

## NUS DEPARTMENT OF MECHANICAL ENGINEERING

Summary of ME Modular Requirements and Credits (For student matriculating from **AY13/14** onwards)

MODULAR REQUIREMENTS		MCS	TERM <sup>4</sup>	NOTES
<b>UNIVERSITY LEVEL REQUIREMENTS</b>			<b>20</b>	
General Education Modules (GEM)		8		
<i>GEM 1 (From Group B: Humanities and Social Sciences):</i>				
<i>GEM 2:</i>				
Singapore Studies (SS) Module		4		
Breadth		8		
<i>Breadth 1:</i>				
<i>Breadth 2:</i>				
<b>UNRESTRICTED ELECTIVE MODULES (UEM)</b>			<b>20</b>	
<i>UEM 1:</i>				
<i>UEM 2:</i>				
<i>UEM 3:</i>				
<i>UEM 4:</i>				
<i>UEM 5:</i>				
ES2331	Communicating Engineering <sup>2</sup>	(4 MCs as Breadth or UEM)		
MA1301	Introductory Mathematics ( <i>For direct poly intake only</i> ) <sup>3</sup>	(4 MCs as Breadth or UEM)		
<b>PROGRAMME REQUIREMENTS</b>				
<b>Faculty Requirements</b>			<b>10</b>	
ES1531	Critical Thinking and Writing ( <i>formerly EG1413</i> )	4		
HR2002	Human Capital in Organisation	3		
EG2401	Engineering Professionalism	3		
ES1xxx	English <sup>1</sup>	(0)		
<b>Foundational Modules</b>			<b>23</b>	
MA1505	Mathematics I	4		
MA1506	Mathematics II	4		
EG1108	Electrical Engineering	3		
EG1109	Statics and Mechanics of Materials	4		
PC1431	Physics IE	4		
CS1010E	Programming Methodology	4		
<b>Mechanical Engineering Major Requirements</b>				
<b>ME Essential Modules:</b>			<b>41</b>	
ME2113	Mechanics of Materials I	3	Odd	
ME2114	Mechanics of Materials II	3	Even	
ME2121	Engineering Thermodynamics	3	Odd	
ME2134	Fluids Mechanics I	4	Odd	
ME2135	Fluids Mechanics II	4	Even	
ME2142	Feedback Control Systems	4	Odd	
ME2143	Sensors and Actuators	4	Even	
ME2151	Principles of Mechanical Engineering Materials	4	Odd	
ME3112	Mechanics of Machines	4	Odd	
ME3122	Heat Transfer	4	Odd	
ME3162	Manufacturing Processes	4	Odd	
<b>ME Design and Project Modules:</b>			<b>27</b>	
ME2101	Fundamentals of Mechanical Design	4	Even	
ME2103	Engineering Visualisation and Modelling	3	Odd	
ME3101	Mechanical Systems Design I	4	Odd	
ME3102	Mechanical Systems Design II	4	Even	
ME4101	B.Eng Dissertation (Over 2 semesters)	12		
<b>ME Technical Electives</b>			<b>20</b>	
<i>ME TE 1:</i>				
<i>ME TE 2:</i>				
<i>ME TE 3:</i>				
<i>ME TE 4:</i>				
<i>ME TE 5:</i>				
<b>TOTAL</b>			<b>161</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 ES1102. This will be decided by CELC. The modules carry zero (0) MCs but students will have to pass in order to graduate. Students are recommended to take the English module in the 1st semester, as ES1102 is a pre-requisite of ES1531.

<sup>2</sup>ES2331 is a compulsory 4 MCs module, taken on a graded basis (i.e. cannot be S/U) and can be counted towards either Breadth or UEM requirements.

<sup>3</sup>Accredited Polytechnic Direct Entry Students will have to take MA1301 Introductory Mathematics to be counted towards Breadth or UEM requirements.

<sup>4</sup>Please check the current schedule regularly as there may changes in the term the modules are being offered.

Some important points to note for graduation (please see the following links for the requirements: <http://www.nus.edu.sg/registrar/edu/UG/graduation.html> and <http://www.nus.edu.sg/registrar/nusbulletin/faculty-engineering>)

- Maximum candidature of 5 years
- Pass (or have been exempted) from the requisite English for Academic Purposes module
- Limit of 60 MCs for Level-1000 Modules
- A minimum of 65% of Programme Requirements credits must be graded and factored into the CAP. This translates to 79 MCs.
- Must satisfy the NUS' residency requirement, i.e. must complete at least 80 MCs, factored into the CAP, at NUS.

**Sample Semester Schedule for ME students (matriculating from AY13/14 onwards)**

Semester 1		MCs	Semester 2		MCs
MA1505	Mathematics I	4	MA1506	Mathematics II	4
PC1431	Physics IE	4	ES1531	Critical Thinking and Writing	4
CS1010E	Programming Methodology	4	EG1108	Electrical Engineering	3
EG1109	Statics and Mechanics of Materials	4	Breadth 1 <sup>1</sup>		4
SS <sup>1</sup>		4	GEM B <sup>1</sup>		4
Sub-total		20	Sub-total		19
Semester 3			Semester 4		
ME2103	Engineering Visualisation and Modelling	3	ME2101	Fundamentals of Mechanical Design	4
ME2113	Mechanics of Materials I	3	ME2114	Mechanics of Materials II	3
ME2121	Engineering Thermodynamics	3	ME2135	Fluid Mechanics II	4
ME2151	Principles of Mechanical Engineering Materials	4	ME2143	Sensors and Actuators	4
ME2134	Fluid Mechanics I	4	GEM A <sup>1</sup>		4
ES2331 <sup>2</sup>	Communicating Engineering	4			
Sub-total		21	Sub-total		19
Semester 5			Semester 6		
ME2142	Feedback Control Systems	4	EG2401	Engineering Professionalism	3
ME3101	Mechanical Systems Design I	4	ME3102	Mechanical Systems Design II	4
ME3112	Mechanics of Machines	4	HR2002	Human Capital in Organizations	3
ME3122	Heat Transfer	4	ME Technical Elective 1		4
ME3162	Manufacturing Processes	4	ME Technical Elective 2		4
			Unrestricted Elective Module 1 or Breadth 2 <sup>2,1</sup>		4
Sub-total		20	Sub-total		22
Semester 7			Semester 8		
ME4101	B.Eng. Dissertation	6	ME4101	B.Eng. Dissertation	6
	ME Technical Elective 3	4		ME Technical Elective 5	4
	ME Technical Elective 4	4		Unrestricted Elective Module 4	4
	Unrestricted Elective Module 2	4		Unrestricted Elective Module 5	4
	Unrestricted Elective Module 3	4			
Sub-total		22	Sub-total		18
<b>Total</b>					<b>161</b>

<sup>1</sup>These ULR modules (GEM, SS, UEM, Breadth) can be read in any semester. Breadth modules are strictly modules read outside the student's faculty.

<sup>2</sup> ES2331 can be counted towards Breadth or UEM requirements, i.e. it can count as UEM 1 or Breadth 2. Note that ES1531 is a pre-requisite of ES2331.

For more details, please refer to the section on **English Modules** at [http://www.eng.nus.edu.sg/ugrad/MS\\_timetable.html](http://www.eng.nus.edu.sg/ugrad/MS_timetable.html).

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.

**Useful Websites and Links**

Description	Website Address / Email Address
Faculty of Engineering – Undergraduate Office	<a href="http://www.eng.nus.edu.sg/ugrad/">http://www.eng.nus.edu.sg/ugrad/</a> <a href="mailto:engbox28@nus.edu.sg">engbox28@nus.edu.sg</a>
ME Undergraduate	<a href="http://www.me.nus.edu.sg/current-students/program-overview">http://www.me.nus.edu.sg/current-students/program-overview</a> <a href="mailto:enquire_me@nus.edu.sg">enquire_me@nus.edu.sg</a>
Centralised Online Registration System (CORS)	<a href="http://www.cors.nus.edu.sg/">http://www.cors.nus.edu.sg/</a>
Office of Student Affairs (OSA)	<a href="http://www.nus.edu.sg/osa/">http://www.nus.edu.sg/osa/</a>
Online Degree Requirement Check	<a href="https://www.eng9.nus.edu.sg/degree/login.html">https://www.eng9.nus.edu.sg/degree/login.html</a>
Student Exchange Programme	<a href="http://www.eng.nus.edu.sg/sep/">http://www.eng.nus.edu.sg/sep/</a>
Double-Degree Programme	<a href="http://www.eng.nus.edu.sg/ugrad/SP_ddp.html">http://www.eng.nus.edu.sg/ugrad/SP_ddp.html</a>
Enhancement Programmes (IA, VIP etc)	<a href="http://www.eng.nus.edu.sg/undergrad/epmc/ep.html">http://www.eng.nus.edu.sg/undergrad/epmc/ep.html</a>
NUS Overseas Colleges	<a href="http://www.overseas.nus.edu.sg/">http://www.overseas.nus.edu.sg/</a>
University Scholars Programme	<a href="http://www.usp.nus.edu.sg/">http://www.usp.nus.edu.sg/</a>
NUS Bulletin Online - for undergraduate curriculum information, degree requirements etc.	<a href="http://www.nus.edu.sg/registrar/nusbulletin/index.html">http://www.nus.edu.sg/registrar/nusbulletin/index.html</a>
Information on Special Term	<a href="http://www.nus.edu.sg/registrar/event/specialterm.html">http://www.nus.edu.sg/registrar/event/specialterm.html</a>
Student Service Centre	<a href="http://www.nus.edu.sg/osa/ssc">http://www.nus.edu.sg/osa/ssc</a>
University Health Centre	<a href="http://www.nus.edu.sg/uhc/">http://www.nus.edu.sg/uhc/</a>

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- Maximum candidature of 5 years
- Pass (or have been exempted) from the requisite English for Academic Purposes module
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#### Sample Semester Schedule for Accredited Poly Direct Entry ME students (matriculating from AY13/14 onwards)

Year 2			
Semester 3	MCs	Semester 4	MCs
MA1301 Introductory Mathematics <sup>1</sup>	4	MA1505 Mathematics I	4
ME2103 Engineering Visualisation and Modelling	3	PC1431 Physics IE	4
ME2151 Principles of Mechanical Engineering Materials	4	ME2101 Fundamentals of Mechanical Design	4
ME2113 Mechanics of Materials I	3	ME2143 Sensors and Actuators	4
ME3162 Manufacturing Processes	4	ME2114 Mechanics of Materials II	3
ES1xxx English <sup>4</sup>	-		
<b>Sub-Total</b>	<b>18</b>	<b>Sub-Total</b>	<b>19</b>
Year 3			
Semester 5	MCs	Semester 6	MCs
MA1506 Mathematics II	4	EG2401 Engineering Professionalism	3
ME2121 Engineering Thermodynamics	3	ME2135 Fluid Mechanics II	4
ME2142 Feedback Control Systems	4	ME3102 Mechanical Systems Design II	4
ME2134 Fluid Mechanics I	4	ME Technical Elective 1	4
ME3101 Mechanical Systems Design I	4	ES2331 Communicating Engineering <sup>3</sup>	4
ME3112 Mechanics of Machines	4	GEM <sup>2</sup>	4
<b>Sub-Total</b>	<b>23</b>	<b>Sub-Total</b>	<b>23</b>
Year 4			
Semester 7	MCs	Semester 8	MCs
ME4101 B.Eng. Dissertation	6	ME4101 B.Eng. Dissertation (cont'd)	6
ME3122 Heat Transfer	4	ME Technical Elective 4	4
ME Technical Elective 2	4	ME Technical Elective 5	4
ME Technical Elective 3	4	Unrestricted Elective Module 2 or Breadth 2	4
SS <sup>2</sup>	4		
<b>Sub-Total</b>	<b>22</b>	<b>Sub-Total</b>	<b>18</b>
<b>Total</b>			<b>123</b>

<sup>1</sup>MA1301 can be used to fulfil Breadth or UEM.

<sup>2</sup>These ULR modules (GEM, SS, UEM, Breadth) can be read in any semester. Breadth modules are strictly modules read outside the student's faculty.

<sup>3</sup>ES2331 can be counted towards Breadth or UEM requirements. Note that ES1531 is a pre-requisite of ES2331. Poly students exempted from ES1531 are required to read either ES1102 and/or ES1000 based on their QET results. The latter basic English modules will be considered equivalent to the pre-requisite to ES2331 for poly students. For more details, please refer to the section on **English Modules** at [http://www.eng.nus.edu.sg/ugrad/MS\\_timetable.html](http://www.eng.nus.edu.sg/ugrad/MS_timetable.html).

<sup>4</sup>Either ES1000 and/or ES1102 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.

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Faculty of Engineering – Undergraduate Office	<a href="http://www.eng.nus.edu.sg/ugrad/">http://www.eng.nus.edu.sg/ugrad/</a> <a href="mailto:engbox28@nus.edu.sg">engbox28@nus.edu.sg</a>
ME Undergraduate	<a href="http://www.me.nus.edu.sg/current-students/program-overview">http://www.me.nus.edu.sg/current-students/program-overview</a> <a href="mailto:enquire_me@nus.edu.sg">enquire_me@nus.edu.sg</a>
Centralised Online Registration System (CORS)	<a href="http://www.cors.nus.edu.sg/">http://www.cors.nus.edu.sg/</a>
Office of Student Affairs (OSA)	<a href="http://www.nus.edu.sg/osa/">http://www.nus.edu.sg/osa/</a>
Online Degree Requirement Check	<a href="https://www.eng9.nus.edu.sg/degree/login.html">https://www.eng9.nus.edu.sg/degree/login.html</a>
Student Exchange Programme	<a href="http://www.eng.nus.edu.sg/sep/">http://www.eng.nus.edu.sg/sep/</a>
Double-Degree Programme	<a href="http://www.eng.nus.edu.sg/ugrad/SP_ddp.html">http://www.eng.nus.edu.sg/ugrad/SP_ddp.html</a>
Enhancement Programmes (IA, VIP etc)	<a href="http://www.eng.nus.edu.sg/undergrad/epmc/ep.html">http://www.eng.nus.edu.sg/undergrad/epmc/ep.html</a>
NUS Overseas Colleges	<a href="http://www.overseas.nus.edu.sg/">http://www.overseas.nus.edu.sg/</a>
University Scholars Programme	<a href="http://www.usp.nus.edu.sg/">http://www.usp.nus.edu.sg/</a>
NUS Bulletin Online - for undergraduate curriculum information, degree requirements etc.	<a href="http://www.nus.edu.sg/registrar/nusbulletin/index.html">http://www.nus.edu.sg/registrar/nusbulletin/index.html</a>
Information on Special Term	<a href="http://www.nus.edu.sg/registrar/event/specialterm.html">http://www.nus.edu.sg/registrar/event/specialterm.html</a>
Student Service Centre	<a href="http://www.nus.edu.sg/osa/ssc">http://www.nus.edu.sg/osa/ssc</a>
University Health Centre	<a href="http://www.nus.edu.sg/uhc/">http://www.nus.edu.sg/uhc/</a>