

List of study units offered in to Bachelor of Engineering (Honours) in Mechanical Engineering (part time course)

Year 1

Semester 1

Compulsory Units (All students **must** register for this/these unit/s)

<u>ENR1112</u>	Technical Report Writing	2 ECTS	(NC)
<u>MAT1801</u>	Mathematics for Engineers 1	4 ECTS	(NC)
<u>MEC1101</u>	Engineering Mechanics - Statics	5 ECTS	(NC)
<u>EPC1102</u>	Electrical Engineering Technology	5 ECTS	

Semester 2

Compulsory Units (All students **must** register for this/these unit/s)

<u>MAT1802</u>	Mathematics for Engineers 2	4 ECTS	(NC)
<u>MEC1401</u>	Mechanics of Materials 1	5 ECTS	(NC)
<u>ESE1231</u>	Fundamentals of Electronics	5 ECTS	

Year 2

Semester 1

Year (This/these unit/s start/s in Semester 1 and continue/s in Semester 2)

Compulsory Units (All students **must** register for this/these unit/s)

CIS1067 Computer Programming for Engineers 5 ECTS

Compulsory Units (All students **must** register for this/these unit/s)

MFE1101 Engineering Drawing 5 ECTS (NC)

MME1201 Fundamentals of Material Science 1 5 ECTS (NC)

Semester 2

Compulsory Units (All students **must** register for this/these unit/s)

MME1202 Physical Metallurgy and Diffusion 5 ECTS (NC)

MEC1405 Thermodynamics 1 5 ECTS (NC)

MFE1202 Fundamentals of Manufacturing and Machining 5 ECTS (NC)

Year 3

Semester 1

Compulsory Units (All students **must** register for this/these unit/s)

<u>IME2102</u>	Engineering Metrology	4 ECTS	(NC)
<u>MEC2102</u>	Engineering Mechanics - Particle Dynamics	5 ECTS	(NC)
<u>MEC2340</u>	Fluid Mechanics 1	5 ECTS	(NC)

Semester 2

Compulsory Units (All students **must** register for this/these unit/s)

<u>MEC2201</u>	Machine Dynamics	5 ECTS	(NC)
<u>MFE2201</u>	Advanced Manufacturing Processes	5 ECTS	(NC)
<u>MFE2204</u>	Manufacturing Systems	5 ECTS	(NC)

Year 4

Semester 1

Compulsory Units (All students **must** register for this/these unit/s)

<u>ENR2101</u>	Engineering Systems and Components	4 ECTS	(NC)
<u>MFE2004</u>	Computer Aided Engineering Design (CAED)	4 ECTS	(NC)
<u>MME2203</u>	Ferrous and Non-Ferrous Materials	5 ECTS	(NC)
<u>SOR1211</u>	Probability	2 ECTS	(NC)

Semester 2

Compulsory Units (All students **must** register for this/these unit/s)

<u>ENR2201</u>	Public Speaking	2 ECTS	(NC)
<u>MME2205</u>	Fundamentals of Material Science 2	4 ECTS	(NC)
<u>MME2206</u>	Materials Selection	4 ECTS	(NC)
<u>SCE2201</u>	Numerical Methods for Engineers	4 ECTS	(NC)
<u>SOR1221</u>	Sampling and Estimation	2 ECTS	(NC)

Year 5

Semester 1

Compulsory Units for students choosing Applied Materials in Engineering

MEC3308	Mechanics of Materials 2	5 ECTS	(NC)
MFE3103	Introduction to Mechatronic Systems	5 ECTS	(NC)
MME3202	Chemical Principles for Engineers	4 ECTS	(NC)

Elective Units for students choosing Applied Materials in Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

Students are to choose 4 ECTS from the list given here for SEM1 and that in SEM2:

MAT3815	Mathematics for Engineers 3	4 ECTS
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Compulsory Units for students choosing Applied Mechanics and Thermofluids Engineering

MEC3307	Thermodynamics 2	5 ECTS	(NC)
MEC3308	Mechanics of Materials 2	5 ECTS	(NC)
MEC3341	Fluid Mechanics 2	5 ECTS	(NC)

Elective Units for students choosing Applied Mechanics and Thermofluids

Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

Students are to choose 5 ECTS from the list given here:

MEC3010	Naval Architecture	5 ECTS
MFE3103	Introduction to Mechatronic Systems	5 ECTS
MME3205	Joining Processes	5 ECTS

Compulsory Units for students choosing Industrial and Manufacturing Engineering

ENR3010	Sustainable Engineering	4 ECTS	(NC)
MFE3103	Introduction to Mechatronic Systems	5 ECTS	(NC)
MME3101	Material Degradation	4 ECTS	(NC)

Elective Units for students choosing Industrial and Manufacturing Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

No electives are being offered

Semester 2

Compulsory Units for students choosing Applied Materials in Engineering

MEC3201	Finite Element Analysis	5 ECTS	(NC)
MFE3207	Quality Management and Control	5 ECTS	(NC)

Elective Units for students choosing Applied Materials in Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

Students are to choose 4 ECTS from the list given here for SEM2 and that in SEM1:

MME3109	Materials Engineering in Practice	4 ECTS
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Compulsory Units for students choosing Applied Mechanics and Thermofluids Engineering

MEC3006	Vibration Analysis	5 ECTS	(NC)
MEC3103	Heat Transfer	5 ECTS	(NC)

Elective Units for students choosing Applied Mechanics and Thermofluids Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

No electives are being offered.

Compulsory Units for students choosing Industrial and Manufacturing Engineering

MFE3207 Quality Management and Control 5 ECTS **(NC)**

Elective Units for students choosing Industrial and Manufacturing Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

Students are to choose 15 ECTS from the list given here:

MEC3006 Vibration Analysis 5 ECTS

MFE3002 Sustainable Manufacturing 5 ECTS

MFE3109 Polymer and Composite Manufacturing Techniques 5 ECTS

MFE3203 Mechatronic System Technologies and Design 5 ECTS

MME3201 Engineering Materials 1 5 ECTS

MME3210 Materials Processing Techniques 5 ECTS

IME3201 Advanced Manufacturing and Electronic Technologies 5 ECTS

Year 6

Year (This/these unit/s start/s in Semester 1 and continue/s in Semester 2)

Compulsory Units (All students **must** register for this/these unit/s)

MFE3105	Engineering Design	10 ECTS	(NC)
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Semester 1

Compulsory Units for students choosing Applied Materials in Engineering

ENR3010	Sustainable Engineering	4 ECTS	(NC)
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MME3101	Material Degradation	4 ECTS	(NC)
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MME3205	Joining Processes	5 ECTS	(NC)
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Elective Units for students choosing Applied Materials in Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

Students are to choose 4 ECTS from the list given here for SEM1 and that in SEM2:

No electives are being offered

Compulsory Units for students choosing Applied Mechanics and Thermofluids Engineering

MME3101	Material Degradation	4 ECTS	(NC)
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MAT3815	Mathematics for Engineers 3	4 ECTS	
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SCI3101	Linear Programming and Fourier Transforms	2 ECTS	
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Elective Units for students choosing Applied Mechanics and Thermofluids

Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

No electives are being offered

Elective Units for students choosing Industrial and Manufacturing Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

No electives are being offered

Semester 2

Compulsory Units for students choosing Applied Materials in Engineering

MME3201	Engineering Materials 1	5 ECTS	(NC)
MME3213	Introduction to Surface Engineering	4 ECTS	(NC)

Elective Units for students choosing Applied Materials in Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

Students are to choose 4 ECTS from the list given here for SEM2 and that in SEM1:

No electives are being offered.

Compulsory Units for students choosing Applied Mechanics and Thermofluids Engineering

MEC3108	Fluid Mechanics 3	5 ECTS	(NC)
MEC3201	Finite Element Analysis	5 ECTS	(NC)

Elective Units for students choosing Applied Mechanics and Thermofluids Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

No electives are being offered

Compulsory Units for students choosing Industrial and Manufacturing Engineering

<u>MFE3208</u>	Digital Manufacturing	5 ECTS	(NC)
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Elective Units for students choosing Industrial and Manufacturing Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

Students are to choose 15 ECTS from the list given here:

<u>MEC3006</u>	Vibration Analysis	5 ECTS
<u>MFE3002</u>	Sustainable Manufacturing	5 ECTS
<u>MFE3109</u>	Polymer and Composite Manufacturing Techniques	5 ECTS
<u>MFE3203</u>	Mechatronic System Technologies and Design	5 ECTS
<u>MME3201</u>	Engineering Materials 1	5 ECTS
<u>MME3210</u>	Materials Processing Techniques	5 ECTS
<u>IME3201</u>	Advanced Manufacturing and Electronic Technologies	5 ECTS

Year 7

Semester 1

Compulsory Units for students choosing Applied Materials in Engineering

MME4004	Mechanics of Material Failure	5 ECTS	(NC)
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Elective Units for students choosing Applied Materials in Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

Students are to choose 10 ECTS from the list given here:

MME3211	Principles of Material Characterization	5 ECTS
MME4102	Engineering Materials 2	5 ECTS
MME4109	Introduction to Biomaterials	5 ECTS
MME4216	Nanotechnology and Nanomaterials	5 ECTS

Compulsory Units for students choosing Applied Mechanics and Thermofluids Engineering

MEC4400	Environmental Engineering	5 ECTS	(NC)
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Elective Units for students choosing Applied Mechanics and Thermofluids Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

Students are to choose 10 ECTS from the list given here:

MEC4002	Engineering Analysis of Composite Structures	5 ECTS
MEC4009	Computational Mechanics	5 ECTS
MEC4010	Structural Integrity	5 ECTS
MEC4012	Heating, Ventilation and Air Conditioning	5 ECTS
MEC4013	Computational Fluid Dynamics	5 ECTS
MEC4015	Water Treatment Technology	5 ECTS

<u>MEC4016</u>	Maritime Hydrodynamics, Manoeuvrability and Interaction	5 ECTS
<u>MEC4017</u>	Maritime Resistance and Propulsion	5 ECTS
<u>MEC4018</u>	Ship Structures	5 ECTS
<u>MEC4019</u>	Compressible Aerodynamics and Propulsion Theory for Aerospace	5 ECTS
<u>MEC4100</u>	Robotics	5 ECTS

Compulsory Units for students choosing Industrial and Manufacturing Engineering

<u>IME4107</u>	Industrial Automation	5 ECTS	(NC)
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Elective Units for students choosing Industrial and Manufacturing Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

Students are to choose 10 ECTS from the list given here:

<u>MEC4100</u>	Robotics	5 ECTS
<u>MFE4210</u>	Introduction to Tool Design and Manufacture	5 ECTS
<u>MFE4211</u>	Artificial Intelligence in Engineering	5 ECTS
<u>MFE4212</u>	Computer Simulation in Product and Process Development	5 ECTS
<u>MFE4213</u>	Quality and Reliability Engineering	5 ECTS

Semester 2

Compulsory Units (All students **must** register for this/these unit/s)

<u>ENR4201</u>	Entrepreneurship for Engineers	2 ECTS	
<u>ENR4006</u>	Professional Issues in Engineering	3 ECTS	(NC)

[ENR4301](#) Engineering Management 5 ECTS **(NC)**

Compulsory Units for students choosing Applied Materials in Engineering

[MME3210](#) Materials Processing Techniques 5 ECTS **(NC)**

Elective Units for students choosing Applied Materials in Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

No electives are being offered

Compulsory Units for students choosing Applied Mechanics and Thermofluids Engineering

[MFE3207](#) Quality Management and Control 5 ECTS **(NC)**

Elective Units for students choosing Applied Mechanics and Thermofluids Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

No electives are being offered

Compulsory Units for students choosing Industrial and Manufacturing Engineering

[IME4214](#) Industrial Engineering Systems 5 ECTS **(NC)**

Elective Units for students choosing Industrial and Manufacturing Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

No electives are being offered

Year 8

Year (This/these unit/s start/s in Semester 1 and continue/s in Semester 2)

Compulsory Units (All students **must** register for this/these unit/s)

ENR4200	Engineering Project	20 ECTS	(NC)
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Semester 1

Compulsory Units for students choosing Applied Materials in Engineering

SCE3114	Introduction to Control Engineering	5 ECTS
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Elective Units for students choosing Applied Materials in Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

Students are to choose 5 ECTS from the list given here:

MME3211	Principles of Material Characterization	5 ECTS
MME4102	Engineering Materials 2	5 ECTS
MME4109	Introduction to Biomaterials	5 ECTS
MME4216	Nanotechnology and Nanomaterials	5 ECTS

Compulsory Units for students choosing Applied Mechanics and Thermofluids Engineering

SCE3114	Introduction to Control Engineering	5 ECTS
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Elective Units for students choosing Applied Mechanics and Thermofluids Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

Students are to choose 5 ECTS from the list given here:

<u>MEC4002</u>	Engineering Analysis of Composite Structures	5 ECTS
<u>MEC4009</u>	Computational Mechanics	5 ECTS
<u>MEC4010</u>	Structural Integrity	5 ECTS
<u>MEC4012</u>	Heating, Ventilation and Air Conditioning	5 ECTS
<u>MEC4013</u>	Computational Fluid Dynamics	5 ECTS
<u>MEC4015</u>	Water Treatment Technology	5 ECTS
<u>MEC4016</u>	Maritime Hydrodynamics, Manoeuvrability and Interaction	5 ECTS
<u>MEC4017</u>	Maritime Resistance and Propulsion	5 ECTS
<u>MEC4018</u>	Ship Structures	5 ECTS
<u>MEC4019</u>	Compressible Aerodynamics and Propulsion Theory for Aerospace	5 ECTS
<u>MEC4100</u>	Robotics	5 ECTS

Compulsory Units for students choosing Industrial and Manufacturing Engineering

<u>MFE4110</u>	Maintenance Management	5 ECTS
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Elective Units for students choosing Industrial and Manufacturing Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

Students are to choose 5 ECTS from the list given here:

<u>MEC4100</u>	Robotics	5 ECTS
<u>MFE4210</u>	Introduction to Tool Design and Manufacture	5 ECTS
<u>MFE4211</u>	Artificial Intelligence in Engineering	5 ECTS
<u>MFE4212</u>	Computer Simulation in Product and Process Development	5 ECTS
<u>MFE4213</u>	Quality and Reliability Engineering	5 ECTS

Semester 2

Elective Units for students choosing Applied Materials in Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)
No electives are being offered

Elective Units for students choosing Applied Mechanics and Thermofluids Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

No electives are being offered

Elective Units for students choosing Industrial and Manufacturing Engineering (Elective units are offered subject to availability, a minimum number of student registrations and time-table constraints)

No electives are being offered