Double Degree in Engineering and Economics
B.Eng (Hons) in Chemical & Biomolecular Engineering and BSocSci (Hons) in Economics
AY2024 - 2025 Intake onwards
with Professional Internship (CBEC)

Programme	Year of Study	Number of Academic Units (AUs)					
		Major Requirement		Interdisciplinary Collaborative Core		Broadening and Deepening Electives	Total
		Core (C)	Major PE (MPE)	Common Core (CC)	Foundational Core (FC)		
Double Degree in Chemical & Biomolecular Engineering and Economics	1	36/37*		9			45/46*
	2	31	3	8	3		45
	3	20			12		32
	4	14	22				36
	5		14			3	17
		101/102*	39	17	15	3	175/176*
Individual Degree Requirements							
Chemical & Biomolecular Engineering	1	24/25*		9			
	2	28		8	3		
	3	17			12		
	4	8	6				
	5						
	Total	77/78*	6	17	15	21	136/137*
Economics	1	12		9			
	2	3	3	8	3		
	3	3			12		
	4	14	16				
	5		14				
	Total	32	33	17	15	30	127

B.Eng (Hons) in Chemical & Biomolecular Engineering 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	
	CH3920	Professional Internship	10	
Major Requirement	**CBE 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	
	CB1131	Introduction to Biomolecular Engineering	3	
	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	

Major Requirement	CH2114	Heat & Mass Transfer in Chemical and Biological Systems	3	38
	CH2123	Chemical Thermodynamics	3	
	CH2151	Unit Operations: Fluid-Solid Seperation	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	
	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
	CBE 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)				3
Total				**175/176***

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

B.Eng (Hons) in Chemical & Biomolecular Engineering and BSocSci (Hons) in Economics
AY2024 - 2025 Intake onwards
with Professional Internship (CBEC)

Year 1 Semester 1

Course		Type	AU
CB1102	Introduction to Chemical and Biomedical Engineering	C	1
CB1131	Introduction to Biomolecular Engineering	C	3
CH1801	Chemical & Biomolecular Engineering Laboratory 1A	C	1
MH1810	Math 1	C	3
PH1011	Physics	C	3
	or		
PH1012	Physics A *(* For students without 'A' Level Physics)*		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

Year 1 Semester 2

Course		Type	AU
CB1103	Organic Chemistry For Engineers	C	3
CB1117	Engineering Mathematics	C	4
CH1104	Materials & Energy Balance	C	3
CH1802	Chemical & Biomolecular Engineering Laboratory 2	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
			24

Year 2 Semester 1

Course		Type	AU
CH2103	Fluid Systems	C	3
CH2107	Introduction to Computational Thinking	C	3
CH2108	Thermodynamics	C	3
CH2010	Engineering Statistics	C	3
CH2801	Chemical & Biomolecular Engineering Laboratory 2A	C	2
CC0006	Sustainability: Society, Economy & Environment	CC	3
ML0004	Career and Entrepreneurial Development for the Future World	CC	2
HE3001	Microeconomics III	C	3
			22

Year 2 Semester 2

Course		Type	AU
CH2112	Chemical Reaction Engineering	C	3
CH2114	Heat & Mass Transfer in Chemical and Biological Systems	C	3
CH2123	Chemical Thermodynamics	C	3
CH2151	Unit Operations: Fluid-Solid Seperation	C	3
CH2802	Chemical & Biomolecular Engineering Laboratory 2B	C	2
CC0007	Science & Technology for Humanity	CC	3
CB0494	Introduction to Data Science and Artificial Intelligence	FC	3
MH1820	Introduction to Probability and Statistical Methods	MPE	3
			23

Year 3 Semester 1

Course		Type	AU
CH3104	Biochemical Engineering	C	3
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	FC	2
HE3002	Macroeconomics III	C	3
			22

Year 3 Semester 2

Course		Type	AU
CH3920	Professional Internship	FC	10
			10

Year 4 Semester 1

Course		Type	AU
CH4801	Final Year Design Project	C	4
	CBE PE 1	MPE	3
HE2003	Econometrics I	C	3
	Econ PE3XXX 1	MPE	3
	Econ PE3XXX 2	MPE	3
	Econ PE3XXX 3	MPE	3
			19

Year 4 Semester 2

Course		Type	AU
CH4801	Final Year Design Project	C	4
	CBE PE 2	MPE	3
HE3003	Econometrics II	C	3
	Econ PE3XXX 4	MPE	3
	Econ PE4XXX 1	MPE	4
			17

Year 5 Semester 1

Course		Type	AU
	BDE 1	BDE	3
	Econ PE3XXX 5	MPE	3
	Econ PE3XXX 6	MPE	3
	Econ PE4XXX 2	MPE	4
	Econ PE4XXX 3	MPE	4
			17

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 (Chemical and Biomolecular				AU Load	
Discipline Requirement	**Core**	EG1001	Engineers In Society	2	**77AU**
		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	
		CB1131	Introduction to Biomolecular Engineering	3	
		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 A	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 B	3	
		CH3802	Chemical & Biomolecular Engineering Laboratory 5	3	
		CH4801	Final Year Design Project	8	
	BDE	HE1001	Microeconomics I	3	**21AU** 15AU from compulsory Economics Core courses. Remaining 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	
			BDE 1	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	**17AU**
		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	HW0288	Engineering Communication	2	**15AU or 10AU (for PA only)**
		CB0494	Introduction to Data Science and Artificial Intelligence	3	
		CH3920/ CH3910	Professional Internship/ Professional Attachment	10/5	
TOTAL					**136 AU**

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

List of courses that contribute towards BSocSci (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	
		CB1131	Introduction to Biomolecular Engineering	3	
		CH1104	Materials & Energy Balance	3	
		CH1801	Chemical & Biomolecular Engineering Laboratory 1A	1	
		CH1802	Chemical & Biomolecular Engineering Laboratory 2	1	
	BDE	CH2010	Engineering Statistics	3	**21AU** from Year 2 and 3 Engineering graded courses that yield the highest CGPA + 5AU (PA only)
		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 Seperation	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	
Interdisciplinary Collaborative Core	**Common Core**	CC0001	Inquiry and Communication in the Interdisciplinary World	2	**17AU**
		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	HW0288	Engineering Communication	2	**15AU** or 10AU (for PA only)
		CB0494	Introduction to Data Science and Artificial Intelligence	3	
		CH3920/ CH3910	Professional Internship/ Professional Attachment	10/5	
TOTAL					**127AU**

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