

Material Science and Engineering

AY2025 cohort

Accurate as of July 2025

E-Scholars 3-years schedule (MSE)			
Semester 0 (APT)			
EG1311 Design and Make			4
MA1505 Mathematics I (4 units. It is mapped to MA1511 which is 2 units, + 2 units to UE)			4
CS1010E Programming Methodology			4
Sub-total			12
Semester 1		Semester 2	
MLE2001A Materials Science & Engineering Principles & Practice II	4	MLE2105 Electronic Properties of Materials	4
GEA1000 Quantitative Reasoning	4	MLE1001B Materials Science & Engineering Principles & Practice I	4
DTK1234 Design Thinking	4	MLE2108 Mechanical and Structural Properties of Materials	4
MA1513 Linear Algebra with Differential Equations	2	UTCP #2	4
PF1101A Project Management and Finance	4	UE	4
CE2407A Engineering Uncertainty Analysis	2	MA1512 Differential Equations for Engineering	2
UTCP #1	4	UE	4
Sub-total	24	Sub-total	26
Semester 3		Semester 4	
MLE2102 Thermodynamics and Renewable Energy Technologies	4	NUS Overseas College (NOC) experience (20 units)*	20
MLE2103A Materials Kinetics & Processing	2		
MLE3101A Materials Characterization	3		
MLE3101 Materials Characterization Laboratory	3		
EE2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence	4		
UE	4		
UTCP #3 (Replaces CDE2501)	4		
UE*	2		
Sub-total	26	Sub-total	20
Semester 5		Semester 6	
MLE4101B BEng Dissertation OR MLE4102A Design Project	4	MLE4101B BEng Dissertation OR MLE4102A Design Project	4
MLE3103 Materials Selection & Design: Aerospace to Biomedical Applications	4	MLE3112 Machine Learning Approaches in Materials Laboratory	2
MLE3111A Materials Properties & Processing Laboratory	2	Technical Elective	4
MLE3104 Polymeric and Composite Materials	4	UE	4
MLE3203 Engineering Materials	4	UE	4
UTCP #4	4	UE	4
Technical Elective	4	UE	4
Sub-total	26	Sub-total	26
Grand total			160

Notes:

- If APT courses are not cleared, those courses (EG1311, MA1511, CS1010E) must be cleared during the normal semesters
- Important rules for NOC:
 - You MUST be in Singapore for Visa processing the semester BEFORE going to NOC.
 - You MUST have cleared at least 70 units before applying to NOC
- *If not embarking on NOC, alternate course combinations to fulfil Industrial Attachment requirement (10 units) include:
 - EG3611A Industrial Attachment (10 units)
 - EG3612 Vacation Industrial Attachment / ETP3205 Innovation & Enterprise Internship (6 units) + CDE2605 Undergraduate Research Opportunity (4 units)
 - EG3612 Vacation Industrial Attachment / ETP3205 Innovation & Enterprise Internship (6 units) + CFG2101 NUS Vacation Internship Programme (4 units) Note that EG3612 and EG3611A can be done as long as you have cleared 60 units.
 - EG3612 Vacation Industrial Attachment / ETP3205 Innovation & Enterprise Internship (6 units) + CDE2605R Undergraduate Research Experience (4 units)

Note that UROP (CDE2605) may be taken in any regular semester or special term as long as you are at seniority 2.

4. If you wish to read Common Curriculum courses before your department's recommended semester, please submit an appeal or select the courses from Round 2.

- courses that require appeal: DTK1234, GEA1000, please email:

DTK1234 - dtk1234@nus.edu.sg

GEA1000 - qadmin@nus.edu.sg