

NUS DEPARTMENT OF MECHANICAL ENGINEERING

Summary of ME Modular Requirements and Credits (For student matriculating from AY19/20 & AY20/21)

MODULAR REQUIREMENTS	MCS	TERM	NOTES
UNIVERSITY LEVEL REQUIREMENTS	20		
General Education (GE) (5 Modules, each of 4MCs) – Human Cultures (GEH), Quantitative Reasoning (GER), Thinking and Expression (GET), Singapore Studies (GES), Asking Questions (GEQ)	20		
UNRESTRICTED ELECTIVE MODULES (UEM)	32		
UEM 1:			
UEM 2:			
UEM 3:			
UEM 4:			
UEM 5:			
UEM 6:			
UEM 7:			
UEM 8:			
PROGRAMME REQUIREMENTS			
Faculty Requirements	6		
ES2531 Critical Thinking and Writing	4		
EG2401A Engineering Professionalism	2		
ES1xxx English ¹	(0)		
Foundational Modules	36		
MA1505 Mathematics I	4		
MA1512 Differential Equations for Engineering	2		
MA1513 Linear Algebra & Differential Equations	2		
CS1010E Programming Methodology	4		
ME1102 Engineering Principles & Practice I	4		
ME2104 Engineering Principles & Practice II	4		
EG1311 Design and Make	4		
IE2141 Systems Thinking and Dynamics	4		
EE2211 Introduction to Machine Learning	4		
MLE1010 Introduction to Machine Learning	4		
PROGRAMME REQUIREMENTS			
ME Essential Modules:			
ME2102 Engineering Innovation and Modelling	4	Odd/Even	
ME2112 Strength of Materials	4	Odd/Even	
ME2115 Mechanics Of Machines	4	Odd/Even	
ME2121 Engineering Thermodynamics and Heat Transfer	4	Odd/Even	
ME2134 Fluid Mechanics I	4	Odd/Even	
ME2142 Feedback Control Systems	4	Odd/Even	
ME3162 Manufacturing Processes	4	Odd/Even	
ME4101B Mechanical Systems Design OR ME4101A B.Eng Dissertation (Both modules are over 2 semesters)	8	Odd/Even	
EG3611A Industrial Attachment ²	10		Poly & DDP Students will take free electives in replacement of IA
MA1301 Introductory Mathematics (For direct poly intake only) ³	0		
ME Technical Electives	12		
Pathway Requirements⁴	8		
TOTAL	160		

Please check the current schedule regularly via <https://www.eng.nus.edu.sg/me/undergraduate/beng-me/timetables/> for possible changes if any.

¹ For students who have not passed or been exempted from the Qualifying English Test at the time of admission to the Faculty, they will have to read ES1000 and/or ES1103.

This will be decided by CELC. ES1000 carries zero (0) MCs but students will have to pass in order to graduate while ES1103 carries 4 MCs to be used to fulfil the UEMs. Students

are recommended to take the English module in the 1st semester, as ES1103 is a pre-requisite of ES2531

² Students on IA are allowed to read up to maximum of two (2) evening modules in the semester taking IA. However, this is optional and students who are not reading evening

modules during IA may plan for these modules to be read in subsequent semesters.

³ Accredited Polytechnic Direct Entry Students will have to take MA1301 Introductory Mathematics to be counted towards Free Elective.

⁴ Pathway Requirements

- a) PPP -> ME4102 & ME4103
- b) RfP -> 2 Level 5000 modules
- c) iDP -> iDP requirements

Sample Semester Schedule for ME students (matriculating from AY2019/2020 & AY20/21) – Industrial Attachment in Sem 5

Semester 1	MCs	Semester 2	MCs
MA1505 Mathematics I	4	MA1512 Differential Equations for Engineering	2
CS1010E Programming Methodology	4	MA1513 Linear Algebra & Differential Equations	2
GER1000 Quantitative Reasoning (GE 1 - QR) ¹	4	EG1311 Design and Make	4
ME1102 Engineering Principles & Practice I	4	ME2104 Engineering Principles & Practice II	4
Unrestricted Elective Module 1 ²	4	GEQ1000 Asking Questions (GE 2 – GEQ) ¹	4
		GET Thinking & Expression (GE 3) ¹	4
Sub-total	20	Sub-total	20
Semester 3	MCs	Semester 4	MCs
MLE1010 Materials Engineering Principles & Practice	4	IE2141 Systems Thinking and Dynamics	4
EE2211 Introduction to Machine Learning	4	ME2102 Engineering Innovation and Modelling	4
ME2112 Strength of Materials	4	ME2121 Engineering Thermodynamics and Heat Transfer	4
ME2134 Fluid Mechanics I	4	ME2115 Mechanics of Machines	4
ME2162 Manufacturing Processes	4	GE 4 ¹	4
ES2531 Critical Thinking and Writing	4	Unrestricted Elective Module 2 ²	4
Sub-total	24	Sub-total	24
Semester 5	MCs	Semester 6	MCs
EG3611A Industrial Attachment	10	ME2142 Feedback Control Systems	4
ME Technical Elective 1	4	EG2401A Engineering Professionalism	2
ME Technical Elective 2/Unrestricted Elective Module 3 ²	4	ME Technical Elective 2/Unrestricted Elective Module 3 ²	4
		Unrestricted Elective Module 4 ²	4
		Unrestricted Elective Module 5 ²	4
		GE 5 ¹	4
Sub-total	18	Sub-total	22
Semester 7	MCs	Semester 8	MCs
ME4101B Mechanical Systems Design OR ME4101A B.Eng. Dissertation	4	ME4101B Mechanical Systems Design OR ME4101A B.Eng. Dissertation	4
Pathway Requirement 1 ⁴	4	Pathway Requirement 2 ⁴	4
ME Technical Elective 3	4	Unrestricted Elective Module 7 ²	4
Unrestricted Elective Module 6 ²	4	Unrestricted Elective Module 8 ²	4
Sub-total	16	Sub-total	16
Total			160

¹ Students are strongly encouraged to complete all the five GE modules latest by the end of Year 2.

² UEM can be read in any semester and can be any modules out of your major requirements.

³ Students on IA are allowed to read up to maximum of two (2) evening modules in the semester taking IA. However, this is optional and students who are not reading evening modules during IA may plan for these modules to be read in subsequent semesters.

⁴ Pathway Requirements

a) PPP -> ME4102 & ME4103

b) RfP -> 2 Level 5000 modules

c) iDP -> iDP requirements

Please note that this semester schedule is only a sample, you can customize your own schedule taking into considerations the semester the modules are offered and the pre- and co-requisites of a module.

Sample Semester Schedule for ME students (matriculating from AY2019/2020 & AY20/21) – Industrial Attachment in Sem 6

Semester 1	MCs	Semester 2	MCs
MA1505 Mathematics I	4	MA1512 Differential Equations for Engineering	2
CS1010E Programming Methodology	4	MA1513 Linear Algebra & Differential Equations	2
GER1000 Quantitative Reasoning (GE 1 - QR) ¹	4	EG1311 Design and Make	4
ME1102 Engineering Principles & Practice I	4	ME2104 Engineering Principles & Practice II	4
Unrestricted Elective Module 1 ²	4	GEQ1000 Asking Questions (GE 2 – GEQ) ¹	4
		GET Thinking & Expression (GE 3) ¹	4
Sub-total	20	Sub-total	20
Semester 3	MCs	Semester 4	MCs
MLE1010 Materials Engineering Principles & Practice	4	IE2141 Systems Thinking and Dynamics	4
ME2102 Engineering Innovation and Modelling	4	ME2112 Strength of Materials	4
ME2121 Engineering Thermodynamics and Heat Transfer	4	ME2134 Fluid Mechanics I	4
ME2115 Mechanics of Machines	4	ME2162 Manufacturing Processes	4
EE2211 Introduction to Machine Learning	4	Unrestricted Elective Module 2 ²	4
ES2531 Critical Thinking and Writing	4	GE 4 ¹	4
Sub-total	24	Sub-total	24
Semester 5	MCs	Semester 6	MCs
ME2142 Feedback Control Systems	4	EG3611A Industrial Attachment	10
EG2401A Engineering Professionalism	2	ME Technical Elective 1	4
ME Technical Elective 2/Unrestricted Elective Module 3 ²	4	ME Technical Elective 2/Unrestricted Elective Module 3 ²	4
Unrestricted Elective Module 4 ²	4		
Unrestricted Elective Module 5 ²	4		
GE 5 ¹	4		
Sub-total	22	Sub-total	18
Semester 7	MCs	Semester 8	MCs
ME4101B Mechanical Systems Design OR ME4101A B.Eng. Dissertation	4	ME4101B Mechanical Systems Design OR ME4101A B.Eng. Dissertation	4
Pathway Requirement 1 ⁴	4	Pathway Requirement 2 ⁴	4
ME Technical Elective 3	4	Unrestricted Elective Module 7 ²	4
Unrestricted Elective Module 6 ²	4	Unrestricted Elective Module 8 ²	4
Sub-total	16	Sub-total	16
Total			160

¹ Students are strongly encouraged to complete all the five GE modules latest by the end of Year 2.

² UEM can be read in any semester and can be any modules out of your major requirements.

³ Students on IA are allowed to read up to maximum of two (2) evening modules in the semester taking IA. However, this is optional and students who are not reading evening modules during IA may plan for these modules to be read in subsequent semesters.

⁴ Pathway Requirements

- a) PPP -> ME4102 & ME4103
- b) RfP -> 2 Level 5000 modules
- c) iDP -> iDP requirements

Please note that this semester schedule is only a sample, you can customize your own schedule taking into considerations the semester the modules are offered and the pre- and co-requisites of a module.

Sample Semester Schedule for Accredited Poly Direct Entry ME students (matriculating from AY19/20 & AY20/21)

Year 2			
Semester 3	MCs	Semester 4	MCs
MA1301 Introductory Mathematics ¹	4	MA1505 Mathematics I	4
MLE1010 Materials Engineering Principles & Practice	4	ME2121 Engineering Thermodynamics and Heat Transfer	4
ME2112 Strength of Materials	4	ME2115 Mechanics of Machines	4
GER1000 Quantitative Reasoning (GE 1 - QR) ¹	4	GEQ1000 Asking Questions (GE 2 – GEQ) ¹	4
Unrestricted Elective Module 1 ²	4	GET Thinking & Expression (GE 3) ¹	4
ES1xxx English ³	-		
Sub-total	20	Sub-total	20
Year 2			
Semester 5	MCs	Semester 6	MCs
MA1512 Differential Equations for Engineering	2	IE2141 Systems Thinking and Dynamics	4
MA1513 Linear Algebra & Differential Equations	2	ME2142 Feedback Control Systems	4
EE2211 Introduction to Machine Learning	4	EG2401A Engineering Professionalism	2
ME2134 Fluid Mechanics I	4	ME Technical Elective 1	4
ME2162 Manufacturing Processes	4	ME Technical Elective 2	4
ES2531 Critical Thinking and Writing	4	GE 5 ¹	4
GE 4 ¹	4		
Sub-total	24	Sub-total	22
Year 2			
Semester 7	MCs	Semester 8	MCs
ME4101B Mechanical Systems Design OR ME4101A B.Eng. Dissertation	4	ME4101B Mechanical Systems Design OR ME4101A B.Eng. Dissertation	4
Pathway Requirement 1 ⁴	4	Pathway Requirement 2 ⁴	4
ME Technical Elective 3	4	Free Elective 3 ²	4
Free Elective 2 ²	2	Unrestricted Elective Module 3 ²	4
Unrestricted Elective Module 2 ²	4		
Sub-total	18	Sub-total	16
Total			120

¹ MA1301 will be counted towards Free Elective.

² These modules (GE, Free Electives, UEM) can be read in any semester.

³ Either ES1000 and/or ES1103 depending on the results of your QET and decided by CELC.

⁴ Pathway Requirements

- a) PPP -> ME4102 & ME4103
- b) RfP -> 2 Level 5000 modules
- c) iDP -> iDP requirements

Please note that this semester schedule is only a sample, you can customize your own schedule taking into considerations the semester the modules are offered and the pre- and co-requisites of a module.