Double Degree in Engineering and Economics

B.Eng (Hons) in Bioengineering and BSocSci (Hons) in Economics

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 (BDE)	Total
		Core (C)	Major PE (MPE)	Common Core (CC)	Foundational Core (FC)		
Double Degree in Bioengineering and Economics	1	33/34*		9			42/43*
	2	32		8	3		43
	3	16	3		12		31
	4	23	16				39
	5		17			3	20
	Total	104/105*	36	17	15	3	175/176*
Individual Degree Requirements							
Bioengineering	1	21/22*		9			
	2	26		8	3		
	3	13			12		
	4	17	3				
	5		3				
	Total	77/78*	6	17	15	21	136/137*
Economics	1	12		9			
	2	6		8	3		
	3	3	3		12		
	4	14	13				
	5		14				
	Total	35	30	17	15	30	127

B.Eng (Hons) in Bioengineering and BSocSci (Hons) in Economics

Category		AU	Total AU
Interdisciplinary Collaborative Core (ICC)	**Common Core (University-level)**		17
	CC0001 Inquiry and Communication in the Interdisciplinary World	2	
	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)		15
	HW0288 Engineering Communication	2	
	CB0494 Introduction to Data Science and Artificial Intelligence	3	
	BG3880 Professional Internship	10	
Major Requirement	**BIE Core (C)**		39
	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	
	CB1117 Engineering Mathematics	4	
	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	

Major Requirement	BG2209	Mechanics for Bioengineers	3	38
	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	
	Econs Core (C)			27
	HE1001	Microeconomics I	3	
	HE1002	Macroeconomics I	3	
	HE2001	Microeconomics II	3	
	HE2002	Macroeconomics II	3	
	HE2003	Econometrics I	3	
	HE3001	Microeconomics III	3	
	HE3002	Macroeconomics III	3	
	HE3003	Econometrics II	3	
	MH1820	Introduction to Probability and Statistical Methods	3	
	Major Prescribe Electives (MPE)			36
	BIE Major Prescribed Electives (2 courses)		6	
	Econs Level 3xxx (6 courses)		18	
	Econs Level 4xxx (3 courses)		12	
Broadening and Deepening Electives (BDE)				3
Total				**175/176***

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

B.Eng. (Bioengineering) and BSocSci (Economics)
Suggested Study Plan for AY2022-2023 intake (Double Degree in Engineering and Economics)
with Professional Internship

Year 1 Semester 1

Course		Type	AU
CB1102	Introduction to Chemical and Biomedical Engineering	C	1
BG1141	Fundamental Biology for Bioengineers	C	3
BG1801	Bioengineering Lab 1A	C	1
MH1810	Math 1	C	3
PH1011	Physics	C	3
	or		
PH1012	Physics A (* For students without 'A' Level Physics)	C	4
CC0001	Inquiry and Communication in the Interdisciplinary World	CC	2
CC0002	Navigating the Digital World	CC	2
HE1001	Microeconomic I	C	3
HE1002	Macroeconomic I	C	3
			*
		21	**22**

Year 1 Semester 2

Course		Type	AU
CB1103	Organic Chemistry For Engineers	C	3
CB1117	Engineering Mathematics	C	4
BG1802	Bioengineering Lab 1B	C	1
EG1001	Engineers in Society	C	2
CC0003	Ethics & Civics in a Multi-Cultural World	CC	2
CC0005	Healthy Living & Wellbeing	CC	3
HE2001	Microeconomics II	C	3
HE2002	Macroeconomics II	C	3
			21

Year 2 Semester 1

Course		Type	AU
BG2119	Anatomy and Physiology	C	3
BG2131	Biomaterials	C	3
BG2142	Biological Thermodynamics	C	3
BG2211	Introduction to Computational Thinking	C	3
BG2801	Bioengineering Lab 2A	C	1
CC0006	Sustainability: Society, Economy & Environment	CC	3
ML0004	Career and Entrepreneurial Development for the Future World	CC	2
HE3001	Microeconomics III	C	3
			21

Year 2 Semester 2

Course		Type	AU
BG2103	Signal Processing in Biosystems	C	3
BG2104	Electronics for Biomedical Engineering	C	3
BG2110	Bioelectricity	C	3
BG2209	Mechanics for Bioengineers	C	3
BG2802	Bioengineering Lab 2B	C	1
CC0007	Science & Technology for Humanity	CC	3
CB0494	Introduction to Data Science and Artificial Intelligence	FC	3
MH1820	Introduction to Probability and Statistical Methods	C	3
			22

Year 3 Semester 1

Course		Type	AU
BG3102	Control in Biosystems	C	3
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
HE3002	Macroeconomics III	C	3
	Econ PE3XXX 1	MPE	3
			21

Year 3 Semester 2

Course		Type	AU
BG3880	Professional Internship	FC	10
			10

Year 4 Semester 1

Course		Type	AU
BG4104	Machine Learning and Optimization for Bioengineers	C	3
BG4122	Medical Device Design	C	3
BG4801	Final Year Project	C	4
HE2003	Econometrics I	C	3
	Econ PE3XXX 2	MPE	3
	Econ PE3XXX 3	MPE	3
			19

Year 4 Semester 2

Course		Type	AU
BG4122	Medical Device Design	C	3
BG4801	Final Year Project	C	4
	BIE PE 1	MPE	3
HE3003	Econometrics II	C	3
	Econ PE3XXX 4	MPE	3
	Econ PE4XXX 1	MPE	4
			20

Year 5 Semester 1

Course		Type	AU
	BIE PE 2	MPE	3
	BDE 1	BDE	3
	Econ PE3XXX 5	MPE	3
	Econ PE3XXX 6	MPE	3
	Econ PE4XXX 2	MPE	4
	Econ PE4XXX 3	MPE	4
			20

Year 5 Semester 2

Course		Type	AU
			0
	Total (AU)		**175**
			176*

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