

**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	CNYS-SP-Core	MPE	CC	Professional Series	Care, Serve, Learn		
1	12 [2]	27 [3]	0	2	0	0	3	44 [5]
2	26	10	0	8	0	3	0	47
3	25	0	0	0	6	0	3	34
4	8	0	6	0	3	0	19	36
Total	71 [2]	37 [3]	6	10	9	3	25	161 [5]

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

CY2001	Research Attachment 1	CNY-Core	4	CNYS 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	
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 & 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	
MLXXXX	Professional Preparation	PS	1	
XXXXXX	SN Compulsory 4	BDE	3	Please see attached list of core courses to choose from
			21	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CH4211	CNYS 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 of core courses to choose from
	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	
CB0494	Introduction to Data Science and Artificial Intelligence	PS	3	
	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:			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_Col00				