

## 2021– 2021 ME Mechanical Engineering Syllabus

### ME IN MECHANICAL ENGINEERING (one academic year, 60 ECTS)

**Students must take:**

20 ECTS Project/Thesis PLUS 20 ECTS Mandatory Advanced Modules PLUS 20 ECTS Optional modules, where at least 5 ECTS must be from Mechanical Systems Options, and 5 ECTS from Manufacturing Systems Options

Students must abide by the grouping quotas below for optional modules. Note the student registration system does not define the groupings, thus the students are required to ensure compliance with the quotas.

Students cannot take a module where they have already completed coursework of a similar content and standard.

\*\*BME402 must be chosen if it (or an equivalent) has not already been taken at undergraduate level. Discuss with Programme Director if you did not complete BME402 and believe you do not need to. Knowledge and software covered in BME402 is used in other mandatory modules in this programme.

**Module availability is NOT guaranteed. Please consult with Mech Eng discipline office before registration. Selection of modules may depend upon:**

- Availability of the module in the academic year of study.
- Timetabling constraints with respect to other modules chosen.
- Completion of pre-requisite or co-requisite modules, or other required modules as identified by the Programme Director.

Requisite: Prereq Coreq Exreq	Module Code	Module Name	ECTS	Taught in Semester 1, 2, or Full Year	Examined/ Submitted in Semester(s)	Duration of exam (hours)	Lectures Shared with:	Bonding	Taken in BM NUI Galway
<b>Project Thesis</b>									
	ME519	Mechanical Engineering Project Thesis*	20	1 & 2	2	Thesis			No
<b>Mandatory Advanced Modules (20 ECTS):</b>									
	ME516	Advanced Mechanics of Materials	5	1	1	1 + c/a	MEB, MEES,MBM		No
	ME521	Research Methods for Engineers	5	1	1	c/a	APE MEB, MEES		No
	ME5106	Advanced Manufacturing	5	2	2	2			No
BME402	BME501	Advanced Finite Element Methods	5	2	2	c/a	MEB, MEES		No
<b>Mechanical Systems Options (choose 5 - 15 ECTS)</b>									
	CT4101	Machine Learning	5	1	1	2 +c/a	BCT		No
	EE5120	Digital Control	5	1	1	2	MEEE	EE410 0	No (Rotating)
	BME5100	Advanced Computational Biomechanics	5	1	1	c/a	MEB		No
	EG5101	Advanced Energy Systems Engineering	5	1	1	c/a	MEES	EG400	Not from 16-17

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	ME5171	Combustion Science & Engineering	5	2	2	c/a	MEES, 4BSE 4BM1	ME410 1	Option 4BM
	ME426	Turbomachines & Advanced Fluid Dynamics	5	2	2	2 + project	4BSE, MEES, 4BM		Option 4BM
	BME402	Computational Methods in Engineering Analysis**	10	1	1	2	MEME, MEES	BME6 101	Core 4BM
BME2100	ME4109	Materials II	5	1	1	2 +c/a	4BM, 4BG		Core 4BM
<b>Manufacturing Systems Options (choose 5 – 15 ECTS)</b>									
	AY872	Financial Management I	5	1	1	2			No
	ME432	Technology, Innovation & Entrepreneurship	5	1	1	c/a	APE, MEES 4BM1		No
	IE5100	Physical Ergonomics	5	1	1	2 + c/a	OEH, OES	IE520	No
	ME572	Human Reliability	5	2	2	2 + c/a	4BG, APE,MEB	IE444	No
	IE450	Lean Systems	5	1	1	2	MEB, MEES		Option 4BM
	ME431	Systems Reliability	5	2	2	2 + c/a	4BG, 4BSE APE 4BM, MEB,	IE444	Option 4BM
	IE446	Project Management	5	1	1	c/a	APE		Similar Option 4BM
	ME4105	Safety Engineering	5	1	1	2	1OP1, 1HH1, 1AP1, 1AP2, 2AP2	IE522	Option 4BM
	ME3104	Introduction to Regulatory affairs in Manufacturing (online)	5	2	2	c/a			Option 3BM
<b>TOTAL FOR THE COMPUTATION OF HONOURS = 60 ECTS</b>									
<i>c/a indicates continuous assessment</i>									
<b><i>*This module is a course requirement: Students must achieve a minimum of 40% in this module. It cannot be passed by compensation</i></b>									