<table>
<thead>
<tr>
<th>Module Code</th>
<th>ME7B18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module Name</td>
<td>Design and Innovation</td>
</tr>
<tr>
<td>ECTS Weighting</td>
<td>10 ECTS</td>
</tr>
<tr>
<td>Semester taught</td>
<td>Semester 2</td>
</tr>
<tr>
<td>Module Coordinator/s</td>
<td>Prof. Michael Monaghan/Prof. David Hoey</td>
</tr>
</tbody>
</table>

**Module Learning Outcomes with reference to the Graduate Attributes and how they are developed in discipline**

On successful completion of this module, students should be able to:

- **LO1.** Create and interpret a brief and to make competent judgements and decisions at the design level.
- **LO2.** Perceive the nature of problems in depth, and to pursue innovative and creative solutions to design problems.
- **LO3.** Communicate design and research concepts through multiple mediums both, visually and orally to multi-disciplinary teams.
- **LO4.** Understand the relevance of individual research in society and the potential impact on individuals, groups and society.
- **LO5.** Possess skills ranging from concept through realization to produce high quality functional product prototypes using 3D printing technologies.
- **LO6.** Communicate effectively with fellow peers and experts from unrelated fields in order to grasp a societal need and address it when part of a multidisciplinary team.

**Graduate Attributes: levels of attainment**

To act responsibly - Attained
To think independently - Attained
To develop continuously - Attained
To communicate effectively - Attained

**Module Content**

This module introduces students to tools and topics within the clinical engineering environment. This module will provide students with an introduction to working within multidisciplinary project teams and provide the opportunity to apply learned knowledge to real world problems within group project work to develop functional prototypes using rapid prototyping technology. The content is split across two initiatives:

- Introduction to industrial design run by National College of Art & Design (NCAD)
• Group project involving the development of functional device prototypes using rapid prototyping technology; website design, engagement with healthcare and non-profit organisations, and demonstration of projects through public outreach at local science fairs, school-demonstrations, media outlets and social platforms.

**Teaching and Learning Methods**

The module is taught using a combination of seminars, lectures and project related work. In the event of a COVID-19 lockdown, the teaching methods for this module may have to be revised. Your module coordinator will keep you updated.
### Assessment Details
Please include the following:
- Assessment Component
- Assessment description
- Learning Outcome(s) addressed
- % of total
- Assessment due date

<table>
<thead>
<tr>
<th>Assessment Component</th>
<th>Assessment Description</th>
<th>LO Addressed</th>
<th>% of total</th>
<th>Week due</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCAD Project</td>
<td>This assessment is based on participation, progress and the calibre of the project developed in NCAD</td>
<td>1,2,3,4,5,6</td>
<td>40</td>
<td>Wk 28</td>
</tr>
<tr>
<td>Med3DP</td>
<td>Med3DP – Final presentation</td>
<td>1,2,3,4,5,6</td>
<td>60</td>
<td>Wk 33</td>
</tr>
</tbody>
</table>

### Reassessment Requirements
Reassessment – 100% Project

### Contact Hours and Indicative Student Workload
- Contact hours: 65 – includes Full week in NCAD and St. James’ Hospital, Med3DP innovation clinics.
- Independent Study (preparation for course and review of materials): 100
- Independent Study (preparation for assessment, incl. completion of assessment): 35

### Recommended Reading List
- Module Pre-requisite
- Module Co-requisite
- Module Website: [www.med3dp.com](http://www.med3dp.com)

### Are other Schools/Departments involved in the delivery of this module? If yes, please provide details.

### Module Approval Date
12/07/21

### Approved by
Michael Monaghan, David Hoey

### Academic Start Year
2021

### Academic Year of Date
2021