

**Bachelor of Engineering (Materials Engineering)
Common Engineering Stream (AY2021-22)**

Updated: 6-Jul-22

Academic Unit (AU) Required for graduation

Year of Study	Core	MPE	CC	FC	BDE	Total AU
1	16 / 17*	-	9	-	9	34 / 35*
2	26	-	8	3	3	40
3	16	-	-	12	3	31
4	18	11	-	-	3	32
	76 / 77*	11	17	15	18	137 / 138*

*Students without H2 Level Physics will take PH1012 (4 AU)

Year 1 - Semester 1

Course Code and Title	Course Type	AU
CC0001 Inquiry and Communication in the Interdisciplinary World	CC	2
CC0002 Navigating the Digital World	CC	2
FE1073 Introduction to Engineering Practices	Core	1
PH1011 Physics**	Core	3
MH1810 Mathematics I	Core	3
EG1001 Engineer & Society	Core	2
BDE1	BDE	3
Total		16

** Students without H2 Level Physics will take PH1012 Physics A (4 AU)

Pre-Req	Co-Req	Offered in		
		S1	S2	Both
		Y		
		Y		
		Y		
				Y
				Y
		Y		

Year 1 - Semester 2

Course Code and Title	Course Type	AU
CC0003 Ethics & Civics in a Multi-Cultural World	CC	2
CC0005 Healthy Living & Wellbeing	CC	3
MS1014 Materials Chemistry II	Core	2
MS1018 Properties of Materials	Core	2
MH2811 Mathematics II	Core	3
BDE2	BDE	3
BDE3	BDE	3
Total		18

Pre-Req	Co-Req	Offered in		
		S1	S2	Both
		Y		
		Y		
		Y		
		Y		
	MH1810			Y

Year 2 - Semester 1

Course Code and Title	Course Type	AU
ML0004 Career and Entrepreneurial Development for the Future World	CC	2
CC0006 Sustainability: Society, Economy & Environment	CC	3
MS1013 Materials Chemistry I	Core	2
MS1017 Introduction to Materials Science	Core	2
MS1008 Introduction to Computational Thinking	Core	3
MS1016 Thermodynamics of Materials	Core	3
MS2013 Introduction to Polymer Science	Core	3
Total		18

Pre-Req	Co-Req	Offered in		
		S1	S2	Both
		Y		
		Y		
		Y		
		Y		
		Y		
	MS1017			Y
	MS1014/MS1016			Y

Year 2 - Semester 2

Offered in

Course Code and Title	Course Type	AU
CC0007 Science & Technology for Humanity	CC	3
MS0003 Introduction to Data Science and Artificial Intelligence	FC	3
MS2012 Introduction to Manufacturing Processes	Core	3
MS2014 Materials Structure and Defects	Core	3
MS2015 Mechanical Behaviour of Materials	Core	3
MS2016 Phase Transformation and Kinetics	Core	3
MS2083 Laboratory on Structure-Property Relationship in Polymers	Core	1
BDE4	BDE	3
Total		22

Pre-Req	Co-Req	S1	S2	Both
			Y	
MS1008			Y	
				Y
MS1017	MS1018			Y
				Y
	MS1016			Y
MS2013				Y

Year 3 - Semester 1		
Course Code and Title	Course Type	AU
HW0288 Effective Communication	FC	2
MS2018 Electronic & Magnetic Properties of Materials	Core	3
MS3011 Metallic & Ceramic Materials	Core	3
MS3012 Micro/Nanoelectronic Materials Processing	Core	3
MS3013 Corrosion of Materials	Core	3
MS3014 Analysis of Materials	Core	3
MS3082 Design Lab	Core	1
BDE5	BDE	3
Total		21

Pre-Req	Co-Req	Offered in		
		S1	S2	Both
				Y
				Y
	MS2016			Y
	MS2013/MS3011			Y
				Y

Year 3 - Semester 2		
Course Code and Title	Course Type	AU
MS3099 Professional Internship	FC	10
Total		10

Pre-Req	Co-Req	Offered in		
		S1	S2	Both
				Not Applicable

Year 4 - Semester 1		
Course Code and Title	Course Type	AU
MS4089 Final Year Project	Core	4
MS3015 Materials Aspects in Design	Core	3
MS4012 Quality Control	Core	3
MPE1	MPE	3
MPE2	MPE	3
Total		16

Pre-Req	Co-Req	Offered in		
		S1	S2	Both
Year 4 Standing				Not Applicable
MS3082	MS2013/MS3011			Y
				Y

Year 4 - Semester 2		
Course Code and Title	Course Type	AU
MS4089 Final Year Project	Core	4
MS4013 Biomaterials	Core	2
MS4014 Nanomaterials: Fundamentals And Applications	Core	2
BDE6	BDE	3
MPE3	MPE	3
MPE4	MPE	2
Total		16

Pre-Req	Co-Req	Offered in		
		S1	S2	Both
Year 4 Standing				Not Applicable
MS2013	MS3011			Y
MS2018/MS3012/MS3013				Y