UNIVERSITY of BRADFORD

Module Descriptor

| Module Details | |
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| Module Title | Healthcare Technology Project |
| Module Code | MHT5005-B |
| Academic Year | 2024/5 |
| Credits | 20 |
| School | School of Engineering |
| FHEQ Level | FHEQ Level 5 |

| Contact Hours | |
|---|---|
| Type | Hours |
| Directed Study | 160 |
| Lectures | 25 |
| Tutorials | 15 |

| Availability | |
|---|---|
| Occurrence | Location / Period |
| BDA | University of Bradford / Academic Year |
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## 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

Identifying opportunities and addressing needs; Product specifications; Concepts: generation, selection, testing; Industrial design; Design visualisation tools; Project Planning; Prototyping: Tools and methods; Product Architecture; Design for manufacture; Robust design; Design for Environment; 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 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.

It is a requirement of the Institution of Engineering and Technology (IET) that students MUST achieve a mark of at least 30% in assessment components weighted above 30% IN ADDITION to achieving a mark of at least 40% in the module overall. This requirement applies ONLY to students on IET accredited programmes, which is the BDA occurrence/version of the module.

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

End of Semester 1: Presentation worth 30%.
End of Semester 2: Prototype Showcase worth 30%.
End of Semester 2: Product Development Portfolio worth 40%.

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. Each submission assesses all learning outcomes.

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 | 30% |
| Summative | Presentation | Semester 2 Group Presentation | 30% |
| Summative | Coursework - Written | Product Portfolio Development | 40% |
| Referral | Coursework - Written | Suplementary Assessment if required: Individual Final | 100% |

| Reading List |
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| 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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*https://bradford.ac.uk*