25UHUT001	ECONOMICS FOR ENGINEERING PRACTICES	Category	L	T	P	R	Credit	Year of Introduction
		HMC	2	0	0	0	2	2025

Preamble: This syllabus covers the fundamentals of Microeconomics, Macroeconomics, and Engineering Economics. It bridges economic theory with practical engineering and management, teaching students to apply analytical tools to scarcity, market dynamics, and financial decision-making.

Prerequisite: Nil

Course Outcomes: After the completion of the course, the student will be able to:

CO	Course Outcomes	Knowledge Level
CO1	Understand the fundamentals of various economic issues using laws and learn the concepts of demand, supply, elasticity and production function.	K2 Understand
CO2	Develop decision making capability by applying concepts relating to costs and revenue, and acquire knowledge regarding the functioning of firms in different market situations.	K3 Apply
CO3	Outline the macroeconomic principles of monetary and fiscal systems and national income.	K2 Understand
CO4	Make use of the possibilities of value analysis and engineering, and take investment decisions through capital budgeting techniques.	K3 Apply

Mapping of course outcomes with program outcomes and program specific outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	3	2	0	0	-	2	2	-	-	-	-		
CO2	3	3	2	0	1	2	-	-	1	1	3	-	-
CO3	2	2	0	0	-	3	3	1	-	-	2	-	-
CO4	3	3	3	2	2	-	2	1	1	1	3	-	-
Avg	2.75	2.5	2.5	2	1.5	2.3	2.3	1	1	1	2.6	-	-

Mapping of course outcomes with Knowledge and Attitude Profile (WK)

	WK1	WK2	WK3	WK4	WK5	WK6	WK7	WK8	WK9
CO1	*	*	*	*	*		*		*
CO2	*	*	*	*	*	*	*	*	
CO3	*	*	*	*	*		*	*	*
CO4	*	*	*	*	*	*		*	*

WKs Mapped with the course

WK1	WK2	WK3	WK4	WK5	WK6	WK7	WK8	WK9
*	*	*	*	*	*	*	*	*

Mark Distribution:

Total Marks	CIE Marks	ESE Marks	ESE Duration
100	40	60	2.5 hrs

Continuous Internal Evaluation Pattern:
Attendance : 5 marks
Continuous Assessment Test : 20 marks
Continuous Assessment Assignment : 15 marks

SYLLABUS

Module 1 (7 hrs)
Nature and significance of economics, Basic economic problems – Production Possibility Curve – Utility – Law of diminishing marginal utility –Demand: Factors determining demand – Law of Demand – Demand curve- Price elasticity of demand- measurement of price elasticity and its applications – Supply: factors determining supply - Law of supply – Supply curve- Equilibrium price determination- Changes in demand and supply and its effects on equilibrium price and quantity. Production: Production function, Factors of Production- Cobb-Douglas Production Function

Module 2 (7 hrs)
Cost: Cost concepts – Private cost and social cost – Sunk cost – Opportunity cost -Explicit and implicit cost –Short run cost curves –Long run average cost curve -Revenue concepts – Break-even point. Taxation-Direct and indirect taxes-principles of Taxation, GST.Market: Market: different market structures and market equilibrium – Kinked demand model- E-commerce, Stock market-SENSEX, NIFTY, Mutual Funds & ETFs (Concepts Only)

Module 3 (7 hrs)

National income: Concepts (GDP, GNP and NNP-Basic problems)– Final goods and Intermediate goods - Methods of Estimation –output method – expenditure method-- Difficulties in the measurement of national income. International trade, terms of Trade, Gain from International Trade, Free Trade vs. Protection. Dumping, and Balance of Payment. Inflation: Causes and Effects – Measures to Control Inflation - Monetary and Fiscal policies – Repo and reverse repo rate. Role of Science, Engineering and Technology In economic Development

Module 4 (7 hrs)

Value Analysis and value Engineering: Cost Value, Exchange Value, Use Value, Esteem Value - Aims, Advantages and Application areas of Value Engineering - Value Engineering Procedure.Capital Budgeting: Time value of money - Net Present Value Method - Benefit Cost Ratio – Internal Rate of Return -– Payback – Accounting Rate of Return.

Text Books:

1. Geetika, Piyali Ghosh and Chodhury, Managerial Economics, Tata McGraw Hill,2015
2. H. G. Thuesen, W. J. Fabrycky, Engineering Economy, PHI, 1966.
3. R. Paneerselvam: Engineering Economics, PHI, 2012.
4. I M Pandey, Financial Management, Vikas Publishing House ,2015

Reference Books:

1 Leland Blank P.E, Anthony Tarquin P. E., Engineering Economy Mc Graw Hill, 7th edition.
2. Khan M. Y, Indian Financial System, Tata McGraw Hill, 2011.
3. Donald G. Newman, Jerome P. Lavelle, Engineering Economics and analysis, Engg. Press, Texas, 2002.
4. Chan S. Park, Contemporary Engineering Economics, Prentice Hall of India Ltd, 2001.
5. Prasanna Chandra, Financial Management: Theory and Practice, Mc Graw Hill, 2007.

END SEMESTER EXAMINATION - MODEL QUESTION PAPER

(STC 2025 SCHEME)

Course Code	**25UHUT001**
Course Name	**ECONOMICS FOR ENGINEERING PRACTICES**
Max. Marks: 60	**Duration: 2.5 Hours**

Part A

(Answer all questions. Each question carries 3 marks)

Qn No.	Question	Marks	CO	BL

1	Explain is the Opportunity Cost principle	3	1	L2
2	Briefly explain the Cobb-Douglas Production Function	3	1	L2
3	Distinguish between Sunk Cost and Incremental Cost.	3	2	L2
4	Interpret the law of diminishing marginal utility using a real-world consumer scenario.	3	2	L3
5	Define Reverse Repo Rate and its impact on money supply.	3	3	L2
6	Define Exchange Value in Value Engineering?	3	3	L2
7	Explain the concept of Payback Period in project evaluation.	3	4	L2
8	Describe the financial meaning of the Internal Rate of Return (IRR) in capital budgeting decisions.	3	4	L3
Part B (*Answer any one full question from each Module. Each carries 9 marks*)				
Module 1				
Qn No.	Question	Marks	CO	
7(a)	Illustrate the Law of Diminishing Marginal Utility with a schedule and diagram.	5	1	L2
(b)	Explain the effect of an increase in Consumer Income on the equilibrium price and quantity of a normal good.	4	1	L2
OR				
8(a)	When the price of a machine part is ₹500, the supply is 100 units. When the price increases to ₹600, the supply rises to 150 units. Calculate the Price Elasticity of Supply and interpret the result.	5	1	L2
(b)	Discuss the three stages of the Law of Variable Proportions.	4	1	L2
MODULE-2				
9(a)	Compare the features of Perfect Competition and Monopoly markets.	5	2	L2
(b)	A firm has a Fixed Cost of ₹20,000 and a Variable Cost of ₹50 per unit. If the selling price is ₹100 per unit, calculate the Break-even Point in units.	4	2	L3
OR				
10(a)	Explain the Kinked Demand Curve model and why it leads to price rigidity in an Oligopoly.	5	2	L2
(b)	Differentiate between Private Cost and Social Cost using the example of industrial pollution.	4	2	L3

MODULE-3				
11(a)	Discuss the Difficulties in the Measurement of National Income in a developing economy.	5	3	L2
(b)	From the data given below estimate GNPmp, GNPfc and NNPmp and National income. GDPmp 5000(in 100 billion), NFIA = -50, indirect tax =70, subsidy =30, depreciation=30.	4	3	L2
OR				
12(a)	Explain Demand-Pull Inflation? Suggest two Fiscal Policy measures to control it.	5	3	L2
(b)	Explain the difference between Final Goods and Intermediate Goods with examples.	4	3	L2
MODULE-4				
13(a)	Describe the Aims and Advantages of applying Value Engineering in a construction project.	5	4	L3
(b)	Explain Use Value? How does it differ from Esteem Value?	4	4	L2
OR				
14(a)	An engineering project requires an initial investment of ₹5,000. The estimated annual cash inflows for 4 years are ₹2,000, ₹1,800, ₹1,600, and ₹1,400. If the discount rate is 8%, calculate the Net Present Value (NPV).	5	4	L3
(b)	State the decision rule for the Benefit-Cost Ratio (BCR) method.	4	4	L2