Course Title	Course Code	Credit Hours
Engineering Economics	ME-325	2-0

Textbook:

- Leland Blank, and Anthony Tarquin, “Engineering Economy”, McGraw-Hill Education

Reference Books/Materials:

- William G. Sullivan, Elin M. Wicks, and Patrick Koelling, “Engineering Economy”, Pearson
- N. M. Fraser, and E. M. Jewkes, “Engineering Economics: Financial Decision Making for Engineers”, Pearson Canada
- D. G. Newnan, J. Whittaker, T. G. Eschenbach, and J. P. Lavelle, “Engineering Economic Analysis”, Oxford University Press

Course Objectives:

The objective of this course is to equip engineering students with the fundamental principles and tools of economics that are essential for making informed decisions in engineering projects, focusing on cost estimation, financial analysis, and risk assessment.

Course Outline:

- Introduction to Engineering Economics, Costs Estimation Models, and Cash Flow Diagrams.
- Time Value of Money: Understanding Equivalence, Spreadsheet Applications, and Simple Versus Compound Interest.
- Analysis of Uniform Series, Arithmetic, and Geometric Gradients in Financial Calculations.
- Nominal and Effective Interest Rates, Continuous Compounding, and Economic Criteria.
- Methods for Evaluating Financial Metrics: Present Worth, Future Worth, Annuity Calculations
- Rate of Return Concepts:

    - Minimum Acceptable Rate of Return (MARR)
    - Internal Rate of Return (IRR)
    - External Rate of Return
- Decision-Making Criteria: Choosing the Best Alternative and Incremental Analysis
- Benefits and Cost Ratio (B/C Ratio) and Payback Period Analysis
- Sensitivity Analysis and Breakeven Analysis
- Depreciation Methods:
    - Straight-Line Method
    - Unit of Production Method
    - Depletion Method
- Tax Considerations in Engineering Economics
    - Income Taxes
    - Impact of Income Taxes on Project Economics