Course Title:	**Economics and Finance for Engineers**
Course Code:	**ENGE814**
Descriptor Start Date:	**26/02/2024**
Descriptor End Date:	**02/03/2025**
POINTS:	**15.00**
LEVEL:	**8**
PREREQUISITE/S:	**None**
COREQUISITE/S:	**None**
RESTRICTION/S:	**None**

LEARNING HOURS

Hours may include lectures, tutorials, online forums, laboratories. Refer to your timetable and course information in Canvas for detailed information.

Total learning hours: 150

PRESCRIPTOR

Develops advanced understanding of economics and financial management in the engineering sector. Provides advanced overview of the strategic procurement and decision making processes necessary to enable sound assessment of the economic and financial rationale for engineering design decisions.

LEARNING OUTCOMES

1. Critically analyse the impact of economic and financial management issues at corporate,
2. Critically assess the macro/microeconomic behaviour of the engineering industry
3. Perform economic and financial calculations involving the time value of money using standard appraisal technique
4. Compare design alternatives and select the optimum alternative using Investment Appraisal Techniques, Incremental Analysis and Benefit-Cost Analysis.
5. Determine project outcomes and mark-ups
6. Apply advanced economic and financial principles in problems involving sensitivity analysis, bonds, loans, inflation and replacement analysis
7. Develop economic risk management models for complex engineering design scenarios.

CONTENT

- Investment Appraisal Techniques and their applications
- Project selection using Investment Appraisal Techniques
- One and two parameter sensitivity analysis
- Sources and uses of funds
- Loan amortization and determining the remaining principal on a loan
- Cash flow forecasting and analyses, annual tax cash flows and after-tax present worth determination, incorporating inflation in cash flows estimations
- Benefit Cost Analyses for public projects and other project selection criteria
- Engineering project budgets and budgetary control
- Project costs determination and cost control
- Procurement mechanisms
- Value management/engineering
- Markets and their impacts on engineering production and costs.
- Insourcing and outsourcing decision support.
- Life cycle costing and analysis.
- Project financing and financial performance of projects.
- Financial risk assessment and management of engineering projects.

LEARNING & TEACHING STRATEGIES

Lectures, Workshops and Seminars based on block course teaching. Extensive use of case studies and case study analysis. Extensive employment of practicing project managers from various engineering companies as visiting lecturers to contextualise teaching. All presentations and learning supported with web-based readings and other materials.

ASSESSMENT PLAN

Assessment Event	Weighting %	Learning Outcomes
Assignment 1: Project Financing and RiskManagement	40.00	1,2,4,5,6,7
Assignment 2: Investment AppraisalTechniques and Cash Flow Analyses	60.00	3,4

Grade Map **MAP1**

A+ A A- Pass with Distinction
B+ B B- Pass with Merit
C+ C C- Pass
D Fail

Overall requirement/s to pass the course:

The student needs at least a C- overall grade.

LEARNING RESOURCES

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For further information, contact: Te Ara Auaha - Faculty of Design & Creative Technologies

Principal Programme:	**AK1317, Master of Engineering Project Management**
Related Programme/s:	

Disclaimer: Course descriptors may be amended between teaching periods/semesters