## **Material Science and Engineering**

AY2025 cohort Accurate as of July 2025

Semes         \$1311 Design and Make         A1505 Mathematics I (4 units. It is mapped to MA1511 which is 2 units, + 2 units to UE)         \$1010E Programming Methodology         b-total         mester 1         £2001A Materials Science & Engineering Principles & Practice II         4         A1000 Quantitative Reasoning         *         *         A1513 Linear Algebra with Differential Equations         *         *         2407A Engineering Uncertainty Analysis         * <t< th=""><th>Semester 2 MLE2105 Electronic Properties of Materials MLE1001B Materials Science &amp; Engineering Principles &amp; Practice I MLE2108 Mechanical and Structural Properties of Materials UTCP #2 UE MA1512 Differential Equations for Engineering UE Sub-total Semester 4 NUS Overseas College (NOC) experience (20 units)*</th><th>4 4 4 4 4 4 4 4 4 4 4 2 4 2 6 26 20</th></t<>	Semester 2 MLE2105 Electronic Properties of Materials MLE1001B Materials Science & Engineering Principles & Practice I MLE2108 Mechanical and Structural Properties of Materials UTCP #2 UE MA1512 Differential Equations for Engineering UE Sub-total Semester 4 NUS Overseas College (NOC) experience (20 units)*	4 4 4 4 4 4 4 4 4 4 4 2 4 2 6 26 20
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EA1000 Quantitative Reasoning       4         K1234 Design Thinking       4         K1234 Design Thinking       4         A1513 Linear Algebra with Differential Equations       2         Linear Algebra with Differential Equations       3	MLE1001B Materials Science & Engineering Principles & Practice I MLE2108 Mechanical and Structural Properties of Materials UTCP #2 UE MA1512 Differential Equations for Engineering UE Sub-total Semester 4	4 4 4 2 4 2 4 26
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1101A Project Management and Finance       2         22407A Engineering Uncertainty Analysis       2         22407A Engineering Uncertainty Analysis       2         CP #1       4         b-total       2         mester 3       2         E2102 Thermodynamics and Renewable Energy Technologies       4         E2101A Materials Kinetics & Processing       2         E3101A Materials Characterization       3         E3101A Materials Characterization Laboratory       3         2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence       4         CP #3 (Replaces CDE2501)       4         *       2         b-total       2         mester 5       3         E4101B BEng Dissertation OR MLE4102A Design Project       4         E3101B Attrials Selection & Design: Aerospace to Biomedical Applications       4	UE MA1512 Differential Equations for Engineering UE Sub-total Semester 4	4 2 4 26
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CP #1       4         b-total       2         mester 3       2         LE2102 Thermodynamics and Renewable Energy Technologies       4         LE2102 Thermodynamics and Renewable Energy Technologies       4         LE2103A Materials Kinetics & Processing       2         LE3101A Materials Characterization       3         LE3101A Materials Characterization Laboratory       3         LE2103 (Replaces CDE2501)       4         CP #3 (Replaces CDE2501)       4         Lettotal       2         b-total       2         mester 5       5         Let101B BEng Dissertation OR MLE4102A Design Project       4         LE3103 Materials Selection & Design: Aerospace to Biomedical Applications       4	UE Sub-total Semester 4	4
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mester 3	Semester 4	
E2102 Thermodynamics and Renewable Energy Technologies       4         E2103A Materials Kinetics & Processing       2         E3101A Materials Characterization       3         E3101 Materials Characterization Laboratory       3         2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence       4         CP #3 (Replaces CDE2501)       4         *       5         betatl       2         mester 5       2         E4101B BEng Dissertation OR MLE4102A Design Project       4         E3103 Materials Selection & Design: Aerospace to Biomedical Applications       4		20
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E3101A Materials Characterization       3         E3101 Materials Characterization Laboratory       3         E3101 Materials Characterization Laboratory       3         22211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence       4         CP #3 (Replaces CDE2501)       4         ''       2         b-total       2         mester 5       2         E4101B BEng Dissertation OR MLE4102A Design Project       4         E3103 Materials Selection & Design: Aerospace to Biomedical Applications       4	NUS Overseas College (NOC) experience (20 units)*	
E3101 Materials Characterization Laboratory       3         22211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence       4         22211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence       4         CP #3 (Replaces CDE2501)       4         *       2         b-total       2         mester 5       2         E4101B BEng Dissertation OR MLE4102A Design Project       4         E3103 Materials Selection & Design: Aerospace to Biomedical Applications       4	NUS Overseas College (NOC) experience (20 units)*	
2211 Introduction to Machine Learning or EE2213 Introduction to Artificial Intelligence       4         CP #3 (Replaces CDE2501)       4         *       2         *       2         *       2         *       2         *       2         *       2         *       2         *       2         *       2         *       2         *       2         *       2         *       2         *       2         *       3         *       4         *       4         *       4         *       4         *       5         *       4         *       4         *       4         *       5         *       4         *       5         *       4         *       4         *       4         *       4	NUS Overseas College (NOC) experience (20 units)*	
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CP #3 (Replaces CDE2501)       4         *       2         b-total       2         mester 5       2         LE4101B BEng Dissertation OR MLE4102A Design Project       4         LE3103 Materials Selection & Design: Aerospace to Biomedical Applications       4		
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E4101B BEng Dissertation OR MLE4102A Design Project 4 E3103 Materials Selection & Design: Aerospace to Biomedical Applications 4	Sub-total	20
E3103 Materials Selection & Design: Aerospace to Biomedical Applications	Semester 6	
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E3111A Materials Properties & Processing Laboratory	MLE3112 Machine Learning Approaches in Materials Laboratory	2
	Technical Elective	4
E3104 Polymeric and Composite Materials	UE	4
E3203 Engineering Materials	UE	4
TCP #4 4	UE	4
chnical Elective 4	UE	4
	Sub-total	
b-total 2		20

Notes:

1. If APT courses are not cleared, those courses (EG1311, MA1511,CS1010E) must be cleared during the normal semesters

2. 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

3. \*If not embarking on NOC, alternate course combinations to fulfil Industrial Attachment requirement (10 units) include:

a) EG3611A Industrial Attachment (10 units)

b) EG3612 Vacation Industrial Attachment / ETP3205 Innovation & Enterprise Internship (6 units) + CDE2605 Undergraduate Research Opportunity (4 units)

c) 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.

d) 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 - qradmin@nus.edu.sg