

B.Eng (Hons) in Bioengineering CNYang Scholars Programme

AY2024 - 2025 Intake onwards (BIE CNYSP)

| Programme | Year of Study | Number of Academic Units (AU) | | | | | | |
|-------------------------|---------------|-------------------------------|-----------------|----------------|-------------------|------------------------|--|-------|
| | | Major Requirement | | | Interdisciplinary | | Broadening and Deepening Electives (BDE) | Total |
| | | School Core (C) | CNYang Core (C) | Major PE (MPE) | Common Core (CC) | Foundational Core (FC) | | |
| Bioengineering (CNYang) | 1 | 6 | 27 | | 5 | | | 38 |
| | 2 | 26 | 10 | | 8 | | | 44 |
| | 3 | 21 | | | | 5 | 3 | 29 |
| | 4 | 9 | | 6 | | 3 | 9 | 27 |
| | Total | 62 | 37 | 6 | 13 | 8 | 12 | 138 |

| Category | | AU | Total AU |
|--|--|----|----------|
| Interdisciplinary Collaborative Core (ICC) | Common Core (University-level) | | |
| | CC0002 Navigating the Digital World | 2 | 13 |
| | CC0005 Healthy Living & Wellbeing | 3 | |
| | CC0006 Sustainability: Society, Economy & Environment | 3 | |
| | SP0061 Science & Technology for Humanity | 3 | |
| | ML0004 Career and Entrepreneurial Development for the Future World | 2 | |
| | Foundational Core (College-level) | | |
| | CB0494 Introduction to Data Science and Artificial Intelligence | 3 | 8 |
| | BG3910 Professional Attachment | 5 | |
| Major Requirement | BIE Core | | |
| | EG1001 Engineers In Society | 2 | 27 |
| | Introduction to Chemical and Biomedical Engineering | 1 | |
| | CB1102 Engineering | 3 | |
| | BG1141 Cellular & Molecular Biology for Bioengineers | 3 | |
| | BG2103 Signal Processing in Biosystems | 3 | |
| | BG2104 Electronics for Biomedical Engineering | 3 | |
| | BG2110 Bioelectricity | 3 | |
| | BG2119 Anatomy and Physiology | 3 | |
| | BG2131 Biomaterials | 3 | |
| | BG2142 Biological Thermodynamics | 3 | |
| | BG2209 Mechanics for Bioengineers | 3 | |

| | | | | |
|--|-------------------|--|---|------------|
| Major Requirement | BG2211 | Introduction to Computational Thinking | 3 | 72 |
| | BG2801 | Bioengineering Lab 2A | 1 | |
| | BG2802 | Bioengineering Lab 2B | 1 | |
| | BG3102 | Control in Biosystems | 3 | |
| | BG3104 | Biomedical Imaging | 3 | |
| | BG3105 | Biomedical Instrumentation | 3 | |
| | BG3112 | Cardiovascular Engineering | 3 | |
| | BG3801 | Bioengineering Lab 3 | 1 | |
| | BG4104 | Machine Learning and Optimization for Bioengineers | 3 | |
| | BG4122 | Medical Device Design | 6 | |
| | BG4211 | CNYSP Overseas Final Year Project | 8 | |
| | CNYSP Core | | | |
| | CY0001 | Writing Across the Disciplines | 3 | |
| | CY0002 | Ethics | 3 | |
| | CY1001 | Cell | 3 | |
| | CY1007 | Climate Change | 3 | |
| | CY1101 | Molecule | 4 | |
| | CY1308 | Physics | 3 | |
| | CY1500 | Introduction to Research | 2 | |
| | CY1601 | Mathematics I | 4 | |
| | CY1602 | Mathematics II | 4 | |
| | CY2001 | Research Attachment 1 | 4 | |
| | CY2003 | Research Attachment 3 | 4 | |
| BIE Major Prescribed Electives (MPE) | | | | 6 |
| Broadening and Deepening Electives (BDE) | | | | 12 |
| Total | | | | 138 |

B.Eng (Hons) in Bioengineering CNYang Scholars Programme
Suggested Study Plan for AY2024-2025 intake
with Professional Attachment (BIE CNYSP)

Year 1 Semester 1

| Course | | Type | AU |
|--------|---|------|----|
| CB1102 | Introduction to Chemical and Biomedical Engineering | C | 1 |
| BG1141 | Cellular & Molecular Biology for Bioengineers | C | 3 |
| CY1001 | Cell | C | 3 |
| CY1101 | Molecule | C | 4 |
| CY1308 | Physics | C | 3 |
| CY1500 | Introduction to Research | C | 2 |
| CY1601 | Mathematics 1 | C | 4 |
| CC0002 | Navigating the Digital World | CC | 2 |

22

Year 2 Semester 1

| Course | | Type | AU |
|--------|---|------|----|
| BG2119 | Anatomy and Physiology | C | 3 |
| BG2131 | Biomaterials | C | 3 |
| BG2142 | Biological Thermodynamics | C | 3 |
| BG2211 | Introduction to Computational Thinking | C | 3 |
| BG2801 | Bioengineering Lab 2A | C | 1 |
| CY0001 | Writing Across The Disciplines | C | 3 |
| CC0006 | Sustainability: Society, Economy & Environment | CC | 3 |
| ML0004 | Career and Entrepreneurial Development for the Future World | CC | 2 |

21

Year 3 Semester 1

| Course | | Type | AU |
|--------|----------------------------|------|----|
| BG3102 | Control in Biosystems | C | 3 |
| BG3104 | Biomedical Imaging | C | 3 |
| BG3105 | Biomedical Instrumentation | C | 3 |
| BG3112 | Cardiovascular Engineering | C | 3 |
| BG3801 | Bioengineering Lab 3 | C | 1 |
| | BDE 1 | BDE | 3 |

16

Year 4 Semester 1

| Course | | Type | AU |
|--------|--|------|----|
| BG4104 | Machine Learning and Optimization for Bioengineers | C | 3 |
| BG4122 | Medical Device Design | C | 3 |
| | BIE PE 1 | MPE | 3 |
| | BDE 2 | BDE | 3 |

12

Year 1 Semester 2

| Course | | Type | AU |
|--------|----------------------------|------|----|
| EG1001 | Engineers in Society | C | 2 |
| CY1007 | Climate Change | C | 3 |
| CY1602 | Mathematics II | C | 4 |
| CC0005 | Healthy Living & Wellbeing | CC | 3 |

Year 1 Special Term

| | | | |
|--------|--|---|---|
| CY2003 | Research Attachment 3 (Making and Tinkering) | C | 4 |
| — | Overseas Learning Trip | — | — |

16

Year 2 Semester 2

| Course | | Type | AU |
|--------|--|------|----|
| BG2103 | Signal Processing in Biosystems | C | 3 |
| BG2104 | Electronics for Biomedical Engineering | C | 3 |
| BG2110 | Bioelectricity | C | 3 |
| BG2209 | Mechanics for Bioengineers | C | 3 |
| BG2802 | Bioengineering Lab 2B | C | 1 |
| CY0002 | Ethics | C | 3 |
| CY2001 | Research Attachment 1 | C | 4 |
| SP0061 | Science & Technology for Humanity | CC | 3 |

23

Year 3 Semester 2

| Course | | Type | AU |
|--------|-----------------------------------|------|----|
| BG4211 | CNYSP Overseas Final Year Project | C | 8 |

Year 3 Special Term

| | | | |
|--------|-------------------------|----|---|
| BG3910 | Professional Attachment | FC | 5 |
|--------|-------------------------|----|---|

13

Year 4 Semester 2

| Course | | Type | AU |
|--------|--|------|----|
| BG4122 | Medical Device Design | C | 3 |
| CB0494 | Introduction to Data Science and Artificial Intelligence | FC | 3 |
| | BIE PE2 | MPE | 3 |
| | BDE 3 | BDE | 3 |
| | BDE 4 | BDE | 3 |

15

Total (AU)

138