

B.Eng (Hons) in Chemical and Biomolecular Engineering CNYang Scholars Programme with 2nd Major in Digital Analytics

AY2023 - 2024 Intake onwards (CBDA 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)		
Chemical & Biomolecular Engineering (CNYang)	1	16	23		5			44
	2	26	10		8			44
	3	25				5	3	33
	4	8		6		3	19	36
	Total	75	33	6	13	8	22	157

Category		AU	Total AU
Interdisciplinary Collaborative Core (ICC)	Common Core (University-level)		
	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	
	Foundational Core (College-level)		
CB0494 Introduction to Data Science and Artificial	3	8	
CH3910 Professional Attachment	5		
Major Requirement	CBE Core		
	EG1001 Engineers In Society	2	34
	CB1102 Engineering	1	
	CB1117^ Engineering Mathematics	4	
	CB1103 Organic Chemistry For Engineers	3	
	CB1131 Introduction to Biomolecular Engineering	3	
	CH1104 Materials & Energy Balance	3	
	CH2010^ Engineering Statistics	3	
	CH2103 Fluid Systems	3	
	CH2107^ Introduction to Computational Thinking	3	
	CH2108 Thermodynamics	3	
	CH2112 Chemical Reaction Engineering	3	
	CH2114 Heat & Mass Transfer in Chemical and Biological Systems	3	

Major Requirement	CH2123	Chemical Thermodynamics	3	74	
	CH2151	Unit Operations A Chemical & Biomolecular Engineering Laboratory	3		
	CH2802	2B	2		
	CH3104	Biochemical Engineering	3		
	CH3109	Decision Tools for Business & Engineering	3		
	CH3111	Process Control and Dynamics	3		
	CH3121	Chemical, Biological & Plant Safety	2		
	CH3140	Unit Operations B Chemical & Biomolecular Engineering Laboratory	3		
	CH3802	5	3		
	CH4211	CNYSP Overseas Final Year Project	8		
	CH4801	Final Year Design Project	8		
	CNYSP Core				
	CY0001	Writing Across the Disciplines	3		
	CY0002	Ethics	3		
	CY1001	Cell	3		
	CY1007	Living with 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		
CBE Major Prescribed Electives (MPE)			6		
2nd Major in Data Analytics (BDEs)	Data Analytics Compulsory Courses			22	
	1) Linear Algebra: CB1117 Engineering		NA		
	2) Computing Skills: BG2211 Introduction to Computational Thinking		NA		
	3) Probability and Statistics: CH2010 Engineering S		NA		
	4) Algorithms: MH1403 Algorithms & Computing		3		
	5) Database: EE4791 Database Systems (3AU)		3		
	6) Data Mining: EE4483 Artificial Intelligence & Data Mining		3		
	7) Data Visualisation/Management: BC2406 Analytics I: Visual and Predictive Techniques		4		
	Electives				
	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	
Total			157

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

B.Eng (Hons) in Chemical and Biomolecular Engineering CNYang Scholars Programme with 2nd Major in Digital Analytics
 AY2023 - 2024 Intake onwards (CBDA CNYSP)
 with Professional Attachment

Year 1 Semester 1

Course		Type	AU
CB1102	Introduction to Chemical and Biomedical Engineering	C	1
CB1131	Introduction to Biomolecular Engineering	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
CH2103	Fluid Systems	C	3
CH2107	Introduction to Computational Thinking	C	3
CH2108	Thermodynamics	C	3
CH2010	Engineering Statistics	C	3
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

20

Year 3 Semester 1

Course		Type	AU
CH3104	Biochemical Engineering	C	3
CH3109	Decision Tools for Business & Engineering	C	3
CH3111	Process Control and Dynamics	C	3
CH3121	Chemical, Biological & Plant Safety	C	2
CH3140	Unit Operations B	C	3
CH3802	Chemical & Biomolecular Engineering Laboratory 5	C	3
	DA Elective 1	BDE	3

20

Year 4 Semester 1

Course		Type	AU
CH4801	Final Year Design Project	C	4
	CBE PE1	MPE	3
CH4244	Numerical Methods and Data Analytics	BDE	3
EE4483	Artificial Intelligence & Data Mining	BDE	3
BC2406	Analytics I: Visual and Predictive Techniques	BDE	4

17

Year 1 Semester 2

Course		Type	AU
CB1103	Organic Chemistry For Engineers	C	3
CB1117	Engineering Mathematics	C	4
CH1104	Materials & Energy Balance	C	3
EG1001	Engineers in Society	C	2
CY1007	Living with Climate Change	C	3
CC0005	Healthy Living & Wellbeing	CC	3

Year 1 Special Term

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

22

Year 2 Semester 2

Course		Type	AU
CH2112	Chemical Reaction Engineering	C	3
CH2114	Heat & Mass Transfer in Chemical and Biological Systems	C	3
CH2123	Chemical Thermodynamics	C	3
CH2151	Unit Operations A	C	3
CH2802	Chemical & Biomolecular Engineering Laboratory 2B	C	2
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
CH4211	CNYSP Overseas Final Year Project	C	8

Year 3 Special Term

CH3910	Professional Attachment	FC	5
--------	-------------------------	----	---

13

Year 4 Semester 2

Course		Type	AU
CH4801	Final Year Design Project	C	4
CB0494	Introduction to Data Science and Artificial Intelligence	FC	3
	CBE PE2	MPE	3
MH1403	Algorithms & Computing	BDE	3
EE4791	Database Systems	BDE	3
	DA Elective 3	BDE	3

19

Total (AU)

157