

Module Details	
Module Title	Individual Research Project
Module Code	ENG6003-D
Academic Year	2020/1
Credits	40
School	Department of Mechanical and Energy Systems Engineering
Subject Area	Mechanical and Automotive Engineering
FHEQ Level	FHEQ Level 6
Pre-requisites	N/A
Co-requisites	N/A

Contact Hours	
Type	Hours
Project Supervision	24
Practical Classes or Workshops	30
Laboratories	72
Directed Study	112
Independent Study	162

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Academic Year

Module Aims
The module has 4 main aims: 1. Provide an academic or industrially relevant student driven project, utilising skills developed during all stages of academic study 2. Further develop skills in the selection and application of appropriate engineering tools including computer aided engineering, manufacturing methods and test rigs 3. Further develop personal skills in product, process, system design or research methods through an industrial or academic research relevant project 4. Provide a framework for the consideration of ethical and health and safety engineering practice to a professional level

Outline Syllabus

It is not possible to be prescriptive about the activities that each student should undertake in each semester as this relates to the specific investigation being undertaken. The project may take a variety of forms, and may include:

1. Critical reference to previous work on the project topic, competing theories, processes and methodologies, economic, social and market considerations.
2. Analysis and modelling, which may involve computer aided engineering in its broadest sense.
3. System and organisation design.
4. Manufacture and Implementation.
5. Experimentation, verification and/or other testing and evaluation.
6. Interpretation of results and concluding analysis.

The balance of the elements above will depend on the type of project work undertaken. A seminar series will be delivered to all students which will include material on Health and Safety, Project Management, Finding Sources, Plagiarism and Referencing, Time Management, Report Writing Skills, Financial Management, Innovation and Entrepreneurship, Presentation Skills and Sustainability and Ethics. In addition Industrial Case Studies will be presented by both visiting speakers and Research / Knowledge Transfer Active Academic Staff.

Learning Outcomes

Outcome Number	Description
1	Select and apply appropriate engineering tools, research methods, data analysis techniques and time management methods for the successful completion of an academic or industrially relevant individual project
2	Apply ethical and health and safety considerations in the context of a given engineering problem
3	Develop and apply personal skills in data management, scientific analysis, IT and creative problem solving and communicate the results in oral and written form to an academic and or industrial audience

Learning, Teaching and Assessment Strategy

Students will prepare a project report detailing their objectives, methodologies, analysis and conclusions arising from their studies. Structure of the report will be dependent on the project undertaken and will be defined in conjunction with academic tutors. Students will also submit a folder of work including any computer models, engineering drawings, tests data and background research to support their report. Students will also demonstrate their knowledge in the field of the project and their communication skills via an oral presentation to an academic and or industrial audience. Formative assessment will be provided during tutorial sessions with academic supervisors in an informal manner. Draft versions of project reports, asset folders and presentations can be submitted for academic consideration prior to formal summative submission for formative feedback. This module satisfies the below Learning Outcomes as specified by the Accreditation of Higher Education Programmes: Third Edition (AHEP3) as published by The Engineering Council in-line with the UK Standard for Professional Engineering Competence (UK-SPEC). These outcomes specify six key areas of learning: Science and Mathematics (SM), Engineering Analysis (EA), Design (D), Economic, Legal, Social, Ethical and Environmental Context (EL), Engineering Practice (P) and Additional General Skills (G). SM1b, SM2b, SM3b, EA1b, EA2, EA3b, D1, D2, D3b, D4, D6, EL2, EL3b, EL4, EL5, P1, P2, P3, P4, P6, P7, P8, G1, G2, G3b, G4, SM1m, SM3m, SM4m, SM5m, SM6m, EA1m, EA3m, EA5m, EA6m, D3m, D8m, EL3m, EL5m, EL7m, P2m, P9m, G3m. Further details of these learning outcomes can be found at <https://www.engc.org.uk/>.

Mode of Assessment				
Type	Method	Description	Length	Weighting
Summative	Dissertation or Project Report	Project Report	N/A	80%
Summative	Presentation	Project report detailing the research finding of the project (80 Poster Presentation)	N/A	20%
Formative	Coursework	Formative feedback on draft versions of summative assessments	Formative feedback on draft versions of summative assessments	N/A

Reading List
To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.

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