

**CURRICULUM FOR BACHELOR OF SCIENCE (PURE PHYSICS)
WITH SECOND MAJOR IN DATA ANALYTICS
CN YANG SCHOLARS PROGRAMME
(FIRST YEAR ADMISSION)
AY2026 Intake Onwards**

SUMMARY OF ACADEMIC UNIT REQUIREMENT								
Year of Study	Core	CNYS- Core	MPE	CC	Professional Series	Care, Serve & Learn	BDE	Total AU
1	10	27 [4]	0	5	0	0	3	45 [4]
2	18	6	0	5	3	3	11	46
3	13	0	9	0	1	0	18	41
4	12	0	0	0	10	0	0	22
Total	53	33 [4]	9	10	14	3	32	154 [4]

[] 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	The Systems Architecture of Life	CNYS-Core	3	
CY1101	Molecule	CNYS-Core	4	
CY1308	Physics	CNYS-Core	3	
CY1601	Mathematics I	CNYS-Core	4	
PS0001	Introduction to Computational Thinking	C	3	
PH1198	Physics Laboratory Ia	C	2	
			19	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
CY1007	Climate Change	CNYS-Core	3	
CY1500	Introduction to Research	CNYS-Core	2	
CY1602^	Mathematics II	CNYS-Core	4	
PH1107	Relativity and Quantum Physics	C	3	
PH1199	Physics Laboratory Ib	C	2	
MH1403	Algorithms and Computing	BDE	3	PS0001
CC0015	Health & Wellbeing	CC	2	
NH0007	Critical Perspectives on Technology and Society	CC	3	
			22	

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

YEAR 2 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
CY0001	Language & Logic	CNYS-Core	3	
PS5915	Undergraduate Research	BDE	IP	Course will be registered in Semester 2. Grades will be recorded at the end of Semester 2
PH2102	Electromagnetism	C	4	CY1308 + CY1601 + CY1602
PH2103	Thermal Physics	C	4	CY1308 + CY1601 + CY1602
PH2198	Physics Lab IIa	C	2	PH1198
PH1105	Optics, Vibrations and Waves	C	3	
MH2500	Probability	BDE	4	CY1601
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2	
NH0001	Tech-For-Good Service Learning	CSL	3	
			25	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
CY0002	Ethics	CNYS-Core	3	

PS5915	Undergraduate Research	BDE	4	2-semester long, course registered only in Sem 2
PH2101	Quantum Mechanics I	C	3	PH1107 + CY1601 + CY1602
PH2199	Physics Lab IIb	C	2	PH1199
PS0002	Introduction to Data Science and Artificial Intelligence	PS	3	PS0001
CC0006	Sustainability: Society, Economy & Environment	CC	3	
XXXXXX	DA Elective 1	BDE	3	
			21	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
PH2104	Analytical Mechanics	C	4	CY1308 + CY1601 + CY1602
PH3101	Quantum Mechanics II	C	4	PH2101 + MH2801
PH3103	Technological Applications of Quantum Mechanics	C	3	
PH4XXX	School Major PE	MPE	3	
SC4020	Data Analytics & Mining	BDE	3	MH1403
SC4024	Data Visualization	BDE	3	PS0001 + MH2500
MLXXXX	Profession Preparation	PS	1	
			21	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
PH3199	Physics Laboratory IIIa	C	2	PH2198 + PH2199
PH4XXX	School Major PE	MPE	3	
PH4XXX	School Major PE	MPE	3	
SC2207	Introduction to Database	BDE	3	MH1403
XXXXXX	DA Elective 2	BDE	3	
XXXXXX	DA Elective 3	BDE	3	
XXXXXX	DA Elective 4	BDE	3	
			20	

YEAR 3 SPECIAL SEMESTER & YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
PH4111	Overseas Final Year Project	C	12	
			12	

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
PH4420	Professional Internship	PS	10	
			10	
Total AUs required for Graduation:			154	

^ These courses are double-counted towards both PHY as well as the Second Major in Data Analytics.

The total AU for the Second Major must be at least 28, excluding double-counted courses (CY1602)

Compulsory Courses for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
Core	MH2500	Probability	4	1	CY1601
Core	CY1602	Mathematics II	4	2	CY1601
Core	MH1403	Algorithms and Computing	3	2	PS0001

Recommended Compulsory Courses for Second Major in Data Analytics					
Course Type	Course Code	Course Title	AU	Offering Sem	Pre-req
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

[Students can choose to read other courses from the list available on SPMS website.](#)

Second Major Electives

[Choose at least 4 courses from the list.](#)

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2	21	6	0	5	3	3	8	46
3	9	0	9	0	1	0	21	40
4	12	0	0	0	10	0	0	22
Total	52	33 [4]	9	10	14	3	32	153 [4]

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ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2	
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CY0002	Ethics	CNYS- Core	3	
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PH2101	Quantum Mechanics I	C	3	PH1107 + CY1601 + CY1602

PH2199	Physics Lab IIb	C	2	PH1199
PH2301	Physical Optics	C	3	
PS0002	Introduction to Data Science and Artificial Intelligence	PS	3	PS0001
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Core	MH1403	Algorithms and Computing	3	2	PS0001

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