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. Naomi Harte (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. Bidisha Ghosh (bghosh@tcd.ie) CEP55E02 Elec: Prof Harun Šiljak (harun.siljak@tcd.ie) EEP55E02 Mechanical: Prof. Tim Persoons (persoont@tcd.ie) MEP55E02 Biomedical: Prof. David Hoey (dahoey@tcd.ie) MEP55E02 EwM: Prof. Rocco Lupoi (lupoir@tcd.ie) MEP55E02 (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: LO1. Contribute individually to the development of scientific/technological knowledge in one or more areas of their stream of Engineering. (PO1,PO2) LO2. Identify, assess and synthesize existing literature and research findings on an unfamiliar problem. (PO4, PO6) LO3. Apply a range of standard and specialised research tools and techniques to provide innovative and appropriate solutions to engineering problems of significant complexity. (PO1, PO2, PO3, PO4) LO4. Develop and apply theoretical, scientific and/or mathematical principles to effectively solve the research problem (PO3, PO4) LO5. Design and conduct unsupervised experiments and analyse and interpret data where appropriate. (PO3, PO6) LO6. Apply and independently develop software to model engineering systems where appropriate. (PO3, PO6) LO7. Discuss and critically evaluate the research findings and reflect on the strength and limitations of the research. (PO4, PO7) LO8. Assess the implications of the project outcomes for engineering practice, people and the environment. (PO5)

	LO9. Write a research dissertation to professional and academic standards using appropriate graphics and references. (PO7) LO10. Present complex ideas and material to peers and respond effectively to questions and criticism. (PO7) LO11. Outline a technical project for a non-technical audience (PO7) LO12. Plan, organise and execute a substantial research project using engineering management principles, modify the plan as appropriate through regular appraisal and decision-making relevant to the branch of engineering. (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 first-round 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.	1-6 10,11, 12	5	Week 6 of Teaching in Sem1 (arranged by local co-ordinators)
Interim Report	Progress report in Sem1	1-9,12	10	Week 10 Sem1
Thesis	Masters-level thesis			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 initial mark sheet uploaded by end of week 13 with final mark agreed at Viva.	All	85	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.

[2] TEP Guidelines on Workload and Assessment

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 **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/graduatestudies/assets/pdf/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	