



National College of Art and Design  
*A Recognised College of University College Dublin*

## MODULE DESCRIPTOR

Name of Module Design Fundamentals of Medical Device Design 1  
 (Module Code - **Will be generated by Student Services**)

<b>Credits</b>	5	<b>Programme</b>	MSc Medical device Design
<b>Level (NQAI Framework)</b>	9	<b>School</b>	Design
<b>Stage</b>	1	<b>Module Coordinator</b>	Enda O'Dowd
<b>Semester</b>	1	<b>Module Team</b>	Enda O'Dowd, Derek Vallenge, Martina Moyne

### Objectives of Module

This module introduces students to the selection of appropriate materials and manufacturing processes in the medical device industry and their implications for device design, validation and regulation

### What will I learn?

On completion of this module, students will be able to:

- Analyse a product from a materials, manufacturing and user perspective
- Conduct a design /user failure modes and effects analysis in order to identify potential device failure modes and design opportunities
- Identify, classify and describe in a comparative manner the most important materials for use in medical devices.
- Translate the functional requirements of a product into quantifiable physical and mechanical properties
- Redesign a device in order to minimise material use, potential failures and improve user function
- Select an appropriate material for a design from material data and defend in a scientific manner the merits of choosing a particular material.
- Select an appropriate method for processing a material to achieve the required shape.

### How will I learn?

#### Hours

Lectures/Workshops/Tutorials	24
Specified Learning Activities	6
Autonomous Student Learning	70
<b>Total Workload</b>	<b>100</b>

### How will I be assessed?

	% of Final Module Grade	Timing
Medical Device Product Analysis	40	Semester 1

Material and Manufacturing Selection	20	Semester 1
Redesign drafting and optimisation	40	Semester 1
<b>Total</b>	<b>100</b>	
<b>What happens if I fail?</b>		
<p><b><u>Resit Opportunities</u></b>  Pass in this module is a requirement for progression. This module must be repeated next year if failed on first occasion.</p> <p><b><u>Remediation</u></b></p>		
<b>Am I eligible to take this module?</b>		
<p><b><u>Module Requisites and Incompatibles</u></b></p> <p>Pre-Requisite: none</p> <p>Required :</p> <p>Co-Requisite: none</p> <p>Incompatibles:</p> <p><b><u>Prior Learning</u></b></p> <p>Requirements:</p> <p>Excluded:</p> <p>Recommended:</p>		
<b><u>When and where is this module offered?</u></b>		
Timetabling information is displayed only for guidance purposes, relates only to 2015/16 and is subject to change.		
Product Design Studio Room	Semester 1 (September – January)	

For further details on the content of your module and teaching arrangements consult your course handout