Bachelor of Engineering (Materials Science & Engineering) with Minor in Innovation & Design

Cohort AY2025/2026

Course Requirements	Units
Common Curriculum	
GEA1000 Quantitative Reasoning with Data ¹	4
CS1010E Programming Methodology (or other variants)	4
CDE2501 Liveable Cities ²	4
ES2631 Critique and Communication of Thinking and Design ²	4
GE: Cultures and Connections ²	4
GE: Communities and Engagement ²	4
DTK1234 Design Thinking	4
EE2211 Introduction to Machine Learning	4
or EE2213 Introduction to Artificial Intelligence	
EG1311 Design and Make <u>or</u> EG1311BE Design and Make	4
PF1101A Project Management and Finance	4
Sub-total for Common Curriculum	40
Engineering Core	
MA1511 Engineering Calculus	2
MA1512 Differential Equations for Engineering	2
MA1513 Linear Algebra with Differential Equations	2
CE2407A Uncertainty Analysis for Engineers	2
EG2401A Engineering Professionalism	2
EG3611A Industrial Attachment <u>or</u>	10
CFG2101 NUS Vacation Internship Programme ³ and EG3612 Vacation Industrial	
Attachment	
Sub-total for Engineering Core	20
Engineering Programme Requirements	
MLE1001B Materials Science & Engineering Principles & Practice I	
	4
MLE2001A Materials Science & Engineering Principles & Practice II	4
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies	4 4
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing	4
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials	4 4 2 4
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials	4 4 2 4 4
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization	4 4 2 4 4 3
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory	4 4 2 4 4 3 3
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory MLE3103 Materials Design: Aerospace to Biomedical Applications	4 4 2 4 4 3 3 3
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory MLE3103 Materials Design: Aerospace to Biomedical Applications MLE3104 Polymeric and Composite Materials	4 4 2 4 4 3 3 3 4
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory MLE3103 Materials Design: Aerospace to Biomedical Applications MLE3104 Polymeric and Composite Materials MLE3111A Materials Properties and Processing Laboratory	4 4 2 4 4 3 3 3 4 4 2
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory MLE3103 Materials Design: Aerospace to Biomedical Applications MLE3104 Polymeric and Composite Materials MLE3111A Materials Properties and Processing Laboratory MLE3112 Machine Learning Approaches in Materials Laboratory	4 4 2 4 4 3 3 3 4 4 4 2 2
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory MLE3103 Materials Design: Aerospace to Biomedical Applications MLE3104 Polymeric and Composite Materials MLE3111A Materials Properties and Processing Laboratory MLE3112 Machine Learning Approaches in Materials Laboratory MLE3203 Engineering Materials	4 4 2 4 4 3 3 3 4 4 4 2 2 2
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory MLE3103 Materials Design: Aerospace to Biomedical Applications MLE3104 Polymeric and Composite Materials MLE3111A Materials Properties and Processing Laboratory MLE3112 Machine Learning Approaches in Materials Laboratory MLE3203 Engineering Materials Technical electives	4 4 2 4 4 3 3 3 4 4 4 2 2 2 4 8
MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory MLE3103 Materials Design: Aerospace to Biomedical Applications MLE3104 Polymeric and Composite Materials MLE3111A Materials Properties and Processing Laboratory MLE312 Machine Learning Approaches in Materials Laboratory MLE3203 Engineering Materials Technical electives MLE4101B B.Eng. Dissertation or MLE4102A Design Project	4 4 2 4 4 3 3 3 4 4 4 2 2 2
MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory MLE3103 Materials Design: Aerospace to Biomedical Applications MLE3104 Polymeric and Composite Materials MLE3111A Materials Properties and Processing Laboratory MLE3112 Machine Learning Approaches in Materials Laboratory MLE3203 Engineering Materials Technical electives MLE4101B B.Eng. Dissertation or MLE4102A Design Project (over 2 consecutive semesters) 4	4 4 2 4 4 3 3 3 4 4 2 2 2 4 8
MLE2101 Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory MLE3103 Materials Design: Aerospace to Biomedical Applications MLE3104 Polymeric and Composite Materials MLE3111A Materials Properties and Processing Laboratory MLE3112 Machine Learning Approaches in Materials Laboratory MLE3203 Engineering Materials Technical electives MLE4101B B.Eng. Dissertation or MLE4102A Design Project (over 2 consecutive semesters) 4 Sub-total for Engineering Programme Requirements	4 4 2 4 4 3 3 3 4 4 4 2 2 2 4 8
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory MLE3103 Materials Design: Aerospace to Biomedical Applications MLE3104 Polymeric and Composite Materials MLE3111A Materials Properties and Processing Laboratory MLE3112 Machine Learning Approaches in Materials Laboratory MLE3203 Engineering Materials Technical electives MLE4101B B.Eng. Dissertation or MLE4102A Design Project (over 2 consecutive semesters) 4 Sub-total for Engineering Programme Requirements Unrestricted Electives	4 4 2 4 4 3 3 3 4 4 2 2 2 4 8 8
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory MLE3103 Materials Design: Aerospace to Biomedical Applications MLE3104 Polymeric and Composite Materials MLE3111A Materials Properties and Processing Laboratory MLE3112 Machine Learning Approaches in Materials Laboratory MLE3203 Engineering Materials Technical electives MLE4101B B.Eng. Dissertation or MLE4102A Design Project (over 2 consecutive semesters) 4 Sub-total for Engineering Programme Requirements Unrestricted Electives CDE3301 Ideas to Proof-of-Concept (over 2 consecutive semesters) 5	4 4 2 4 4 3 3 3 4 4 2 2 2 4 8 8
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory MLE3103 Materials Design: Aerospace to Biomedical Applications MLE3104 Polymeric and Composite Materials MLE3111A Materials Properties and Processing Laboratory MLE3112 Machine Learning Approaches in Materials Laboratory MLE3203 Engineering Materials Technical electives MLE4101B B.Eng. Dissertation or MLE4102A Design Project (over 2 consecutive semesters) 4 Sub-total for Engineering Programme Requirements Unrestricted Electives CDE3301 Ideas to Proof-of-Concept (over 2 consecutive semesters) 5 Electives for Minor 5	4 4 4 2 4 3 3 3 4 4 2 2 4 8 8 8 8 8
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory MLE3103 Materials Design: Aerospace to Biomedical Applications MLE3104 Polymeric and Composite Materials MLE3111A Materials Properties and Processing Laboratory MLE3112 Machine Learning Approaches in Materials Laboratory MLE3203 Engineering Materials Technical electives MLE4101B B.Eng. Dissertation or MLE4102A Design Project (over 2 consecutive semesters) ⁴ Sub-total for Engineering Programme Requirements Unrestricted Electives CDE3301 Ideas to Proof-of-Concept (over 2 consecutive semesters) ⁵ Electives for Minor ⁵ Other unrestricted electives ⁴	4 4 4 2 4 4 3 3 3 4 4 4 2 2 2 4 8 8 8 60 12 8 20
MLE2001A Materials Science & Engineering Principles & Practice II MLE2102 Thermodynamics and Renewable Energy Technologies MLE2103A Materials Kinetics & Processing MLE2105 Electronic Materials of Materials MLE2108 Mechanical and Structural Properties of Materials MLE3101A Materials Characterization MLE3101 Materials Characterization Laboratory MLE3103 Materials Design: Aerospace to Biomedical Applications MLE3104 Polymeric and Composite Materials MLE3111A Materials Properties and Processing Laboratory MLE3112 Machine Learning Approaches in Materials Laboratory MLE3203 Engineering Materials Technical electives MLE4101B B.Eng. Dissertation or MLE4102A Design Project (over 2 consecutive semesters) 4 Sub-total for Engineering Programme Requirements Unrestricted Electives CDE3301 Ideas to Proof-of-Concept (over 2 consecutive semesters) 5 Electives for Minor 5	4 4 4 2 4 3 3 3 4 4 2 2 4 8 8 8 8 8 8

Notes:

- ¹ Students may read other approved courses for Data Literacy in lieu of GEA1000.
- Students may read equivalent courses in NUS College (NUSC), University Town College Programme (UTCP), and Ridge View Residential Programme (RVRC). CDE2501 fulfils GE: Singapore Studies while ES2631 fulfils GE: Critique and Expression.
- ³ May be replaced by CDE2605 Undergraduate Research Opportunities Programme or CDE2605R Undergraduate Research Experience (UREx).
- Students may take CDE4301 Innovation & Design Capstone or CDE4301A Ideas to Start-up in lieu of MLE4101B/MLE4102A and 4 units of unrestricted electives.
- ⁵ Students should clear at least one elective course from List I prior to CDE3301.

Recommended semester schedule – JC-intake students or equivalent

(for students who opt for vacation internships)

Semester 1	Units	Semester 2	Units
MLE2001A Materials Science &	4	MLE1001B Materials Science &	4
Engineering Principles & Practice II	4	Engineering Principles & Practice I	4
GEA1000 Quantitative Reasoning with	4	CC1010F Dragramming Mathedalogy	4
Data	4	CS1010E Programming Methodology	4
DTV1224 Design Thinking	4	EG1311 Design and Make	4
DTK1234 Design Thinking		or EG1311BE Design and Make	4
MA1513 Linear Algebra with Differential	2	MA1511 Engineering Calculus	2
Equations	2	WATSTI Engineering Calculus	2
CE2407A Uncertainty Analysis for	2	MA1512 Differential Equations for	2
Engineers		Engineering	
PF1101A Project Management and	4	MLE2108 Mechanical and Structural	4
Finance	4	Properties of Materials	4
Sub-total	20	Sub-total	20

Summer vacation between Semesters 2 and 3	Units
CFG2101 NUS Vacation Internship Programme	4
Sub-total	4

Semester 3	Units	Semester 4	Units
MLE2102 Thermodynamics and	4	MLE2105 Electronic Properties of	4
Renewable Energy Technologies	4	Materials	4
MLE3101A Materials Characterization	3	CDE2501 Liveable Cities	4
EE2211 Introduction to Machine Learning <u>or</u> EE2213 Introduction to Artificial Intelligence	4	ES2631 Critique and Communication of Thinking and Design	4
EG2401A Engineering Professionalism	2	GE	4
Elective 1 for Minor	4	CDE3301 Ideas to Proof-of-Concept	6
Elective 2 for Minor	4		
Sub-total	21	Sub-total	22

Summer vacation between Semesters 4 and 5	Units
EG3612 Vacation Internship Attachment	6
Sub-total	6

Semester 5	Units	Semester 6 – can be used for SEP	Units
CDE3301 Ideas to Proof-of-Concept	6	Technical Elective 1	4
MLE2103A Materials Kinetics and Processing	2	Technical Elective 2	4
MLE3101 Materials Characterization Laboratory	3	UE	4
MLE3104 Polymeric and Composite Materials	4	UE	4
MLE3203 Engineering Materials	4	UE	4
GE	4		
Sub-total	23	Sub-total	20

Semester 7	Units	Semester 8	Units
MLE4101B B.Eng. Dissertation or	4	MLE4101B B.Eng. Dissertation or	4
MLE4102A Design Project	4	MLE4102A Design Project	4
MLE3103 Materials Design: Aerospace to	4	MLE3112 Machine Learning Approaches	2
Biomedical Applications	4	in Materials Laboratory	2
MLE3111A Materials Properties and	2	UE	4
Processing Laboratory	2	06	4
UE	4		
Sub-total Sub-total	14	Sub-total Sub-total	10

Recommended semester schedule – JC-intake students or equivalent

(for students who opt for industrial attachment)

Semester 1	Units	Semester 2	Units
MLE2001A Materials Science &	4	MLE1001B Materials Science &	4
Engineering Principles & Practice II	4	Engineering Principles & Practice I	4
GEA1000 Quantitative Reasoning with	4	CS1010E Programming Methodology	4
Data	7	CS1010L 1 Togramming Methodology	7
DTK1234 Design Thinking	4	EG1311 Design and Make	4
DIKI234 Design Hilliking	4	or EG1311BE Design and Make	4
MA1513 Linear Algebra with Differential	2	MA1511 Engineering Calculus	2
Equations		WATSTI Engineering Calculus	
CE2407A Uncertainty Analysis for	2	MA1512 Differential Equations for	2
Engineers		Engineering	
PF1101A Project Management and	4	MLE2108 Mechanical and Structural	4
Finance	4	Properties of Materials	4
Sub-total	20	Sub-total	20

Semester 3	Units	Semester 4	Units
MLE2102 Thermodynamics and	4	MLE2105 Electronic Properties of	4
Renewable Energy Technologies	4	Materials	4
MLE3101A Materials Characterization	3	CDE2501 Liveable Cities	4
EE2211 Introduction to Machine Learning <u>or</u> EE2213 Introduction to Artificial Intelligence	4	ES2631 Critique and Communication of Thinking and Design	4
EG2401A Engineering Professionalism	2	GE	4
Elective 1 for Minor	4	CDE3301 Ideas to Proof-of-Concept	6
Elective 2 for Minor	4		
Sub-total	21	Sub-total Sub-total	22

Semester 5	Units	Semester 6	Units
CDE3301 Ideas to Proof-of-Concept	6	EG3611A Industrial Attachment	10
MLE2103A Materials Kinetics and	2		
Processing	2		
MLE3101 Materials Characterization	3		
Laboratory	3		
MLE3104 Polymeric and Composite	4		
Materials	4		
MLE3203 Engineering Materials	4		
GE	4		
Sub-total	23	Sub-total Sub-total	10

Semester 7	Units	Semester 8	Units
MLE4101B B.Eng. Dissertation or	4	MLE4101B B.Eng. Dissertation or	4
MLE4102A Design Project	4	MLE4102A Design Project	4
MLE3103 Materials Design: Aerospace to	4	MLE3112 Machine Learning Approaches	2
Biomedical Applications	4	in Materials Laboratory	2
MLE3111A Materials Properties and	2	Technical Elective 2	4
Processing Laboratory	2	Technical Elective 2	4
Technical Elective 1	4	UE	4
UE	4	UE	4
UE	4	UE	4
Sub-total	22	Sub-total Sub-total	22

Recommended semester schedule – JC-intake students or equivalent

(for students in Engineering Scholars Programme)

Semester 1	Units	Semester 2	Units
MLE2001A Materials Science &	4	MLE1001B Materials Science &	4
Engineering Principles & Practice II	4	Engineering Principles & Practice I	4
GEA1000 Quantitative Reasoning with	4	MLE2108 Mechanical and Structural	4
Data	4	Properties of Materials	4
DTK1234 Design Thinking	4	MA1512 Differential Equations for	2
DTK1254 Design Hilliking	4	Engineering	2
MA1513 Linear Algebra with Differential	2	RVRC/UTCP course 2 (replaces GE)	4
Equations	2	NVNC/OTEF course 2 (replaces GE)	4
CE2407A Uncertainty Analysis for	2	Elective 1 for Minor	4
Engineers	2	Elective 1 for Willion	4
PF1101A Project Management and	4	CDE3301 Ideas to Proof-of-Concept	6
Finance	4	CDE3301 ideas to F1001-01-Colicept	O
RVRC/UTCP course 1 (replaces GE)	4		
Sub-total	24	Sub-total	24

Summer vacation between Semesters 2 and 3	Units
CFG2101 NUS Vacation Internship Programme	4
Sub-total	4

Semester 3	Units	Semester 4 – can be used for SEP	Units
MLE2102 Thermodynamics and	4	MLE2105 Electronic Properties of	4
Renewable Energy Technologies	4	Materials	4
MLE2103A Materials Kinetics and	2	DVDC/LITCD course 4 (replaces ES2621)	1
Processing	2	RVRC/UTCP course 4 (replaces ES2631)	4
MLE3101 Materials Characterization	3	Elective 2 for Minor	4
Laboratory	3	Elective 2 for Willion	4
MLE3101A Materials Characterization	3	UE	4
EG2401A Engineering Professionalism	2	UE	4
RVRC/UTCP course 3 (replaces CDE2501)	4	UE	4
CDE3301 Ideas to Proof-of-Concept	6		
Sub-total	24	Sub-total	24

Summer vacation between Semesters 4 and 5	Units
EG3612 Vacation Internship Attachment	6
Sub-total	6

Semester 5	Units	Semester 6	Units	
MLE4101B B.Eng. Dissertation or	4	MLE4101B B.Eng. Dissertation or	4	
MLE4102A Design Project	4	MLE4102A Design Project	4	
MLE3103 Materials Design: Aerospace to	4	MLE3112 Machine Learning Approaches	2	
Biomedical Applications	4	in Materials Laboratory	2	
MLE3104 Polymeric and Composite	4	Technical Elective 1	4	
Materials	4	4	reclinical Elective 1	4
MLE3111A Materials Properties and	2	Technical Elective 2	4	
Processing Laboratory	2	2 Technical Elective 2	4	
MLE3203 Engineering Materials	4	UE	4	
EE2211 Introduction to Machine				
Learning or EE2213 Introduction to	4	UE	2	
Artificial Intelligence				
Sub-total	22	Sub-total	20	

Students are highly encouraged to complete the following courses before Semester 1 through advanced placement credits:

- CS1010E Programming Methodology (4 units)
- EG1311 Design and Make (4 units)
- MA1505 Mathematics I (4 units) replaces MA1511 Engineering Calculus (2 units) and counted as UE (2 units)

Recommended semester schedule – poly-intake students

Semester 1	Units	Semester 2	Units	
MLE2001A Materials Science &	4	MLE1001B Materials Science &	4	
Engineering Principles & Practice II	4	Engineering Principles & Practice I	4	
GEA1000 Quantitative Reasoning with	4	CS1010E Programming Methodology	4	
Data	4	CS1010E Programming Methodology	4	
PF1101A Project Management and	4	MAATTAL Engineering Coloulus	2	
Finance	4	4	MA1511 Engineering Calculus	2
MA1301 Introductory Mathematics *	1	MA1512 Differential Equations for	2	
(UE)	4	Engineering	2	
PC1201 Fundamentals of Physics ^	4	MLE2108 Mechanical and Structural	4	
(UE) – if required	4	Properties of Materials	4	
		Elective 1 for Minor ^	4	
		CDE3301 Ideas to Proof-of-Concept	6	
Sub-total	20	Sub-total	26	

Semester 3	Units	Semester 4	Units
CDE3301 Ideas to Proof-of-Concept	6	MLE2105 Electronic Properties of	4
CDESSOT Ideas to Proof-of-Concept		Materials	
MLE2102 Thermodynamics and	4	CDE2501 Liveable Cities	4
Renewable Energy Technologies	4	CDE2301 Liveable Cities	4
MLE2103A Materials Kinetics and		ES2631 Critique and Communication of	4
Processing	2	Thinking and Design	
MLE3101A Materials Characterization	3	GE	4
MLE3101 Materials Characterization	3	Elective 2 for Minor	4
Laboratory		3	Elective 2 for Willion
MA1513 Linear Algebra with Differential	2		
Equations			
CE2407A Uncertainty Analysis for	2		
Engineers	2		
EG2401A Engineering Professionalism	2		
Sub-total	24	Sub-total Sub-total	20

Semester 5	Units	Semester 6	Units
MLE4101B B.Eng. Dissertation or	4	MLE4101B B.Eng. Dissertation or	4
MLE4102A Design Project	4	MLE4102A Design Project	4
MLE3103 Materials Design: Aerospace to	4	MLE3112 Machine Learning Approaches	2
Biomedical Applications	4	in Materials Laboratory	2
MLE3104 Polymeric and Composite	4 Technical Elective 1	4	
Materials		4 reclinical Elective 1	4
MLE3111A Materials Properties and	2 Technical Elective 2	4	
Processing Laboratory		Technical Elective 2	4
MLE3203 Engineering Materials	4	GE	4
EE2211 Introduction to Machine			
Learning or EE2213 Introduction to	4		
Artificial Intelligence *			
Sub-total	22	Sub-total	18

^{*} Students who are exempted from MA1301 can take MA1513 and CE2407A in Semester 1 and EE2211/EE2213 in Semester 3.

[^] Students who are exempted from PC1201 can take Elective 1 for Minor in Semester 1.

Poly-intake students with accredited diplomas will receive the following exemptions:

- DTK1234 Design Thinking (4 units)
- EG1311 Design and Make (4 units)
- EG3611P Industrial Attachment (10 units)
- Unrestricted electives (20 units)