

Double Degree in Engineering and Economics

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

AY2025 - 2026 Intake onwards

with Professional Internship (BEEC)

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)	Professional Series (PS)	Care, Serve, Learn (CSL)		
Double Degree in Bioengineering and Economics	1	33		6				39
	2	30	3	8	3			44
	3	16	3		13			32
	4	23	16			3		42
	5		17				1	18
	Total	102	39	14	16	3	1	175
103*								176*
<i>Individual Degree Requirements</i>								
Bioengineering	1	21		6				
	2	27		8	3			
	3	13			13			
	4	17	3			3		
	5		3					
	Total	78	6	14	16	3	19	136
79*								137*
Economics	1	12		6				
	2	3	3	8	3			
	3	3	3		13			
	4	14	13			3		
	5		14					
	Total	32	33	14	16	3	27	125

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

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 the V.U.C.A World	2	
	Professional Series (PS)		
	CB0494 Introduction to Data Science and Artificial Intelligence	3	16
	HW0288 Engineering Communication	2	
	MLXXXX Professional Preparation	1	
	BG3920 Professional Internship	10	
	Care, Service, Learn (CSL)		
	Service Learning	3	3
Major Requirement	BIE Core (C)		
	EG1001 Engineers In Society	2	31
	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 Cellular & Molecular Biology for Bioengineers	3	
	BG1801 Bioengineering Lab 1A	1	
	BG1802 Bioengineering Lab 1B	1	
	CB2002 Introduction to Chemical and Biological Safety	1	
	BG2103 Signal Processing in Biosystems	3	
	BG2104 Electronics for Biomedical Engineering	3	
	BG2110 Bioelectricity	3	

Major Requirement	BG2119	Anatomy and Physiology	3	47	
	BG2131	Biomaterials	3		
	BG2142	Biological Thermodynamics	3		
	BG2209	Mechanics for Bioengineers	3		
	BG2211	Introduction to Computational	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	Cardiovascular Engineering	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)				24
	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		
	Major Prescribe Electives (MPE)				39
	BIE Major Prescribed Electives (2 courses)		6		
	MH1820	Introduction to Probability and Statistical Methods	3		
	Econs Level 3xxx (6 courses)		18		
	Econs Level 4xxx (3 courses)		12		
Broadening and Deepening Electives (BDE)				1	
Total				175	

176*

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

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with Professional Internship (BEEC)**Year 1 Semester 1**

Course	Type	AU
CB1102 Introduction to Chemical and Biomedical Engineering	C	1
BG1141 Cellular & Molecular Biology for Bioengineers	C	3
BG1801 Bioengineering Lab 1A	C	1
MH1810 Math 1	C	3
PH1011 Physics	C	3
PH1012 Physics A (* For students without 'A' Level Physics)	C	4
CC0001 Inquiry and Communication in the Interdisciplinary World	CC	2
HE1001 Microeconomic I	C	3
HE1002 Macroeconomic I	C	3
		*
		19 20

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
ML0004 Career Design & Workplace Readiness in the V.U.C.A World	CC	2
CC0006 Sustainability: Society, Economy & Environment	CC	3
HE3001 Microeconomics III	C	3
		21

Year 3 Semester 1

Course	Type	AU
BG3102 Control in Biosystems	C	3
BG3104 Biomedical Imaging	C	3
BG3105 Biomedical Instrumentation	C	3
BG3112 Cardiovascular Engineering	C	3
BG3801 Bioengineering Lab 3	C	1
HW0288 Engineering Communication	PS	2
MLXXXX Professional Preparation	PS	1
HE3002 Macroeconomics III	C	3
Econ PE3XXX 1	MPE	3
		22

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
Service Learning	CSL	3
HE2003 Econometrics I	C	3
Econ PE3XXX 2	MPE	3
Econ PE3XXX 3	MPE	3
		22

Year 5 Semester 1

Course	Type	AU
BIE PE 2	MPE	3
BDE 1	BDE	1
Econ PE3XXX 5	MPE	3
Econ PE3XXX 6	MPE	3
Econ PE4XXX 2	MPE	4
Econ PE4XXX 3	MPE	4
		18

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
CC0015 Health & Wellbeing	CC	2
HE2001 Microeconomics II	C	3
HE2002 Macroeconomics II	C	3
		20

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
CB2002 Introduction to Chemical and Biological Safety	C	1
CC0007 Science & Technology for Humanity	CC	3
CB0494 Introduction to Data Science and Artificial Intelligence	PS	3
MH1820 Introduction to Probability and Statistical Methods	MPE	3
		23

Year 3 Semester 2

Course	Type	AU
BG3920 Professional Internship	PS	10
		10

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 2

Course	Type	AU
		0
Total (AU)		175
		176*

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

List of Courses that Contributes to BEng (Bioengineering)				AU Load	
Discipline Requirement	Core	EG1001	Engineers In Society	2	78 AU
		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	Cellular & Molecular Biology for Bioengineers	3	
		BG1801	Bioengineering Lab 1A	1	
		BG1802	Bioengineering Lab 1B	1	
		CB2002	Introduction to Chemical and Biological Safety	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	Cardiovascular Engineering	3	
		BG3801	Bioengineering Lab 3	1	
		BG4104	Machine Learning and Optimization for Bioengineers	3	
		BG4122	Medical Device Design	6	
		BG4801	Final Year Project	8	
	BDE	HE1001	Microeconomics I	3	19 AU 15AU from compulsory Economics Core courses. 3AU from Year 3 and 4 Economics PE that yield the highest CGPA. + 5AU (PA only)
		HE1002	Macroeconomics I	3	
		HE2001	Microeconomics II	3	
		HE2002	Macroeconomics II	3	
		HE2003	Econometrics I	3	
		HEXXXX	Economics PE	3	
	Major PE	BGXXXX	BIE PE 1	3	6AU
		BGXXXX	BIE PE 2	3	
Interdisciplinary Collaborative Core	Common Core	CC0001	Inquiry and Communication in the Interdisciplinary World	2	14AU
		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 the V.U.C.A World	2	

	Professional Series	CB0494 HW0288 MLXXXX CH3920/ CH3910	Introduction to Data Science and Artificial Intelligence Engineering Communication Professional Preparation Professional Internship/ Professional Attachment	3 2 1 10/5	16AU or 11AU (for PA only)
	Care, Service, Learn (CSL)		Service Learning	3	3AU
TOTAL					136 AU

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

List of courses that contribute towards BA(Econs)				AU Load	
Discipline Requirement	Core	HE1001	Microeconomics I	3	32AU
		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	
		BG4801	Final Year Project	8	
	MPE	MH1820	Introduction to Probability and Statistical Methods	3	33AU
		HE3XXX	Econs PE1	3	
		HE3XXX	Econs PE2	3	
		HE3XXX	Econs PE3	3	
		HE3XXX	Econs PE4	3	
		HE3XXX	Econs PE5	3	
		HE3XXX	Econs PE6	3	
		HE4XXX	Econs PE7	4	
		HE4XXX	Econs PE8	4	
		HE4XXX	Econs PE9	4	
	BDE	EG1001	Engineers In Society	2	9AU from Year 1 Engineering graded Core courses that yield the highest CGPA.
		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	Cellular & Molecular Biology for Bioengineers	3	
		BG1801	Bioengineering Lab 1A	1	
		BG1802	Bioengineering Lab 1B	1	
	BDE	CB2002	Introduction to Chemical and Biological Safety	1	18AU from Year 2 and 3 Engineering graded courses that yield the highest CGPA + 5AU (PA only)
		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	Cardiovascular Engineering	3	
		BG3801	Bioengineering Lab 3	1	
Interdisciplinary Collaborative Core	Common Core	CC0001	Inquiry and Communication in the Interdisciplinary World	2	14AU
		CC0003	Ethics & Civics in a Multi-Cultural World	2	
		CC0004	Career Design & Workplace Readiness in the V.U.C.A World	2	
		CC0015	Health & Wellbeing	2	
		CC0006	Sustainability: Society, Economy & Environment	3	
		CC0007	Science & Technology for Humanity	3	
	Professional Series	CB0494	Introduction to Data Science and Artificial Intelligence	3	16AU or 11AU (for PA only)
		HW0288	Engineering Communication	2	
			Professional Preparation	1	
		CH3920/ CH3910	Professional Internship/ Professional Attachment	10/5	
	Care, Service & Learn		Service Learning	3	3AU
TOTAL					125 AU

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