

CURRICULUM FOR PHYSICS (PPHY)
WITH CN YANG SCHOLARS PROGRAMME_Internship
SECOND MAJOR IN SUSTAINABILITY (PHSN)
(FIRST YEAR ADMISSION)

Last Updated : 22-Apr-25

SUMMARY OF ACADEMIC UNIT REQUIREMENT							
Year of Study	School Core	CNYSP-Core	MPE	CC	FC	BDE	Total AU
1	7	30	0	5	0	6	48
2	18	10	0	8	0	3	39
3	13	0	9	0	3	18	43
4	12	0	0	0	10	0	22
Total	50	40	9	13	13	27	152

YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1001	Cell	CNY-Core	3	CNYSP Courses
CY1101	Molecule	CNY-Core	4	
CY1308	Physics	CNY-Core	3	
CY1500	Introduction to Research	CNY-Core	2	
CY1601	Mathematics I	CNY-Core	4	
PS0001	Introduction to Computational Thinking	C	3	
PH1198	Physics Laboratory Ia	C	2	
CC0002	Navigating the Digital World	CC	2	
			23	

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	CNYSP Course
CY1307	Quantum	CNY-Core	3	Core for CNYSP-PHY as it is a pre-req for advanced courses
PH1199	Physics Laboratory Ib	C	2	
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	
	Second Major Compulsory Course 1	BDE	3	
	Second Major Compulsory Course 2	BDE	3	
			21	

YEAR 1 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY2003	Research Attachment 3	CNY-Core	4	CNYSP 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	CNYSP Course
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	
ML0004	Career and Entrepreneurial Development for the Future World	CC	2	
			18	

YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYSP Course

CY2001	Research Attachment 1	CNY-Core	4	CNYSP Course 2-semester long, course registered only in Sem 2 (similar to URECA)
PH2101	Quantum Mechanics I	C	3	CY1307 + CY1601 + CY1602
PH2199	Physics Lab IIb	C	2	PH1199
CC0006	Sustainability: Society, Economy & Environment	CC	3	
SP0061	Science & Technology for Humanity	CC	3	
	Second Major Compulsory Course 3	BDE	3	
			21	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/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	
	SN Elective 1	BDE	3	List of electives to choose from
			20	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
PH3199	Physics Laboratory IIIa	C	2	PH2198 + PH2199
PH4XXX	School Major PE	MPE	3	
PH4XXX	School Major PE	MPE	3	
PS0002	Introduction to Data Science and Artificial Intelligence	FC	3	PS0001
	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	
			23	

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

YEAR 4 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
PH4420	Professional Internship	FC	10	
			10	

Total AU 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

CURRICULUM FOR APPLIED PHYSICS (APHY)
WITH CN YANG SCHOLARS PROGRAMME_Internship
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YEAR 1 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY1001	Cell	CNY-Core	3	CNYSP Courses
CY1101	Molecule	CNY-Core	4	
CY1308	Physics	CNY-Core	3	
CY1500	Introduction to Research	CNY-Core	2	
CY1601	Mathematics I	CNY-Core	4	
PS0001	Introduction to Computational Thinking	C	3	
PH1198	Physics Laboratory Ia	C	2	
CC0002	Navigating the Digital World	CC	2	
			23	

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	CNYSP Course
CY1307	Quantum	CNY-Core	3	Core for CNYSP-PHY as it is a pre-req for advanced courses
PH1199	Physics Laboratory Ib	C	2	
CC0005	Healthy Living & Mental Wellbeing in an Aging Society	CC	3	
	Second Major Compulsory Course 1	BDE	3	
	Second Major Compulsory Course 2	BDE	3	
			21	

YEAR 1 SPECIAL SEMESTER				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY2003	Research Attachment 3	CNY-Core	4	CNYSP 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	CNYSP Course
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	
ML0004	Career and Entrepreneurial Development for the Future World	CC	2	
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YEAR 2 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
CY0002	Ethics	CNY-Core	3	CNYSP Course

CY2001	Research Attachment 1	CNY-Core	4	CNYSP Course 2-semester long, course registered only in Sem 2 (similar to URECA)
PH2101	Quantum Mechanics I	C	3	CY1307 + CY1601 + CY1602
PH2199	Physics Lab IIb	C	2	PH1199
PH2301	Physical Optics	C	3	
CC0006	Sustainability: Society, Economy & Environment	CC	3	
SP0061	Science & Technology for Humanity	CC	3	
			21	

YEAR 3 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/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	
	Second Major Compulsory Course 4	BDE	3	
	SN Elective 1	BDE	3	List of electives to choose from
			19	

YEAR 3 SEMESTER 2				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
PH3199	Physics Laboratory IIIa	C	2	PH2198 + PH2199
PH4XXX	School Major PE	MPE	3	
PH4XXX	School Major PE	MPE	3	
PS0002	Introduction to Data Science and Artificial Intelligence	FC	3	PS0001
	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	
			23	

YEAR 3 SPECIAL SEMESTER & YEAR 4 SEMESTER 1				
Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
PH4111	Overseas Final Year Project	C	12	CNYSP Course
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Course Code	Course Title	Type	AU	Pre-Requisite/Remarks
PH4420	Professional Internship	FC	10	
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