

B.Eng (Hons) in Bioengineering (ABP)

AY2024 - 2025 Intake onwards

with Professional Attachment (BIE ABP)

| Programme | Year of Study | Number of Academic Units (AU) | | | | | |
|----------------|---------------|-------------------------------|----------------|--------------------------------------|------------------------|--|----------|
| | | Major Requirement | | Interdisciplinary Collaborative Core | | Broadening and Deepening Electives (BDE) | Total |
| | | Core (C) | Major PE (MPE) | Common Core (CC) | Foundational Core (FC) | | |
| Bioengineering | 1 | 21/22* | | 9 | | 9 | 39/40* |
| | 2 | 26 | | 8 | 3 | | 37 |
| | 3 | 27 | 3 | | 7 | 6 | 43 |
| | 4 | 3 | 3 | | | 11 | 17 |
| | Total | 77/78* | 6 | 17 | 10 | 26 | 136/137* |

BIE Accelerated Bachelor Programme (ABP)

| Category | | AU | Total AU |
|--|--|----|----------|
| Interdisciplinary Collaborative Core (ICC) | Common Core (University-level) | | |
| | CC0001 Inquiry and Communication in the Interdisciplinary World | 2 | 17 |
| | CC0002 Navigating the Digital World | 2 | |
| | CC0003 Ethics & Civics in a Multi-Cultural World | 2 | |
| | CC0005 Healthy Living & Wellbeing | 3 | |
| | CC0006 Sustainability: Society, Economy & Environment | 3 | |
| | CC0007 Science & Technology for Humanity | 3 | |
| | ML0004 Career and Entrepreneurial Development for the Future World | 2 | |
| | | | |
| | Foundational Core (College-level) | | |
| Major Requirement | HW0288 Engineering Communication | 2 | 10 |
| | CB0494 Introduction to Data Science and Artificial Intelligence | 3 | |
| | BG3910 Professional Attachment | 5 | |
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|--|--------------------------------------|--|----------|----|
| Major Requirement | CB1117 | Engineering Mathematics | 4 | 65 |
| | BG1141 | Cellular & Molecular Biology for Bioengineers | 3 | |
| | BG1801 | Bioengineering Lab 1A | 1 | |
| | BG1802 | Bioengineering Lab 1B | 1 | |
| | 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 | |
| | BG2211 | Introduction to Computational Thinking | 3 | |
| | 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 | |
| | BG4801 | Final Year Project | 8 | |
| | BIE Major Prescribed Electives (MPE) | | | 6 |
| | | | | |
| Broadening and Deepening Electives (BDE) | | | 26 | |
| | | | | |
| Total | | | 136/137* | |

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

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

| Year 1 Semester 1 | | | | Year 1 Semester 2 | | | |
|-------------------|---|------|----|---------------------|--|------|----|
| Course | | Type | AU | Course | | Type | AU |
| CB1102 | Introduction to Chemical and Biomedical Engineering | C | 1 | CB1103 | Organic Chemistry For Engineers | C | 3 |
| BG1141 | Cellular & Molecular Biology for Bioengineers | C | 3 | CB1117 | Engineering Mathematics | C | 4 |
| BG1801 | Bioengineering Lab 1A | C | 1 | BG1802 | Bioengineering Lab 1B | C | 1 |
| MH1810 | Math 1 | C | 3 | EG1001 | Engineers in Society | C | 2 |
| PH1011 | Physics | C | 3 | CC0003 | Ethics & Civics in a Multi-Cultural World | CC | 2 |
| PH1012 | or Physics A (*For students without 'A' Level Physics) | | 4 | CC0005 | Healthy Living & Wellbeing | CC | 3 |
| | | | | | BDE 2 | BDE | 3 |
| CC0001 | Inquiry and Communication in the Interdisciplinary World | CC | 2 | | BDE 3 | BDE | 3 |
| CC0002 | Navigating the Digital World | CC | 2 | | | | |
| | BDE 1 | BDE | 3 | | | | |
| | | | * | | | | |
| | | | 18 | 19 | | | |
| Year 2 Semester 1 | | | | Year 2 Semester 2 | | | |
| Course | | Type | AU | Course | | Type | AU |
| BG2119 | Anatomy and Physiology | C | 3 | BG2103 | Signal Processing in Biosystems | C | 3 |
| BG2131 | Biomaterials | C | 3 | BG2104 | Electronics for Biomedical Engineering | C | 3 |
| BG2142 | Biological Thermodynamics | C | 3 | BG2110 | Bioelectricity | C | 3 |
| BG2211 | Introduction to Computational Thinking | C | 3 | BG2209 | Mechanics for Bioengineers | C | 3 |
| BG2801 | Bioengineering Lab 2A | C | 1 | BG2802 | Bioengineering Lab 2B | C | 1 |
| CC0006 | Sustainability: Society, Economy & Environment | CC | 3 | CC0007 | Science & Technology for Humanity | CC | 3 |
| ML0004 | Career and Entrepreneurial Development for the Future World | CC | 2 | CB0494 | Introduction to Data Science and Artificial Intelligence | FC | 3 |
| | | | 18 | 19 | | | |
| Year 3 Semester 1 | | | | Year 3 Semester 2 | | | |
| Course | | Type | AU | Course | | Type | AU |
| BG3102 | Control in Biosystems | C | 3 | BG4122 | Medical Device Design | C | 3 |
| BG3104 | Biomedical Imaging | C | 3 | BG4801 | Final Year Project | C | 4 |
| BG3105 | Biomedical Instrumentation | C | 3 | | BIE PE1 | MPE | 3 |
| BG3112 | Cardiovascular Engineering | C | 3 | | BDE 4 | BDE | 3 |
| BG3801 | Bioengineering Lab 3 | C | 1 | | BDE 5 | BDE | 3 |
| BG4122 | Medical Device Design | C | 3 | Year 3 Special Term | | | |
| BG4801 | Final Year Project | C | 4 | BG3910 | Professional Attachment | FC | 5 |
| HW0288 | Engineering Communication | FC | 2 | | | | |
| | | | 22 | 21 | | | |
| Year 4 Semester 1 | | | | Year 4 Semester 2 | | | |
| Course | | Type | AU | Course | | Type | AU |
| BG4104 | Machine Learning and Optimization for Bioengineers | C | 3 | | | | |
| | BIE PE2 | MPE | 3 | | | | |
| | BDE 6 | BDE | 3 | | | | |
| | BDE 7 | BDE | 3 | | | | |
| | BDE 8 | BDE | 3 | | | | |
| | BDE 9 | BDE | 2 | | | | |
| | | | 17 | 0 | | | |
| | | | | Total (AU) | | | |
| | | | | 136 | | | |
| | | | | 137 | | | |

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