DAYANANDA SAGAR COLLEGE OF ENGINEERING BENGALURU-78

(An Autonomous Institution affiliated to VTU, Belagavi)

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

ENGINEERING ECONOMICS

Course Code: 18HS6ICEEM **Credits: 03**
L: P: T: S: 3: 0: 0: 0 **CIE Marks: 50**
Exam Hours: 03 **SEE Marks: 50**
Total Hours: 40

COURSE OBJECTIVES:

1. Expose the students to role and importance of engineering economics in decision making.
2. Equip the students with methods of evaluating investment decisions.
3. Establish decision making capabilities in investments alternatives.

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

ENGINEERING ECONOMICS	
CO1	Identify the importance and role of engineering economy in investment decisions.
CO2	Understand the techniques of cash flows and interest calculations
CO3	Use present, annual & future worth comparisons for evaluation of investment decisions
CO4	Analyze and determine the various rates of reruns for different investments.
CO5	Plan a depreciation schedule for an asset and make break even decisions
CO6	Recommend decisions on replacement of equipment and assess the cost of product by considering the various elements of cost.

Mapping of Course outcomes to Program outcomes:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2	-	2	-	1	-	1	3	2
CO2	2	3	2	2	2	2	-	1	-	1	3	3
CO3	2	3	3	2	2	2	-	1	-	1	3	2
CO4	3	3	3	2	2	2	-	1	-	1	3	2
CO5	3	3	3	2	2	2	2	1	-	1	3	2
CO6	3	3	2	2	2	3	3	1	-	1	3	2

Unit	Course Content	Hours	COs
1	**Introduction to Engineering economics** - Engineering Decision makers, Problem solving, Decision making, **Interest and Interest Factors** - Interest rate, simple interest & Compound interest factors, Cash- flow diagrams, Numerical Exercises.	10	CO1 CO2
2	**Present Worth Comparison** - Conditions for present worth comparisons, Basic Present worth comparisons, Present worth equivalence, Net Present worth, Assets with equal and unequal lives, Future worth comparison, Numerical Exercises.	10	CO3
3	**Equivalent Annual Worth Comparisons** - Equivalent Annual Worth Comparison methods, Situations for Equivalent Annual Worth Comparison, Consideration of asset life, Use of sinking fund method, Numerical Exercises. **Rate of Return Calculations:** Rate of return, Minimum acceptable rate of return, IRR, Numerical Exercises on Rate of return calculations.	10	CO4
4	**Depreciation:** Causes of Depreciation, Basic methods of computing Depreciation charges: Straight line method of depreciation, Declining balance method, Sum of year's digits method and Sinking fund method. **Breakeven analysis**: Introduction to breakeven analysis, calculation of BEQ, BEP, Numerical Exercises.	10	CO5
5	**Replacement Analysis**: Deterioration, obsolescence, inadequacy, Economic life for cycle replacements, individual replacement, Numerical Exercises. **Costing**: Elements of cost, Components of cost, preparation of cost sheet, Numerical Exercises..	10	CO6

SELF-STUDY COMPONENT/ASSIGNMENT:

Unit-1: Law of demand and supply, Law of returns.
Unit-2: Comparison of assets with infinite lives.
Unit-3: Rate of return calculations by using ERR method.
Unit-4: Depreciation computations by using double declining balance method
Unit-5: Group replacement analysis.

TEXT BOOKS:

1. RIGGS J.L., Engineering economy, McGraw Hill, 2002
2. R PANEERSELVAM, Engineering Economics, PHI, Eastern Economy Edition, 2013.
3. NAIDU, BABU & RAJENDRA, Engineering Economy, New Age international Publishers, 2006
4. M N Arora, Priyanka Katyal, Cost Accounting, Vikas Publishing house, 2nd Revised Edition, 2016

REFERENCE BOOKS:

1. TARACHAND, Engineering Economy, 2000
2. TUESEN.G. Engineering Economy, PHI, 9th edition, 2009.

Assessment Pattern:

CIE –Continuous Internal Evaluation Theory (50 Marks)

Bloom's Category	**Tests**	**Assignment**	**Quiz**
Marks (Out of 50)	**30**	**10**	**10**
Remember	05	04	04
Understand	05	02	02
Apply	10	02	02
Analyze	05	01	01
Evaluate	05	01	01
Create	-	-	-