B.Eng (Hons) in Bioengineering (BIE) - ABP

AY2022 - 2023 Intake onwards

with Professional Attachment

		Number of Academic Units (AU)							
Programme	Year of Study	Major Requirement			sciplinary ative Core	Broadening and Deepening			
		Core (C)	Major PE (MPE)	Common Core (CC)	Foundational Core (FC)	Electives (BDE)	Total		
	1	21/22*		9		9	39/40*		
Bioengineering	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*		

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			
	CC0002 Navigating the Digital World CC0003 Ethics & Civics in a Multi-Cultural World CC0005 Healthy Living & Wellbeing	2 2 3	17		
	CC0006 Sustainability: Society, Economy & Environment	3			
	CC0007 Science & Technology for Humanity	3			
	ML0004 Career and Entrepreneurial Development for the Future World	or 2			
	Foundational Core (College-level)				
	HW0288 Engineering Communication	2			
	CB0494 Introduction to Data Science and Artificial Intelligence	3	10		
	BG3885 Professional Attachment	5			
	DIF Cove	1	Ī		
Major Requirement	BIE Core EG1001 Engineers In Society MH1810 Math 1 PH1011* Physics Introduction to Chemical and Biomedical	2 3 3	12/13*		
	CB1102 Engineering CB1103 Organic Chemistry For Engineers	3			

BG1141 Fundamental Biology for Bioengineers BG1801 Bioengineering Lab 1A BG1802 Bioengineering Lab 1B BG2103 Signal Processing in Biosystems BG2104 Electronics for Biomedical Engineering BG2110 Bioelectricity BG2111 Biomaterials BG2112 Biological Thermodynamics BG2124 Biological Thermodynamics BG2131 Biomaterials BG2142 Biological Thermodynamics BG210 Mechanics for Bioengineers Major Requirement BG2801 Bioengineering Lab 2A BG2802 Bioengineering Lab 2B BG3102 Control in Biosystems BG3104 Biomedical Imaging BG3105 Biomedical Instrumentation BG3106 Bioengineering Lab 3 BG3107 Biomedical Instrumentation BG3108 Bioengineering Lab 3 BG3109 Bioengineering Lab 3 BG3101 Biofluid Mechanics and Medical Devices BG3101 Bioengineering Lab 3 BG3102 Machine Learning and Optimization for Bioengineers BG4104 Medical Device Design BG4105 Bioengineers BG4106 Bioengineers BG4107 Medical Device Design BG4108 Bioengineers BG4109 Final Year Project BIE Major Prescribed Electives (MPE)		CB1117	Engineering Mathematics	4	
BG1801 Bioengineering Lab 1A BG1802 Bioengineering Lab 1B BG2103 Signal Processing in Biosystems BG2104 Electronics for Biomedical Engineering BG2110 Bioelectricity BG2119 Anatomy and Physiology BG2131 Biomaterials BG2142 Biological Thermodynamics BG209 Mechanics for Bioengineers BG209 Mechanics for Bioengineers Major Requirement BG2801 Bioengineering Lab 2A BG2802 Bioengineering Lab 2B BG3102 Control in Biosystems BG3104 Biomedical Imaging BG3105 Biomedical Instrumentation BG3112 Biofluid Mechanics and Medical Devices BG3801 Bioengineering Lab 3 BG3104 Bioengineering Lab 3 BG3105 Biomedical Instrumentation BG3106 Bioengineering Lab 3 BG3107 Bioengineering Lab 3 BG3108 Bioengineering Lab 3 BG3109 Bioengineering Lab 3 BG3109 Bioengineering Lab 3 BG3109 Bioengineering Lab 3 BG3100 Bioengineering Lab					
BG1802 Bioengineering Lab 1B BG2103 Signal Processing in Biosystems BG2104 Electronics for Biomedical Engineering BG2110 Bioelectricity BG2119 Anatomy and Physiology BG2131 Biomaterials BG2142 Biological Thermodynamics BG2209 Mechanics for Bioengineers 3 BG2209 Mechanics for Bioengineers 3 Major Requirement BG2801 Bioengineering Lab 2A BG2802 Bioengineering Lab 2B BG3102 Control in Biosystems BG3104 Biomedical Imaging BG3105 Biomedical Instrumentation BG3112 Biofluid Mechanics and Medical Devices BG3801 Bioengineering Lab 3 BG4104 Machine Learning and Optimization for Bioengineers BG4102 Medical Device Design BG4801 Final Year Project 8					
BG2103 Signal Processing in Biosystems BG2104 Electronics for Biomedical Engineering BG2110 Bioelectricity BG2119 Anatomy and Physiology BG2131 Biomaterials BG2142 Biological Thermodynamics BG2209 Mechanics for Bioengineers 3 Major Requirement BG2211 Introduction to Computational Thinking BG2801 Bioengineering Lab 2A BG2802 Bioengineering Lab 2B BG3102 Control in Biosystems BG3104 Biomedical Imaging BG3105 Biomedical Instrumentation BG3112 Biofluid Mechanics and Medical Devices BG3801 Bioengineering Lab 3 BG3801 Bioengineering Lab 3 BG3104 Machine Learning and Optimization for Bioengineers BG4104 Medical Device Design BG4801 Final Year Project 8		BG1801		1	
BG2104 Electronics for Biomedical Engineering BG2110 Bioelectricity BG2119 Anatomy and Physiology BG2131 Biomaterials BG2142 Biological Thermodynamics BG2209 Mechanics for Bioengineers Major Requirement BG2201 Introduction to Computational Thinking BG2801 Bioengineering Lab 2A BG2802 Bioengineering Lab 2B BG3102 Control in Biosystems BG3104 Biomedical Imaging BG3105 Biomedical Instrumentation BG3112 Biofluid Mechanics and Medical Devices BG3801 Bioengineering Lab 3 BG4104 Machine Learning and Optimization for Bioengineers BG4122 Medical Device Design BG4801 Final Year Project B 4 B 5 B 6 B 7 B 7 B 7 B 7 B 7 B 7 B 7 B 7 B 7		BG1802	Bioengineering Lab 1B	1	
BG2110 Bioelectricity BG2119 Anatomy and Physiology BG2131 Biomaterials BG2142 Biological Thermodynamics BG2209 Mechanics for Bioengineers 3 Major Requirement BG2201 Introduction to Computational Thinking BG2801 Bioengineering Lab 2A BG2802 Bioengineering Lab 2B BG3102 Control in Biosystems BG3104 Biomedical Imaging BG3105 Biomedical Instrumentation BG3112 Biofluid Mechanics and Medical Devices BG3801 Bioengineering Lab 3 BG3104 Bioengineering Lab 3 BG3105 Biomedical Instrumentation BG3112 Biofluid Mechanics and Medical Devices BG3801 Bioengineering Lab 3 BG4104 Machine Learning and Optimization for Bioengineers BG4104 Medical Device Design BG4801 Final Year Project 8		BG2103	Signal Processing in Biosystems	3	
BG2119 Anatomy and Physiology BG2131 Biomaterials BG2142 Biological Thermodynamics BG2209 Mechanics for Bioengineers 3 Major Requirement BG2211 Introduction to Computational Thinking BG2801 Bioengineering Lab 2A BG2802 Bioengineering Lab 2B BG3102 Control in Biosystems BG3104 Biomedical Imaging BG3105 Biomedical Instrumentation BG3112 Biofluid Mechanics and Medical Devices BG3801 Bioengineering Lab 3 Machine Learning and Optimization for Bioengineers BG4104 Medical Device Design BG4122 Medical Device Design BG4801 Final Year Project 8		BG2104	Electronics for Biomedical Engineering	3	
BG2131 Biomaterials BG2142 Biological Thermodynamics BG2209 Mechanics for Bioengineers Major Requirement BG2211 Introduction to Computational Thinking BG2801 Bioengineering Lab 2A BG2802 Bioengineering Lab 2B BG3102 Control in Biosystems BG3104 Biomedical Imaging BG3105 Biomedical Instrumentation BG3112 Biofluid Mechanics and Medical Devices BG3801 Bioengineering Lab 3 Machine Learning and Optimization for Bioengineers BG4104 Medical Device Design BG4801 Final Year Project B BG4801 Final Year Project B BG3801 Biomaterials B BG3801 Bioengineers BG4801 Final Year Project B BG4801 Final Year Project		BG2110	Bioelectricity	3	
BG2142 Biological Thermodynamics BG2209 Mechanics for Bioengineers 3 Major Requirement BG2211 Introduction to Computational Thinking BG2801 Bioengineering Lab 2A BG2802 Bioengineering Lab 2B BG3102 Control in Biosystems BG3104 Biomedical Imaging BG3105 Biomedical Instrumentation 3 BG3112 Biofluid Mechanics and Medical Devices BG3801 Bioengineering Lab 3 BG4104 Machine Learning and Optimization for Bioengineers BG4122 Medical Device Design BG4801 Final Year Project 8		BG2119	Anatomy and Physiology	3	
Major Requirement BG2211 Introduction to Computational Thinking BG2801 Bioengineering Lab 2A BG2802 Bioengineering Lab 2B BG3102 Control in Biosystems BG3104 Biomedical Imaging BG3105 Biomedical Instrumentation BG3112 Biofluid Mechanics and Medical Devices BG3801 Bioengineering Lab 3 BG4104 Machine Learning and Optimization for Bioengineers BG4122 Medical Device Design BG4801 Final Year Project BG5 BG5 BG5 BG65 BG65 BG65 BG65 BG7 BG7 BG7 BG7 BG7 BG7 BG7 BG		BG2131	Biomaterials	3	
Major Requirement BG2211 Introduction to Computational Thinking BG2801 Bioengineering Lab 2A BG2802 Bioengineering Lab 2B BG3102 Control in Biosystems BG3104 Biomedical Imaging BG3105 Biomedical Instrumentation BG3112 Biofluid Mechanics and Medical Devices BG3801 Bioengineering Lab 3 BG4104 Machine Learning and Optimization for Bioengineers BG4122 Medical Device Design BG4801 Final Year Project B 65 65 65 65 65 65 65 65 65 65		BG2142	Biological Thermodynamics	3	
Requirement 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		BG2209	Mechanics for Bioengineers	3	
BG2801 Bioengineering Lab 2A BG2802 Bioengineering Lab 2B 1 BG3102 Control in Biosystems BG3104 Biomedical Imaging BG3105 Biomedical Instrumentation 3 BG3112 Biofluid Mechanics and Medical Devices 3 BG3801 Bioengineering Lab 3 Machine Learning and Optimization for Bioengineers BG4104 Medical Device Design BG4801 Final Year Project 1 1 1 1 1 1 1 1 1 1 1 1 1	1	BG2211	Introduction to Computational Thinking	3	65
BG3102 Control in Biosystems BG3104 Biomedical Imaging BG3105 Biomedical Instrumentation BG3112 Biofluid Mechanics and Medical Devices BG3801 Bioengineering Lab 3 BG4104 Machine Learning and Optimization for Bioengineers BG4122 Medical Device Design BG4801 Final Year Project B 3		BG2801	Bioengineering Lab 2A	1	
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		BG2802	Bioengineering Lab 2B	1	
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		BG3102	Control in Biosystems	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		BG3104	Biomedical Imaging	3	
BG3801 Bioengineering Lab 3 1 BG4104 Machine Learning and Optimization for Bioengineers 3 BG4122 Medical Device Design 6 BG4801 Final Year Project 8		BG3105	Biomedical Instrumentation	3	
BG4104 Machine Learning and Optimization for Bioengineers BG4122 Medical Device Design BG4801 Final Year Project 8		BG3112	Biofluid Mechanics and Medical Devices	3	
Bioengineers BG4104 Bioengineers BG4122 Medical Device Design BG4801 Final Year Project 8		BG3801	Bioengineering Lab 3	1	
BG4801 Final Year Project 8		BG4104		3	
		BG4122	Medical Device Design	6	
BIE Major Prescribed Electives (MPE) 6		BG4801	Final Year Project	8	
		BIE Major		6	
Broadening and Deepening Electives (BDE) 26	Broadening and Deepening Electives (BDE)				
broadening and beepening Liectives (BDL)	broadening and beepening Electives (BDE)				
Total 136/137*	Total				

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

	lioengineering)							
	ed Study Plan for AY2022-2023 intake (ABP) essional Attachment							
Year 1 Semester 1 Course		Type AU			Year 1 Semester 2 Course T			AU
CB1102	Introduction to Chemical and Biomedical Engineering	С	1	_	CB1103	Organic Chemistry For Engineers	С	3
BG1141	Fundamental Biology for Bioengineers	С	3		CB1117	Engineering Mathematics	С	4
BG1801	Bioengineering Lab 1A	С	1		BG1802	Bioengineering Lab 1B	С	1
					=====		•	
MH1810	Math 1	С	3		EG1001	Engineers in Society	С	2
PH1011	Physics or	С	3		CC0003 CC0005	Ethics & Civics in a Multi-Cultural World Healthy Living & Wellbeing	CC	2 3
PH1012	Physics A (*For students without 'A' Level Physics)		4			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 1 BDE 3 *						
			18	19				21
Year 2 Semester 1 Course		Туре	AU		Year 2 Semester 2 Course		Type	AU
BG2119	Anatomy and Physiology	С	3	_	BG2103	Signal Processing in Biosystems	С	3
BG2131	Biomaterials	С	3		BG2104	Electronics for Biomedical Engineering	С	3
BG2142	Biological Thermodynamics	С	3		BG2110	Bioelectricity	С	3
BG2211	Introduction to Computational Thinking	С	3		BG2209	Mechanics for Bioengineers	С	3
BG2801	Bioengineering Lab 2A	С	1		BG2802	Bioengineering Lab 2B	С	1
CC0006	Sustainability: Society, Economy & Environment	СС	3		CC0007	Science & Technology for Humanity	CC	3
ML0004	Career and Entrepreneurial Development for the Future World	СС	2		CB0494	Introduction to Data Science and Artificial Intelligence	FC	3
			18	_				19
Year 3 Se	emester 1	_			Year 3 Se	emester 2	_	
Course		Туре	AU	_	Course		Туре	AU
BG3102	Control in Biosystems	С	3		BG4122	Medical Device Design	С	3
BG3104 BG3105	Biomedical Imaging Biomedical Instrumentation	C C	3 3		BG4801	Final Year Project BIE PE1	C MPE	4 3
BG3112	Biofluid Mechanics and Medical Devices	С	3			BDE 4	BDE	3
BG3801	Bioengineering Lab 3	С	1			BDE 5	BDE	3
BG4122	Medical Device Design	С	3					
BG4801 HW0288	Final Year Project Engineering Communication	C FC	4 2		Year 3 Sp BG3885	pecial Term Professional Attachment	FC	5
			22	_				21
Year 4 Semester 1 Course		Туре	AU		Year 4 Se Course	emester 2	Туре	AU
BG4104	Machine Learning and Optimization for	. , , , , ,	3	_			, r -	
	Bioengineers BIE PE2	MPE	3					
	BDE 6	BDE	3					
	BDE 7	BDE	3					
	BDE 8 BDE 9	BDE BDE	3 2					
				_				
			17			Total (AU)		0 136
						iotai (Ao)		137*

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