

Healthcare Technology Project

Module Code:	MHT5005-B
Academic Year:	2018-19
Credit Rating:	20
School:	Department of Biomedical and Electronics Engineering
Subject Area:	Medical and Healthcare Technology
FHEQ Level:	FHEQ Level 5
Module Leader:	Dr Benjamin Whiteside

Additional Tutors:

Pre-requisites:

Co-requisites:

Contact Hours

Type	Hours
Lectures	24
Tutorials	24
Directed Study	152

Availability Periods

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

Module Aims

To demonstrate the multiple elements required for a successful product design process from initial ideas to functional prototypes. To allow students to develop their skills to understand how to logically choose between concepts and how to implement tools for decision making throughout the evolution of the product. To help students understand the key benefits of relevant manufacturing processes and how to integrate industrial design, hardware and software to create functional products.

Outline Syllabus

Sem1

Week	Activity
2	Introduction and group assignment
3	Identifying opportunities
4	Customer needs and product specifications
5	Preparation for assessment
6	Design brief communication - assessed presentation
7	Concept testing
8	Concept selection
9	Refinement of candidate selection
10	Revision of best candidate design
11	Industrial design
12	Preparation of final design presentation
13	Client meeting - assessed presentation of final design

Sem2

Week	Activity
1	Design for environment
2	Design for manufacturing
3	Proof of concept design development
4	Proof of concept design completion
5	Proof of concept outcomes - assessed presentation
6	Prototyping
7	Robust design
8	Proof of prototype starts
9	Proof of prototype development
10	Prototype testing and compliance
11	Preparation for final presentation
12	Final presentation

Reading List:

[1] Product Design and Development, K. Ulrich, S. Eppinger, McGraw Hill

Module Learning Outcomes

On successful completion of this module, students will be able to...

- 1 LO1. Describe the key stages of the product design process
 LO2. Understand how to effectively apply decision making tools and work within a team to develop new product ideas
- 2 LO3. Develop a range of concepts from an initial design brief
 LO4. Critically assess concepts and use weighted scoring techniques to funnel down to the most promising candidates
 LO5. Develop candidate product designs to working prototypes
- 3 LO6. Solve design challenges systematically and choose optimised solutions
 LO7. Present your work to a large audience to influence decision making
 LO8. Locate and study additional material from sources such as books, journals and online resources.

Learning, Teaching and Assessment Strategy

This module is delivered to groups of 6-8 members which are assigned in the first session. Each session lasts for 2hr and consists of a lecture of 30-40 mins which introduces the product design stage that is relevant for the session, then the groups spend the rest of the time using what they have learned to develop their own product design idea. eg. Sessions 1 and 2 are spent identifying opportunities i.e. existing problems that their products could solve. After the lecture they are encouraged to use the ideas presented to search for their own opportunities. Lecture material is delivered in an interactive Prezi format containing live demonstrations, videos and animation. The rest of the session is run as a combination of group work and tutorial activities where each group is supported by 3 lecturers in the room to help them develop their ideas, and ensure that the group work is running smoothly and productively. (LO1, LO2, LO3, LO4, LO5).

The module is assessed using a variety of coursework assessments. 4 in the form of presentations to the class, 1 peer assessment of group work contribution and 1 final report/portfolio (LO6, LO7, LO8). These assessments encourage the groups to keep on track with their project and allow feedback to be provided throughout the course.

Supplementary assessment: is an individual report about the product development activity. Students are expected to utilise time outside the timetabled sessions to arrange further group meetings to research and develop their project ideas, and to collectively assemble the report.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Summative	Presentation	Sem 2 Presentation		20%	No
Summative	Presentation	Peer Review		5%	No
Summative	Presentation	Sem 1 Presentation		15%	No
Summative	Coursework	Final Report		60%	Yes
Referral	Coursework	Supplementary assessment: Individual report (3000 word equivalent)	0 hours	100%	No

Legacy Code (if applicable)

ENG2305L

Reading List

To view Reading List, please go to [rebus:list](#).