

## NUS DEPARTMENT OF MECHANICAL ENGINEERING

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

MODULAR REQUIREMENTS	MCS	TERM	NOTES
<b>UNIVERSITY LEVEL REQUIREMENTS</b>		<b>20</b>	
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>		<b>32</b>	
<i>UEM 1:</i>			
<i>UEM 2:</i>			
<i>UEM 3:</i>			
<i>UEM 4:</i>			
<i>UEM 5:</i>			
<i>UEM 6:</i>			
<i>UEM 7:</i>			
<i>UEM 8:</i>			
<b>PROGRAMME REQUIREMENTS</b>			
<b>Faculty Requirements</b>		<b>6</b>	
ES1531 Critical Thinking and Writing	4		
EG2401 Engineering Professionalism	2		
ES1xxx English <sup>1</sup>	(0)		
<b>Foundational Modules</b>		<b>28</b>	
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>		<b>58</b>	
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	
ME3112 Mechanics of Machines	4	Even	
ME3162 Manufacturing Processes	4	Odd	
ME3103 Mechanical Systems Design	8	Odd/Even	Students in iDCP will take EG3301R in replacement of
ME4101A B.Eng Dissertation (Over 2 semesters)	8	Odd/Even	Students in iDCP will take EG4301 in replacement of ME4101A
EG3611a Industrial Attachment	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>		<b>8</b>	
<b>Pathway Requirements</b>		<b>8</b>	
<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.

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 onwards) – 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	ME3112	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	10	ME3103	Mechanical Systems Design	8
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 2 / Unrestricted Elective Module 3 <sup>2</sup>		4
Sub-total		18	Sub-total		22
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
<b>Total</b>					<b>160</b>

<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.

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 onwards) – 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	ME3112	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	8	EG3611a	Industrial Attachment	10
ME2142	Feedback Control Systems	4	ME Technical Elective 1		4
EG2401	Engineering Professionalism	2	ME Technical Elective 2 / Unrestricted Elective Module 3 <sup>2</sup>		4
GE 5 <sup>1</sup>		4			
ME Technical Elective 2 / Unrestricted Elective Module 3 <sup>2</sup>		4			
Sub-total		22	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
<b>Total</b>					<b>160</b>

<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.

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)**

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	ME3112	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>	-			
<b>Sub-Total</b>		<b>20</b>	<b>Sub-Total</b>		<b>20</b>
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	8
ME3162	Manufacturing Processes	4	ME Technical Elective 1		4
ES1531	Critical Thinking and Writing	4	GE 5 <sup>2</sup>		4
GE 4 <sup>2</sup>		4			
<b>Sub-Total</b>		<b>20</b>	<b>Sub-Total</b>		<b>22</b>
Year 4					
Semester 7		MCs	Semester 8		MCs
ME4101A	B.Eng. Dissertation	4	ME4101A	B.Eng. Dissertation (cont'd)	4
ME Technical Elective 2		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
<b>Sub-Total</b>		<b>20</b>	<b>Sub-Total</b>		<b>18</b>
<b>Total</b>					<b>120</b>

<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.