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

AY2023 - 2024 Intake onwards (BEDA CNYSP)

				Numb	er of Aca	demic Units	(AU)	
		Major Requirement		Interdisciplinary		Broadening		
Duograma	Year of						and	
Programme	Study	School	CNYang	Major	Common	Foundational	Deepening	Total
		Core (C)	Core (C)	PE (MPE)	Core (CC)	Core (FC)	Electives	
		(C)	(0)	(1411 L)	(CC)	(10)	(BDE)	
	1	10	23		5			38
Pioonginooring	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				
	Common	Core (University-level)		
	CC0002 N	avigating the Digital World	2	
	CC0005 H	ealthy Living & Wellbeing	3	
		ustainability: Society, Economy & Environment	3	13
   Interdisciplinary		ience & Technology for Humanity	3	
Collaborative		areer and Entrepreneurial Development for the	2	
Core (ICC)	Future Wo	orld		
	Foundation	onal Core (College-level)		
	CB0494 In	troduction to Data Science and Artificial	3	8
	BG3910 P	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	37
Requirement	BG2110	Bioelectricity	3	
	BG2119	Anatomy and Physiology	6	
	BG2131	Biomaterials	3	
	BG2142	Biological Thermodynamics	3	
	BG2209	Mechanics for Bioengineers	3	
	BG2211^	Introduction to Computational Thinking	3	

	BG2801	Bioengineering Lab 2A	3	
	BG2802	Bioengineering Lab 2B	3	
		5 0		
	BG3102	Control in Biosystems	1	
		•	_	
	BG3104	Biomedical Imaging	1	
	BG3105	Biomedical Instrumentation	3	
	BG3112	Cardiovascular Engineering	3	
	BG3801	Bioengineering Lab 3	3	
		Machine Learning and Optimization for		
	BG4104	Bioengineers	1	
	BG4122	Medical Device Design	3	
	BG4211	CNYSP Overseas Final Year Project	8	
	BG4211	CNTSP Overseas Fillal Teal Project	0	62
Major				
Requirement	CNYSP Co	pre		
	CY0001	Writing Across the Disciplines	3	
	CY0002	Ethics	3	
	CY1001	Cell	3	
	CY1007	Living with Climate Change	3	
	CY1101	Molecule	4	
			3	
	CY1308	Physics		
	CY1500	Introduction to Research	2	
	CY1601	Mathematics I	4	
	CY2001	Research Attachment 1	4	
	CY2003	Research Attachment 3	4	
	RIF Major	Prescribed Electives (MPE)		
	1			
	CH2010^	Engineering Statistics	3	6
	BIE PE 2		3	
	Data Anal	ytics Compulsory Courses		
	1) Linear A	Algebra: CB1117 Engineering	NA	
	2) Comput	ing Skills: BG2211 Introduction to		
	1 .	ional Thinking	NA	
	•	lity and Statistics: CH2010 Engineering Statistics	NA	
	1 -	ims: MH1403 Algorithms & Computing	3	
	1 ' "	se: EE4791 Database Systems	3	
		ining: EE4483 Artificial	3	
		_	3	
	_	e & Data Mining		
	1 -	sualisation/Management: BC2406	4	
	Analytics I	: Visual and Predictive Techniques	· ·	22
Analytics (BDEs)				
	Electives			
	CH4244	Numerical Method and Data Analytics	3	
		om the following:		
	-	achine Learning Design & Application (3AU)		
	1	22 200 0 200.011 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	I

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)

<sup>^</sup>Counted towards 2nd Major in Data Analytics requirement (total 10AU)

	emester 1			Year 1 Se	mester 2		
Course		Туре	AU	Course		Type	
CB1102	Introduction to Chemical and Biomedical	С	1	EG1001	Engineers in Society	С	
	Engineering Cellular & Molecular Biology for	_		004445			
G1141	Bioengineers	С	3	CB1117	Engineering Mathematics	С	
Y1001	Cell	С	3	CY1007	Living with Climate Change	С	
Y1101 Y1308	Molecule Physics	C C	4 3	CC0005	Healthy Living & Wellbeing	CC	
CY1500	Introduction to Research	C	2				
CY1601	Mathematics 1	С	4				
CC0002	Navigating the Digital World	CC	2	V4 0	and Tarre		
				_	pecial Term  Research Attachment 3 (Making		
				CY2003	and Tinkering)	С	
				_	Overseas Learning Trip	_	
			22				
ear 2 Sourse	emester 1	Туре	AU	Year 2 Se Course	mester 2	Туре	
3G2119	Anatomy and Physiology	С	3	BG2103	Signal Processing in Biosystems	С	
G2131	Biomaterials	С	3	BG2104	Electronics for Biomedical	С	
					Engineering		
3G2142 3G2211	Biological Thermodynamics  Introduction to Computational Thinking	C	3	BG2110 BG2209	Bioelectricity Mechanics for Bioengineers	C C	
	· · · · · · · · · · · · · · · · · · ·				ū		
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	CC	3	CY2001	Research Attachment 1	С	
ИL0004	Career and Entrepreneurial Development for	СС	2	SP0061	Science & Technology for	СС	
ILOUUT	the Future World	00	_	01 0001	Humanity	00	
			21				
	emester 1	<b>T</b>	<b>A</b> 11	Year 3 Se	mester 2	<b>T</b>	
ourse		Туре	AU	Course		Туре	
<b>/ear 3 S</b> Course 3G3102	emester 1  Control in Biosystems	<b>Type</b>	<b>AU</b> 3	_	CNYSP Overseas Final Year Project	Type C	
Course				Course	CNYSP Overseas Final Year		
G3102 3G3104	Control in Biosystems Biomedical Imaging	C C	3	Course BG4211	CNYSP Overseas Final Year Project		
G3102 3G3104 3G3105 3G3112	Control in Biosystems	С	3	Course BG4211	CNYSP Overseas Final Year		
3G3102 3G3104 3G3105	Control in Biosystems  Biomedical Imaging  Biomedical Instrumentation	C C C	3 3 3	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	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 C	3 3 3 3	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 C	3 3 3 3	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 C	3 3 3 3 1	BG4211 Year 3 Sp	CNYSP Overseas Final Year Project	С	
3G3102 3G3104 3G3104 3G3105 3G3112 3G3801	Control in Biosystems  Biomedical Imaging  Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3	C C C C C	3 3 3 3 1	BG4211 Year 3 Sp	CNYSP Overseas Final Year Project  Decial Term  Professional Attachment	С	
3G3102 3G3104 3G3104 3G3105 3G3112 3G3801	Control in Biosystems  Biomedical Imaging  Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3  DA Elective 1	C C C C C	3 3 3 3 1	Course BG4211  Year 3 Sp BG3910	CNYSP Overseas Final Year Project  Decial Term  Professional Attachment	С	
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 BDE	3 3 3 3 1 3	Course BG4211  Year 3 Sp BG3910	CNYSP Overseas Final Year Project  Decial Term  Professional Attachment	C FC	
G3102 G3104 G3105 G3112 G3801 Gaser 4 Scourse	Control in Biosystems  Biomedical Imaging  Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3  DA Elective 1  emester 1  Machine Learning and Optimization for Bioengineers	C C C C C BDE	3 3 3 3 1 3	Year 3 Sp BG3910	CNYSP Overseas Final Year Project  Pecial Term Professional Attachment  Professional Device Design Introduction to Data Science and	C FC	
G3102 G3104 G3105 G3112 G3801 Fear 4 S Course G4104	Control in Biosystems  Biomedical Imaging  Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3  DA Elective 1  emester 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 3	Year 4 Se Course BG41122	CNYSP Overseas Final Year Project  Decial Term Professional Attachment  Demoster 2  Medical Device Design Introduction to Data Science and Artificial Intelligence	C FC Type C FC	
Gourse  3G3102  3G3104  3G3105  3G3112  3G3801  Cear 4 S  Course  3G4104  3G4122  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	C C C C C BDE  Type C C C	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  Pecial Term Professional Attachment  Pemester 2  Medical Device Design Introduction to Data Science and Artificial Intelligence BIE PE2	Type C FC MPE	
Gourse 3G3102 3G3104 3G3105 3G3112 3G3801 Year 4 S Course 3G4104 3G4122	Control in Biosystems  Biomedical Imaging  Biomedical Instrumentation Cardiovascular Engineering Bioengineering Lab 3  DA Elective 1  emester 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 3	Year 4 Se Course BG4211 Year 3 Sp BG3910 Year 4 Se Course BG4122 CB0494	CNYSP Overseas Final Year Project  Pecial Term Professional Attachment  Pemester 2  Medical Device Design Introduction to Data Science and Artificial Intelligence BIE PE2  Algorithms & Computing	Type C FC MPE BDE	
G3102 G3104 G3105 G3112 G3801 G4104 G4104 G4122 GH2010	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	C C C C C BDE  Type C C C	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  Pecial Term Professional Attachment  Pemester 2  Medical Device Design Introduction to Data Science and Artificial Intelligence BIE PE2	Type C FC MPE	
G3102 G3104 G3105 G3112 G3801 Garage G4104 G4122 H2010 H4244	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 1 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  Pecial Term Professional Attachment  Pemester 2  Medical Device Design Introduction to Data Science and Artificial Intelligence BIE PE2  Algorithms & Computing	Type C FC MPE BDE	
G3102 G3104 G3105 G3112 G3801 Gara 4 Si ourse G4104 G4122 H2010 H4244 E4483	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	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 3 3 3 3	Year 4 Se Course BG4211 Year 3 Sp BG3910 Year 4 Se Course BG4122 CB0494	CNYSP Overseas Final Year Project  Pecial Term Professional Attachment  Pemester 2  Medical Device Design Introduction to Data Science and Artificial Intelligence BIE PE2  Algorithms & Computing Database Systems	Type C FC MPE BDE BDE	