

# NUS DEPARTMENT OF MECHANICAL ENGINEERING

Summary of ME Modular Requirements and Credits (For student matriculating from AY17/18 & AY18/19)

MODULAR REQUIREMENTS	MCS	TERM	NOTES
<b>UNIVERSITY LEVEL REQUIREMENTS</b>		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		
<b>UNRESTRICTED ELECTIVE MODULES (UEM)</b>		32	
UEM 1:			
UEM 2:			
UEM 3:			
UEM 4:			
UEM 5:			
UEM 6:			
UEM 7:			
UEM 8:			
<b>PROGRAMME REQUIREMENTS</b>			
<b>Faculty Requirements</b>		6	
ES1531 Critical Thinking and Writing	4		
EG2401 Engineering Professionalism	2		
ES1xxx English <sup>1</sup>	(0)		
<b>Foundational Modules</b>		28	
MA1505 Mathematics I	4		
MA1512 Differential Equations for Engineering	2		
MA1513 Linear Algebra & Differential Equations	2		
PC1431 Physics IE	4		
CS1010E Programming Methodology	4		
EG1111 Engineering Principles & Practice I	6		
EG1112 Engineering Principles & Practice II	6		
<b>Mechanical Engineering Major Requirements</b>			
<b>ME Essential Modules:</b>		56	
ME2102 Engineering Innovation and Modelling	4	Even	
ME2112 Strength of Materials	4	Odd	
ME2121 Engineering Thermodynamics	4	Even	
ME2134 Fluids Mechanics I	4	Odd	
ME2142 Feedback Control Systems	4	Odd/Even	
ME2151 Principles of Mechanical Engineering Materials	4	Odd	
ME2115 Mechanics of Machines	4	Even	
ME3162 Manufacturing Processes	4	Odd	
ME3103 Mechanical Systems Design	6	Odd/Even	Students in iDCP will take EG3301R in replacement of ME3103
ME4101A B.Eng Dissertation (Over 2 semesters)	8	Odd/Even	Students in iDCP will take EG4301 in replacement of ME4101A
EG3611a Industrial Attachment <sup>3</sup>	10		Poly Students and students in GEP/DDP will take free electives in replacement of IA
<b>MA1301 Introductory Mathematics (For direct poly intake only)<sup>2</sup></b>			
<b>ME Technical Electives</b>		10	
<b>Pathway Requirements</b>		8	
<b>TOTAL</b>		<b>160</b>	

<sup>1</sup>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 ES1531.

<sup>2</sup>Accredited Polytechnic Direct Entry Students will have to take MA1301 Introductory Mathematics to be counted towards Free Elective.

<sup>3</sup>Students on IA are allowed to read a maximum of 8MCs of evening modules in the semester taking IA. However this is optional and students who are not reading evening modules during IA may plan the 8MCs of workload in other semesters.

Please check the current schedule regularly via <http://me.nus.edu.sg/current-students/sample-schedules/> for possible changes if any.

Sample Semester Schedule for ME students (matriculating from AY17/18 & AY18/19) – Industrial Attachment in Sem 5

Semester 1		MCS	Semester 2		MCS
MA1505	Mathematics I	4	MA1512	Differential Equations for Engineering	2
PC1431	Physics IE	4	MA1513	Linear Algebra & Differential Equations	2
GER1000	Quantitative Reasoning (GE 1 - QR) <sup>1</sup>	4	CS1010E	Programming Methodology	4
EG1111	Engineering Principles & Practice I	6	EG1112	Engineering Principles & Practice II	6
Unrestricted Elective Module 1 <sup>2</sup>		4	GEQ1000	Asking Questions (GE2 – GEQ) <sup>1</sup>	4
			GE3 – GET	Thinking & Expression <sup>1</sup>	4
Sub-total		22	Sub-total		22
Semester 3			Semester 4		
ME2112	Strength of Materials	4	ME2102	Engineering Innovation and Modelling	4
ME2151	Principles of Mechanical Engineering Materials	4	ME2121	Engineering Thermodynamics	4
ME2134	Fluid Mechanics I	4	ME2115	Mechanics of Machines	4
ME3162	Manufacturing Processes	4	GE 4 <sup>1</sup>		4
ES1531	Critical Thinking and Writing	4	Unrestricted Elective Module 2 <sup>2</sup>		4
Sub-total		20	Sub-total		20
Semester 5			Semester 6		
EG3611a	Industrial Attachment <sup>3</sup>	10	ME3103	Mechanical Systems Design	6
ME Technical Elective 1		4	ME2142	Feedback Control Systems	4
ME Technical Elective 2 / Unrestricted Elective Module 3 <sup>2</sup>		4	EG2401	Engineering Professionalism	2
			GE 5 <sup>1</sup>		4
			ME Technical Elective 3		4
			Unrestricted Elective Module 3 <sup>2</sup>		4
Sub-total		18	Sub-total		24
Semester 7			Semester 8		
ME4101A	B.Eng. Dissertation	4	ME4101A	B.Eng. Dissertation (cont'd)	4
Pathway Requirements		4	Pathway Requirements		4
Unrestricted Elective Module 4 <sup>2</sup>		4	Unrestricted Elective Module 7 <sup>2</sup>		4
Unrestricted Elective Module 5 <sup>2</sup>		4	Unrestricted Elective Module 8 <sup>2</sup>		4
Unrestricted Elective Module 6 <sup>2</sup>		4			
Sub-total		20	Sub-total		16
Total					162

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

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

<sup>3</sup>Students on IA are allowed to read a maximum of 8MCS of evening modules in the semester taking IA. However this is optional and students who are not reading evening modules during IA may plan the 8MCS of workload in other semesters.

Please note that this semester schedule is only a sample, you can customized 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 AY17/18 & AY18/19) – Industrial Attachment in Sem 6

Semester 1		MCS	Semester 2		MCS
MA1505	Mathematics I	4	MA1512	Differential Equations for Engineering	2
PC1431	Physics IE	4	MA1513	Linear Algebra & Differential Equations	2
GER1000	Quantitative Reasoning (GE 1 - QR) <sup>1</sup>	4	CS1010E	Programming Methodology	4
EG1111	Engineering Principles & Practice I	6	EG1112	Engineering Principles & Practice II	6
Unrestricted Elective Module 1 <sup>2</sup>		4	GEQ1000	Asking Questions (GE2 – GEQ) <sup>1</sup>	4
			GE3 – GET	Thinking & Expression <sup>1</sup>	4
Sub-total		22	Sub-total		22
Semester 3			Semester 4		
ME2112	Strength of Materials	4	ME2102	Engineering Innovation and Modelling	4
ME2151	Principles of Mechanical Engineering Materials	4	ME2121	Engineering Thermodynamics	4
ME2134	Fluid Mechanics I	4	ME2115	Mechanics of Machines	4
ME3162	Manufacturing Processes	4	GE 4 <sup>1</sup>		4
ES1531	Critical Thinking and Writing	4	Unrestricted Elective Module 2 <sup>2</sup>		4
Sub-total		20	Sub-total		20
Semester 5			Semester 6		
ME3103	Mechanical Systems Design	6	EG3611a	Industrial Attachment <sup>3</sup>	10
ME2142	Feedback Control Systems	4	ME Technical Elective 2		4
EG2401	Engineering Professionalism	2	ME Technical Elective 3		4
GE 5 <sup>1</sup>		4	Unrestricted Elective Module 3 <sup>2</sup>		
ME Technical Elective 1		4			
Unrestricted Elective Module 3 <sup>2</sup>		4			
Sub-total		24	Sub-total		18
Semester 7			Semester 8		
ME4101A	B.Eng. Dissertation	4	ME4101A	B.Eng. Dissertation (cont'd)	4
Pathway Requirements		4	Pathway Requirements		4
Unrestricted Elective Module 4 <sup>2</sup>		4	Unrestricted Elective Module 7 <sup>2</sup>		4
Unrestricted Elective Module 5 <sup>2</sup>		4	Unrestricted Elective Module 8 <sup>2</sup>		4
Unrestricted Elective Module 6 <sup>2</sup>		4			
Sub-total		20	Sub-total		16
Total					162

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

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

<sup>3</sup>Students on IA are allowed to read a maximum of 8MCS of evening modules in the semester taking IA. However this is optional and students who are not reading evening modules during IA may plan the 8MCS of workload in other semesters.

Please note that this semester schedule is only a sample, you can customized 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 in AY17/18 & AY18/19)

Year 2			
Semester 3	MCs	Semester 4	MCs
MA1301 Introductory Mathematics <sup>1</sup>	4	MA1505 Mathematics I	4
PC1431 Physics IE	4	ME2121 Engineering Thermodynamics	4
ME2151 Principles of Mechanical Engineering Materials	4	ME2115 Mechanics of Machines	4
ME2112 Strength of Materials	4	GEQ1000 Asking Questions (GE 2 – GEQ) <sup>2</sup>	4
GER1000 Quantitative Reasoning (GE 1 - QR) <sup>2</sup>	4	GET Thinking & Expression (GE 3) <sup>2</sup>	4
ES1xxx English <sup>3</sup>	-		
Sub-Total	20	Sub-Total	20
Year 3			
Semester 5	MCs	Semester 6	MCs
MA1512 Differential Equations for Engineering	2	EG2401 Engineering Professionalism	2
MA1513 Linear Algebra & Differential Equations	2	ME2142 Feedback Control Systems	4
ME2134 Fluid Mechanics I	4	ME3103 Mechanical Systems Design	6
ME3162 Manufacturing Processes	4	ME Technical Elective 1	4
ES1531 Critical Thinking and Writing	4	ME Technical Elective 2	4
GE 4 <sup>2</sup>	4	GE 5 <sup>2</sup>	4
Sub-Total	20	Sub-Total	24
Year 4			
Semester 7	MCs	Semester 8	MCs
ME4101A B.Eng. Dissertation	4	ME4101A B.Eng. Dissertation (cont'd)	4
ME Technical Elective 3	4	Pathway Requirements	4
Pathway Requirements	4	Free Elective 3 <sup>2</sup>	2
Free Elective 2 <sup>2</sup>	4	Unrestricted Elective Module 2 <sup>2</sup>	4
Unrestricted Elective Module 1 <sup>2</sup>	4	Unrestricted Elective Module 3 <sup>2</sup>	4
Sub-Total	20	Sub-Total	18
Total			122

<sup>1</sup>MA1301 will be counted towards Free Elective.

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

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

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