

Module Code	Module Title	ECTS Credits	Semester/ Duration	% Exam	% CA	Quota	Pre-requisite	Notes
CE7E07	Sustainable Water Supply and Sanitation	5	Semester 1	70	30	999	None	
<a href="#">CE7J02</a>	Solar Energy Conversion Applications	5	Semester 1	50	50	999	None	
CE7J04	Energy Policy and Demand	5	Semester 1	75	25	999	None	
<a href="#">CE7S02</a>	Advanced Computation for Structures	5	Semester 1	40	60	999	Module participants are expected have completed an undergraduate degree in engineering, maths-physics or similar. Students should have a good understanding of mechanics of solids, structural analysis using stiffness method and should be familiar with differential equations.	
<a href="#">CE7S03</a>	Wind and Earthquake Engineering	5	Semester 1	70	30	999	Any textbook on structural dynamics. Clough and Penzien is recommended. Web resources to be identified in class.	
<a href="#">CE7T01</a>	Transportation Policy	5	Semester 1	50	50	999	None	
<a href="#">CE7T02</a>	Transport Modelling and Planning	5	Semester 1	50	50	999	None	
CEP55E03	Air Pollution: Monitoring, Assessment & Control	5	Semester 1	TBD	TBD	999	None	
CEU22E04	Solids and Structures	5	Semester 1	85	15	999	1E7 Mechanics	
<a href="#">CEU22E07</a>	Engineering and the Environment	5	Semester 1	70	30	999	None	
<a href="#">CEU22E09</a>	Engineering design III: Project	5	Semester 1	0	100	999	None	
<a href="#">CEU33A02</a>	Structural Design	5	Semester 1	85	15	999	2E4 or similar introduction to structural mechanics/ <b>**Not appropriate for masters students**</b>	
<a href="#">CEU33A05</a>	Soil Mechanics	5	Semester 1	80	20	999	Mechanics of Solids	
CEU33A07	Transportation and Highway Engineering	5	Semester 1	100	0	999	None	
CEU44A04	Hydraulics	5	Semester 1	75	25	999	None	
<a href="#">CEU44A31</a>	Environmental Engineering	5	Semester 1	75	25	999	None	
<a href="#">CEU44A51</a>	Geotechnical Engineering	5	Semester 1	80	20	999	CEU33A5	
<a href="#">CEU44A61</a>	Structures 1	5	Semester 1	50	50	999	3A2 or similar introduction to structural design	
<a href="#">CEU44E01</a>	Management for Engineers	5	Semester 1	50	50	999	None	
<a href="#">CEU44E03</a>	Research Methods	5	Semester 1	0	100	999	None	
<a href="#">EE5C16</a>	Deep Learning and its Applications	10	Semester 1	60	40	999	None	
EE5M01	Integrated Systems Design	5	Semester 1	70	30	999	EE3C7 or equivalent	EE5M01 & EU44C01 must be taken together.

<a href="#">EEMT21</a>	Introduction to XR: Applications and Technologies	5	Semester 1	0	100	999	None	
<b>EE5C04</b>	<b>Speech Technology (**New Module**)</b>	5	Semester 1			999	MAI (Masters) Module - Suitable for Postgraduate Visiting Electronic Eng students	
<b>EEP55C10</b>	<b>Statistical Signal Processing for Machine Learning (**New Module**)</b>	5	Semester 1			999	MAI (Masters) Module - Suitable for Postgraduate Visiting Electronic Eng students	
<a href="#">EEU45C09</a>	Self-Organizing Systems	5	Semester 1	50	50	999	Mathematics (JS), Physics, Signal Processing (preferably JS), Basic knowledge of Linear Algebra and Probability and Statistics.	
<a href="#">EEP55C22</a>	Computational Methods	10	Full Year	0	100	999	<b>**Only available to students in year 4 or year 5 of their degree programme**</b>	
<a href="#">EEP55C23</a>	Computation for Transport Engineering	5	Semester 1	40	60	999	None	
<a href="#">EEPMMT07</a>	Audio Engineering	5	Semester 1	0	100	999	<b>**Max Number of students is 25 in the module so limited spaces available**</b>	
<a href="#">EEU22E06</a>	Electronics	5	Semester 1	70	30	999	1E6 Electronics or equivalent	
<a href="#">EEU33C01</a>	Signals and Systems	5	Semester 1	90	10	999	2E1 Engineering Mathematics III and 2E2 Engineering Mathematics IV	
<a href="#">EEU44C01</a>	Integrated Systems Design	5	Semester 1	70	30	999	EE3C7 or equivalent	EE5M01 & EEU44C01 must be taken together.
<a href="#">EEU44C04</a>	Next Generation Networks	5	Semester 1	100	0	999	Prerequisite module: EEU3C05 Telecommunications. Other/alternative non-module prerequisites: General knowledge of networking protocols and transmission.	
<a href="#">EEU44C05</a>	Digital Signal Processing	5	Semester 1	100	0	999	<b>Students must have take modules similar to that of 3C1 Signals and Systems 3E3 Probability and Statistics 3E1 Engineering Mathematics V - Masters students should enrol on EEP55C05</b>	
<a href="#">EEU44C16</a>	Deep Learning and its Applications	10	Semester 1	60	40	999	None	
<a href="#">EEU44E03</a>	Research Methods	5	Semester 1	40	60	999	None	
<a href="#">ME5B09</a>	Control Engineering II	5	Semester 1	60	40	999	None	
<a href="#">ME5E3</a>	Innovation in Product Development	15	Full Year	TBD	TBD	999	None	
<a href="#">ME5E4</a>	Introduction to Computational Fluid Mechanics	5	Semester 1	30	70	999	Foundation courses in Numerical Methods (e.g. 2E11/3E2), Fluid Mechanics (e.g. 3B02, 4B13), and Heat Transfer (e.g. 4B04)	
<a href="#">ME5MM3</a>	Supply Chain Management	5	Semester 1	0	100	999	EM year 3,4; or visiting student equivalents, or suited to Unitech students	

<a href="#">ME5MM7</a>	Risk Management and Safety Assessment Systems	5	Semester 1	0	100	999	Recommended: Advanced Manufacturing modules, Supply Chain Management or equivalent from visiting institutions or suited to unitech students	
<a href="#">MEP55B15</a>	Low Carbon Transport Technology	10	Full Year	0	100	999	<b>Students must be enrolled for full year</b>	
<a href="#">MEP55B16</a>	Low Carbon Power Technology	10	Full Year	0	100	999	None	
<a href="#">MEU11E08</a>	Introduction to Professional Engineering	5	Semester 1	20	80	999	None	
<a href="#">MEP56BM9</a>	Medical Device Fundamentals	5	Semester 1				Fourth year module	
<a href="#">MEU11E12</a>	Engineering Materials and their Applications	10	Semester 1	50	50	999	<b>Limited to a small number of visiting students as there may be a large number of students</b>	
<a href="#">MEU11E14</a>	Experimental Methods and Data Centric Engineering	5	Semester 1	75	25	999	None	
<a href="#">MEU11EM1</a>	Introduction to Manufacturing	5	Semester 1	60	40	999	None	
<a href="#">MEU22EM2</a>	Strategic and Financial Management	5	Semester 1	40	60	999	None	
<a href="#">MEU22EM3</a>	Design I	5	Semester 1	0	100	999	None	
<a href="#">MEU23B10</a>	3D Computer Aided Design	5	Semester 1	0	100	999	None	
<a href="#">MEU33B02</a>	Fluid Mechanics	5	Semester 1	85	15	999	MEU2205	
<a href="#">MEU33B04</a>	Mechanical Engineering Materials	5	Semester 1	50	50	999	CEU22E08 Materials or MEU22M04 Materials or equivalent module	
<a href="#">MEU44B04</a>	Heat Transfer	5	Semester 1	80	20	999	3B2 Fluid Mechanics or equivalent	
<a href="#">MEU44B07</a>	Computer Aided Design	5	Semester 1	0	100	999	Some experience with CAD drawing using a professional software package (e.g., SOLIDWORKS, AutoCAD, CREO, ANSYS, etc) and a basic understanding of finite element analysis (e.g., 3B8, 2E11)	
<a href="#">MEU44B13</a>	Fluid Mechanics 2	5	Semester 1	60	40	999	3B2 Fluid Mechanics (or equivalent) This is not a foundation course so students need to make sure that they have already studied the appropriate prerequisite material)	
<a href="#">MEU44B17</a>	Multibody Dynamics	5	Semester 1	70	30	999	None	
<a href="#">MEU44BM4</a>	Experimental and Research Methods	5	Semester 1	0	100	999	None	
<a href="#">MEU44BM5</a>	Biomechanics	5	Semester 1	80	20	999	ME7B04 Basic Medical Sciences	
<a href="#">MEU44BM6</a>	Biomaterials	5	Semester 1	80	20	999	None	
<a href="#">MEU44E03</a>	Engineering Research Methods	5	Semester 1	0	100	999	None	
<a href="#">MEU44EM3</a>	Supply Chain Management	5	Semester 1	TBD	TBD	999	None	
<a href="#">MEU44EM9</a>	User Centred Design Innovation	5	Semester 1	0	100	999	None	
<a href="#">CE7E04</a>	Waste Management and Energy Recovery	5	Semester 2	70	30	999	Chemistry and environmental engineering background	

<a href="#">CE7E05</a>	Water Quality and Hydrological Modelling	5	Semester 2	70	30	999	basic chemistry	
<a href="#">CE7E06</a>	Water Resource Planning and Climate Change	5	Semester 2	80	20	999	No specific pre-requisite, but previous engineering hydrology module helpful	
<a href="#">CE7J01</a>	Wind Energy	5	Semester 2	80	20	999	None	
<a href="#">CE7J06</a>	Wave and Hydro Energy	5	Semester 2	80	20	999	None	
<a href="#">CE7S01</a>	Geotechnical Engineering	5	Semester 2	85	15	999	Students must have successfully completed an undergraduate module(s) in Soil Mechanics and (or) Geotechnical Engineering	
<a href="#">CE7S04</a>	Bridge Engineering	5	Semester 2	0	100	999	None	
<a href="#">CE7S05</a>	Advanced Concrete Technology	5	Semester 2	90	10	999	None	
<a href="#">CE7S06</a>	Soil Structure Interaction -instead Offshore geotechnical engineering	5	Semester 2	80	20	999	CEU33A5, CEU44A51	
<a href="#">CE7T04</a>	Intelligent Transportation Systems	5	Semester 2	75	25	999	Engineering or Sciences Primary Degree	
<a href="#">CEU11E07</a>	Mechanics	5	Semester 2	90	10	999	None	
<a href="#">CEU11E09</a>	Engineering Design I: Graphics and CAE	5	Semester 2	80	20	999	None	
<a href="#">CEU33A04</a>	Structural Analysis	5	Semester 2	100	0	999	Ability to analyse statically determinate structures	
<a href="#">CEU33A08</a>	Geology for Engineers	5	Semester 2	100	0	999	None	
<a href="#">CEU33A10</a>	Surveying and Geo-spatial Planning	5	Semester 2	50	50	999	None	
<a href="#">CEU33A11</a>	Fluids and Environment	5	Semester 2	60	40	999	None	
<a href="#">CEU44A01</a>	Civil Engineering Materials	5	Semester 2	80	20	999	basic chemistry and material science	
<a href="#">CEU44A02</a>	Hydrogeology and Engineering Geology	5	Semester 2	100	0	999	None	
<a href="#">CEU44A08</a>	Transportation	5	Semester 2	60	40	999	None	
<a href="#">CEU44A62</a>	Structures 2: Advanced Design of Structures	5	Semester 2	85	15	999	None	
<a href="#">EE5C01</a>	Motion Picture Engineering	10	Semester 2	0	100	999	An introduction to DSP and Image Processing would be useful	<b>**Only available to students in year 4 or year 5 of their degree programme**</b>
<a href="#">EE5M02</a>	Microelectronics	5	Semester 2	80	20	999	EEU33C03 or equivalent	
<a href="#">EEP55C24</a>	Simulations for Geophysical Modelling	5	Semester 2	40	60	999	None	
<a href="#">EEP55C25</a>	Algorithms for Quantum Computing	5	Semester 2	40	60	999	None	
<a href="#">EEP55M08</a>	Image and Video Processing	5	Semester 2	75	25	999	EEU33C01 (Signals and Systems)	
<a href="#">EEU22E10</a>	Engineering design IV: Project	10	Semester 2	0	100	999	None	
<a href="#">EEU22E12</a>	Computational Science and Engineering	5	Semester 2	65	35	999	Mathematics (JF), Physics, Basic knowledge of Linear Algebra (JF Level)/Available to students in Year 2 or 3 of degree programme	
<a href="#">EEU33C02</a>	Digital Circuits	5	Semester 2	80	20	999	Successful Completion SF year of BAI programme	
<a href="#">EEU33C03</a>	Analogue Circuits	5	Semester 2	85	15	999	EEU22E06 or equivalent	
<a href="#">EEU33C05</a>	Telecommunications	5	Semester 2	70	30	999	None	

EEU33C07	Digital Systems Design	5	Semester 2	50	50	999	EE1E6 or equivalent	
<a href="#">FEU33F03</a>	Probability and Statistics	5	Semester 2	100	0	999	Engineering Mathematics (up to Year 2 incl.)	
<a href="#">EEU44C02</a>	Microelectronic Circuits	5	Semester 2	80	20	999	EEU33C03 or equivalent	
<a href="#">EEU44C08</a>	Digital Image and Video Processing	5	Semester 2	75	25	999	EEU33C01 (Signals and Systems)	
<a href="#">EEU44C21</a>	Open Reconfigurable Networks	5	Semester 2	20	80	999	None	
<a href="#">ME5B03</a>	Advanced Thermal Fluid Sciences	10	Semester 2	15	85	999	4B4 Heat Transfer, 4B13 Fluid Mechanics	
<a href="#">ME5B10</a>	Instrumentation and Experimental Techniques	5	Semester 2	60	40	999	None	
<a href="#">ME5BIQ3</a>	Tissue Engineering	5	Semester 2	75	25	999	MEU44BM6	Co-Requisite: ME5M20 (if MEU44BM6 has not been taken previously)
<a href="#">ME5BIO7</a>	Advanced Medical Imaging	5	Semester 2	65	35	999	None	
<a href="#">MEP55BM8</a>	Active Implanted Devices and Systems	10	Semester 2	100	0	999	3BIO1 Anatomy and Physiology, 4C5 Digital Signal Processing/ Students must be in a Biomedical Engineering Programme.	
<a href="#">MEU22E05</a>	Thermo-fluids	5	Semester 2	70	30	999	None	
<a href="#">MEU33B01</a>	Thermodynamics	5	Semester 2	80	20	999	2E5 Thermo-fluids	
<a href="#">MEU33B03</a>	Mechanics of Solids	5	Semester 2	90	10	999	1E7 Mechanics (or equivalent) and 2E4 Solids and Structures (or equivalent)	
<a href="#">MEU33B05</a>	Mechanics of Machines	5	Semester 2	80	20	999	MEU11E07 Mechanics	
MEU33B07	Manufacturing Technology I	5	Semester 2	0	100	999	<b>ONLY AVAILABLE TO STUDENTS WHO HAVE TAKEN MEU23B10 Computer added design in semester 1.</b>	
<a href="#">MEU44B01</a>	Mechanics of Solids	5	Semester 2	85	15	999	<b>Students Need to Have completed a similar module like MEU33M03 Mechanics of Solids in their Home University</b>	
MEU44B02	Forensic Materials Engineering	5	Semester 2	70	30	999	3B4 Mechanical Engineering Materials or equivalent	
MEU44B05	Manufacturing Technology	5	Semester 2	20	80	999	None	
<a href="#">MEU44B06</a>	Manufacturing Systems and Project Management	5	Semester 2	0	100	999	None	
<a href="#">MEU44B09</a>	Control Engineering	5	Semester 2	85	15	999	None	
<a href="#">MEU44B10</a>	Turbomachinery	5	Semester 2	100	0	999	3B1 Thermodynamics, 3B2 Fluid Mechanics, 4B13 Fluid Mechanics	
<a href="#">MEU44B12</a>	Introduction to Autonomous Mobile Robotics	5	Semester 2	30	70	999	None	
MEU44B14	Engineering Vibration and Noise	5	Semester 2	75	25	999	None	
<b>For more information on module descriptors please click the module code oor contact International Engineering &lt;InternationalEng@tcd.ie&gt;</b>								
<b>Please note that Modules relate to the 2024/25 Academic Year and are subject to change</b>								