

**CURRICULUM FOR BACHELOR OF SCIENCE (CHEMISTRY AND BIOLOGICAL CHEMISTRY)  
WITH SECOND MAJOR IN DATA ANALYTICS  
CN YANG SCHOLARS PROGRAMME  
(FIRST YEAR ADMISSION)- AY2025 ONWARDS**

SUMMARY OF ACADEMIC UNIT REQUIREMENT								
Year of Study	Core	CNYSP-Core	MPE	CC	Professional Series	Care, Serve & Learn	BDE	Total AU
1	7	27 [4]	0	2	0	0	3	39 [4]
2	16 [3]	6	0	8	3	3	11	47 [3]
3	18	0	12 [3]	0	1	0	12	43 [3]
4	12	0	0	0	10	0	0	22
<b>Total</b>	<b>53 [3]</b>	<b>33 [4]</b>	<b>12 [3]</b>	<b>10</b>	<b>14</b>	<b>3</b>	<b>26</b>	<b>151 [10]</b>

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

YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
CY1001	Cell	CNYSP-Core	3	
CY1101	Molecule	CNYSP-Core	4	
CY1308	Physics	CNYSP-Core	3	
CY1500	Introduction to Research	CNYSP-Core	2	
CY1601	Mathematics I	CNYSP-Core	4	
CB1102	Introduction to Chemistry, Chemical and Biomedical Engineering	C	1	New Core wef AY25
CC0015	Health & Wellbeing	CC	2	
			<b>19</b>	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
CY1007	Climate Change	CNYSP-Core	3	
CY1602^	Mathematics II	CNYSP-Core	4	
CM2031	Organic & Bioorganic Chemistry	C	3	Pre-req (CY1101 Molecule) fulfilled at the end of Y1S1
CM2041	Physical & Biophysical Chemistry 1	C	3	CY1101
EE4791	Database Systems	BDE	3	
			<b>16</b>	

YEAR 1 SPECIAL TERM				
Course Code	Course Title	Type	AU	Remarks
CY2003	Research Attachment 3 (Making and Tinkering)	CNYSP-Core	4	
	Overseas Learning Trip			
			<b>4</b>	

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
CY0001	Writing Across The Disciplines	CNYSP-Core	3	
CB5915	Undergraduate Research	BDE	IP	Course will be registered in Semester 2. Grades will be recorded at the end of Semester 2
CM2011	Analytical & Bioanalytical Chemistry	C	3	CY1101
CM2021	Inorganic & Bioinorganic Chemistry	C	3	CY1101
CM2061	Chemistry & Biological Chemistry Lab 1	C	3	CY1101
MH2500	Probability and Introduction to Statistics	BDE	4	<b>CY1601</b>
PS0001^	Introduction to Computational Thinking	C	3	
XXXXXX	Tech-For-Good	CSL	3	
CC0006	Sustainability: Society, Economy & Environment	CC	3	
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2	
			<b>27</b>	

**YEAR 2 SEMESTER 2**

Course Code	Course Title	Type	AU	Remarks
CY0002	Ethics	CNYS-Core	3	
CB5915	Undergraduate Research	BDE	4	2-semester long, course registered only in Sem 2
CM2062	Chemistry & Biological Chemistry Lab 2	C	3	CY1101
CB2002	Introduction to Chemical and Biological Safety	C	1	New Core wef AY25
PS0002	Introduction to Data Science and Artificial Intelligence	PS	3	<b>PS0001</b>
SP0061	Science & Technology for Humanity	CC	3	
<b>MH1403</b>	<b>Algorithms and Computing</b>	<b>BDE</b>	<b>3</b>	<b>PS0001</b>
			<b>20</b>	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
CM3xxx	Chem-Core	C	3	CM3011, CM3021, CM3031, CM3041 are offered in both semesters
CM3xxx	Chem-Core	C	3	
CM3062	Chemistry & Biological Chemistry Lab 4	C	3	CM2062
CM4044 <sup>^</sup>	Artificial Intelligence in Chemistry	MPE	3	<b>PS0001 &amp; PS0002</b>
CM4XXX	School Major PE	MPE	3	
SC4020	Data Analytics & Mining	BDE	3	<b>MH1403</b>
SC4024	Data Visualization	BDE	3	<b>PS0001 &amp; MH2500</b>
MLXXXX	Profession Preparation	PS	1	
			<b>22</b>	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
CM3xxx	Chem-Core	C	3	CM3011, CM3021, CM3031, CM3041 are offered in both semesters
CM3xxx	Chem-Core	C	3	
CM3062	Chemistry & Biological Chemistry Lab 4	C	3	CM2062
CM4043 <sup>^</sup>	Molecular Modelling: Principles and Applications	MPE	3	<b>CM3041</b>
CM4XXX	School Major PE	MPE	3	
XXXXXX	DA Elective 2	BDE	3	
XXXXXX	DA Elective 3	BDE	3	
			<b>21</b>	

YEAR 3 SPECIAL SEMESTER & YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
CM4111	Overseas Final Year Project	C	12	CNYS-SP Course
			<b>12</b>	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
CM4081	Professional Internship	PS	10	
			<b>10</b>	
<b>Total AUs required for Graduation:</b>			<b>151</b>	

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

Compulsory Courses for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
BDE	MH2500	Probability and Introduction to Statistics	4	1	CY1601
Core	CY1602	Mathematics II	4	2	CY1601
Core	PS0001	Introduction to Computational Thinking	3	1	-
BDE	MH1403	Algorithms and Computing	3	2	PS0001
BDE	EE4791	Database Systems	3	2	-
BDE	SC4020	Data Analytics and Mining	3	1	MH1403
BDE	SC4024	Data Visualization	3	1	PS0001 & MH2500

Electives for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
MPE	CM4043	Molecular Modelling: Principles and Applications	3	2	CM3041
MPE	CM4044	Artificial Intelligence in Chemistry	3	1	PS0001 & PS0002
BDE	XXXXXX	DA Elective 2	3		
BDE	XXXXXX	DA Elective 3	3		