Paper Code: ECO 213	Paper: Engineering Economics	L	T/P	C
Paper ID:		2	0	2

Prerequisite Paper: None

Marking Scheme :

1. Teacher's Continuous Evaluation : 25 marks
2. Term and Theory Examinations : 75 marks to be conducted by the concerned teacher as the paper is in the NUES mode.

Instructions for paper setter

1. There should be 9 questions in the term end examinations question paper.
2. The first (1st) question should be compulsory and cover the entire syllabus. This question should be objective, single line answers or short answer type questions of total 15 marks.
3. Apart from question one which is compulsory, rest of the paper shall consists of four units as per the syllabus. Every unit shall have two questions covering the corresponding unit of the syllabus. However, the student shall be asked to attempt only one of the two questions in the unit. Individual questions may contain up to 5 sub-parts/sub-questions. Each unit shall have a marks weightage of 15.
4. The questions are to be framed keeping in view the learning objectives of course/paper. The standard / level of the questions to be asked should be at the level of the prescribed text book.

Course Objectives :

1.	Introduce economic theory and value analysis.
2.	Understand cash flow.
3.	Learn about sampling and replacement maintenance.
4.	Learn about depreciation and inflation.

Course Outcomes (CO)

CO 1	Ability to do understand economic analysis.
CO 2	Ability to understand and use cash flow method.
CO 3	Ability to determine economic life of an asset and replacement method.
CO 4	Ability to do depreciation analysis and inflation adjustment.

Course Outcomes (CO) to Programme Outcomes (PO) mapping (scale 1: low, 2: Medium, 3: High)

	PO01	PO02	PO03	PO04	PO05	PO06	PO07	PO08	PO09	PO10	PO11	PO12
CO 1	-	1	-	-	1	2	3	-	-	-	3	1
CO 2	-	1	-	-	1	2	3	-	-	-	3	1
CO 3	-	1	-	-	1	2	3	-	-	-	3	1
CO 4	-	1	-	-	1	2	3	-	-	-	3	1

UNIT I

Introduction, Flow in an economy, Law of Supply and Demand, Concept of Engineering Economics, Elements of Cost, Break-Even Analysis, P/V ratio, examples of simple economic analysis, Interest Formulas and Their Applications.

UNIT II

Present Worth Method of Comparison: Introduction, Revenue Dominated Cash Flow Diagram, Cost-Dominated Cash Flow Diagram

Future Worth Method: Introduction, Revenue Dominated Cash Flow Diagram, Cost-Dominated Cash Flow Diagram

Annual Equivalent Method: Introduction, Revenue Dominated Cash Flow Diagram, Cost-Dominated Cash Flow Diagram, Alternate approach.

Rate of Return Method.

UNIT III

Replacement and Maintenance Analysis: Introduction, Types, Determination of economic life of an asset, replacement method.

Depreciation: Introduction and methods of depreciation (Straight line, Declining Balance, Sum of the Years Digit method, Sinking fund method, Service output method). Evaluation of public alternative.

UNIT IV

Inflation Adjustment: Introduction, Procedure to adjust Inflation, Inflation Adjusted Economic Life of Machines. Inventory Control and Methods, Make or buy decision, Project Management: Introduction, Phases, CPM, Gantt/Time Chart, PERT. Value Analysis / Value Engineering

Textbook:

1. R. Paneerselvam, "Engineering Economics", PHI Learning, New Delhi, 2012.

References:

1. David L. Whitman, Ronald E. Terry, Fundamentals of Engineering Economics and Decision Analysis, Morgan & Claypool Publishers (2012).
2. John A. White, Kellie Grasman, Fundamentals of Engineering Economic Analysis, Wiley (2013).
3. Leland Blank, Antony Tarquin, Engineering Economy, McGraw Hill, 2002.
4. K. L. Sharma, An Introduction to Engineering Economics, Momentum Press, 2015.
5. Chan S. Park, Fundamentals of Engineering Economics, Global Edition-Pearson, (2019).
6. Zahid A. Khan, Arshad N. Siddiquee, Brajesh Kumar, Mustufa H. Abidi, Principles of Engineering Economics with Applications, Cambridge University Press (2018).