

**CURRICULUM FOR BACHELOR OF SCIENCE (PURE PHYSICS)
WITH SECOND MAJOR IN SUSTAINABILITY
CN YANG SCHOLARS PROGRAMME
(FIRST YEAR ADMISSION)
AY2025 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 [3]	0	4	0	0	6	47 [3]
2	18	10	0	6	3	3	3	43
3	13	0	9	0	1	0	18	41
4	12	0	0	0	10	0	0	22
Total	53	37 [3]	9	10	14	3	27	153 [3]

[] 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	CNYS- Core	3	
CY1101	Molecule	CNYS- Core	4	
CY1308	Physics	CNYS- Core	3	
CY1500	Introduction to Research	CNYS- Core	2	
CY1601	Mathematics I	CNYS- Core	4	
PS0001	Introduction to Computational Thinking	C	3	
PH1198	Physics Laboratory Ia	C	2	
CC0015	Health & Wellbeing	CC	2	
			23	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
CY1007^	Climate Change	CNYS- Core	3	Double-counted as Planet Core
CY1602	Mathematics II	CNYS- Core	4	
PH1107	Relativity and Quantum Physics	C	3	
PH1199	Physics Laboratory Ib	C	2	
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2	
	Second Major Compulsory Course 1	BDE	3	List of core courses to choose from
	Second Major Compulsory Course 2	BDE	3	
			20	

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	Writing Across The Disciplines	CNYS- Core	3	
CY2001	Research Attachment 1	CNYS- Core	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	
	Tech-For-Good	CSL	3	
CC0006	Sustainability: Society, Economy & Environment	CC	3	
			22	

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

CY2001	Research Attachment 1	CNYS-SP-Core	4	2-semester long, course registered only in Sem 2 (similar to URECA)
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	
SP0061	Science & Technology for Humanity	CC	3	
	Second Major Compulsory Course 3	BDE	3	List of core courses to choose from
			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	
	Second Major Compulsory Course 4	BDE	3	List of core courses to choose from
	SN Elective 1	BDE	3	List of electives to choose from
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	
	SN Elective 2	BDE	3	List of electives to choose from
	SN Elective 3	BDE	3	
	SN Elective 4	BDE	3	
	Second Major Interdisciplinary Project	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:			153	

^ These courses are double-counted towards both PHY 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

**CURRICULUM FOR BACHELOR OF SCIENCE (APPLIED PHYSICS)
WITH SECOND MAJOR IN SUSTAINABILITY
CN YANG SCHOLARS PROGRAMME
(FIRST YEAR ADMISSION)
AY2025 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 [3]	0	4	0	0	6	47 [3]
2	21	10	0	6	3	3	0	43
3	9	0	9	0	1	0	21	40
4	12	0	0	0	10	0	0	22
Total	52	37 [3]	9	10	14	3	27	152 [3]

[] 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	CNYS- Core	3	
CY1101	Molecule	CNYS- Core	4	
CY1308	Physics	CNYS- Core	3	
CY1500	Introduction to Research	CNYS- Core	2	
CY1601	Mathematics I	CNYS- Core	4	
PS0001	Introduction to Computational Thinking	C	3	
PH1198	Physics Laboratory Ia	C	2	
CC0015	Health & Wellbeing	CC	2	
			23	

YEAR 1 SEMESTER 2				
Course Code	Course Title	Type	AU	Remarks
CY1007^	Climate Change	CNYS- Core	3	Double-counted as Planet Core
CY1602	Mathematics II	CNYS- Core	4	
PH1107	Relativity and Quantum Physics	C	3	
PH1199	Physics Laboratory Ib	C	2	
ML0004	Career Design & Workplace Readiness in the V.U.C.A World	CC	2	
	Second Major Compulsory Course 1	BDE	3	List of core courses to choose from
	Second Major Compulsory Course 2	BDE	3	
			20	

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	Writing Across The Disciplines	CNYS- Core	3	
CY2001	Research Attachment 1	CNYS- Core	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	
	Tech-For-Good	CSL	3	
CC0006	Sustainability: Society, Economy & Environment	CC	3	
			22	

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

CY2001	Research Attachment 1	CNYS-SP-Core	4	2-semester long, course registered only in Sem 2 (similar to URECA)
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
SP0061	Science & Technology for Humanity	CC	3	
			21	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Remarks
PH3101	Quantum Mechanics II	C	4	PH2101 + MH2801
PH3103	Technological Applications of Quantum Mechanics	C	3	
PH4XXX	School Major PE	MPE	3	
	Second Major Compulsory Course 3	BDE	3	List of core courses to choose from
	Second Major Compulsory Course 4	BDE	3	
	SN Elective 1	BDE	3	List of electives to choose from
MLXXXX	Profession Preparation	PS	1	
			20	

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	
	SN Elective 2	BDE	3	List of electives to choose from
	SN Elective 3	BDE	3	
	SN Elective 4	BDE	3	
	Second Major Interdisciplinary Project	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:			152	

^ These courses are double-counted towards both PHY 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