CURRICULUM FOR BACHELOR OF SCIENCE (MATHEMATICAL SCIENCES)
WITH SECOND MAJOR IN DATA ANALYTICS
CN YANG SCHOLARS PROGRAMME
(FIRST YEAR ADMISSION)
AY2025 Intake Onwards

SUMMARY OF ACADEMIC UNIT REQUIREMENT								
Year of Study	Core	CNYSP-Core	MPE	CC	Professional Series	Care, Serve & Learn	BDE	Total AU
1	13 [3]	27 [4]	0	2	0	0	0	42 [7]
2	12 [4]	10	0	8	3	3	9	45 [4]
3	0	0	19	0	1	0	13	33
4	12	0	0	0	10	0	0	22
Total	37 [7]	37 [4]	19	10	14	3	22	142 [11]

[ ] 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	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	
PS0001	Introduction to Computational Thinking	C	3	
			19	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
CY1007	Climate Change	CNYSP-Core	3	
CY1602^	Mathematics II	CNYSP-Core	4	
MH1301	Discrete Mathematics	C	3	
MH1403^	Algorithms and Computing	C	3	PS0001
MH3100	Real Analysis I	C	4	CY1601
CC0015	Health & Wellbeing	CC	2	
			19	

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

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
CY0001	Writing Across The Disciplines	CNYSP-Core	3	
CY2001	Research Attachment 1	CNYSP-Core	IP	Course will be registered in Semester 2. Grades will be recorded at the end of Semester 2
MH1300	Foundations of Mathematics	C	4	
MH2500^	Probability and Introduction to Statistics	C	4	CY1601
SC2207	Introduction to Database	BDE	3	MH1403
	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	
			22	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
CY0002	Ethics	CNYSP-Core	3	
CY2001	Research Attachment 1	CNYSP-Core	4	2-semester long, course registered only in Sem 2 (similar to URECA)
MH3110	Ordinary Differential Equations	C	4	CY1602
MH3511	Data Analysis with Computer	BDE	3	MH2500
XXXXXX	DA Elective 1	BDE	3	

Course Code	Course Title	Type	AU	Remarks
PS0002	Introduction to Data Science and Artificial Intelligence	PS	3	
SP0061	Science & Technology for Humanity	CC	3	
			23	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
XXXXXX	School Major PE	MPE	4	
XXXXXX	School Major PE	MPE	4	
XXXXXX	School Major PE	MPE	4	
XXXXXX	DA Elective 2	BDE	3	
SC4020	Data Analytics & Mining	BDE	3	MH1403
SC4024	Data Visualization	BDE	3	PS0001 + MH2500
MLXXXX	Professional Preparation	PS	1	
			22	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
XXXXXX	School Major PE	MPE	3	
XXXXXX	School Major PE	MPE	4	
XXXXXX	DA Elective 3	BDE	4	
			11	

YEAR 3 SPECIAL SEMESTER & YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
MH4111	Overseas Final Year Project	C	12	
			12	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
MH4912	Professional Internship	PS	10	
			10	
Total AUs required for Graduation:			142	

^ These courses are double-counted towards both MATH 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
Core	MH2500	Probability & Introduction to Statistics	4	1	CY1601
Core	CY1602	Mathematics II	4	2	CY1601
BDE	MH3511	Data Analysis with Computer	3	2	MH2500
Core	MH1403	Algorithms and Computing	3	2	PS0001
BDE	SC2207	Introduction to Database	3	1,2	MH1403
BDE	SC4020	Data Analytics and Mining	3	1	MH1403
BDE	SC4024	Data Visualization	3	1	PS0001 & MH2500

Electives for Second Major in Data Analytics (choose at least 3)					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
BDE	SC4002	Natural Language Processing	3	1	MH1403
BDE	SC4021	Information Retrieval	3	2	MH1403
BDE	SC4022	Network Science	3	2	MH1403
BDE	MH3400	Algorithms for the Real World	4	2	MH1201 + MH1301 + MH1403 + MH2500
BDE	MH3500	Statistics	4	2	MH2500
BDE	MH3510	Regression Analysis	4	1	MH2500 + MH3500
BDE	MH3701	Basic Optimization	4	2	MH1201/MH2800/MH2802
BDE	MH4302	Theory of Computing	4	1,2	MH1300 + MH1301 + MH1403
BDE	MH4500	Time Series Analysis	4	2	MH2500 + MH3500 + MH3510
BDE	MH4511	Sampling & Survey	4	1	MH2500 + MH3500
BDE	MH4512	Clinical Trials	4	2	MH3500 + MH3510
BDE	MH4513	Survival Analysis	4	1	MH2500 + MH3500 + MH3510
BDE	MH4702	Probabilistic Methods in OR	4	1	MH2500 + MH3701 + MH3512