

**AY2022-23 CURRICULUM FOR BACHELOR OF ENGINEERING (MATERIALS ENGINEERING)
WITH CN YANG SCHOLARS PROGRAMME
(FIRST YEAR ADMISSION)**

Last Updated : 6-Jul-23

SUMMARY OF ACADEMIC UNIT REQUIREMENT							
Year of Study	School Core	CNYSP-Core	MPE	CC	FC	BDE	Total AU
1	7	27	0	5	0	3	42
2	14	10	0	8	0	3	35
3	33	0	0	0	8	0	41
4	10	0	9	0	0	0	19
Total	64	37	9	13	8	6	137

YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1001	Cell	CNY-Core	3	CNYSP Courses
CY1101	Molecule	CNY-Core	4	
CY1308	Physics	CNY-Core	3	
CY1500	Introduction to Research	CNY-Core	2	
CY1601	Mathematics I	CNY-Core	4	
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	
			19	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1007	Climate Change	CNY-Core	3	CNYSP Courses
CY1602	Mathematics II	CNY-Core	4	
MS1014	Materials Chemistry II	C	2	
MS2013	Introduction to Polymer Science	C	3	
EG1001	Engineers in Society	C	2	
CC0002	Navigating the Digital World	CC	2	
XXXXXX	Broadening & Deepening Elective 1	BDE	3	
			19	

YEAR 1 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY2003	Research Attachment 3	CNY-Core	4	CNYSP Course
	Overseas Learning Trip			
			4	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0001	Writing Across the Disciplines	CNY-Core	3	CNYSP Course
CY1307	Quantum	BDE	3	Students can choose to opt out and replace with any other BDE course (3 AU)
MS1016	Thermodynamics of Materials	C	3	
MS1017	Introduction to Materials Science	C	2	
SP0061	Science & Technology for Humanity	CC	3	
			14	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYSP Course

CY2001	Research Attachment 1	CNY-Core	4	CNYSP Course 2-semester long, course registered only in Sem 2 (similar to URECA)
MS1008	Introduction to Computational Thinking	C	3	
MS1018	Properties of Materials	C	2	
MS2014	Materials Structure and Defects	C	3	
MS2083	Laboratory on Structure-Property Relationship in Polymers	C	1	
ML0004	Career and Entrepreneurial Development for the Future	CC	2	
CC0006	Sustainability: Human, Social, Economic & Environment	CC	3	
			21	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MS2012	Introduction to Manufacturing Processes	C	3	
MS2015	Mechanical Behaviour of Materials	C	3	
MS2016	Introduction to Metallurgy	C	2	
MS2018	Electronic & Magnetic Properties of Materials	C	3	
MS3082	Design Lab	C	1	
MS4012	Quality Control	C	3	
MS4013	Biomaterials	C	2	
			17	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MS2084	Phase Transformations and Kinetics in Steels	Core	1	
MS3011	Metallic & Ceramic Materials	C	3	
MS3012	Micro/Nanoelectronic Materials Processing	C	3	
MS3013	Corrosion of Materials	C	3	
MS3014	Analysis of Materials	C	3	
MS3015	Industrial Design	C	3	
MS0003	Introduction to Data Science and Artificial Intelligence	FC	3	
			19	

YEAR 3 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MS3096	Professional Attachment	FC	5	
			5	

YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MS4211	CNYSP Overseas Final Year Project	C	8	CNYSP Course
			8	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MS4014	Nanomaterials: Fundamentals and Applications	C	2	
	Major PE 1	MPE	3	
	Major PE 2	MPE	3	
	Major PE 3	MPE	3	
			11	

Total AU for Graduation: **137**