

**Bachelor of Engineering (Materials Engineering)  
CNYang Scholars Programme (AY2022-23)**

Updated: 27-Jun-22

**Academic Unit (AU) Required for graduation**

Year of Study	Core	CNYSP Core	MPE	CC	FC	BDE	Total AU
1	7	27	-	5	-	3	42
2	14	10	-	8	-	3	35
3	28	-	-	-	8	-	36
4	15	-	9	-	-	-	24
	64	37	9	13	8	6	137

**Year 1 - Semester 1**

Course Code and Title	Course Type	AU
CC0005 Healthy Living & Wellbeing	CC	3
CY1001 Cell	CNYSP Core	3
CY1101 Molecule	CNYSP Core	4
CY1308 Physics	CNYSP Core	3
CY1500 Introduction to Research	CNYSP Core	2
CY1601 Mathematics I	CNYSP Core	4
<b>Total</b>		<b>19</b>

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
CC0002 Navigating the Digital World	CC	2
EG1001 Engineer & Society	Core	2
CY1007 Climate Change	CNYSP Core	3
CY1602 Mathematics II	CNYSP Core	4
MS1014 Materials Chemistry II	Core	2
MS2013 Introduction to Polymer Science	Core	3
BDE1	Core	3
<b>Total</b>		<b>19</b>

Pre-Req

Co-Req

*Offered in*

S1	S2	Both
Y		
Y		
Y		
Y		
		Y
		Y
		Y

MS1014/MS1016

*Not Applicable*

**Year 1 - Special Term**

Course Code and Title	Course Type	AU
CY2003 Research Attachment 3 (Overseas Learning Trip)	CNYSP Core	4
<b>Total</b>		<b>4</b>

Pre-Req

Co-Req

*Offered in*

S1	S2	Both

*Not Applicable*

**Year 2 - Semester 1**

Course Code and Title	Course Type	AU
CC0007 Science & Technology for Humanity	CC	3
CY0002 Ethics	CNYSP Core	3
CY1307 Quantum	BDE (Optional i.e. students can take any other BDE)	3
MS1017 Introduction to Materials Science	Core	2
MS1008 Introduction to Computational Thinking	Core	3
<b>Total</b>		<b>14</b>

Pre-Req

Co-Req

*Offered in*

S1	S2	Both
Y		
Y		
Y		
Y		
Y		

Year 2 - Semester 2		
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
CY0001 Writing Across the Disciplines	CNYS Core	3
CY2001 Research Attachment 1	CNYS Core	4
MS1018 Properties of Materials	Core	2
MS1016 Thermodynamics of Materials	Core	3
MS2083 Laboratory on Structure-Property Relationship in Polymers	Core	1
MS2012 Introduction to Manufacturing Processes	Core	3
<b>Total</b>		<b>21</b>

Pre-Req	Co-Req	Offered in		
		S1	S2	Both
			Y	
			Y	
			Y	
		Y		
			Y	
MS2013	MS1017			Y
				Y
				Y

Year 3 - Semester 1		
Course Code and Title	Course Type	AU
MS2014 Materials Structure and Defects	Core	3
MS2015 Mechanical Behaviour of Materials	Core	3
MS2016 Phase Transformation and Kinetics	Core	3
MS2018 Electronic & Magnetic Properties of Materials	Core	3
MS3012 Micro/Nanoelectronic Materials Processing	Core	3
MS3082 Design Lab	Core	1
<b>Total</b>		<b>16</b>

Pre-Req	Co-Req	Offered in		
		S1	S2	Both
MS1017	MS1018			Y
				Y
	MS1016			Y
				Y
				Y
				Y

Year 3 - Semester 2		
Course Code and Title	Course Type	AU
MS0003 Introduction to Data Science and Artificial Intelligence	FC	3
MS3011 Metallic & Ceramic Materials	Core	3
MS3013 Corrosion of Materials	Core	3
MS3014 Analysis of Materials	Core	3
MS3015 Industrial Design	Core	3
<b>Total</b>		<b>15</b>

Pre-Req	Co-Req	Offered in		
		S1	S2	Both
MS1008			Y	
	MS2016			Y
	MS2013/MS3011			Y
				Y
MS3082	MS2013/MS3011			Y

Year 3 - Special Term		
Course Code and Title	Course Type	AU
MS3096 Professional Attachment	FC	5
<b>Total</b>		<b>5</b>

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

Year 4 - Semester 1		
Course Code and Title	Course Type	AU
MS4211 CNYS Overseas FYP	Core	8
<b>Total</b>		<b>8</b>

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

Year 4 - Semester 2		
Course Code and Title	Course Type	AU
MS4012 Quality Control	Core	3
MS4013 Biomaterials	Core	2
MS4014 Nanomaterials: Fundamentals And Applications	Core	2

Pre-Req	Co-Req	Offered in		
		S1	S2	Both
				Y
MS2013	MS3011			Y
MS2018/MS3012/MS3013				Y

MPE1	MPE	3
MPE2	MPE	3
MPE3	MPE	3
<b>Total</b>		<b>16</b>
	Total AU for Graduation	<b>137</b>