

**AY2024-25 CURRICULUM FOR BACHELOR OF ENGINEERING
(CHEMICAL AND BIOMOLECULAR ENGINEERING)
WITH CN YANG SCHOLARS PROGRAMME
SECOND MAJOR IN SUSTAINABILITY (CBSN)
(FIRST YEAR ADMISSION)**

Last updated: 31-Jan-24

SUMMARY OF ACADEMIC UNIT REQUIREMENT							
Year of Study	School Core	CNYSB-Core	MPE	CC	FC	BDE	Total AU
1	12	27	0	5	0	3	47
2	26	10	0	8	3	0	47
3	25	0	0	0	5	0	30
4	8	0	6	0	0	22	36
Total	71	37	6	13	8	25	160

YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1001	Cell	CNY-Core	3	CNYSB Courses
CY1101	Molecule	CNY-Core	4	
CY1308	Physics	CNY-Core	3	
CY1500	Introduction to Research	CNY-Core	2	
CY1601	Mathematics I	CNY-Core	4	
CB1102	Introduction to Chemical and Biomedical Engineering	C	1	
CB1131	Introduction to Biomolecular Engineering	C	3	
CC0002	Navigating the Digital World	CC	2	
			22	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1007^	Climate Change	CNY-Core	3	Double-counted as Planet Core
CY1602	Mathematics II	CNY-Core	4	CNYSB Course
CB1103	Organic Chemistry For Engineers	C	3	
CH1104	Materials & Energy Balance	C	3	
EG1001^	Engineers in Society	C	2	Double-counted as Practice Core
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	
EM5109	Environmental Issue & Sustainability	BDE	3	People Core
			21	

YEAR 1 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY2003	Research Attachment 3	CNY-Core	4	CNYSB Course
	Overseas Learning Trip			
			4	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0001	Writing Across the Disciplines	CNY-Core	3	CNYSB Course
CH2010	Engineering Statistics	C	3	CY1601
CH2103	Fluid Systems	C	3	CB1117 & CH1104
CH2107	Introduction to Computational Thinking	C	3	CB1117
CH2108	Biological Thermodynamics	C	3	CH1104
CC0006	Sustainability: Society, Economy & Environment	CC	3	
ML0004	Career and Entrepreneurial Development for the Future World	CC	2	
			20	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYSB Course
CY2001	Research Attachment 1	CNY-Core	4	CNYSB Course 2-semester long, course registered only in Sem 2 (similar to URECA)

CH2112	Chemical Reaction Engineering	C	3	CH1104 & CH2108 & CH2123
CH2114	Heat & Mass Transfer in Chemical and Biological Systems	C	3	BG1131
CH2123	Chemical Thermodynamics	C	3	CH1104 & CB1117 & CH2108
CH2151	Unit Operations A	C	3	
CH2802	Chemical & Biomolecular Engineering Laboratory 2B	C	2	
CB0494	Introduction to Data Science and Artificial Intelligence	FC	3	
SP0061	Science & Technology for Humanity	CC	3	
			27	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CH3104	Biochemical Engineering	C	3	CH1104 & CB1131 & CH2114 & CH2112
CH3109	Decision Tools for Business & Engineering	C	3	
CH3111	Process Control and Dynamics	C	3	CH1104 & BG2142 & CH2112 & CH2114 & CY1601
CH3121	Chemical, Biological & Plant Safety	C	2	
CH3140	Unit Operations: Fluid-Fluid Separation	C	3	CH1104 & CH2108 & CH2123
CH3802	Chemical & Biomolecular Engineering Laboratory 5	C	3	
			17	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CH4211	CNYSP Overseas Final Year Project	C	8	
			8	

YEAR 3 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CH3910	Professional Attachment	FC	5	
			5	

YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CH4801	Final Year Design Project	C	4	
XXXXXX	CBE PE 1	MPE	3	
HA1001	Introduction to International Relations and Foreign Policy	BDE	3	Policy Core
	SN Elective 1	BDE	3	Please see attached list of electives to choose from
	SN Elective 2	BDE	3	
	SN Elective 3	BDE	3	
			19	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CH4801	Final Year Design Project	C	4	
XXXXXX	CBE PE 2	MPE	3	
AB0603	Social Entrepreneurship	BDE	3	Profit Core
	SN Elective 4	BDE	4	Please see attached list of electives to choose from
	Second Major Interdisciplinary Project	BDE	3	
			17	

Total AU for Graduation: **160**

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

Compulsory Courses and Electives for Second Major in Sustainability

https://www.ntu.edu.sg/ase/admissions/undergraduate-programmes/second-major-in-sustainability#Content_C002_Col00