

Module Details	
Module Title	Healthcare Technology Project
Module Code	MHT5005-B
Academic Year	2021/2
Credits	20
School	Department of Biomedical and Electronics Engineering
FHEQ Level	FHEQ Level 5

Contact Hours	
Type	Hours
Lectures	25
Tutorials	15
Directed Study	160

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

Module Aims
Using established Product Design methods, the learner will work in groups to: (1) Identify a key need for a medical device technology. (2) Develop concepts for a new device with functionality that will address the need. (3) Refine the design to produce a proof of concept demonstrator. (4) Demonstrate and evaluate functional solutions to these problems with a working prototype.

Outline Syllabus	
1) Identifying opportunities and addressing needs	
2) Product specifications	
3) Concept generation	
4) Concept selection	
5) Concept testing	
6) Industrial design	
7) Design visualisation tools	
8) Project Planning	
9) Prototyping Tools	
10) Prototyping Methods	
11) Product Architecture	
12) Design for manufacture	
13) Robust design	
14) Design for Environment	
15) Patents and IP protection	

Learning Outcomes	
Outcome Number	Description
01	Demonstrate the process of systematic creative problem solving in a group-based working environment.
02	Select and apply new tools and techniques to enable project delivery.
03	Analyse and evaluate information to obtain solutions to particular engineering and technology problems.
04	Manage, present and interpret data to an audience
05	Solve problems systematically and creatively.
06	Collaborate and communicate effectively with other team members

Learning, Teaching and Assessment Strategy

Core content will be delivered through key lectures and directed reading, providing students with the opportunity to acquire the information to enhance their knowledge and understanding of subject LO 1,2,3,4,5. This will be complemented by group discussions and tutorials to allow students to apply this learning to specific issues.

Discipline skills will be developed in open-ended problem solving, tackled by working in small groups supported by members of academic staff LO 1,2,3,4,5,6. Group support will be provided through synchronous online tutorials in semester one and lab-based tutorials in semester two. Directed study provides students with the opportunity to undertake guided reading and to develop their own portfolio of learning to enhance transferable skills and knowledge LO 1,2,3,4,5.

The VLE will be used to provide access to online resources, lecture notes and external links to websites of interest.

The module is delivered according to the stages that an Entrepreneur would be likely to follow to bring a new product to market.

The module is assessed using coursework and presentation components, divided into key areas as follows:

Submission Type Percentage

Semester 1 Presentation (Wk 12) 30% LO1,2,3,4,5,6

Semester 2 Prototype Showcase (Wk 12) 30% LO 1,2,3,4,5,6

Product Development Portfolio (Wk 12) 40% LO1,2,3,4,5,6

The structure of the assessment has been designed to mirror a real product development approach with presentations to relevant stakeholders. The scores for each assessment will consist of a component awarded by the course tutors and a peer component that assesses the contribution of each group member.

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, EA3b, EA4b, D1, D2, D3b, D4, D5, D6, EL2, EL3b, EL4, EL5, P1, P2, P3, P7, P11b, G1, G4, SM2m, SM3m, SM4m, SM6m, EA3m, EA4m, EA5m, D3m, D7m, D8m, EL3m, EL5m, EL7m, P2m, P10m, P11m. Further details of these learning outcomes can be found at <https://www.engc.org.uk/>

Mode of Assessment

Type	Method	Description	Weighting
Summative	Presentation	Semester 1 Group Presentation (20 Mins)	30%
Summative	Presentation	Semester 2 Group Presentation (20 Mins)	30%
Summative	Coursework - Portfolio/e-portfolio	Product Development Portfolio	40%
Referral	Coursework - Written	Supplementary Assessment: Individual Final Report	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.

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