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

AY2024 - 2025 Intake onwards (BEDA CNYSP)

		Number of Academic Units (AU)							
		Major Requirement			Interdi	sciplinary	Broadening		
Due sue ve ve	Year of						and		
Programme	Study	School	CNYang	Major	Common	Foundational	Deepening	Total	
		Core (C)	Core (C)	PE (MPE)	Core (CC)	Core (FC)	Electives		
		(C)	(C)	(IVIPE)	(CC)	(FC)	(BDE)		
	1	10	23		5			38	
Diconginocring	2	26	10		8			44	
Bioengineering (CNYang)	3	21				5	3	29	
(Civialig)	4	9		6		3	19	37	
	Total	66	33	6	13	8	22	148	

Category	AU	Total AU		
	Common	Core (University-level)		
	CC0002 Na	avigating the Digital World	2	
	CC0005 H	ealthy Living & Wellbeing	3	
		ustainability: Society, Economy & Environment	3	13
 Interdisciplinary		ience & Technology for Humanity	3	
Collaborative Core (ICC)		areer and Entrepreneurial Development for the	2	
	Future Wo	orid		
	Foundatio	onal Core (College-level)		
	CB0494 In	troduction to Data Science and Artificial	3	8
	BG3910 Pi	rofessional Attachment	5	0
	BIE Core			
	EG1001	Engineers In Society	2	
	CB1102	Engineering	1	
	CB1117^	Engineering Mathematics	4	
	BG1141	Cellular & Molecular Biology for Bioengineers	3	
	BG2103	Signal Processing in Biosystems	3	
Major	BG2104	Electronics for Biomedical Engineering	3	34
Requirement	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	
		5 0		
	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	
	B04211	CIVISF Overseas Fillal Fear Floject		65
Major				
Requirement	CNYSP Co	pre		
	CY0001	Writing Across the Disciplines	3	
	CY0002	Ethics	3	
	CY1001	Cell	3	
	CY1007	Climate Change	3	
	CY1101	Molecule	4	
	CY1308		3	
		Physics		
	CY1500	Introduction to Research	2	
	CY1601	Mathematics I	4	
	CY2001	Research Attachment 1	4	
	CY2003	Research Attachment 3	4	
	BIF Major	Prescribed Electives (MPE)		
	CH2010^	Engineering Statistics	3	
		Engineering Statistics		6
	BIE PE 2		3	
	Data Anal	ytics Compulsory Courses		
	1) Linear A	Algebra: CB1117 Engineering	NA	
	2) Comput	ting Skills: BG2211 Introduction to		
	1	ional Thinking	NA	
	3) Probabi	lity and Statistics: CH2010 Engineering Statistics	NA	
	*	nms: MH1403 Algorithms & Computing	3	
	1 '	se: EE4791 Database Systems	3	
	-	ining: EE4483 Artificial	3	
	-	ee & Data Mining	3	
	_	_		
2	1 -	sualisation/Management: BC2406	4	
	Analytics	: Visual and Predictive Techniques		22
Analytics (BDEs)				
	Electives			
	CH4244	Numerical Method and Data Analytics	3	
	Choose fro	om the following:		
	-	achine Learning Design & Application (3AU)		
	•	- · · · · · · · · · · · · · · · · · · ·	•	•

Total	148
EE4497 Pattern Recognition & Machin MA4829 Machine Intelligence (3AU) MA4830 Real Time Software for Mech MA4832 Microprocessor System (3AU MS4671 Introduction to Materials Sin	natronics System (3AU) 6 J)

[^]Counted towards 2nd Major in Data Analytics requirement (total 10AU)

	fessional Attachment						
Year 1 Se Course	emester 1	Туре	AU	Year 1 Se Course	emester 2	Type	
CB1102	Introduction to Chemical and Biomedical	C	1	EG1001	Engineers in Society	C	
3G1141	Engineering Cellular & Molecular Biology for	С	3	CB1117 [^]	,	С	
	Bioengineers				ů ů		
CY1001 CY1101	Cell	С	3 4	CY1007	Climate Change	С	
CY1308	Molecule Physics	C C	3	CC0005	Healthy Living & Wellbeing	CC	
CY1500	Introduction to Research	Č	2				
CY1601	Mathematics 1	С	4				
CC0002	Navigating the Digital World	CC	2	Voar 1 Sr	pecial Term		
				_	Research Attachment 3 (Making	0	
				CY2003	and Tinkering)	С	
				_	Overseas Learning Trip	_	
			22				
'ear 2 Se Course	emester 1	Туре	AU	Year 2 Se	emester 2	Туре	
3G2119	Anatomy and Physiology	С	3	BG2103	Signal Processing in Biosystems	С	
3G2131	Biomaterials	С	3	BG2104	Electronics for Biomedical	С	
					Engineering		
3G2142 <mark>3G2211^</mark>	Biological Thermodynamics Introduction to Computational Thinking	C C	3	BG2110 BG2209	Bioelectricity Mechanics for Bioengineers	C C	
					· ·		
3G2801	Bioengineering Lab 2A	С	1	BG2802	Bioengineering Lab 2B	С	
CY0001	Writing Across The Disciplines	С	3	CY0002	Ethics	С	
CC0006	Sustainability: Society, Economy & Environment	СС	3	CY2001	Research Attachment 1	С	
ML0004	Career and Entrepreneurial Development for the Future World	СС	2	SP0061	Science & Technology for Humanity	СС	
			21				
					omeeter 2		
	emester 1	Tyne	ΔΠ	Year 3 Se	eniester z	Type	
Course		Туре	AU	Course	CNYSP Overseas Final Year	Туре	
Course	Control in Biosystems	Type	AU 3			Type C	
Year 3 Se Course BG3102 BG3104				Course	CNYSP Overseas Final Year		
Gourse BG3102 BG3104 BG3105	Control in Biosystems Biomedical Imaging Biomedical Instrumentation	C C C	3 3 3	Course BG4211 Year 3 Sp	CNYSP Overseas Final Year Project	С	
G3102 3G3104 3G3105 3G3112	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering	C C C	3 3 3 3	Course BG4211	CNYSP Overseas Final Year Project		
G3102 3G3104 3G3105 3G3112	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3	C C C C	3 3 3 3 1	Course BG4211 Year 3 Sp	CNYSP Overseas Final Year Project	С	
GOUTSE 3G3102 3G3104 3G3105 3G3112	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering	C C C	3 3 3 3	Course BG4211 Year 3 Sp	CNYSP Overseas Final Year Project	С	
G3102 3G3104 3G3105 3G3112	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3	C C C C	3 3 3 3 1	Course BG4211 Year 3 Sp	CNYSP Overseas Final Year Project	С	
G3102 3G3104 3G3105 3G3112	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3	C C C C	3 3 3 3 1	Course BG4211 Year 3 Sp	CNYSP Overseas Final Year Project	С	
Gourse 3G3102 3G3104 3G3105 3G3112 3G3801	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3	C C C C C BDE	3 3 3 3 1 3	Course BG4211 Year 3 Sp BG3910	CNYSP Overseas Final Year Project	C FC	
Gourse 3G3102 3G3104 3G3105 3G3112 3G3801	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3 DA Elective 1	C C C C C C Type	3 3 3 1 3 1 3	Year 4 Se Course	CNYSP Overseas Final Year Project Decial Term Professional Attachment	C FC	
Gourse 3G3102 3G3104 3G3105 3G3112 3G3801	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3 DA Elective 1	C C C C C C C C C C C C C C C C C C C	3 3 3 1 3 16 AU	Year 4 Se Course BG4122	CNYSP Overseas Final Year Project Decial Term Professional Attachment Demester 2 Medical Device Design	C FC Type	
Gourse 3G3102 3G3104 3G3105 3G3105 3G3112 3G3801 Cear 4 Scourse 3G4104	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3 DA Elective 1	C C C C C C Type	3 3 3 1 3 1 3	Year 4 Se Course	CNYSP Overseas Final Year Project Decial Term Professional Attachment	C FC	
Gourse 3G3102 3G3104 3G3105 3G3112 3G3801 (ear 4 Scourse 3G4104 3G4122	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3 DA Elective 1 Machine Learning and Optimization for Bioengineers Medical Device Design	C C C C C C C C C C C C C C C C C C C	3 3 3 1 3 16 AU	Year 4 Se Course BG4122	CNYSP Overseas Final Year Project Decial Term Professional Attachment Demester 2 Medical Device Design Introduction to Data Science and	C FC Type	
Gourse 3G3102 3G3104 3G3105 3G3105 3G3112 3G3801 (ear 4 Scourse 3G4104 3G4122 CH2010^	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3 DA Elective 1 Permester 1 Machine Learning and Optimization for Bioengineers Medical Device Design Engineering Statistics	C C C C C C C C C C C C C C C C C C C	3 3 3 1 3 16 AU 3	Year 4 Se Course BG4122	CNYSP Overseas Final Year Project Decial Term Professional Attachment Pemester 2 Medical Device Design Introduction to Data Science and Artificial Intelligence BIE PE2	C FC Type C FC	
BG3102 BG3104 BG3105 BG3112 BG3801	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3 DA Elective 1 Machine Learning and Optimization for Bioengineers Medical Device Design	C C C BDE Type C C C	3 3 3 3 1 3 16 AU 3 3 3	Year 4 Se Course BG4211 Year 3 Sp BG3910 Year 4 Se Course BG4122 CB0494	CNYSP Overseas Final Year Project Decial Term Professional Attachment Demester 2 Medical Device Design Introduction to Data Science and Artificial Intelligence BIE PE2 Algorithms & Computing	Type C FC MPE BDE	
Course BG3102 BG3104 BG3105 BG3112 BG3801 Year 4 Sc Course BG4104 BG4122 CH2010^ CH4244	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3 DA Elective 1 Permester 1 Machine Learning and Optimization for Bioengineers Medical Device Design Engineering Statistics Numerical Methods and Data Analytics Artificial Intelligence & Data Mining	C C C BDE Type C C C	3 3 3 3 1 3 16 AU 3 3	Year 4 Se Course BG4211 Year 3 Sp BG3910 Year 4 Se Course BG4122 CB0494	CNYSP Overseas Final Year Project Decial Term Professional Attachment Pemester 2 Medical Device Design Introduction to Data Science and Artificial Intelligence BIE PE2	C FC FC MPE	
Gourse 3G3102 3G3104 3G3105 3G3105 3G3112 3G3801 (fear 4 Scourse 3G4104 3G4122 CH2010^ CH4244 EE4483	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3 DA Elective 1 Machine Learning and Optimization for Bioengineers Medical Device Design Engineering Statistics Numerical Methods and Data Analytics	C C C C C C C C C C C C C C C C C C C	3 3 3 3 1 3 16 AU 3 3 3	Year 4 Se Course BG4211 Year 3 Sp BG3910 Year 4 Se Course BG4122 CB0494	CNYSP Overseas Final Year Project Decial Term Professional Attachment Demester 2 Medical Device Design Introduction to Data Science and Artificial Intelligence BIE PE2 Algorithms & Computing	Type C FC MPE BDE	
Course BG3102 BG3104 BG3105 BG3105 BG3112 BG3801 Year 4 Sc Course BG4104 BG4122 CH2010^	Control in Biosystems Biomedical Imaging Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3 DA Elective 1 Machine Learning and Optimization for Bioengineers Medical Device Design Engineering Statistics Numerical Methods and Data Analytics Artificial Intelligence & Data Mining Analytics I: Visual and Predictive	C C C C BDE Type C C C MPE BDE BDE	3 3 3 3 1 3 16 AU 3 3 3 3 3	Year 4 Se Course BG4211 Year 3 Sp BG3910 Year 4 Se Course BG4122 CB0494	CNYSP Overseas Final Year Project Decial Term Professional Attachment Professional Attachment Professional Attachment Medical Device Design Introduction to Data Science and Artificial Intelligence BIE PE2 Algorithms & Computing Database Systems	Type C FC MPE BDE BDE	

[^] These courses are double-counted towards both BIE as well as the Second Major in Data Analytics.