Bachelor of Engineering (Mechanical Engineering)

Summary of ME Course Requirements and Units (For students matriculating from AY2025/2026 onwards)

UNIT REQUIREMENTS		Units	TERM	NOTES
UNRESTRICTED ELECTIVE (UE) COURSES		**40**		
COMMON CURRICULUM REQUIREMENTS – see Annex A		**40**		
General Education (GE) Courses:		**24**		
CDE2501	Sustainable Systems for Liveable Cities	4		
ES2631	Critique and Communication of Thinking and Design	4		
CS1010E	Programming Methodology	4		
GEA1000	Quantitative Reasoning with Data	4		
Cultures and Connections (GEC)		4		
Communities and Engagement (GEN)		4		
CDE Common Courses:		**16**		
DTK1234	Design Thinking	4		
EG1311	Design and Make	4		
EE2211/ EE2213	Introduction to Machine Learning or Introduction to Artificial Intelligence	4		
PF1101A	Project Management and Finance	4		
Mechanical Engineering Major Requirements		**80**		
Engineering Core Courses:		**20**		
MA1505	Mathematics I	4		
MA1512	Differential Equations for Engineering	2		
MA1513	Linear Algebra & Differential Equations	2		
EG2401A	Engineering Professionalism	2		
EG3611A	Industrial Attachment[1]	10		
ME Major Courses[3]:				
ME1103	Principles of Mechanics and Materials	4	Odd/Even	
ME2105	Principles of Mechatronics and Automation	4	Odd/Even	
ME2102	Engineering Innovation and Modelling	4	Odd/Even	
ME2116	Strength of Materials *(offered from AY2026/27 onwards)*	4	Odd/Even	
ME2121	Engineering Thermodynamics and Heat Transfer	4	Odd/Even	
ME2134	Fluids Mechanics I	4	Odd/Even	
ME2162	Manufacturing Processes	4	Odd/Even	
ME3115	Mechanics of Machines	4	Odd/Even	
ME3123	Applied Thermofluids *(offered from AY2026/27 onwards)*	4	Odd/Even	
ME3142	Feedback Control Systems	4	Odd/Even	
ME4101A	B.Eng Dissertation[4]	8	Odd/Even	
ME Technical Electives		12		
MA1301	***Introductory Mathematics (For direct poly intake only)[2]***			
TOTAL		**160**		

[1] Engineering students may take up to 20 Units of credit-bearing internships, of which up to 10 Units can be used to fulfil the major internship requirement and the remaining will be counted towards Unrestricted Electives (UE) Course. This limit does not apply to students enrolled in the co-op degree programme.

[2] Accredited Polytechnic Direct Entry Students will have to take MA1301 Introductory Mathematics to be counted towards Unrestricted Elective (UE) Course.

[3] ME Major courses are offered in both Semesters. Students may swap between even and odd Semesters.

[4] CDE4301 or CDE4301A is a 12 Unit course that forms part of the Innovation and Design Second Major. Students taking this will fulfil the Integrated project pillar (8 Units) and an additional 4 Units of Unrestricted Elective (UE) Course.

Please check the current schedule regularly for possible changes, if any.

Annex A: Catalogue of courses in the Common Curriculum

Common Curriculum Requirements	B.Eng. Basket of Courses
General Education (GE) Courses:	
Singapore Studies	CDE2501 Sustainable Systems for Liveable Cities
Critique and Expression	ES2631 Critique and Communication of Thinking and Design
Digital Literacy	CS1010% Programming Methodology (any variant)
Data Literacy	GEA1000 Quantitative Reasoning with Data or any course from the basket of courses approved by the NUS General Education Committee for this pillar.
Cultures and Connections (GEC)	Students may read any course from the curated list of courses as approved by the NUS General Education Committee for this pillar.
Communities and Engagement (GEN)	Courses from the curated list of courses as approved by the NUS General Education Committee for this pillar.
CDE Common Courses:	
Design Thinking	DTK1234 Design Thinking
Maker Space	EG1311 Design and Make
Artificial Intelligence	EE2211 Introduction to Machine Learning OR EE2213 Introduction to Artificial Intelligence
Project Management	PF1101A Project Management and Finance

Sample Semester Schedule for ME students (matriculating from AY2025/2026 onwards)

Semester 1	Units	Semester 2	Units
ME1103/ Principles of Mechanics and Materials OR ME2105 Principles of Mechatronics and Automation	4	ME1103/ Principles of Mechanics and Materials OR ME2105 Principles of Mechatronics and Automation	4
MA1505 Mathematics I	4	MA1512 Differential Equations for Engineering	2
EG1311 Design and Make	4	MA1513 Linear Algebra & Differential Equations	2
CS1010E Programming Methodology	4	GEA1000 Quantitative Reasoning with Data	4
GE/UE	4	DTK1234 Design Thinking	4
		PF1101A Project Management and Finance	4
Sub-total	**20**	**Sub-total**	**20**
Semester 3	**Units**	**Semester 4**	**Units**
ES2631 Critique and Comm. of Thinking and Design	4	CDE2501 Sustainable Systems for Liveable Cities	4
ME2116 Strength of Materials	4	EE2211/ Introduction to Machine Learning OR EE2213 Introduction to Artificial Intelligence	4
ME2121 Engineering Thermo. and Heat Transfer	4	ME2102 Engineering Innovation and Modelling	4
ME2134 Fluid Mechanics I	4	ME3115 Mechanics of Machines	4
GE/UE	4	GE/UE	4
Sub-total	**20**	**Sub-total**	**20**
Semester 5	**Units**	**Semester 6**	**Units**
ME2162 Manufacturing Processes	4	EG3611A Industrial Attachment[1]	10
ME3123 Applied Thermofluids	4	EG2401A Engineering Professionalism	2
ME3142 Feedback Control Systems	4	ME Technical Elective 2	4
ME Technical Elective 1	4	GE/UE	4
GE/UE	4		
Sub-total	**20**	**Sub-total**	**20**
Semester 7	**Units**	**Semester 8**	**Units**
ME4101A B.Eng. Dissertation	4	ME4101A B.Eng. Dissertation	4
ME Technical Elective 3	4	GE/UE	4
GE/UE	4	GE/UE	4
GE/UE	4	GE/UE	4
GE/UE	4	GE/UE	4
Sub-total	**20**	**Sub-total**	**20**
Total			**160**

[1]More information on the Industrial Attachment may be found here.

ME Major courses are offered in both Semesters. Students may swap between even and odd Semesters.

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

Sample Semester Schedule for Accredited Poly Direct Entry ME students (matriculating from AY2025/2026 onwards)

Year 2			
Semester 3	**Units**	**Semester 4**	**Units**
ME1103/ Principles of Mechanics and Materials OR ME2105 Principles of Mechatronics and Automation	4	ME1103/ Principles of Mechanics and Materials OR ME2105 Principles of Mechatronics and Automation	4
ME2162 Manufacturing Processes	4	MA1512 Differential Equations for Engineering	2
MA1301 Introductory Mathematics[1] (UE 1)	4	MA1513 Linear Algebra & Differential Equations	2
CS1010E Programming Methodology	4	GEA1000 Quantitative Reasoning with Data	4
GE/UE	4	PF1101A Project Management and Finance	4
		ME2121 Engineering Thermo. and Heat Transfer	4
Sub-total	**20**	**Sub-total**	**20**
Year 3			
Semester 5	**Units**	**Semester 6**	**Units**
MA1505 Mathematics I	4	CDE2501 Sustainable Systems for Liveable Cities	4
ES2631 Critique and Comm. of Thinking and Design	4	EE2211/ Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4
ME2102 Engineering Innovation and Modelling	4	EG2401A Engineering Professionalism	2
ME3115 Mechanics of Machines	4	ME2116 Strength of Materials	4
ME Technical Elective 1	4	ME2134 Fluid Mechanics I	4
		GE/UE	4
Sub-total	**20**	**Sub-total**	**22**
Year 4			
Semester 7	**Units**	**Semester 8**	**Units**
ME4101A B.Eng. Dissertation	4	ME4101A B.Eng. Dissertation	4
ME3123 Applied Thermofluids	4	ME Technical Elective 3	4
ME3142 Feedback Control Systems	4	GE/UE	4
ME Technical Elective 2	4	GE/UE	4
GE/UE	4	GE/UE	4
Sub-total	**20**	**Sub-total**	**20**
Total			**122**

[1]MA1301 will be counted towards Unrestricted Elective (UE) Course. Please refer here for more information.
Students who are not required to read MA1301 may consider reading MA1505 instead.

ME Major courses are offered in both Semesters. Students may swap between even and odd Semesters.

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