

B.Eng (Hons) in Chemical and Biomolecular Engineering

AY2026 - 2027 Intake onwards

with Professional Internship (CBE)

Programme	Year of Study	Number of Academic Units (AUs)						
		Major Requirement		Interdisciplinary Collaborative Core (ICC)			Broadening and Deepening Electives (BDE)	Total
				Core (C)	Major PE (MPE)	Common Core (CC)		
Chemical & Biomolecular Engineering	1	24		7		3	3	37
	2	28		7	3		2	40
	3	17			13			30
	4	8	6				15	29
	Total	77	6	14	16	3	20	136
		78*						137*

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

Category		AU	Total AU
Interdisciplinary Collaborative Core (ICC)	Common Core (CC)		
	CC0001 Inquiry and Communication in the Interdisciplinary World	2	14
	CC0003 Ethics & Civics in a Multi-Cultural World	2	
	CC0006 Sustainability: Society, Economy & Environment	3	
	CC0007 Science & Technology for Humanity	3	
	CC0015 Health & Wellbeing	2	
	ML0004 Career Design & Workplace Readiness in a Dynamic World	2	
	Professional Series (PS)		
	CB0494 Introduction to Data Science and Artificial Intelligence	3	16
	HW0288 Engineering Communication	2	
	MLXXXX Professional Preparation	1	
	CH3920 Professional Internship	10	
	Care, Service, Learn (CSL)		
	Service Learning	3	3
Major Requirement	CBE Core		
	EG1001 Engineers In Society	2	12
	MH1810 Math 1	3	
	PH1011* Physics	3	
	CB1102 Introduction to Chemistry, Chemical Engineering and Biomedical Engineering	1	
	CB1103 Organic Chemistry For Engineers	3	
	CB1117 Engineering Mathematics	4	

Major Requirement	CB1131	Introduction to Biomolecular Engineering	3	65
	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)				20
Total				136

137*

**Students without 'A' Level/Senior High School Physics will take 'PH1012 Physics A' (4AU)*

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Suggested Study Plan for AY2026-2027 intake
with Professional Internship (CBE)

Year 1 Semester 1				Year 1 Semester 2			
Course	Type	AU		Course	Type	AU	
CB1102 Introduction to Chemistry, Chemical Engineering 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	
<i>or</i>				CC0007 Science & Technology for Humanity	CC	3	
PH1012 Physics A (*For students without 'A' Level Physics)	C	4		ML0004 Career Design & Workplace Readiness in a Dynamic World	CC	2	
CC0001 Inquiry and Communication in the Interdisciplinary World	CC	2		Service Learning	CSL	3	
BDE 1	BDE	3	*				
		16	17			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	
CC0003 Ethics & Civics in a Multi-Cultural World	CC	2		CC0006 Sustainability: Society, Economy & Environment	CC	3	
BDE 2	BDE	2		CC0015 Health & Wellbeing	CC	2	
		18		CB0494 Introduction to Data Science and Artificial Intelligence	PS	3	
						22	
Year 3 Semester 1				Year 3 Semester 2			
Course	Type	AU		Course	Type	AU	
CH3104 Biochemical Engineering	C	3		CH3920 Professional Internship	PS	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	PS	2					
MLXXXX Professional Preparation	PS	1					
		20				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/Senior High School Physics will take 'PH1012 Physics A' (4AU)