examine the nature, incidence and strategies for alleviating poverty and income inequality in India.
- CO4** Scrutinize the structure and dynamics of the labor force, occupational patterns, and unemployment in India.
- CO5** Appraise human development indicators and India's performance in human development at both national and global levels.

UNITS	CONTENTS	Marks in End Sem
I	Development strategies in Different Phases of Growth Indian Economy during Colonial Era; Development strategies since independence: Economic Planning, goal of self-reliance, import substitution and protection; LPG Policy: globalization strategies based on stabilization and structural adjustment packages.	15
II	Demographic Structure: Population, Labour Force & Unemployment- Size and growth rates of population, Density of population, Age and Sex Composition, Demographic Dividend; Magnitude and Growth of Labour force In India; Occupational Structure and economic development, occupational distribution of labour force; Unemployment-Nature and types of unemployment in India, Magnitude, Causes of unemployment, Government policies and measures.	15
III	Fundamental Economic Problems Poverty-Concept and Incidence of Poverty in India, Economic 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.	15

IV	Agriculture Industry and Service Sector Role of Agriculture, Industry and Service Sector in Indian Economy; Performance of Agriculture, Industry and Service Sector in the post economic reform period; Policies and Issues	15
TOTAL		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

Suggested Readings

- **Mishra, S.K. & V.K. Puri** (2001). *Indian Economy and Its Development Experience*. Himalaya Publishing House.
- **Dutt, Rudrar and K.P.M. Sundaram** (2001). *Indian Economy*. S. Chand & Co. Ltd., New Delhi.
- **Jalan, Bimal** (1996). *India's Economic Policy – Preparing for the Twenty-First Century*. Viking, New Delhi.
- **Joshi, Vijay and I.M.D. Little** (1998). *India's Economic Reforms 1991–2001*. Oxford University Press, Delhi.
- **Acharya, Shankar** (2010). “Macroeconomic Performance and Policies,” in Shankar Acharya and Rakesh Mohan (eds.), *India's Economy: Performance and Challenges – Development and Participation*. Oxford University Press.
- **Basu, Kaushik and A. Maertens** (eds.) (2013). *The New Oxford Companion to Economics in India*. Oxford University Press.
- **Jalan, Bimal** (ed.). *The Indian Economy: Problems and Prospects*. Penguin Books Ltd.
- **Subramanian, Arvind**. *India's Turn: Understanding the Economic Transformation*. Oxford University Press.
- **Kapila, Uma**. *Indian Economy: Policies and Performances*. Academic Foundation.

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 3RD SEMESTER

Course Title **Operational Economics**

Course Code: MDCECO303

Nature of Course: Multidisciplinary

Total Credits: **4 credits**

Distribution of Marks :**60 (End-Sem.)+40(In-Sem.)**

Course Objectives: The objectives of this course are:

- 1.Introduce basic economic concepts used in business and operations.
- 2.Equip students with tools to understand economic decision-making.
- 3.Enable analysis of simple real-world problems involving cost, demand, pricing, and policy.
- 4.Promote multidisciplinary thinking using examples from business, public policy, and social sectors.

Course Outcome: Upon completing this course, students will be able to:

- CO1:** Introduce basic economic concepts used in business and operations.
- LO1.1 To understand the concept, scope & importance of operational economics;
 - LO1.2 To explain basic economic problems: Scarcity, Choice, and Opportunity Cost
 - LO1.3 To understand Decision-Making in Households, Firms, and Governments
 - LO1.4 To explain the Concept of Efficiency and Optimal Use of Resources.
- CO2:** Equip students with tools to understand economic decision-making
- LO 2.1 To understand the ideas of Demand and Supply and the Basic Concepts and Curves; Price Mechanism and Market Equilibrium;
 - LO 2.2 To explain the concept and applications of Elasticity of Demand
 - LO2.3 To have simple understandings of the concepts of Costs and Revenues (Fixed, Variable, Total)
 - LO2.4 To learn the concept and functioning of share market and stock exchanges
- CO3:** Enable analysis of simple real-world problems involving cost, demand, pricing, and policy.
- LO3.1 To learn the types of Production: Goods and Services; Basic Input-Output Relationships
 - LO3.2 To understand the mechanism of Decision-Making by Firms and Cost Minimization
 - LO3.3 To learn the basic concepts of profit
 - LO3.4 To understand Market Types: Perfect Competition, Monopoly, Monopolistic, Oligopoly
- CO4:** Promote multidisciplinary thinking using examples from business, public policy, and social sectors.
- LO4.1 To learn Cost-Benefit Analysis in Daily Life and Projects;
 - LO4.2 To understand Break-even Analysis; Basics of Resource Allocation in Public Services (e.g., Hospitals, Water Supply)
 - LO4.3 To have the knowledge of Public Policy: Subsidies, Taxes, and Welfare Schemes;

LO4.4 To understand Sustainability and Efficiency in Indian Context

UNITS	CONTENTS	Marks
I	Foundations of Operational Economics Concept, Scope & Importance of Operational Economics; Basic Economic Problems: Scarcity, Choice, and Opportunity Cost; Decision-Making in Households, Firms, and Governments; Concept of Efficiency and Optimal Use of Resources.	15
II	Demand, Supply and Markets Demand and Supply: Basic Concepts and Curves; Price Mechanism and Market Equilibrium; Elasticity of Demand; Simple Introduction to Costs and Revenues (Fixed, Variable, Total); Concept and functioning of share market and stock exchanges.	15
III	Production, Firms and Decision-Making Types of Production: Goods and Services; Basic Input-Output Relationships (Simple production functions); Decision-Making by Firms: Cost Minimization, Basic Profit Concept; Introduction to Market Types: Perfect Competition, Monopoly, Monopolistic, Oligopoly (Basic Features)	15
IV	Operational Choices in the Real World Cost-Benefit Analysis in Daily Life and Projects; Break-even Analysis; Basics of Resource Allocation in Public Services (e.g., Hospitals, Water Supply); Introduction to Public Policy: Subsidies, Taxes, and Welfare Schemes; Sustainability and Efficiency in Indian Context	15
	Total	60

MODES OF IN-SEMESTERASSESSMENT:

40 Marks

- Two Internal Examinations - 20 Marks
- Any two from the following: 20 marks
Assignment/Group Discussion/Seminars/Project/
Field Survey/departmental activities

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	
Meta cognitive 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 Reading:

1. "Economics" – Paul Samuelson (Simplified Chapters)
2. "Essentials of Economics" – N. Gregory Mankiw (Introductory Version)
3. NCERT Economics Textbooks (Class XI-XII, select chapters)
4. News articles, infographics, and caselets from The Hindu Business Line, EPW, India Spend

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 4TH SEMESTER

Course Title **Essentials of Microeconomics**

Course Code: **CECO405**

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 develop an understanding of consumer and producer behavior using microeconomic principles.
2. to enable students to analyze firm behavior under different market structures.
3. to apply microeconomic models to evaluate the implications of public policies such as taxation and subsidies.

Course Outcome: Upon completing this course, students will be able to:

CO1: Analyze consumer's theory

- LO1.1 Explain utility functions, direct and indirect utility function.
- LO1.2 Describe income and substitution effects of price changes.
- LO1.3 Apply Slutsky's equation in consumer choice analysis.
- LO1.4 Differentiate between compensated and ordinary demand curves.
- LO1.5 Examine consumer behavior under risk
- LO1.6 Analyse revealed preference theory.

CO2: Apply the perfect competition model to assess the welfare effects of public policies.

- LO 2.1 Analyze profit maximization in competitive markets.
- LO 2.2 Evaluate short-run and long-run equilibrium.
- LO2.3 Analyse optimal resource allocation
- LO2.4 Derive long run market supply curve
- LO2.5 Apply market models to study taxation

CO3: Evaluate firm behavior under monopoly and monopolistic competition

- LO3.1 Examine monopoly pricing strategies.
- LO3.2 Examine forces of monopoly power and social cost of monopoly
- LO3.3 Examine pricing under monopolistic completion
- LO3.4 Assess the impact of monopolistic competition

CO4: Evaluate firm behaviour under collusive and non-collusive oligopoly

- LO4.1 Analyse features of oligopoly market
- LO4.2 Compare oligopoly models and strategic interactions.
- LO4.3 Study collusive behaviors, including cartels and price leadership.

CO5: Examine the characteristics and functions of input markets

- LO5.1 Analyse firm behaviour in the short run and long run using one and two variable factors in labour markets
- LO5.2 Explain the concepts of rent and profit maximisation within the input market
- LO5.3 Understand the key principles governing the capital market.

Units		L	T	P	Total Hours
1	Theory of Consumer Behaviour Utility Functions- Direct and Indirect Utility Function, Price effect-income and substitution effects of price change for normal, inferior and giffen goods ; Decomposition of Price Effect into Income and Substitution Effects under Hicksian and Slutsky's methods, Compensated and ordinary demand curve; choice under risk, Revealed preference theory.	9	3	-	12
2	Perfect Competition Profit maximization by a price taking firm; Economic vs accounting profit; Short run and long run equilibrium under perfect competition; Long-run market supply curve; Practical applicability of the concept of competitive market- invisible hand, Excise duty and subsidies	9	3	-	12
3	Monopoly and monopolistic competition Definition and features of monopoly market, Equilibrium price-output decision in Monopoly Market; Sources of Monopoly Power, Social Costs of Monopoly Power, Price discrimination of first, second and third degree, price-output determination under price discrimination, peak-load pricing, two part tariff, Monopolistic competition-characteristics, output decision-short run and long run, excess capacity	9	3	-	12
4	Oligopoly Features of a Oligopoly Market-pricing and output decision; Various Models of Oligopoly: Non Collusive models-Cournot, Bertrand and Kinked demand model; Collusive Oligopoly model: Cartels and Price leadership	9	3	-	12
5	Input Markets <i>Input Demand: Land and Labour Markets</i> Basic concepts of input markets; Labour market: Firm's input decisions using one or two variable factors in the short and long run; Land market: Rent determination, relationship between rent and output, profit maximization in input markets; Input demand curves: Factors causing shifts in input demand; Resource allocation, output mix, and income distribution in competitive markets <i>Input Demand: Capital Market and Investment Decision</i> Concept and types of capital; Investment, depreciation, and capital accumulation; Capital market and financial market operations; Capital income: Interest and profits; Factors influencing investment decisions and demand for new capital	9	3	-	12
Total		45	15		60

Where ,L:Lectures T: Tutorials P: Practicals

MODES OF IN-SEMESTERASSESSMENT:**40 Marks**

- Two Internal Examinations - 20 Marks
- Any two from the following: 20 marks
Assignment/Group Discussion/Seminars/Project/ Field Survey/departmental activities

Cognitive mapping of Cos with blooms taxonomy

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

- **Case, Karl E. & Fair, Ray C.** (2007). *Principles of Economics* (8th Edition). Pearson Education Inc.
- **Mankiw, N. Gregory** (2007). *Economics: Principles and Applications* (4th Edition, India Edition). Cengage Learning India Pvt. Ltd.
- **Stiglitz, Joseph E. & Walsh, Carl E.** (2007). *Economics* (4th Edition, International Student Edition). W.W. Norton & Company, New York.
- **Maddala, G.S. & Miller, Ellen** (2013). *Microeconomics: Theory and Applications* (10th Reprint). McGraw Hill Education, New Delhi.
- **Pindyck, R.S., Rubinfeld, D.N. & Mehta, P.L.** (2009). *Microeconomics* (7th Edition). Pearson, New Delhi.

- **Mc Connell, Brue & Flynn** (2017). *Microeconomics: Principles, Problems, and Policies*. McGraw Hill Education (India) Pvt. Ltd.
- A Koutsoyiannis, *Modern Microeconomics*, 2nd Edition, Mac Millan Education, UK, 1979

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 4TH SEMESTER

Course Title **Economy of Assam**

Course Code: **CECO406**

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 acquaint the learners with the economic characteristics as well as with the current issues of the economy of Assam.
- 2.To impart knowledge about the status of Assam in agriculture, industry, infrastructure and fiscal issues.

Course Outcome: Upon completing this course, students will be able to:

CO1: Critically appraise the performance of the Assam economy in terms of growth of State GDP

LO1.1 Identify and explain state GDP

LO1.2 Understand and analyze the trends in GDP and per capita income in Assam.

LO1.3 Assess the reasons for Assam's low state GDP and suggestion

LO1.4 Examine state's key natural resources and their utilisation

LO1.5 Examine state's human resources and composition of population of Assam

LO1.6 Evaluate the occupational distribution of the state

CO2: 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.

LO 2.1 Comprehend the role and performance of agriculture in Assam's economy.

LO 2.2 Analyze the land-use and cropping patterns in Assam.

LO2.3 Evaluate the trends in area and production of various crops, including food crops, horticulture and plantation crops.

LO2.4 Understand the challenges and opportunities in agricultural marketing, finance, pricing and sustainable agricultural practices in Assam.

CO3: 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.

CO4: 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.

CO5: Describe the fiscal landscape of Assam, the sources of finance, the sharing of central taxes and grants and the expenditure patterns of the state.

LO5.1 Identify and explain the revenue and non-revenue sources of finance in Assam.

LO5.2 Comprehend the mechanisms of sharing central taxes and grants-in-aid.

LO5.3 Analyze the expenditure patterns of the Assam government.

LO5.4 Evaluate the fiscal policies and their impact on the economic development of Assam.

LO5.5 Evaluate the role of Central and State Finance Commission

Unit	Contents	L	T	P	Total Hours
I	State GDP and State Resources Trend of state income after economic reforms, per-capita state GDP, Comparative analysis state GDP with the national level, reasons for low state income and suggestions for its improvement State natural resources-land, water, mineral, forest; Human resources-trend in population growth, composition of population, occupational distribution	12			12
II	Agriculture Role and performance of agriculture; Land- use Pattern in Assam, cropping pattern -Trend in Area and Production of food crops, Horticultural/Plantation Crop, Vegetables-Fruits-Floriculture-Sericulture; Live stock Economy; Agricultural Marketing-Agricultural Finance-Agriculture Prices; modernization and sustainable agriculture, problems of agriculture.	12			12
III	Industry Role and performance of Industry sector; Industrial Structure-Major, MSMEs and cottage industries; major industries of Assam; policies and programmes; Sources of Industrial Finance; problems and prospects of Industry sector; Problems and prospect of tourism industry of Assam	12			12
IV	Infrastructure Power and irrigation; Transport and Communication, Education, Health, Policies and programmes for Infrastructural Development, Role of North Eastern Council	12			12
V	Fiscal Issues: Sources of State Finance-Revenue and non-Revenue sources; Sharing of Central Taxes and Grants-in-Aid; Expenditure Pattern, Central and State Finance Commission	12			12
	Total	60			60

Where, L:Lectures T: Tutorials P: Practical

MODES OF IN-SEMESTERASSESSMENT:

40 Marks

- Two Internal Examinations - 20 Marks
- Assignment/Group Discussion/Seminars/Project etc. - 10 marks
- Field Survey and other departmental activities (Group)- 10 marks

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				✓	✓	
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

- Directorate of Economics & Statistics. *Economic Survey*, various issues.
- Medhi, S.B., *Transport System and Economic Development of Assam*. Publication Board, Assam
- Nayak, P. *Growth and Human Development in North east India*, OUP India, 2010
- Dhar, P.K. *Indian Economy*, Kalyani Publication, 2021.
- Goswami J. and Verma A.S. , *Macro View on Assam Economy* , Bluerose Publishers Pvt. Ltd., 2023
- Buragohain, L and Changmai, T., *Asomer Samajik Aaru Arthnetik Itihaas : Social & Economic History of Assam*, Mahaveer Publications, 2022

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 4TH SEMESTER

Course Title: **Statistical Methods for Economics**

Course Code: **CECO407**

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:

This course aims to enable the students to apply basic statistical concepts, including measures of central tendency and measures of dispersion in real life situations and to acquaint the learners with the understanding and application of probability theory, sampling, correlation, index number in real world situations.

Course Outcome: Upon completing 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 the concept of skewness and kurtosis to understand data distribution.
- CO2:** Apply probability theory and distribution models to solve problems involving uncertainty and variability.
- LO 2.1 Explain basic probability concepts
 - LO 2.2 Analyze and apply conditional probability
 - LO2.3 Define and calculate mathematical expectation
 - LO2.4 Understand and apply theoretical distributions (Binomial)
- CO3:** Conduct sampling and hypothesis testing to draw inferences about populations from sample data.
- LO3.1 Differentiate between sampling and census methods and describe various sampling techniques.
 - LO3.2 Identify and distinguish between sampling and non-sampling errors in statistics.
 - LO3.3 Define statistical hypotheses, understand the distributions of test statistics, and differentiate between Type I and Type II errors.
 - LO3.4 Conduct and interpret hypothesis tests using chi-square, t-test, and F-test.
- CO4:** Analyze relationships between variables using correlation and regression techniques.
- LO4.1 Explain and calculate covariance and interpret scatter diagrams.
 - LO4.2 Compute and interpret Spearman's rank correlation and Karl Pearson's coefficient of correlation.
 - LO4.3 Understand the concept of regression, derive regression lines, and use the method of least square
- 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.

LO5.5 To understand and solve problems related to Deflating, Splicing and Base-Shifting

Unit	Content	L	T	Total	Marks
I	Measures of Central Tendency and Dispersion Measures of Central Tendency and their application: Arithmetic Mean, Geometric Mean, Harmonic Mean, Median and Mode, Measures of Dispersion: Range, Quartile Deviation, Mean Deviation and Standard Deviation, Concept of Skewness and Kurtosis.	7	1	8	12
II	Probability Theory and Probability Distributions: Probability: Basic Concepts, Classical and empirical definitions, Addition and Multiplication Theorems; Conditional Probability and Independence of Events; Mathematical Expectation, Theoretical Distributions: Binomial and Poisson distribution-Poisson distribution as a limiting case of binomial distribution, Normal distribution	15	2	17	12
III	Sampling and Testing of Hypothesis: Sampling vs census, Methods of sampling, Errors in statistics: sampling vs. non-sampling errors, Testing of hypotheses: defining statistical hypotheses; distributions of Test statistics; Type I and Type II errors; Testing of hypothesis: chi square, <i>t</i> test, F test	8	2	10	12
IV	Correlation and Regression Analysis: Elementary analysis of linear correlation: Scatter Diagram, Spearman's rank correlation, Karl Pearson's coefficient of correlation-Properties and the Method of Calculation, The Concept of Regression, Correlation vs Regression; Regression Lines, the method Least Squares	15	2	17	12
V	Index Numbers Types and uses; methods of constructing index numbers: simple aggregate method, weighted aggregate method – Laspeyres, Paasche and Fisher's price index; Deflating, Splicing and Base-Shifting; problems in construction of index numbers.	7	1	8	12
	Total	52	8	60	60

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

- Two Internal Examinations - 20 Marks
- Assignment/Group Discussion/Seminars/Project etc. - 10 marks
- Field Survey and other departmental activities (Group)- 10 marks

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
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

- Jay L. Devor. *Probability and Statistics for Engineers*. Cengage Learning, 2010.
- John E.Freund. *Mathematical Statistics*. Prentice Hall,1992.
- RichardJ.LarsenandMorrisL.Marx.*AnIntroductiontoMathematicalStatisticsand 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

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 4TH SEMESTER

Course Title Course Title: **Intermediate Mathematical Methods
for Economics**

Course Code: **CECO408**

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. Introduce the fundamental concepts of difference equations and their applications in economics.
2. Expand learners' understanding of derivatives by exploring functions of multiple variables and their practical uses.
3. Develop a strong grasp of various optimization techniques and their applications in different economic contexts.

Course Outcome:

Upon completing this course, students will be able to:

- CO1:** Utilize first-order difference equations to model and analyze economic phenomena.
- LO1.1 Identify and solve first-order difference equations.
 - LO1.2 Explain the solutions of difference equations in economic contexts.
 - LO1.3 Use difference equations to model economic dynamics, including inventory control and market equilibrium.
 - LO1.4 Evaluate the stability of economic models through difference equations.
- CO2:** Apply partial and total differentiation techniques to solve economic problems related to production and consumer theory.
- LO 2.1 Compute partial and total derivatives of multivariable functions.
 - LO 2.2 Utilize differentiation methods to analyze indifference curves and derive expansion paths.
 - LO2.3 Assess production functions, particularly homogeneous functions, using Euler's Theorem.
 - LO2.4 Compare the characteristics of Cobb-Douglas and CES production functions.
- CO3:** Implement methods of unconstrained optimization to address economic problems involving single and multiple variables.
- LO3.1 Conduct unconstrained optimization for single-variable functions and interpret its economic significance.
 - LO3.2 Solve optimization problems involving multiple variables.
 - LO3.3 Apply optimization techniques to analyze economic scenarios such as discriminating and multiproduct monopolies.
 - LO3.4 Interpret optimization results within the framework of economic decision-making.
- CO4:** Employ Lagrange multipliers to solve constrained optimization problems, particularly in consumer and producer equilibrium analysis.
- LO4.1 Describe constrained optimization and the function of Lagrange multipliers.

- LO4.2 Use Lagrange multipliers to solve optimization problems with equality constraints.
- LO4.3 Examine consumer equilibrium through constrained optimization methods.
- LO4.4 Determine producer equilibrium using constrained optimization and analyze the results

Units		L	T	P	Total Hours
I	Difference equation: First order Difference equation and its Economic Applications.	7	1		8
II	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.	16	3		19
III	Unconstrained optimization: Unconstrained optimization with one variable and Economic Applications; Unconstrained optimization with more than one variable and Economic Applications- Discriminating Monopoly, multiproduct monopoly.	16	3		19
IV	Constrained optimization with equality constraints: Lagrange characterization using calculus; applications- consumer's equilibrium and producer's equilibrium.	12	2		14
Total		51	9		60

Where L: Lectures T: Tutorials P: Practical

MODES OF IN-SEMESTER ASSESSMENT:

40 Marks

- Two Internal Examinations - 20 Marks
- Assignment/Group Discussion/Seminars/Project etc. - 10 marks
- Field Survey and other departmental activities (Group)- 10 marks

Cognitive Mapping of COs with Bloom's Taxonomy:

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

Mapping of COs with POs:

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

Suggested Readings

- K. Sydsaeter and P. Hammond, *Mathematics for Economic Analysis*, Pearson Educational Asia: Delhi, 2002.
- Chiang, A. C.: *Fundamental Methods of Mathematical Economics*, Fourth edition, Mc Graw Hill 2005.
- Hoy, M.,J. Livernois, C. Mc Kena, R. Rees, andT. 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

DIGBOI COLLEGE (AUTONOMOUS)
FOUR YEAR UNDER GRADUATE PROGRAMME IN ECONOMICS (NEP)
DETAILED SYLLABUS OF 4TH SEMESTER
Course Title Course Title: Statistical Methods for Economics

Course Code: **MINECO404**

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:

This course aims to enable the students to apply basic statistical concepts, including measures of central tendency and measures of dispersion in real life situations and to acquaint the learners with the understanding and application of probability theory, sampling, correlation, index number in real world situations.

Course Outcome: Upon completing 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.

CO2: Conduct sampling and hypothesis testing to draw inferences about populations from sample data.

LO 2.1 Differentiate between sampling and census methods and describe various sampling techniques.

LO 2.2 Identify and distinguish between sampling and non-sampling errors in statistics.

LO2.3 Define statistical hypotheses, understand the distributions of test statistics, and differentiate between Type I and Type II errors.

LO2.4 Conduct and interpret hypothesis tests using chi-square, t-test, F test

CO3: Apply probability theory to solve problems involving uncertainty and variability.

LO3.1 Explain basic probability concepts, including classical and empirical definitions, and solve problems using addition and multiplication theorems.

LO3.2 Analyze and apply conditional probability, independence of events.

LO3.3 Define and calculate mathematical expectation

CO4: Analyze relationships between variables using correlation techniques

LO4.1 Explain and calculate covariance and interpret scatter diagrams.

LO4.2 Compute and interpret Spearman's rank correlation

LO4.3 Compute and interpret Karl Pearson's co-efficient of correlation.

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 and understand deflating, splicing and base-shifting to discuss the problems involved in constructing index numbers.

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

Units		L	T	Total Hours	Marks in End Sem
I	Measures of Central Tendency and Dispersion Measures of Central Tendency and their application: Arithmetic Mean, Geometric Mean, Harmonic Mean, Median and Mode, Measures of Dispersion: Range, Quartile Deviation, Mean Deviation and Standard Deviation, Concept of Skewness and Kurtosis.	1 3	2	15	12
II	Sampling and Testing of Hypothesis: Sampling vs census, Methods of sampling, Errors in statistics: sampling vs. non-sampling errors, Testing of hypotheses: defining statistical hypotheses; distributions of Test statistics; Type I and Type II errors; Testing of hypothesis: chi square, t test and F test.	1 3	2	15	12
III	Probability Theory Probability: Basic Concepts, Classical and empirical definitions, Addition and Multiplication Theorems; Conditional Probability and Independence of Events; Mathematical Expectation.				12
IV	Correlation Technique Elementary analysis of linear correlation: Scatter Diagram, Spearman's rank correlation, Karl Pearson's coefficient of correlation-Properties and the Method of Calculation	13	2	15	12
V	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.	13	2	15	12
	Total	52	8	60	60

MODES OF FIN-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	CO2,CO3, CO4	CO3,CO4,	CO4
Metacognitive Knowledge						

Mapping of COs with POs:

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

Suggested Readings

- Jay L. Devor. *Probability and Statistics for Engineers*. Cengage Learning, 2010.
- John E. Freund. *Mathematical Statistics*. Prentice Hall,1992.
- Richard J. Larsenand 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

