

# Bachelor of Engineering (Materials Engineering)

## Year 1 Admission (Common Engineering) (AY2018-19)

### ACADEMIC UNIT (AU) REQUIRED FOR GRADUATION

<i>Bachelor of Engineering (Materials Engineering)</i>	Year of Study	Core	Core Electives	GER			Unrestricted Electives	Total AU	
				Core	Electives				
					BM	LA			STS
<b>Year 1 Admission (Common Engineering)</b>	1	22	-	3	-	3	3	6	37/38 <sup>+</sup>
	2	26	-	5	3	-	-	6	40
	3	26	-	3	-	-	-	3	32
	4	17	12	3	-	-	-	-	32
	All Years								141/142 <sup>+</sup>

<sup>+</sup>Students without H2 Level Physics will take PH1012 (4 AU)

Description of Abbreviation

BM – Business & Management

LA – Liberal Arts

STS – Science, Technology & Society

**YEAR 1 - Admission to Year 1 (Common Engineering) (AY2018-19)**

<b>Course Code and Title</b>	<b>Type</b>	<b>AU</b>
<b>YEAR 1 SEMESTER 1</b>		
HW0001 English Proficiency		0
FE1073 Introduction to Engineering Practices	Core	1
GC0001 Introduction to Sustainability: Multidisciplinary Approaches and Solutions	GER Core	1
HE9091 Principles of Economics	GER Elective (LA)	3
HW0188 Engineering Communication I	GER Core	2
MH1810 Mathematics I	Core	3
PH1011 Physics**	Core	3
UE 1	Unrestricted Elective	3
<b>TOTAL</b>		<b>16</b>

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

<b>YEAR 1 SEMESTER 2</b>		
MS1008 Introduction to Computational Thinking	Core	3
MS1012 Materials Physics	Core	3
MS1014 Materials Chemistry II	Core	3
MS1015 Materials Science	Core	3
MS1016 Thermodynamics of Materials	Core	3
GER-PE (STS)	GER Elective (STS)	3
UE 2	Unrestricted Elective	3
<b>TOTAL</b>		<b>21</b>

**YEAR 2 – Admission to Year 1 (Common Engineering) (AY2018-19)**

<b>Course Code and Title</b>	<b>Type</b>	<b>AU</b>
<b>YEAR 2 SEMESTER 1</b>		
HY0001 Ethics and Moral Reasoning	GER Core	1
MH2811 Mathematics II	Core	3
<b>MS1013 Materials Chemistry I</b>	<b>Core</b>	<b>3</b>
MS2014 Materials Structure and Defects	Core	3
MS2016 Phase Transformation and Kinetics	Core	3
MS2082 Laboratory IIB	Core	1
MS8001 Management with Humour	GER Elective (BM)	3
UE 3	Unrestricted Elective	3
<b>TOTAL</b>		<b>20</b>

<b>YEAR 2 SEMESTER 2</b>		
MS2012 Introduction to Manufacturing Processes	Core	3
MS2013 Polymers and Composites	Core	3
MS2015 Mechanical Behaviour of Materials	Core	3
MS2018 Electronic & Magnetic Properties of Materials	Core	3
MS2081 Laboratory IIA	Core	1
MS0003 Introduction to Data Science and Artificial Intelligence	GER Core	3
ML0003 Kickstart your Career Success	GER Core	1
UE 4	Unrestricted Elective	3
<b>TOTAL</b>		<b>19</b>

**YEAR 3 – Admission to Year 1 (Common Engineering) (AY2018-19)**

<b>Course Code and Title</b>	<b>Type</b>	<b>AU</b>
<b>YEAR 3 SEMESTER 1</b>		
ET0001 Enterprise and Innovation	GER Core	1
HW0288 Engineering Communication II	GER Core	2
MS3011 Metallic & Ceramic Materials	Core	3
MS3012 Micro/Nanoelectronic Materials Processing	Core	3
MS3013 Environmental Effects on Materials	Core	3
MS3014 Analysis of Materials	Core	3
MS3015 Materials Aspects in Design	Core	3
MS3081 Laboratory III	Core	1
UE 5	Unrestricted Elective	3
<b>TOTAL</b>		<b>22</b>

<b>YEAR 3 SEMESTER 2</b>		
MS3099 Professional Internship	Core	10
<b>TOTAL</b>		<b>10</b>

**YEAR 4 – Admission to Year 1 (Common Engineering) (AY2018-19)**

<b>Course Code and Title</b>	<b>Type</b>	<b>AU</b>
<b>YEAR 4 SEMESTER 1</b>		
MS4013 Biomaterials	Core	3
EG0001 Engineers & Society	GER Core	3
MS4089 Final Year Project	Core	4
Major Prescribed Elective 1	Core Elective	3
Major Prescribed Elective 2	Core Elective	3
<b>TOTAL</b>		<b>16</b>

<b>YEAR 4 SEMESTER 2</b>		
MS4012 Quality Control	Core	3
MS4014 Nanomaterials: fundamentals and applications	Core	3
MS4089 Final Year Project	Core	4
Major Prescribed Elective 3	Core Elective	3
Major Prescribed Elective 4	Core Elective	3
<b>TOTAL</b>		<b>16</b>