

**NE364          Engineering Economy**

**COURSE INFORMATION**

| Prerequisites         | Academic Year & Level |          | Teaching Methods |          |            | Credit Hrs. |
|-----------------------|-----------------------|----------|------------------|----------|------------|-------------|
|                       | Year                  | Semester | Lecture          | Tutorial | Laboratory |             |
| 54<br>Credit<br>Hours | 4                     | 8        | 2                | 2        | 0          | 3           |

**COURSE AIM**

Applying breakeven analysis concepts in analyzing profits and losses and comparing different alternatives - Complete computations and manipulations using the basic engineering economic equations - Use engineering economy to compare alternatives by the present worth methods, the annual cost method, the benefit and cost ratio method, and the rate of return method - The role of income tax and depreciation in making engineering economic decisions

**COURSE WEEKLY CONTENTS**

- 1 Introduction and overview.
- 2 Cost concepts and the economic environment.
- 3 Principles of money – time relations, the concept of economic equivalence.
- 4 Cash flow diagrams: Interest formulas and uniform series.
- 5 Cash flow diagrams: Uniform gradient series and geometric sequence
- 6 Nominal and effective interest rates, continuous compounding and continuous cash flows.
- 7 - **Midterm Exam**
- 8 Applications of engineering economy: Methods of investment assessment.
- 9 Comparing alternatives: Useful life is equal to the study period.
- 10 Comparing alternatives: Useful life is shorter than the study period.
- 11 Comparing alternatives: Useful life is longer than the study period.
- 12 12th Assessment
- 13 Solving for unknown interest rates and for unknown useful lives
- 14 Depreciation: Historical Methods.
- 15 Depreciation: Cost recovery systems.

## STUDENT GRADING & ASSESSMENT

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| Weeks    | Exams      | Assign. | Quizzes   | Reports | Present. | Lab. | Total |
|----------|------------|---------|---|---------|----------|------|-------|
| 1 to 7   | 20 Midterm | ←       | 10  | MARKS   |          | →    |       |
|          |            |         | To be freely distributed among possible assessments |         |          |      |       |
| 8 to 12  |            | ←       | 20  | MARKS   |          | →    |       |
| 13 to 15 |            | ←       | 10  | MARKS   |          | →    |       |
| 16 or 17 | 40 Final   |         |   |         |          |      |       |
| Total    | Exams      | Assign. | Quizzes   | Reports | Present. | Lab. | 100   |

## REFERENCES

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**Textbook** William G Sullivan, Elin M Wicks, & James Koelling, "Engineering Economy", latest edition.

**Other** E.L. Grant, W.G. Ireson, and R.S. Leavenworth, "Principles of Engineering Economy", John Wiley and Sons, latest edition. § Chan S. Park, "Contemporary Engineering Economics", Pearson, latest edition  
Chan S. Park, "Contemporary Engineering Economics", Addi