

Module Title:	Development Project (Engineering)
Language of Instruction:	English
Credits:	10
NFQ Level:	7
Module Delivered In	7 programme(s)
Teaching & Learning Strategies:	The students are supervised by a lecturer in the software labs and general workshop, for project each week. Here the students will work either in groups or individually with brainstorming of ideas is encouraged. Solutions and guidance is provided through discussions with the supervisor. Also students are encouraged to contact specific lecturers / departments within the college and external bodies with expertise in specific areas applicable to their project.
Module Aim:	The aim of the Project is to provide the student with the opportunity to apply the knowledge and skills learned on the programme to solve an engineering problem, and in doing so extend the student's experience in communication, teamwork, project management and interaction with industry
Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Plan, design and implement an engineering project from initial problem definition to the presentation of results.
LO2	Utilise software and hardware to develop and optimise a technical solution to an engineering problem. This solution may incorporate design, simulation, programming and/or development of a practical artifact.
LO3	Test components with respect to their functional design specifications and to interpret the results.
LO4	Develop a technical report and assess alternative design solutions considering the impact on society, the environment and health & safety.
LO5	Communicate effectively on the project and project status in a professional manner via staged presentations (initial/interim/final).
Pre-requisite learning	
Module Recommendations	
<i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
Incompatible Modules	
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements	
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
No requirements listed	

Module Content & Assessment

Indicative Content

Project Concept

Learners will be provided with guidance on the selection of a project, definition of a problem statement, development of an aim and objectives and the overall scoping of the project. Students will be encouraged to explore possible cooperation on project assignments with their peers from other engineering programmes in the institute and their peers from international collaborative partners.

Analysis and Solutions

Develop engineering solutions and use weighting techniques in selecting the most viable solution to the problem. Evaluate alternative design solutions, including, where applicable, manufacturing, distribution and end-of-life, to assess their social and environmental impact. Prepare a Gantt chart with the various milestones of the project set out against the time frame of the academic year. Detail costing of components required and delivery dates, and use of existing equipment within the college for cost control and ordering purposes. Plan the use of resources to achieve the aims of the project. Research (for industrial based problems) the requirements of industry and the implication of cost and reliability and the need for use of specific customers design / detailed norms in their solution.

Design & Manufacture

Where applicable, produce fully dimensioned engineering drawings/schematics - including part and assembly for the construction of the engineering component/project. Manufacture/design/develop the solution using the facilities available. This constraint can influence the design and gives the student the real world experience of constraints placed upon their designs through practical issues

Testing and evaluation

Select material and specification of component parts. Identify variables under evaluation and interpretation of results. Develop testing schedule. Assess financial viability

Presentations

Initial presentation outlining the project concept, aims and objectives. Interim presentation giving the pursued strategy and producing a project plan (Gantt chart) and project milestones. Final presentation presenting the final technical solution with future recommendations and a brief overview of project constraints and other likely solutions.

Support

Learners will be provided with guidance and resources in technical areas such as specialist software and equipment and will utilise the Institutes Teaching & Learning Centre for access to workshops on topics such as Library/Database access and Academic Writing Workshops. This module is supported by content delivered in the module 'Industrial Studies'. Each learner will be allocated a supervisor for the duration of the project who will support the learner in developing and maintaining a project plan with milestones. Regular meetings between the learner and supervisor will support guided research, critical feedback and support in preparation for presentations and the final report.

Assessment Breakdown

	%
Project	100.00%

No Continuous Assessment

Project

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	Initial presentation 5%, Interim Presentation 10% Final Presentation 10%. Interim and Final Presentations are made in front of a panel of lecturers from within the department and their peers. The lecturers assess the presentation under various headings of time, structure of presentation, delivery method and responses.	5	25.00	n/a
Project	The project will be graded according to specific rubrik and project brief provided upon commencement of the module. It will incorporate the complete technical report and the technical solution (artifact, design, simulation etc).	1,2,3,4	75.00	End-of-Semester

No Practical

No End of Module Formal Examination

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Project	12 Weeks per Stage	4.25
Independent Learning Time	15 Weeks per Stage	13.27
Total Hours		250.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_EEAER_B	Bachelor of Engineering (Honours) in Aerospace Engineering	6	Elective
CW_EEBEE_B	Bachelor of Engineering (Honours) in Biomedical Electronics	6	Elective
CW_EESYS_B	Bachelor of Engineering (Honours) in Electronic Engineering	6	Elective
CW_EEROB_B	Bachelor of Engineering (Honours) in Robotics and Automated Systems	6	Elective
CW_EEACS_D	Bachelor of Engineering in Aircraft Systems	6	Mandatory
CW_EEBEE_D	Bachelor of Engineering in Biomedical Electronics	6	Mandatory
CW_EEROO_D	Bachelor of Engineering in Robotics and Automated Systems	6	Mandatory