

**AY2021-22 CURRICULUM FOR BACHELOR OF ENGINEERING (MATERIALS ENGINEERING)
WITH CN YANG SCHOLARS PROGRAMME
(FIRST YEAR ADMISSION)**

Last Updated : 18-Jun-21

| SUMMARY OF ACADEMIC UNIT REQUIREMENT | | | | | | | |
|--------------------------------------|-------------|-----------|----------|-----------|----------|----------|------------|
| Year of Study | School Core | CNYS-Core | MPE | CC | FC | BDE | Total AU |
| 1 | 7 | 30 | 0 | 5 | 0 | 0 | 42 |
| 2 | 14 | 10 | 0 | 8 | 0 | 3 | 35 |
| 3 | 28 | 0 | 0 | 0 | 8 | 0 | 36 |
| 4 | 15 | 0 | 9 | 0 | 0 | 0 | 24 |
| Total | 64 | 40 | 9 | 13 | 8 | 3 | 137 |

| YEAR 1 SEMESTER 1 | | | | |
|-------------------|---|----------|-----------|-----------------------|
| Course Code | Course Title | Type | AU | Pre-Requisite/Remarks |
| CY1001 | Cell | CNY-Core | 3 | CNYS-SP 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 | Living with Climate Change | CNY-Core | 3 | CNYS-SP Courses |
| CY1602 | Mathematics II | CNY-Core | 4 | |
| CC0002 | Navigating the Digital World | CC | 2 | |
| EG1001 | Engineers in Society | C | 2 | |
| MS1014 | Materials Chemistry II | C | 2 | |
| MS2013 | Introduction to Polymer Science | C | 3 | |
| | BDE | BDE | 3 | |
| | | | 19 | |

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

| YEAR 2 SEMESTER 1 | | | | |
|-------------------|--|----------|-----------|---|
| Course Code | Course Title | Type | AU | Pre-Requisite/Remarks |
| CY2001 | Research Attachment 1 | CNY-Core | 4 | CNYSP Courses |
| CY0002 | Ethics | CNY-Core | 3 | |
| CY1307 | Quantum | BDE | 3 | Optional i.e. students can take any other BDE module. |
| MS1008 | Introduction to Computational Thinking | C | 3 | |
| MS1017 | Introduction to Materials Science | C | 2 | |
| CC0007 | Science & Technology for Humanity | CC | 3 | |
| | | | 18 | |

| YEAR 2 SEMESTER 2 | | | | |
|-------------------|---|----------|-----------|-----------------------|
| Course Code | Course Title | Type | AU | Pre-Requisite/Remarks |
| CY0001 | Writing Across the Disciplines | CNY-Core | 3 | CNYSP Course |
| MS1016 | Thermodynamics of Materials | C | 3 | |
| MS1018 | Properties of Materials | C | 2 | |
| MS2012 | Introduction to Manufacturing Processes | C | 3 | |
| MS2083 | Polymer (Soft Matters) Lab | C | 1 | |
| ML0004 | Career and Entrepreneurial Development for the Future World | CC | 2 | |
| CC0006 | Sustainability: Human, Social, Economic & Environment | CC | 3 | |
| | | | 17 | |

| YEAR 3 SEMESTER 1 | | | | |
|-------------------|---|------|-----------|-----------------------|
| Course Code | Course Title | Type | AU | Pre-Requisite/Remarks |
| MS2014 | Materials Structure and Defects | C | 3 | |
| MS2015 | Mechanical Behaviour of Materials | C | 3 | |
| MS2016 | Phase Transformation and Kinetics | C | 3 | |
| MS2018 | Electronic & Magnetic Properties of Materials | C | 3 | |
| MS3012 | Micro/Nanoelectronic Materials Processing | C | 3 | |
| MS3082 | Design Lab | C | 1 | |
| | | | 16 | |

| YEAR 3 SEMESTER 2 | | | | |
|-------------------|------------------------------|------|----|-----------------------|
| Course Code | Course Title | Type | AU | Pre-Requisite/Remarks |
| MS3011 | Metallic & Ceramic Materials | C | 3 | |
| MS3013 | Corrosion of Materials | C | 3 | |
| MS3014 | Analysis of Materials | C | 3 | |
| MS3015 | Material Aspects in Design | C | 3 | |

| | | | | |
|--------|------------------|----|-----------|--|
| MS0003 | Digital Literacy | FC | 3 | |
| | | | 15 | |

| 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 |
| MS4012 | Quality Control | C | 3 | |
| MS4013 | Biomaterials | C | 2 | |
| MS4014 | Nanomaterials: Fundamentals and Applications | C | 2 | |
| | Major PE 1 | MPE | 3 | |
| | Major PE 2 | MPE | 3 | |
| | Major PE 3 | MPE | 3 | |
| | | | 16 | |

Total AU for Graduation : **137**