

B.Eng (Hons) in Bioengineering CNYang Scholars Programme with 2nd Major in Sustainability

AY2025 - 2026 Intake onwards (BESN CNYSP)

Programme	Year of Study	Number of Academic Units (AU)							
		Major Requirement			Interdisciplinary Collaborative Core			Broadening and Deepening Electives (BDE)	Total
		School Core (C)	CNYang Core (C)	Major PE (MPE)	Common Core (CC)	Professional Series (PS)	Care, Serve, Learn (CSL)		
Bioengineering (CNYang)	1	6 [2]	27 [3]		2			3	38
	2	27	10		8		3		48
	3	21				6		6	33
	4	9		6		3		16	34
	Total	63 [2]	37 [3]	6	10	9	3	25	153

Category		AU	Total AU
Interdisciplinary Collaborative Core (ICC)	Common Core (CC)		
	CC0006 Sustainability: Society, Economy & Environment	3	10
	CC0015 Health & Wellbeing	2	
	ML0004 Career Design & Workplace Readiness in the V.U.C.A World	2	
	SP0061 Science & Technology for Humanity	3	
	Professional Series (PS)		
	CB0494 Intelligence	3	9
	MLXXXX Professional Preparation	1	
	BG3910 Professional Attachment	5	
	Care, Service, Learn (CSL) Tech-For-Good (T4G)	3	3
Major Requirement	BIE Core		
	EG1001^ Engineers In Society	2	28
	CB1102 Introduction to Chemical and Biomedical Engineering	1	
	BG1141 Cellular & Molecular Biology for Bioengineers	3	
	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	35
	BG3112 Cardiovascular Engineering	3	
	BG3801 Bioengineering Lab 3	1	
	BG4104 Machine Learning and Optimization for Bioengineers	3	
	BG4122 Medical Device Design	6	
	BG4211 CNYSP Overseas Final Year Project	8	
	CNYSP Core		
	CY0001 Writing Across the Disciplines	3	
	CY0002 Ethics	3	
	CY1001 Cell	3	
	CY1007^ Climate Change	3	
	CY1101 Molecule	4	37
	CY1308 Physics	3	
	CY1500 Introduction to Research	2	
	CY1601 Mathematics I	4	
	CY1602 Mathematics II	4	
	CY2001 Research Attachment 1	4	
	CY2003 Research Attachment 3	4	
	BIE Major Prescribed Electives (MPE)	6	6
	Sustainability Compulsory Courses		
	<i>Choose 1 Course from EACH of the 5</i>		
	1) PEOPLE		
	EM5109 Environmental Issue & Sustainability (3AU)		
	ES5006 Environmental Sustainability (3AU)		
	HV5001 Introduction to Environmental Humanities (3AU)		
	2) Planet		
	CY1007 Climate Change (NA)		
	3) Profit		
	AB0603 Social Entrepreneurship (3AU)		
	HE5091 Principles of Economics (3AU)	9	
	4) Practice		
	EG1001 Engineers in Society (NA)		
	5) Policy		
	HU1002 Introduction to Urban Planning (3AU)		
	HA1001 Introduction to International Relations and Foreign Policy (3AU)		
	HA1003 Introduction to Public Administration and Public Policy (3AU)		25

2nd Major in Sustainability	Interdisciplinary Project	3	
	Sustainability Electives Choose 3- 4 courses from the list of electives (min. 12 AUs) https://www.ntu.edu.sg/ase/admissions/undergraduate-programmes/second-major-in-sustainability#Content_C002_Col00	13	
Total			153

^Counted towards 2nd Major in sustainability requirement (total 5AU)

B.Eng (Hons) in Bioengineering CNYang Scholars Programme with 2nd Major in Sustainability

AY2025 - 2026 Intake onwards (BESN CNYSP)

with Professional Attachment**Year 1 Semester 1**

Course	Type	AU
CB1102 Introduction to Chemical and Biomedical Engineering	C	1
BG1141 Cellular & Molecular Biology for Bioengineers	C	3
CY1001 Cell	C	3
CY1101 Molecule	C	4
CY1308 Physics	C	3
CY1500 Introduction to Research	C	2
CY1601 Mathematics 1	C	4

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
CY0001 Writing Across The Disciplines	C	3
ML0004 Career Design & Workplace Readiness in the V.U.C.A World	CC	2
CC0006 Sustainability: Society, Economy & Environment	CC	3
Tech-For-Good (T4G)	CSL	3

24**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
MLXXXX Professional Preparation	PS	1
SN Compulsory 2	BDE	3
SN Compulsory 3	BDE	3

20**Year 4 Semester 1**

Course	Type	AU
BG4104 Machine Learning and Optimization for Bioengineers	C	3
BG4122 Medical Device Design	C	3
BIE PE1	MPE	3
SN Elective 1	BDE	3
SN Elective 2	BDE	3
Interdisciplinary Project	BDE	3

18**Year 1 Semester 2**

Course	Type	AU
EG1001^ Engineers in Society	C	2
CY1007^ Climate Change	C	3
CY1602 Mathematics 2	C	4
CC0015 Health & Wellbeing	CC	2
SN Compulsory 1	BDE	3

Year 1 Special Term

CY2003 Research Attachment 3 (Making and Tinkering)	C	4
— Overseas Learning Trip	—	—

18**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
CY0002 Ethics	C	3
CY2001 Research Attachment 1	C	4
SP0061 Science & Technology for Humanity	CC	3

24**Year 3 Semester 2**

Course	Type	AU
BG4211 CNYSP Overseas Final Year Project	C	8

Year 3 Special Term

BG3910 Professional Attachment	PS	5
--------------------------------	----	---

13**Year 4 Semester 2**

Course	Type	AU
BG4122 Medical Device Design	C	3
CB0494 Introduction to Data Science and Artificial Intelligence	PS	3
BIE PE2	MPE	3
SN Elective 3	BDE	3
SN Elective 4	BDE	4

16**Total (AU)****153**

^ These courses are double-counted towards both BIE as well as the Second Major in Sustainability.