

Module Code	CEU44E01
Module Name	4E1 Management for Engineers
ECTS Weighting¹	5 ECTS
Semester taught	Semester 1
Module Coordinator/s	John Gallagher (j.gallagher@tcd.ie)
<u>Module Learning Outcomes</u> with reference to the <u>Graduate Attributes</u> and how they are developed in discipline	<p>On successful completion of the module, students should be able to:</p> <p><u>SECTION A</u></p> <p>LO1. Define an engineering project.</p> <p>LO2. Understand the key aspects of project management including: team dynamics and organizational behaviour; project planning tools and critical path; assessment of project feasibility; risk, resources and cost; alternative models of project management; IT, innovation, new product development.</p> <p>LO3. Apply project management concepts to a number of hypothetical projects.</p> <p>LO4. Assess and reflect on their use of project management concepts.</p> <p><u>SECTION B</u></p> <p>LO5. Understand the Law of Contract, and be aware of the different types of contract and methods of dispute resolution in use in Ireland today.</p> <p>LO6. Understand the importance of financial matters and the economic and commercial aspects of engineering projects.</p> <p>LO7. Chair and minute meetings with different stakeholders.</p> <p>LO8. Make decisions about ethical questions.</p> <p>LO9. Understand health and safety legislation, and the importance of safety management.</p> <p>LO10. Know about the proper management of subordinate staff and operatives, and current HR trends.</p> <p>LO11. Capacity to develop, manage and support a creative and entrepreneurial ecosystem within an engineering organisation.</p> <p>Graduate Attributes: levels of attainment</p>

To act responsibly - Enhanced
To think independently - Enhanced
To develop continuously - Enhanced
To communicate effectively - Enhanced

Module Content

This module is divided into two sections. Section A runs for the first six weeks and Section B runs for the last five weeks.

SECTION A

This part of the module aims to introduce students to the concepts and tools of project management. We will use a project management simulation software to develop the practical skills required to be a successful and effective project manager.

Module Content

- Introduction to project management concepts;
- Project definition and organisation;
- Project feasibility and evaluation;
- Project planning and Critical Path analysis;
- Risks, resources and costs;
- Team dynamics and organizational behaviour;
- Alternative models of project management: IT, innovation, AGILE.

SECTION B

This part of the module aims to provide to young graduate engineers some of the management tools they will need early in their careers. Emphasis is placed on ethics, health and safety and environmental issues, people management, accounting principles, and legal concepts.

Module Content

- Law – general legal concepts, engineering contracts, dispute resolution;
- Professional ethics;
- Office accounting – Bookkeeping, budgets and financial management, current and capital expenditure, company finances;
- Conduct of meetings;
- People management – HR functions, appraisals, staff management, leadership, employment legislation;
- Safety and Health – S&H at Work Act, safety management in industry;
- Supporting creativity and entrepreneurship in engineering.

Teaching and Learning Methods

Lectures will be delivered in-person, and students must attend live sessions.

SECTION A

Teaching methods include:

- Lectures
- Independent learning i.e. learning by doing (simulation)
- Case study

This section of the module will be assessed through coursework and accounts for 50% of the final module mark. Plagiarism is taken extremely seriously, and all assessments must be submitted on Blackboard via Turnitin plagiarism detection system.

SECTION B

The teaching method in this section is by lectures.

Most of the lecturers on this part of the module are leaders from industry who share their experience, knowledge and expertise with the students, giving an up-to-date insight into current practices. This part of the module will be examined in one two-hour exam. It counts for 50% of the final module mark.

Assessment Details²

Please include the following:

- **Assessment Component**
- **Assessment description**
- **Learning Outcome(s) addressed**
- **% of total**
- **Assessment due date**

Assessment Component	Assessment Description	LO Addressed	% of total	Week due
Coursework	Reflective essay based on use of project management simulation (10%)	LOs 1-4	50%	Wk 6
	Score on simulation (10%)			Wk 6
	Project Management case study (30%)			Wk 7
Examination	2-hour written examination	LOs 5-11	50%	

Reassessment Requirements

100% written examination

Contact Hours and Indicative Student Workload²

Contact hours: 18 hours (Section A) + 18 hours (Section B)

Independent Study (preparation for course and review of materials): 36 hours

Independent Study (preparation for assessment, incl. completion of assessment): 40 hours

Recommended Reading List

SECTION A

- *Project Management*, Clifford F Gray and Erik W Larson; McGraw-Hill. Several copies in Hamilton library S-LEN.

SECTION B

Textbooks and further reading may be suggested by the individual lecturers.

Module Pre-requisite

Module Co-requisite

Module Website

Are other Schools/Departments involved in the delivery of this module? If yes, please provide details.

Module Approval Date

Approved by

Academic Start Year

September 2022

Academic Year of Date

2022-23