

**Bachelor of Engineering (Materials Engineering)
CN Yang Scholars Programme (AY2020-21)**

Academic Unit (AU) Required for graduation

| Year of Study | Core | Major Prescribed Electives | GER-Core | GER-PE (BM) | GER-PE(LA) | GER-PE (STS) | Unrestricted Electives | Total AU |
|---------------|------|----------------------------|----------|-------------|------------|--------------|------------------------|----------|
| 1 | 39 | - | 1 | - | - | - | - | 40 |
| 2 | 27 | - | 10 | - | - | - | - | 37 |
| 3 | 30 | 3 | 6 | - | - | - | 3 | 42 |
| 4 | 14 | 6 | - | - | - | - | 3 | 23 |
| | | | | | | | | 142 |

* 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 - Semester 1

| Course Code and Title | Course Type | AU |
|---|-------------|-----------|
| GC0001 Introduction to Sustainability: Multidisciplinary Approaches and Solutions | GER-Core | 1 |
| CY1001 Introductory Biology | Core | 3 |
| CY1101 Principles of Modern Chemistry (EF 1) | Core | 3 |
| CY1308 Physics | Core | 3 |
| CY1500 Introductory Research Methodology | Core | 3 |
| CY1601 Mathematics I | Core | 4 |
| Total | | 17 |

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

* Students who obtained at least 3 'A's in H2 level subjects and at least grade 'E' or 'C6' in General Paper (GP) or Knowledge Inquiry (KI) will be eligible for exemption if a grade 'A' is obtained in the corresponding subject at H2 level.

Year 1 - Semester 2

| Course Code and Title | Course Type | AU |
|--|-------------|----|
| CY1007 Climate Change | Core | 3 |
| CY1307 Relativity and Quantum Physics | Core | 3 |
| CY1400 CNYSP Undergraduate Research Experience | Core | 3 |
| CY1602 Mathematics II | Core | 4 |
| MS1014 Materials Chemistry II | Core | 3 |
| Engineering Fundamentals (EF 2) | Core | 3 |

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|--------------|-----------|
| Total | 19 |
|--------------|-----------|

| Year 1 - Special Term | | |
|---|-------------|----------|
| Course Code and Title | Course Type | AU |
| CY2003 Research Attachment 3 (Making & Tinkering) | Core | 4 |
| Total | | 4 |

| Year 2 - Semester 1 | | |
|--|-------------|-----------|
| Course Code and Title | Course Type | AU |
| CY2001 Research Attachment 1 | Core | 4 |
| CY0002 Ethics | GER-Core | 3 |
| MS1015 Materials Science | Core | 3 |
| MS1016 Thermodynamics of Materials | Core | 3 |
| MS2012 Introduction to Manufacturing Processes | Core | 3 |
| MS2081 Laboratory IIA | Core | 1 |
| MS1008 Introduction to Computational Thinking | Core | 3 |
| Total | | 20 |

| Year 2 - Semester 2 | | |
|---|-------------|-----------|
| Course Code and Title | Course Type | AU |
| CY0001 Writing Across the Disciplines | GER-Core | 3 |
| MS2013 Polymers and Composites | Core | 3 |
| MS2014 Materials Structure and Defects | Core | 3 |
| MS2016 Phase Transformation and Kinetics | Core | 3 |
| MS2082 Laboratory IIB | Core | 1 |
| MS0003 Introduction to Data Science and Artificial Intelligence | GER-Core | 3 |
| ML0003 Kickstart your Career Success | GER-Core | 1 |
| Total | | 17 |

| Year 3 - Semester 1 | | |
|---|-------------|-----------|
| Course Code and Title | Course Type | AU |
| EG0001 Engineers and Society | GER-Core | 3 |
| MS2015 Mechanical Behaviour of Materials | Core | 3 |
| MS2018 Electronics & Magnetic Properties of Materials | Core | 3 |
| MS3011 Metallic & Ceramic Materials | Core | 3 |
| MS3012 Micro/Nanoelectronic Materials Processing | Core | 3 |
| CY0006 Enterprise, Innovation and Leadership | GER-Core | 3 |
| Total | | 18 |

| Year 3 - Semester 2 | | |
|---------------------|--|--|
|---------------------|--|--|

| Course Code and Title | Course Type | AU |
|---|----------------------------|-----------|
| 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 |
| Major Prescribed Elective 1 | Major Prescribed Electives | 3 |
| UE 1 | Unrestricted Electives | 3 |
| Total | | 19 |

| Year 3 - Special Term | | |
|--------------------------------|-------------|----------|
| Course Code and Title | Course Type | AU |
| MS3096 Professional Attachment | Core | 5 |
| Total | | 5 |

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

| Year 4 - Semester 2 | | |
|---|----------------------------|-----------|
| Course Code and Title | Course Type | AU |
| MS4012 Quality Control | Core | 3 |
| MS4014 Nanomaterials: Fundamentals and Applications | Core | 3 |
| Major Prescribed Elective 2 | Major Prescribed Electives | 3 |
| Major Prescribed Elective 3 | Major Prescribed Electives | 3 |
| UE 2 | Unrestricted Electives | 3 |
| Total | | 15 |