Module descriptor for MAI projects with Supervisor based in School of Engineering

Module Code	MEP55E02, CEP55E02, EEP55E02
Module Name	ENGINEERING RESEARCH PROJECT
ECTS Weighting[1]	30 ECTS - Derogation
Semester taught	Semester 1 & 2
Module Coordinator/s	MAI Projects Academic Lead: Prof. François Pitié (responsible for overall academic direction and allocation process) Depending on Discipline of *Supervisor,* the following Module Coordinators are responsible for running the module locally: Civil: Prof. David Igoe (igoed@tcd.ie) CEP55E02 Elec: Prof. Aleksandra (Ola) Kaszubowska-Anandarajah (anandara@tcd.ie) EEP55E02 Mech: Prof. Garret O'Donnell (odonnege@tcd.ie) MEP55E02 Bio: Prof. Bruce Murphy (murphb17@tcd.ie) MEP55E02 EwM: Prof. Daniel Trimble (dtrimble@tcd.ie) MEP55E02 CS: Prof. Andrew Butterfield (andrew.butterfield@tcd.ie) (Note if your supervisor is based in CS you should be enrolled in CSP55E02 which has a separate module descriptor)
Module Learning Outcomes with reference to the Graduate Attributes and how they are developed in discipline **PO refers to Programme Outcomes from Engineers Ireland 2021 onwards**	On successful completion of this module, students should be able to: 1. Investigate and Analyse: Formulate a complex engineering problem and contribute new knowledge by critically synthesising existing literature, applying systematic research methods, and evaluating the findings. (PO1, PO2, PO4) 2. Design and Solve: Devise an innovative solution to a complex engineering problem by applying advanced theoretical principles and utilising specialised experimental, computational, or analytical techniques. (PO1, PO3, PO4) 3. Evaluate Professional Impact: Assess the professional, ethical, societal, and environmental impact of the engineering work undertaken in the project. (PO5) 4. Communicate Effectively: Communicate the project's context, methodology, results, and conclusions on complex engineering activities effectively to diverse audiences through a formal written dissertation and an oral defence. (PO7) 5. Manage Project Independently: Plan, manage, and execute a substantial research project with a high degree of autonomy, demonstrating self-directed learning and the application of engineering management principles. (PO6,PO8)

	Graduate Attributes: levels of attainment To act responsibly - Attained To think independently - Attained To develop continuously - Attained To communicate effectively - Attained
Module Content	This module allows the students to complete an individual research project on a topic of contemporary engineering research interest. The main objective of this module is to plan, execute and report on an individual engineering research project at a level appropriate for an Engineers Ireland level 9 accredited programme. A School-wide list of project titles and descriptions is issued to students towards the end of the second semester of the Senior Sophister year. Students are asked to rank up to 10 project preferences, and allocations will be confirmed by the end of July of that year. Allocation is done in order, with students ranked based on JS results. Students will be allocated the top project from their list which is still available. A second round of allocation takes place just before the start of the first Semester in the MAI year if necessary.
Teaching and Learning Methods	Each individual project will be supervised by an academic staff member in the School of Engineering. Occasionally, if deemed academically appropriate by the MAI Projects Academic Lead, additional supervisors may be involved. The students must meet their assigned supervisor in week 1 of semester 1 at the latest, or as soon as they are assigned a project title. There are no formal timetabled hours associated with the project, but students are expected to spend the time it takes to make reasonable progress and to keep in regular contact with their supervisors. For a 30 ECTS project, this is approximately **25 hours per week** over the two 12-week Semesters. It is recommended that students make a formal arrangement with their supervisors to meet on a regular basis. Note that students must take responsibility for their own engagement in the project.

Assessment Details[2]
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
Project Plan	5-minute Presentations including background to project, clear goal and proposed path forward. Followed with 5 minutes questions/feedback from academic/technical staff.	4,1,3,5	Formative	Week 6 of Teaching in Sem1 (arranged by local co-ordinators)
Literature Review	Progress report with detailed literature review, showing a good grasp of the project background and motivation. Followed by feed-back from supervisor.	1,4,5	Formative	Week 10 Sem1
Thesis	Masters-level thesis	1,2,3,4,5	100	Last day of Teaching in Week 12, Semester 2
Viva-Voce Presentation and Examination	Supervisor and second reader to attend; separate chair if required by supervisor or MAI Co-ordinator. Supervisor and 2nd reader submit their independent thesis reports prior to the Viva. Final mark are agreed at Viva.			Within Revision Week or Exam Period of Semester 2 (organised with Supervisor)

A handout detailing each assessment element will be shared with students. The thesis must use a template as directed by the local module co-ordinator. The dissertation is examined independently by the project supervisor and a second examiner; with a third examiner and the external examiner providing moderation when required.

Reassessment Requirements

Based on report only, with option to call for viva if supervisor or 2nd reader, or Module Coordinator or MAI Academic Project Lead require this.

Contact Hours and Indicative Student Workload[2]

Contact hours: Approximately 12-24 hours over the two Semesters is typical, depending on nature of the project, through meetings with supervisor

[2] TEP Guidelines on Workload and Assessment

	Independent Study (preparation for course and review of materials; preparation for assessment, incl. completion of assessment): A total student effort of 25 hours a week on average is expected for the 30 ECTS project, over the course of the two Semesters of the MAI year.
Recommended Reading List	All notes from the relevant Research Methods module in 4th year www.tcd.ie/media/tcd/graduate-studies/pdfs/theses-submission-guidelines.pdf https://student-learning.tcd.ie/learning-resources/
Module Pre-requisite	Research Methods 4E3 from one of the streams, or MEU44BM4 as appropriate
Module Co-requisite	
Module Website	Blackboard is used for local module communication and all submissions.
Are other Schools/Departments involved in the delivery of this module? If yes, please provide details.	
Module Approval Date	
Approved by	
Academic Start Year	
Academic Year of Date	