



Institiúid Teicneolaíochta Chorcaí  
Cork Institute of Technology

APPROVED

**Awards**

BEng (Hons)

**Programme Code:** CR\_EMECH\_8

**Mode of Delivery:** Full Time

**No. of Semesters:** 8

**NFQ Level:** 8

**Embedded Award:** No

**Programme Credits:** 240

**programmeReviewDate:** September 2021

**Department:** MECHANICAL, BIOMEDICAL & MANUFACTURING ENGINEERING

## Programme Outcomes

Upon successful completion of this programme the graduate will be able to demonstrate... :

<b>PO1</b>	Knowledge - Breadth
	(a) A broad based knowledge and understanding of mathematics, the physical sciences, ICT, design processes and methodologies and industrial practices relevant to Mechanical Engineering.
<b>PO2</b>	Knowledge - Kind
	(a) A detailed knowledge and understanding of the application of mathematical and scientific methods to Mechanical Engineering problems, whilst comprehending that mathematics and the engineering sciences are built on relatively few basic concepts and involving powerful unifying principles.
<b>PO3</b>	Skill - Range
	(a) Apply and modify mathematical and scientific tools and techniques to solve complex mechanical engineering problems through data collection, modelling, analysis, design, simulation, communication and management with creativity, imagination and confidence.
<b>PO4</b>	Skill - Selectivity
	(a) The ability to select, evaluate and apply appropriate engineering, technological and management aids to design and implement a system, component or process to meet specified needs in complex and unfamiliar situations.
<b>PO5</b>	Competence - Context
	(a) An understanding of the diverse nature and the social context of mechanical engineering; appreciate the impact of engineering solutions in a global, contemporary, societal, commercial and environmental context; exhibit professionalism, whilst having the confidence and independence to apply existing knowledge to new and unfamiliar problems.
<b>PO6</b>	Competence - Role
	(a) An ability to act in teams and in a multi-disciplinary fashion, set and implement work objectives and priorities, exercise leadership over technical or other personnel where required; recognise, interpret and apply appropriate regulations and ethical considerations.
<b>PO7</b>	Competence - Learning to Learn
	(a) An awareness of the current boundaries of the various specialist areas in Mechanical Engineering and to have sufficient academic training, confidence and discipline to broaden and deepen own knowledge base through further study, research and professional development.
<b>PO8</b>	Competence - Insight
	(a) A recognition of their obligations to society, the profession and the environment by being familiar with the expectations and standards inherent in professional codes of conduct, but also by consciously applying aesthetic considerations when performing the art and science of engineering.

## Semester Schedules

### Stage 1 / Semester 1

Mandatory	
Module Code	Module Title
MECH6009	<a href="#">Engineering Mechanics</a>
MATH6005	<a href="#">Engineering Maths 101</a>
MECH6006	<a href="#">Engineering Workshop Practice</a>
MECH6003	<a href="#">CAD with Design</a>
PHYS6003	<a href="#">Engineering Physics 1</a>
CMOD6001	<a href="#">Creativity Innovation&amp;Teamwork</a>

### Stage 1 / Semester 2

Mandatory	
Module Code	Module Title
MECH6012	<a href="#">Material Science &amp; Engineering</a>
MECH6004	<a href="#">CAD &amp; Mechanical Design</a>
CHEM6001	<a href="#">Engineering Chemistry</a>
MATH6006	<a href="#">Engineering Maths 102</a>
MECH6010	<a href="#">Introductory ThermoFluids</a>

  

Elective	
Module Code	Module Title
MATH6031	<a href="#">Engineering Computing 1</a>
FREE6001	<a href="#">Free Choice Module</a>

Stage 2 / Semester 1

Mandatory	
Module Code	Module Title
MECH7011	<a href="#">Mechanical Materials (2D)</a>
MECH7004	<a href="#">Electrical Engineering 1</a>
MATH7006	<a href="#">Engineering Mathematics 211</a>
MATH7015	<a href="#">Numerical Methods 1</a>
MECH7017	<a href="#">Thermodynamics (Laws &amp; Cycles)</a>
Elective	
Module Code	Module Title
MECH7007	<a href="#">Manufacturing Technology</a>
FREE6001	<a href="#">Free Choice Module</a>

Stage 2 / Semester 2

Mandatory	
Module Code	Module Title
MECH7026	<a href="#">Engineering Dynamics 1</a>
MECH7018	<a href="#">Mechanical Eng Design</a>
MECH7005	<a href="#">Electrical Engineering 2</a>
MATH7005	<a href="#">Engineering Maths Methods</a>
MECH7006	<a href="#">Fluid Mechanics</a>
MATH7016	<a href="#">Numerical Methods II</a>

Stage 3 / Semester 1

Mandatory	
Module Code	Module Title
MECH8004	<a href="#">Mechanical Eng. Design</a>
MECH8012	<a href="#">Mechanical Materials (3D)</a>
INTR8004	<a href="#">Applied Thermodynamics</a>
MECH8009	<a href="#">IPD Laboratories 1</a>
MECH8023	<a href="#">System Dynamics &amp; Control Eng</a>
Elective	
Module Code	Module Title
MANU8004	<a href="#">Manufacturing Systems</a>
MECH8030	<a href="#">Metrology Systems</a>
MANU8007	<a href="#">Quality Engineering</a>
FREE6001	<a href="#">Free Choice Module</a>
MECH8032	<a href="#">Surface Engineering</a>

Stage 3 / Semester 2

Mandatory	
Module Code	Module Title
MECH8031	<a href="#">Engineering Dynamics 2</a>
STAT8005	<a href="#">Statistics for Engineering</a>
MECH8010	<a href="#">IPD Laboratories 2</a>
MECH8024	<a href="#">Work Placement Mechanical Eng</a>

Stage 4 / Semester 1

Mandatory	
Module Code	Module Title
MECH8008	<a href="#">Heat Transfer</a>
MECH8014	<a href="#">Mechatronics System Design</a>
STAT8002	<a href="#">Mathematics for Engineers</a>
MECH8005	<a href="#">Engineering Management</a>
MECH8020	<a href="#">Project Management &amp; Research</a>
Elective	
Module Code	Module Title
INTR8011	<a href="#">Instrumentation for Sensors</a>
MANU8001	<a href="#">Advanced Materials &amp; Processes</a>
MANU8004	<a href="#">Manufacturing Systems</a>
FREE6001	<a href="#">Free Choice Module</a>
MECH8032	<a href="#">Surface Engineering</a>

Stage 4 / Semester 2

Mandatory	
Module Code	Module Title
MECH8007	<a href="#">Fluid Dynamics</a>
MECH8021	<a href="#">Mechanical Capstone Project</a>
MECH8011	<a href="#">Machine Dynamics</a>
MECH8002	<a href="#">Elasticity and Stress Analysis</a>
MECH8001	<a href="#">Control Eng. and Automation</a>