

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

AY2024 - 2025 Intake onwards (BEDA 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	10	23		5			38
	2	26	10		8			44
	3	21				5	3	29
	4	9		6		3	19	37
	Total	66	33	6	13	8	22	148

Category		AU	Total AU	
Interdisciplinary Collaborative Core (ICC)	<b>Common Core (University-level)</b>		13	
	CC0002 Navigating the Digital World			2
	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>		8	
	CB0494 Introduction to Data Science and Artificial			3
	BG3910 Professional Attachment		5	
Major Requirement	<b>BIE Core</b>		34	
	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
	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	65	
	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		
	CY2001	Research Attachment 1	4		
	CY2003	Research Attachment 3	4		
	<b>BIE Major Prescribed Electives (MPE)</b>				
	CH2010^	Engineering Statistics	3	6	
	BIE PE 2		3		
2nd Major in Data Analytics (BDEs)	<b>Data Analytics Compulsory Courses</b>			22	
	1) Linear Algebra: CB1117 Engineering		NA		
	2) Computing Skills: BG2211 Introduction to Computational Thinking		NA		
	3) Probability and Statistics: CH2010 Engineering Statistics		NA		
	4) Algorithms: MH1403 Algorithms & Computing		3		
	5) Database: EE4791 Database Systems		3		
	6) Data Mining: EE4483 Artificial Intelligence & Data Mining		3		
	7) Data Visualisation/Management: BC2406		4		
	Analytics I: Visual and Predictive Techniques				
	<b>Electives</b>				
	CH4244	Numerical Method and Data Analytics	3		
	<i>Choose from the following:</i>				
	EE4414 Machine Learning Design & Application (3AU)				

	EE4497 Pattern Recognition & Machine Learning (3AU) MA4829 Machine Intelligence (3AU) MA4830 Real Time Software for Mechatronics System (3AU) MA4832 Microprocessor System (3AU) MS4671 Introduction to Materials Simulation (3AU)	6	
<b>Total</b>			<b>148</b>

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

**with Professional Attachment**

<sup>^</sup> These courses are double-counted towards both BIE as well as the Second Major in Data Analytics.