

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

AY2024 - 2025 Intake onwards (BESN CNYSP)

Programme	Year of Study	Number of Academic Units (AU)						
		Major Requirement			Interdisciplinary		Broadening and Deepening Electives (BDE)	Total
		School Core (C)	CNYang Core (C)	Major PE (MPE)	Common Core (CC)	Foundational Core (FC)		
Bioengineering (CNYang)	1	6	27		5		6	44
	2	26	10		8			44
	3	21				5	3	29
	4	9		6		3	16	34
	Total	62	37	6	13	8	25	151

Category		AU	Total AU
Interdisciplinary Collaborative Core (ICC)	<b>Common Core (University-level)</b>		
	CC0002 Navigating the Digital World	2	13
	CC0005 Healthy Living & Wellbeing	3	
	CC0006 Sustainability: Society, Economy & Environment	3	
	SP0061 Science & Technology for Humanity	3	
	ML0004 Career and Entrepreneurial Development for the Future World	2	
	<b>Foundational Core (College-level)</b>		
	CB0494 Introduction to Data Science and Artificial Intelligence	3	8
	BG3910 Professional Attachment	5	
Major Requirement	<b>BIE Core</b>		
	EG1001^ Engineers In Society	2	30
	CB1102 Introduction to Chemical and Biomedical	1	
	BG1141 Cellular & Molecular Biology for Bioengineers	3	
	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	

Major Requirement	BG2801	Bioengineering Lab 2A	1	75	
	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		
		Machine Learning and Optimization for			
	BG4104	Bioengineers	3		
	BG4122	Medical Device Design	6		
	BG4211	CNYSP Overseas Final Year Project	8		
	<b>CNYSP Core</b>				
	CY0001	Writing Across the Disciplines	3		
	CY0002	Ethics	3		
	CY1001	Cell	3		
	CY1007^	Climate Change	3		
	CY1101	Molecule	4		
	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		
	<b>BIE Major Prescribed Electives (MPE)</b>				6
<a href="#">2nd Major in Sustainability</a>	<b>Sustainability Compulsory Courses</b>				
	<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)				
<a href="#">2nd Major in</a>	3) Profit AB0603 Social Entrepreneurship (3AU) HE5091 Principles of Economics (3AU)		9	25	
	4) Practice EG1001 Engineers in Society (NA)				
<a href="#">2nd Major in</a>	5) Policy				

<a href="#">2nd Major in Sustainability</a>	HU1002 Introduction to Urban Planning (3AU)		
	HA1001 Introduction to International Relations and Foreign Policy (3AU)		
	HA1003 Introduction to Public Administration and Public Policy (3AU)		
	Interdisciplinary Project	3	
	Sustainability Electives	13	
<b>Total</b>			<b>151</b>

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

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**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
CC0002 Navigating the Digital World	CC	2

**22****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
CC0006 Sustainability: Society, Economy & Environment	CC	3
ML0004 Career and Entrepreneurial Development for the Future World	CC	2

**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
HA1001 Policy: Introduction to International Relations and Foreign Policy	BDE	3

**16****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
CC0005 Healthy Living & Wellbeing	CC	3
EM5109 People: Environmental Issue & Sustainability	BDE	3
AB0603 Profit: Social Entrepreneurship	BDE	3

**Year 1 Special Term**

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

**22****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
CY0002 Ethics	C	3
CY2001 Research Attachment 1	C	4
SP0061 Science & Technology for Humanity	CC	3

**23****Year 3 Semester 2**

Course	Type	AU
BG4211 CNYSP Overseas Final Year Project	C	8

**Year 3 Special Term**

BG3910 Professional Attachment	FC	5
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**13****Year 4 Semester 2**

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

**16****Total (AU)****151**

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