

**CURRICULUM FOR BACHELOR OF ENGINEERING
(CHEMICAL AND BIOMOLECULAR ENGINEERING)**
WITH CN YANG SCHOLARS PROGRAMME
SECOND MAJOR IN SUSTAINABILITY (CBSN)
(FIRST YEAR ADMISSION)
AY2025 Intake Onwards

SUMMARY OF ACADEMIC UNIT REQUIREMENT								
Year of Study	Major Requirements			Interdisciplinary Collaborative Core			BDE	Total AU
	School Core	CNYSP-Core	MPE	CC	Professional Series	Care, Serve, Learn		
1	12 [2]	27 [3]	0	2	0	0	3	44 [5]
2	26	6	0	8	0	3	4	47
3	25	0	0	0	6	0	3	34
4	8	0	6	0	3	0	19	36
Total	71 [2]	33 [3]	6	10	9	3	29	161 [5]

[] AU of courses that could be used to fulfil Core requirement and second major requirement concurrently

YEAR 1 SEMESTER 1					
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks	
CY1001	Cell	CNY-Core	3	CNYSP 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		
			20		

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	CNYSP 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	
CC0015	Health & Wellbeing	CC	2		
XXXXXX	SN Compulsory 3	BDE	3	Please see attached list of core courses to choose from	
			20		

YEAR 1 SPECIAL SEMESTER					
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks	
CY2003	Research Attachment 3	CNY-Core	4	CNYSP 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	CNYSP Course	
CB5915	Undergraduate Research	BDE	IP	Course will be registered in Semester 2. Grades will be recorded at the end of Semester 2	
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 Design & Workplace Readiness in the V.U.C.A World	CC	2	
	Tech-For-Good (T4G)	CSL	3	
			23	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYSP Course
CB5915	Undergraduate Research	BDE	4	2 semester long, course registered only in Sem 2
CH2112	Chemical Reaction Engineering	C	3	CH1104 & CH2108 &
CH2114	Heat & Mass Transfer in Chemical and Biological Systems	C	3	BG1131
CH2123	Chemical Thermodynamics	C	3	CH1104 & CB1117 &
CH2151	Unit Operations A	C	3	
CH2802	Chemical & Biomolecular Engineering Laboratory 2B	C	2	
SP0061	Science & Technology for Humanity	CC	3	
			24	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CH3104	Biochemical Engineering	C	3	CH1104 & CB1131 &
CH3109	Decision Tools for Business & Engineering	C	3	
CH3111	Process Control and Dynamics	C	3	CH1104 & BG2142 &
CH3121	Chemical, Biological & Plant Safety	C	2	
CH3140	Unit Operations: Fluid-Fluid Separation	C	3	CH1104 & CH2108 &
CH3802	Chemical & Biomolecular Engineering Laboratory 5	C	3	
MLXXXX	Professional Preparation	PS	1	
XXXXXX	SN Compulsory 4	BDE	3	Please see attached list
			21	

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	PS	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	
XXXXXX	SN Compulsory 5	BDE	3	Please see attached list
	SN Elective 1	BDE	3	Please see attached list
	SN Elective 2	BDE	3	of electives to choose from
	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	
CB0494	Introduction to Data Science and Artificial Intelligence	PS	3	
	SN Elective 4	BDE	4	Please see attached list.
	Second Major Interdisciplinary Project	BDE	3	
			17	
Total AU for Graduation:			161	

[^] 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_C000