

CURRICULUM FOR BACHELOR OF ENGINEERING (MATERIALS ENGINEERING)
WITH CN YANG SCHOLARS PROGRAMME
(FIRST YEAR ADMISSION)
AY2025 Intake Onwards

SUMMARY OF ACADEMIC UNIT REQUIREMENT								
Year of Study	Major Requirements			Interdisciplinary Collaborative Core			BDE	Total AU
	School Core	CNYSP-Core	MPE	CC	Professional Series	Care, Serve, Learn		
1	15	27	0	2	0	0	0	44
2	13	6	0	8	0	3	4	34
3	28	0	0	0	9	0	3	40
4	10	0	8	0	0	0	2	20
Total	66	33	8	10	9	3	9	138

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		
MS1011	Materials Matter	C	1		
MS1017	Introduction to Materials Science	C	2		
CC0015	Health & Wellbeing	CC	2		
			21		

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		
MS1018	Properties of Materials	C	2		
MS1008	Introduction to Computational Thinking	C	3		
MS2013	Introduction to Polymer Science	C	3		
EG1001	Engineer & Society	C	2		
			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	
MS5915	Undergraduate Research	BDE	IP	Course will be registered in Semester 2. Grades will be recorded at the end of Semester 2	
MS1016	Thermodynamics of Materials	C	3		
MS2012	Introduction to Manufacturing Processes	C	3		
SP0061	Science & Technology for Humanity	CC	3		
	Tech-For-Good (T4G)	CSL	3		
			15		

YEAR 2 SEMESTER 2					
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Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYSP Course
MS5915	Undergraduate Research	BDE	4	2-semester long, course registered only in Sem 2
MS2014	Materials Structure and Defects	C	3	
MS2018	Electronic & Magnetic Properties of Materials	C	3	
MS2083	Laboratory on Structure-Property Relationship in Polymers	C	1	
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2	
CC0006	Sustainability: Society, Economy & Environment	CC	3	
			19	

YEAR 3 SEMESTER 1

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MS2015	Mechanical Behaviour of Materials	C	3	
MS2016	Introduction to Metallurgy	C	2	
MS3014	Analysis of Materials	C	3	
MS3082	Design Lab	C	1	
MS4012	Quality Control	C	3	
MS4013	Biomaterials	C	2	
MLXXXX	Profession Preparation	PS	1	
			15	

YEAR 3 SEMESTER 2

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MS3011	Metallic & Ceramic Materials	C	3	
MS3012	Micro/Nanoelectronic Materials Processing	C	3	
MS3013	Electrochemical Corrosion	C	3	
MS3015	Industrial Design	C	4	
MS0003	Introduction to Data Science and Artificial Intelligence	PS	3	
MS2084	Phase Transformations and Kinetics in Steels	C	1	
	Broadening & Deepening Elective 1	BDE	3	
			20	

YEAR 3 SPECIAL SEMESTER

Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
MS3096	Professional Attachment	PS	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	2	
	Major PE 2	MPE	3	
	Major PE 3	MPE	3	
	Broadening & Deepening Elective 2	BDE	2	
			12	
Total AU for Graduation:				138