

B.Eng (Hons) in Chemical and Biomolecular Engineering (CBE)

AY2022 - 2023 Intake onwards

with Professional Internship

| Programme | Year of Study | Number of Academic Units (AUs) | | | | | |
|-------------------------------------|---------------|--------------------------------|----------------|--------------------------------------|------------------------|------------------------------------|----------|
| | | Major Requirement | | Interdisciplinary Collaborative Core | | Broadening and Deepening Electives | Total |
| | | Core (C) | Major PE (MPE) | Common Core (CC) | Foundational Core (FC) | | |
| Chemical & Biomolecular Engineering | 1 | 24/25* | | 9 | | 6 | 39/40* |
| | 2 | 28 | | 8 | 3 | | 39 |
| | 3 | 17 | | | 12 | | 29 |
| | 4 | 8 | 6 | | | 15 | 29 |
| | Total | 77/78* | 6 | 17 | 15 | 21 | 136/137* |

B.Eng (Hons) in Chemical and Biomolecular Engineering (CBE)

| 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 | 15 |
| | CB0494 Introduction to Data Science and Artificial Intelligence | 3 | |
| | CH3880 Professional Internship | 10 | |
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|------------------------------------------|--------------------------------------|---------------------------------------------------------|---|----------|
| Major Requirement | CB1117 | Engineering Mathematics | 4 | 65 |
| | CB1131 | Introduction to Biomolecular Engineering | 3 | |
| | CH1104 | Materials & Energy Balance | 3 | |
| | CH1801 | Chemical & Biomolecular Engineering Laboratory 1A | 1 | |
| | CH1802 | Chemical & Biomolecular Engineering Laboratory 2 | 1 | |
| | CH2010 | Engineering Statistics | 3 | |
| | CH2103 | Fluid Systems | 3 | |
| | CH2107 | Introduction to Computational Thinking | 3 | |
| | CH2108 | Thermodynamics | 3 | |
| | CH2112 | Chemical Reaction Engineering | 3 | |
| | CH2114 | Heat & Mass Transfer in Chemical and Biological Systems | 3 | |
| | CH2123 | Chemical Thermodynamics | 3 | |
| | CH2151 | Unit Operations: Fluid-Solid Separation | 3 | |
| | CH2801 | Chemical & Biomolecular Engineering Laboratory 2A | 2 | |
| | CH2802 | Chemical & Biomolecular Engineering Laboratory 2B | 2 | |
| | CH3104 | Biochemical Engineering | 3 | |
| | CH3109 | Decision Tools for Business & Engineering | 3 | |
| | CH3111 | Process Control and Dynamics | 3 | |
| | CH3121 | Chemical, Biological & Plant Safety | 2 | |
| | CH3140 | Unit Operations: Fluid-Fluid Separation | 3 | |
| | CH3802 | Chemical & Biomolecular Engineering Laboratory 5 | 3 | |
| | CH4801 | Final Year Design Project | 8 | |
| | CBE Major Prescribed Electives (MPE) | | | |
| Broadening and Deepening Electives (BDE) | | | | 21 |
| Total | | | | 136/137* |

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

B.Eng. (Chemical & Biomolecular Engineering)
Suggested Study Plan for AY2022-2023 intake
with Professional Internship

| 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 | |
| CB1131 Introduction to Biomolecular Engineering | C | 3 | | CB1117 Engineering Mathematics | C | 4 | |
| CH1801 Chemical & Biomolecular Engineering Laboratory 1A | C | 1 | | CH1104 Materials & Energy Balance | C | 3 | |
| MH1810 Math 1 | C | 3 | | CH1802 Chemical & Biomolecular Engineering Laboratory 2 | C | 1 | |
| PH1011 Physics | C | 3 | | EG1001 Engineers in Society | C | 2 | |
| PH1012 Physics A (*For students without 'A' Level Physics) | C | 4 | | CC0003 Ethics & Civics in a Multi-Cultural World | CC | 2 | |
| CC0001 Inquiry and Communication in the Interdisciplinary World | CC | 2 | | CC0005 Healthy Living & Well-being | CC | 3 | |
| CC0002 Navigating the Digital World | CC | 2 | | BDE 2 | BDE | 3 | |
| BDE 1 | BDE | 3 | | | | | |
| | | | * | | | | |
| | | 18 | 19 | | | 21 | |
| Year 2 Semester 1 | | | | Year 2 Semester 2 | | | |
| Course | Type | AU | | Course | Type | AU | |
| CH2103 Fluid Systems | C | 3 | | CH2112 Chemical Reaction Engineering | C | 3 | |
| CH2107 Introduction to Computational Thinking | C | 3 | | CH2114 Heat & Mass Transfer in Chemical and Biological Systems | C | 3 | |
| CH2108 Thermodynamics | C | 3 | | CH2123 Chemical Thermodynamics | C | 3 | |
| CH2010 Engineering Statistics | C | 3 | | CH2151 Unit Operations: Fluid-Solid Separation | C | 3 | |
| CH2801 Chemical & Biomolecular Engineering Laboratory 2A | C | 2 | | CH2802 Chemical & Biomolecular Engineering Laboratory 2B | C | 2 | |
| 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 | |
| | | 19 | | | | 20 | |
| Year 3 Semester 1 | | | | Year 3 Semester 2 | | | |
| Course | Type | AU | | Course | Type | AU | |
| CH3104 Biochemical Engineering | C | 3 | | CH3880 Professional Internship | FC | 10 | |
| CH3109 Decision Tools for Business & Engineering | C | 3 | | | | | |
| CH3111 Process Control and Dynamics | C | 3 | | | | | |
| CH3121 Chemical, Biological & Plant Safety | C | 2 | | | | | |
| CH3140 Unit Operations: Fluid-Fluid Separation | C | 3 | | | | | |
| CH3802 Chemical & Biomolecular Engineering Laboratory 5 | C | 3 | | | | | |
| HW0288 Engineering Communication | FC | 2 | | | | | |
| | | 19 | | | | 10 | |
| Year 4 Semester 1 | | | | Year 4 Semester 2 | | | |
| Course | Type | AU | | Course | Type | AU | |
| CH4801 Final Year Design Project | C | 4 | | CH4801 Final Year Design Project | C | 4 | |
| CBE PE1 | MPE | 3 | | CBE PE2 | MPE | 3 | |
| BDE 3 | BDE | 3 | | BDE 6 | BDE | 3 | |
| BDE 4 | BDE | 3 | | BDE 7 | BDE | 3 | |
| BDE 5 | BDE | 3 | | | | | |
| | | 16 | | | | 13 | |
| | | | | Total (AU) | | 136 | |
| | | | | | | 137^ | |

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