

Module Title:	Project 3 (Mechanical)
Language of Instruction:	English
Credits:	5
NFQ Level:	7
Module Delivered In	No Programmes
Teaching & Learning Strategies:	The following methods will be used to teach this module: Practical project assignments prepared using project based learning techniques Mechanical workshops training sessions to enhance student practical skills Facilitator-assisted documentary research to gather detailed technical information Lecture on engine power calculations to assist with engine theory aspect of project.
Module Aim:	To give the students the understanding, competency and basic practical skills necessary to: Develop written Health & Safety procedures pertinent to the project Manufacture and Assemble a working engine model Test the engine for correct operation Design / build rigs to measure the engine power output and propeller efficiency Develop a theoretical engine model and compare with practical results Generate pertinent documentation to build and test the project Present the final, working project using relevant communication techniques Work as an effective member of a small team
Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Develop and describe a set of operational procedures for personal safety and to ensure correct equipment operation
LO2	Demonstrate the effectiveness of working in a small group
LO3	Analyse formal project planning and design methods for a mechanical project
LO4	Demonstrate the process of prototype build, assembly and testing
LO5	Effectively operate mechanical workshop machinery
LO6	Communicate effectively through written, graphical, interpersonal and presentation skills
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

Health & Operational Safety

Safety procedures for personal safety ~ Operational procedures to ensure correct equipment operation

Project Planning

Main project tasks to be completed by a specified completion date. Gannt chart showing proposed tasks in chronological order

Design

Design to include relevant calculations. The student must clearly explain the design decisions and trade-offs; ~ Manufacturing methods and materials used to complete the project ~ Generation of either computer based or manually drawn schematics using industry standard engineering drawing symbols

Manufacture

Creation of apparatus components efficiently without excessive waste ~ use of standard materials, fasteners and equipment where appropriate ~ Finishing of the apparatus to a high standard ~ Verification of the apparatus to conform to the project design

Apparatus Assembly

Building of the apparatus using standard tools, fasteners and maintenance techniques ~ Apparatus quick assembly without using excessive toolwork and/or manpower

Testing

Comparison between the theoretical and actual project operation, showing specific calculations ~ Explanation of any problems or complications with the project design

Documentation

Preparation of all relevant documents to operate the project correctly ~ Final project report ~ Project logbook/task cards as appropriate

Final Presentation

Basic operational theory behind the project ~ Presentation of the final project showing the project in working order ~ Use of clear presentational skills throughout

Assessment Breakdown

%

Project

100.00%

No Continuous Assessment

Project

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	Engine build	1,2,3,4,5,6	60.00	n/a
Project	Rig design to measure thrust	3,6	10.00	n/a
Project	Theoretical Engine model and report	2,3,6	10.00	n/a
Project	Dynamometer / Rig manufacture and assembly	1,2,3,4,5,6	20.00	n/a

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		
Workload Type	Frequency	Average Weekly Learner Workload
Practicals	Every Week	3.00
Total Hours		3.00

