

Module Details	
Module Title:	Group Project
Module Code:	ENG5060-B
Academic Year:	2019-20
Credit Rating:	20
School:	Engineering and Informatics (Faculty-wide)
Subject Area:	Engineering
FHEQ Level:	FHEQ Level 5
Pre-requisites:	
Co-requisites:	

Contact Hours	
Type	Hours
Tutorials	50
Directed Study	140

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Academic Year (Sept - May)

Module Aims
The module is designed to build upon the stage 1 modules 'Design, Build and Test' and 'Computer Aided Engineering' to provide a more in-depth project based hands on experience which integrates with other modules within the second year. The module has three key aims: 1. Provide practical experience of functional component and assembly design through the application of appropriate computer aided design, analysis and simulation tools. 2. Develop skills in the selection and application of appropriate manufacturing technologies such as computer aided manufacture (CAM) and additive manufacturing including consideration of production tolerances. 3. Develop personal and interpersonal skills in product, process or system design through industrially or research relevant projects

Outline Syllabus

The syllabus follows on directly from the Stage 1 module 'Computer Aided Engineering'. Computer Aided Engineering skills are extended to consider ISO standards on limits and fits, manufacturing tolerances and the production of engineering drawings to an industrial standard within the familiar framework of CAD tools.

Assembly analysis skills are extended to incorporate more advanced simulation tools including the application of Computer Aided Manufacture (CAM) for component manufacture.

Guidance on financial and project management will ensure that project coursework is industrially relevant.

Learning Outcomes

1	Select and apply appropriate materials, design parameters and computational methods for the build and analysis of functional engineering problems.
2	Communicate engineering information through appropriate visual means.
3	Demonstrate management and problem solving skills as applied to engineering analysis

Learning, Teaching and Assessment Strategy

Computer Aided Engineering tools including CAD/CAM are demonstrated using practical examples delivered during live demonstrations, tutorial classes or as part of students directed study.

Formative feedback will be incorporated within tutorial sessions on an informal and ongoing basis.

Directed study activities will use Canvas to provide access to substantial industrially relevant examples which students can review and complete out of timetabled sessions.

There are 2 formal assessments split between group and individual submissions.

Assessment 1 (Group coursework) - 2 and 3D modelling of parts, assemblies and manufacturing processes based on design specification including manufacture and testing (70%)

Assessment 2 (Individual report) - Data analysis, visualisation and assessment of a selected component of the group project solution.

Formative assessment will be provided throughout the module during timetabled tutorial sessions.

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, EA1b, EA2, EA3b, D3b, D4, D5, EL1, EL2, EL3b, EL4, EL6b, P1, P2, P3, P6, P7, G1, G2, G3b, P2m.

Further details of these learning outcomes can be found at <https://www.engc.org.uk/>.

Mode of Assessment

Type	Method	Description	Length	Weighting
------	--------	-------------	--------	-----------

Summative	Coursework	Modelling and build of a functional mechanical system		70%
Summative	Coursework	Data analysis, visualisation and assessment individual report		30%
Formative	Coursework	Ongoing formative assessment during timetabled tutorials		%
Referral	Coursework	3D modelling of systems with data analysis		100%

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.