

B.Eng (Hons) in Bioengineering (BIE)

AY2022 - 2023 Intake onwards

with Professional Internship

Programme	Year of Study	Number of Academic Units (AU)					
		Major Requirement		Interdisciplinary Collaborative Core		Broadening and Deepening Electives	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	13			12	6	31
	4	17	6			6	29
	Total	77/78*	6	17	15	21	136/137*

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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	
	BG3880 Professional Internship	10	
Major Requirement	BIE Core		12/13*
	EG1001 Engineers In Society	2	
	MH1810 Math 1	3	
	PH1011* Physics	3	
	CB1102 Introduction to Chemical and Biomedical Engineering	1	
	CB1103 Organic Chemistry For Engineers	3	

Major Requirement	CB1117	Engineering Mathematics	4	65
	BG1141	Fundamental 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	Biofluid Mechanics and Medical Devices	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)			
Broadening and Deepening Electives (BDE)				21
Total				136/137*

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

B.Eng. (Bioengineering)
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
BG1141	Fundamental 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 <i>or</i>	C	3	CC0003	Ethics & Civics in a Multi-Cultural World	CC	2
PH1012	Physics A (*For students without 'A' Level Physics)	C	4	CC0005	Healthy Living & Well-being	CC	3
CC0001	Inquiry and Communication in the Interdisciplinary World	CC	2		BDE 2	BDE	3
CC0002	Navigating the Digital World	CC	2		BDE 3	BDE	3
	BDE 1	BDE	3				
			18				21
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	BG3880	Professional Internship	FC	10
BG3104	Biomedical Imaging	C	3				
BG3105	Biomedical Instrumentation	C	3				
BG3112	Biofluid Mechanics and Medical Devices	C	3				
BG3801	Bioengineering Lab 3	C	1				
HW0288	Engineering Communication	FC	2				
	BDE 4	BDE	3				
	BDE 5	BDE	3				
			21				10
Year 4 Semester 1				Year 4 Semester 2			
Course		Type	AU	Course		Type	AU
BG4104	Machine Learning and Optimization for Bioengineers	C	3	BG4122	Medical Device Design	C	3
BG4122	Medical Device Design	C	3	BG4801	Final Year Project	C	4
BG4801	Final Year Project	C	4		BIE PE2	MPE	3
	BIE PE1	MPE	3		BDE 7	BDE	3
	BDE 6	BDE	3				
			16				13
				Total (AU)			
				136			
				137			

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