

2021 -2022 BE Mechanical Engineering Syllabus

<i>Requisite Type:</i>	<i>Module Code</i>	<i>Module Name</i>	<i>ECTS Credits</i>	<i>Taught in Semester 1, 2, or Full Year</i>	<i>Examined/ Submitted in Semester(s)</i>	<i>Duration of exam (hours)</i>	<i>Lectures Shared With:</i>	<i>Bonded with:</i>
(1BM1) First University Examination in Engineering (Mechanical)								
	CH140	Engineering Chemistry	5	1	1	2	All BE Programmes	
	CT1110	Engineering Computing I*	5	1	1	2	All BE Programmes, BCM	
	EI160	Engineering Graphics	5	1	1	2hr computer based exam + c/a	All BE Programmes, BCM	
	MA140	Engineering Calculus	5	1	1	2	All BE Programmes	
	MP120	Engineering Mechanics	5	1	1	2	All BE Programmes	
	EI140	Fundamentals of Engineering	10	1 & 2	1 + 2	2	All BE Programmes	
	CT1111	Engineering Computing II*	5	2	2	2	All BE Programmes	
	EI150	Engineering Design*	10	2	2	c/a	All BE Programmes, BCM	
	MM140	Engineering Mathematical Methods	5	2	2	2	All BE Programmes	
	PH140	Engineering Physics	5	2	2	2	All BE Programmes	
TOTAL FOR THE COMPUTATION OF HONOURS = 60 ECTS								
<i>c/a indicates continuous assessment</i>								
*This module is a course requirement: Students must achieve a minimum of 40% in this module. It cannot be passed by compensation.								

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(2BM2) Second University Examination in Engineering (Mechanical)									
	EE231	Electronic Instrumentation and Sensors	5	1	1	2	All BE Progs		
	MA2101	Mathematics and Applied Mathematics I	5	1	1	2	All BE Progs		
	ME223	Thermodynamics & Fluid Mechanics	5	1	1	2	2BM, 2BSE, 2BE		
	ME2106	Theory of Machines & CADD	5	1	1	2 + c/a	2BG, 3BSE		
	ST1100	Engineering Statistics	5	1	1	2	All 2 nd Eng		
	ME2105	Manufacturing Technology & CAIRDE	5	1&2	2	2 + c/a	2BG		
	CE227	Strength of Materials	10	1 & 2	2	2	2BG, 2BE, 2BCM, 2BSE		
	BME2100	Materials I	5	2	2	2 + c/a	2BG		
	EE230	Electrical Circuits and Systems	5	2	2	2	2BP, 2BLE, 3BEE, 2BSE		
	MA2102	Mathematics and Applied Mathematics II	5	2	2	2	All BE Progs		
	ME5105	Fundamentals of Operations Engineering	5	2	2	2 + c/a	2HF1, 1AP, 2BCM	IE228, ME522	
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Incoming third year students will automatically be enrolled in the third year of the integrated 5-year programme- BE and ME in Mechanical Engineering (3BM1 is the 3rd year code and students will progress to 4BM1 for their 4th year)

Students who wish not to do so, will be enrolled on the third year of the 4-year programme- BE in Mechanical Engineering (3BM4 is the 3rd year code, and students will progress to 4BM4 for their 4th year)

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(3BM1) Third University Examination in Engineering (Mechanical) <i>Integrated 5-Year BE & ME Programme</i>								
Core Modules								
	EE3101	Electromechanical Power Conversion	5	1	1	2 + c/a	3BLE, 3BSE	
	ME301	Fluid Dynamics	5	1	1	2 + c/a	3BG, 3BSE	
	ME304	Mechanical Analysis and Design	5	1	1	2	3BG, 3BSE, 4BEE	
	ME322	Thermodynamics & Heat Transfer	5	1	1	2 + c/a	3BSE, 4BG	
	EE352	Linear Control Systems	5	1	1	2 + c/a	3BLE	
	BME3132	Finite Element Methods in Eng 1	5	1	1	2 + c/a	2BG	
	ME3107	Machine Design Project	10	2	2	c/a		
	ME312	Automated Systems	5	2	2	2 + c/a	3BG,	
	ME352	Mechanical Vibrations	5	2	2	2 + c/a	3BSE ,4BM4	
	ME431	Systems Reliability	5	2	2	2 + c/a	3BM1, 4HF2, 4BSE, 1APE1	IE444
	ME353	Quality Systems	5	2	2	2 + c/a	4BM4	
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(3BM4) Third University Examination in Engineering (Mechanical) 4-Year BE Programme only								
Core Modules								
	EE3101	Electromechanical Power Conversion	5	1	1	2 + c/a	3BLE, 3BSE	
	ME301	Fluid Dynamics	5	1	1	2 + c/a	3BG, 3BSE	
	ME304	Mechanical Analysis and Design	5	1	1	2	3BG, 3BSE, 4BEE	
	ME322	Thermodynamics & Heat Transfer	5	1	1	2 + c/a	3BSE, 4BG	
	EE352	Linear Control Systems	5	1	1	2 + c/a	3BLE	
	BME3132	Finite Element Methods in Eng 1	5	1	1	2 + c/a	2BG	
	CT3112	Professional Skills (<i>online module</i>)	5	2	2	c/a	4BM1, 3BCT, 3BLE1	
	ME3109	Mechanical Professional Experience Programme*	20	2	2	c/a		
Choose 5 ECTS from the following :								
	ME3104	Intro to Regulatory Affairs in Manufacturing (<i>online module</i>)	5	2	2	c/a	4BM1, 3BG	
	ME3102	Project Management for Engineers (<i>online module</i>)	5	2	2	c/a	4BM1, 3BG, 3BP, 3BSE	
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(4BM1) Fourth University Examination in Engineering (Mechanical) <i>Integrated 5-Year BE & ME Programme</i>								
Core Modules								
	ME4109	Materials II	5	1	1	2 + c/a	4BG, 4BSE, SPE	
	BME402	Computational Methods in Engineering Analysis	10	1	1	2 + c/a	4BG, SPE, MEB, MEME, MEES	BME6101
	ME424	Energy Conversion	5	1	1	2 + c/a	4BSE	
	ME402	Adv Mechanical Analysis and Design	5	1	1	2 + c/a	SPE, MEES	
	EE4100	Digital Control	5	1	1	2 + c/a	4BSE	
	ME4111	Mechanical Professional Experience Programme*	20	2	2	c/a		
	CT3112	Professional Skills (<i>online module</i>)	5	2	2	c/a	3BCT, 3BLE1	
Choose 5 ECTS from the following Semester 1 Options**								
	ME4105	Safety Engineering	5	1	1	2	1OP1, 1HH1, 1AP1, 1AP2, 2AP2	IE522
	BME400	Biomechanics	5	1	1	2 + c/a	4BG, MBM	
Choose 5 ECTS from the following Semester 2 Options**								
	ME3104	Intro to Regulatory Affairs in Manufacturing (<i>online module</i>)	5	2	2	c/a	4BM1, 3BG	
	ME3102	Project Management for Engineers (<i>online module</i>)	5	2	2	c/a	4BM1, 3BG, 3BP, 3BSE	
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****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.**

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(4BM4) Fourth University Examination in Engineering (Mechanical) 4-Year BE Programme only								
Core Modules								
	ME4103	Mechanical Engineering Fourth Year Project *	10	1 & 2	2	c/a		
	ME4109	Materials II	5	1	1	2 + c/a	4BG, 4BSE, SPE	
	BME402	Computational Methods in Engineering Analysis	10	1	1	2 + c/a	4BG, SPE, MEB, MEME, MEES	BME6101
	ME424	Energy Conversion	5	1	1	2 + c/a	4BSE	
	ME402	Adv Mechanical Analysis and Design	5	1	1	2 + c/a	SPE, MEES	
	EE4100	Digital Control	5	1	1	2 + c/a	4BSE	
	ME4106	Machine Design Project	5	2	2	c/a		
	ME312	Automated Systems	5	2	2	2 + c/a	3BG,	
	ME352	Mechanical Vibrations	5	2	2	2 + c/a	3BSE ,4BM4	
Choose 5 ECTS from the following Industrial Systems Semester 2 Options								
	ME431	Systems Reliability	5	2	2	2 + c/a	3BM1, 4HF2, 4BSE, 1APE1	IE444
	ME353	Quality Systems	5	2	2	2 + c/a	4BM4	
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