

**Bachelor of Engineering (Materials Engineering)
CNYang Scholars Programme (AY2021-22)**

Academic Unit (AU) Required for graduation

| Year of Study | Core | CNYS Core | MPE | CC | FC | BDE | Total AU |
|---------------|------|-----------|-----|----|----|-----|----------|
| 1 | 7 | 30 | - | 5 | - | - | 42 |
| 2 | 14 | 10 | - | 8 | - | 3 | 35 |
| 3 | 28 | - | - | - | 8 | - | 36 |
| 4 | 15 | - | 9 | - | - | - | 24 |
| | 64 | 40 | 9 | 13 | 8 | 3 | 137 |

Year 1 - Semester 1

| Course Code and Title | Course Type | AU |
|-----------------------------------|-------------|-----------|
| CC0005 Healthy Living & Wellbeing | CC | 3 |
| CY1001 Cell | CNYS Core | 3 |
| CY1101 Molecule | CNYS Core | 4 |
| CY1308 Physics | CNYS Core | 3 |
| CY1500 Introductory to Research | CNYS Core | 2 |
| CY1601 Mathematics I | CNYS Core | 4 |
| Total | | 19 |

Year 1 - Semester 2

| Course Code and Title | Course Type | AU |
|---|-------------|-----------|
| CC0002 Navigating the Digital World | CC | 2 |
| EG1001 Engineer & Society | Core | 2 |
| CY1007 Living with Climate Change | CNYS Core | 3 |
| CY1400 CNYS Undergraduate Research Experience | CNYS Core | 3 |
| CY1602 Mathematics II | CNYS Core | 4 |
| MS1014 Materials Chemistry II | Core | 2 |
| MS2013 Introduction to Polymer Science | Core | 3 |
| Total | | 19 |

| Year 1 - Special Term | | |
|---|-------------|----------|
| Course Code and Title | Course Type | AU |
| CY2003 Research Attachment 3 (Overseas Learning Trip) | CNYSP Core | 4 |
| Total | | 4 |

| 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 |
| CY2001 Research Attachment 1 | CNYSP Core | 4 |
| MS1017 Introduction to Materials Science | Core | 2 |
| MS1008 Introduction to Computational Thinking | Core | 3 |
| Total | | 18 |

| 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 | CNYSP Core | 3 |
| 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 |
| Total | | 17 |

| 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 |
| Total | | 16 |

| 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 Materials Aspects in Design | Core | 3 |
| Total | | 15 |

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

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

| 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 |
| MPE1 | MPE | 3 |
| MPE2 | MPE | 3 |
| MPE3 | MPE | 3 |
| Total | | 16 |