

2021-2022	Mechanical Engineering	Year 3 - Sem. 5
SHS306	Engineering Economy	Mandatory
ECTS: 2	<i>Coordinator:</i> Dr Maya Badr	<i>Language:</i> English/French
Total hours: 27 h	<i>Lectures:</i> Dr. Mikhael Tannous, Dr.Maya Badr, Dr. Ali Harkous	

Description:

This course presents the theoretical and practical tools needed for financial project analysis: Equivalence and interest formulae; real world transactions; present worth analysis; annual equivalent worth; rate of return analysis; inflation.

Learning outcomes:

- Understand the meaning, role, approach and basic concepts of engineering economy.
- Perform economic calculations for interest and payment periods other than one year.
- Perform financial evaluation using Payback Period (PBP), Net Present Worth (NPW) and Capital Equivalence (CE) analysis.
- Perform financial evaluation using Rate of Return (ROR) analysis.

Content by topic:

- The cost of money and economic equivalence
- Development of interest formulas and unconventional equivalence calculations
- Nominal and effective interest rates. Economic equivalence using effective interest rate
- Inflation rate: Constant and Actual dollar analysis. Mixed dollar analysis
- Debt management
- Project screening methods: Present worth analysis, capitalized equivalent method
- Comparing mutually exclusive alternatives using net present worth
- Annual equivalent method
- Capital versus operating costs, per unit cost calculations, cost reimbursement
- Return on investment, internal rate of return and external rate of return
- Rate of return of an incremental investment
- Asset depreciation: Straight line, declining balance depreciation, sum of years digits and MACRS depreciation methods

Reference:

- Contemporary Engineering Economics, Chan S. Park, Prentice Hall, Fifth Edition, 2010.

Evaluation Method:

Assessment in the following areas will be converted to points, to compute your final grade in this course:

- Attendance
- Mid-Term
- Final Exam

Description :

Ce cours présente les outils théoriques et pratiques nécessaires à l'analyse financière de projet: Formules d'équivalence et d'intérêt; transactions dans le monde réel; analyse de la valeur actuelle ; valeur annuelle équivalente; analyse du taux de rendement ; inflation.