

**Curriculum for CN Yang Scholars Programme
Materials Engineering
(For AY2018-19 intake)**

Course Type	AU
Core Courses	107
Major Prescribed Electives	12
GER-Core	17
GER-PE	0
Unrestricted Electives	6
Total	142

	Course Code	Course Title	Type	AU
Year 1 Semester 1	CY1001	Introductory Biology	Core	3
	CY1101	Principles of Modern Chemistry	Core	3
	CY1308	Physics	Core	3
	CY1500	Introductory Research Methodology	Core	3
	CY1601	Mathematics I	Core	4
	GC0001	Introduction to Sustainability: Multidisciplinary Approaches and Solutions	GER-Core	1
				Total AUs

	Course Code	Course Title	Type	AU
Year 1 Semester 2	CY1007	Climate Science: Multi-Disciplinary Perspectives	Core	3
	CY1307	Relativity and Quantum Physics	Core	3
	CY1400	CNYSPP Undergraduate Research Experience	Core	3
	CY1602	Mathematics II	Core	4
	MS1014	Materials Chemistry II	Core	3
	MS1008	Introduction to Computational Thinking	Core	3
				Total AUs

	Course Code	Course Title	Type	AU
Year 1 Special Term	CY2003	Research Attachment 3 (Making & Tinkering)	Core	4
	Overseas Learning Trip			
			Total AUs	4

	Course Code	Course Title	Type	AU	
Year 2 Semester 1	CY2001	Research Attachment 1	Core	4	
	CY0001	Writing and Reasoning	GER-Core	3	
	MS1015	Materials Science	Core	3	
	MS1016	Thermodynamics of Materials	Core	3	
	MS2012	Introduction to Manufacturing Processes	Core	3	
	MS2013	Polymers and Composites	Core	3	
	MS2018	Electronic & Magnetic Properties of Materials	Core	3	
	MS2081	Laboratory IIA	Core	1	
				Total AUs	23

	Course Code	Course Title	Type	AU	
Year 2 Semester 2	CY2002	Research Attachment 2	Core	4	
	CY0002	Ethics	GER-Core	3	
	MS2014	Materials Structure and Defects	Core	3	
	MS2015	Mechanical Behaviour of Materials	Core	3	
	MS2016	Phase Transformation and Kinetics	Core	3	
	MS2082	Laboratory IIB	Core	1	
	XXXXX	Unrestricted Elective	UE	3	
	MS0003	Introduction to Data Science and Artificial Intelligence	GER-Core	3	
	ML0003	Career Preparatory Course	GER-Core	1	
				Total AUs	24

	Course Code	Course Title	Type	AU
Year 3 Semester 1	MS3011	Metallic & Ceramic Materials	Core	3
	MS3012	Micro/Nanoelectronic Materials Processing	Core	3
	MS46XX	School Major PE (choose from Table B)	Major PE	3
	MS46XX	School Major PE (choose from Table B)	Major PE	3
	CY0006	Enterprise, Innovation and Leadership	GER-Core	3
				Total AUs

	Course Code	Course Title	Type	AU
Year 3 Semester 2	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
	MS4013	Biomaterials	Core	3

	MS4014	Nanomaterials: Fundamentals and Applications	Core	3
			Total AUs	16

Year 3 Special Term	Course Code	Course Title	Type	AU
	MS3096	Professional Attachment	Core	5
				Total AUs

Year 4 Semester 1	Course Code	Course Title	Type	AU
	MS4211	CNYSP Overseas Final Year Project	Core	8
				Total AUs

Year 4 Semester 2	Course Code	Course Title	Type	AU
	MS0002	Engineers and Society	GER-Core	3
	MS4012	Quality Control	Core	3
	MS46XX	School Major PE (choose from Table B)	Major PE	3
	MS46XX	School Major PE (choose from Table B)	Major PE	3
	xxxxxx	Unrestricted Elective	UE	3
				Total AUs
GRAND TOTAL				140

Table A: School Core (54 AUs)

School Core (54 AUs)	Type	AU
MS1014 Materials Chemistry II	Core	3
MS1015 Materials Science	Core	3
MS1016 Thermodynamics of Materials	Core	3
MS2012 Introduction to Manufacturing Processes	Core	3
MS2013 Polymers and Composites	Core	3
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
MS2081 Laboratory IIA	Core	1
MS2082 Laboratory IIB	Core	1
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
MS4012 Quality Control	Core	3
MS4013 Biomaterials	Core	3
MS4014 Nanomaterials: Fundamentals and Applications	Core	3
Total		54

Table B: School Major PE (choose courses with a total of 12 AUs)

School Major PE (12 AUs)	Type	AU
MS4601 Principles of Semiconductor Devices	Major PE	3
MS4603 Microelectronics Process Integration	Major PE	3
MS4610 Advanced Biomaterials	Major PE	3
MS4611 Biomedical Devices	Major PE	3
MS4612 Drug Delivery and Tissue Engineering	Major PE	3
MS4620 Polymer Technology	Major PE	3
MS4621 Polymer Science	Major PE	3
MS4622 Composite Materials	Major PE	3
MS4630 Photovoltaic Devices and Energy Storage	Major PE	3
MS4631 Corrosion Engineering	Major PE	3
MS4640 Advanced Analysis of Materials	Major PE	3
MS4650 Functional Nanostructured Materials	Major PE	3
MS4651 Thin Film Technology	Major PE	3