

1. You are advised to read the instructions to courses registration posted in STARS. Please refer to STARS for the schedule of registration.
2. Students are only allowed to register for courses up to their **Normal Load** during their scheduled course registration day (during **both** their scheduled timeslot and between 5pm to 10pm on the same day). To register more than Normal Load, students would only be able to do so during the Add/Drop period. Please refer to the table below for the normal and maximum load requirement for your year of study.

Single/Second Major	Programme	Study Years	Normal Load	Maximum Load	Remarks
PHY Single Major	PHY	1,3-4	20	20	
	PHY	2	14	20	Note 1
PHY with Second Major	PHME, PHDA, PHMP, PHEN, PHSN, PHQT	1	22	22	
	PHME	2	17	22	Note 2
	PHDA	2	16	22	Note 1
	PHMP	2	19	22	Note 3
	PHME, PHMP, PHMA	3	22	22	

**Note 1:** ICC courses CC0006 and CC0007 will be system-allocated **after** the main registration period. Hence the Normal Load excludes AU of CC0006 and CC0007.

**Note 2:** ICC courses ML0004 and CC0006 will be system-allocated **after** the main registration period. Hence the Normal Load excludes AU of ML0004 and CC0006.

**Note 3:** ICC course CC0006 will be system-allocated **after** the main registration period. Hence the Normal Load excludes AU of CC0006.

3. If you wish to read a course that will exceed your maximum load, you can apply online through this link: <https://raspberry.spms.ntu.edu.sg/overload/apply/default.aspx>. Please note that approval is granted to a specific course that you wish to overload.
4. The following courses are to be read during Semester 2 AY 2023-2024 (subject to fulfilling pre-requisites).
5. Please refer to URL for the most updated ICC/ GER Core requirements and programme requirements:  
<https://www.ntu.edu.sg/spms/admissions/undergrad/core-courses>  
<https://www.ntu.edu.sg/spms/about-us/physics/undergrad/degree-programmes>

PHY Year 1 – U23 intake				
Course Code	Course Title	Course Type	Course AU	Remarks
PH1106	Electricity and Magnetism	Core	3	
PH1199	Physics Laboratory Ib	Core	2	
MH1803	Calculus for Physics	Core	4	
PS0002	Introduction to Data Science and Artificial Intelligence	Core	3	PHQT, PHME, PHMP only
PH2301	Physical Optics	Core	3	PHQT only
CC0001	Inquiry and Communication in an Interdisciplinary World	ICC-Core	2	
CC0003	Ethics & Civics in a Multicultural World	ICC Core	2	
CC0005	Healthy Living and Wellbeing	ICC Core	3	

PHY Year 2 – U22 intake				
Course Code	Course Title	Course Type	Course AU	Remarks
PH2101	Quantum Mechanics I	Core	3	
PH2199	Physics Laboratory IIb	Core	2	
PS0002	Introduction to Data Science and Artificial Intelligence	Core	3	PHY, PHDA, PHSN only
MH2801	Complex Methods for the Sciences	Core	3	
CC0006	Sustainability: Society, Economy & Environment	ICC-Core	3	PHY, PHME, PHMP, PHDA only
CC0007	Science & Technology for Humanity	ICC-Core	3	PHY, PHDA only
ML0004	Career & Entrepreneurial Development for the Future World	ICC-Core	2	PHME only
MH1403	Algorithms and Computing	BDE	3	PHDA only

PHY Year 3 – U21 intake				
Course Code	Course Title	Course Type	Course AU	Remarks
PH3199	Physics Laboratory IIIa	Core	2	
HW0218	Communication Across the Sciences	ICC-Core	2	
PH3303	Biomechanics and Exercise Physiology	BDE	3	PHMP only
PH4605	Medical Physics for Radiotherapy	BDE	4	PHMP only
PH7013	Advanced Numerical Methods for Physicists	BDE	4	PHME only
PH4601	Physics of Semiconductor and Spintronics Devices	BDE	4	PHME only
MH3511	Data Analysis with Computer	BDE	3	PHDA only

PHY Year 3 – U20 and earlier				
Course Code	Course Title	Course Type	Course AU	Remarks
PH3199	Physics Laboratory IIIa	Core	2	
PH3201	Statistical Mechanics I	Core	4	PPHY track only
PH2301	Physical Optics	Core	3	APHY track only

GER-Core (non-ICC intakes only)				
Course Code	Course Title	Course Type	Course AU	Remarks
ET0001	Enterprise & Innovation	GER-Core	1	Index: 70901
GC0001	Sustainability: Seeing Through the Haze	GER-Core	1	Index: 70902
ML0003	Kickstart Your Career Success	GER-Core	1	Index: 70903
PS0002	Introduction to Data Science & Artificial Intelligence	GER-Core	3	

The following **GER-core courses** are no longer offered. Replacement course (if applicable) is indicated next to the respective course. Please email [SPMSUndgrad@ntu.edu.sg](mailto:SPMSUndgrad@ntu.edu.sg) if you need to take the replacement course **after** registering for Core and/or Major-PE courses.

Course Code & Course Title	Replacement Course (if applicable)
HW0128 Scientific Communication I	CC0001 Inquiry and Communication in an Interdisciplinary Word
HW0228 Scientific Communication II	HW0218 Communication Across the Sciences
PS8001 Defence Science	-NA-
PS0003 Plan your Career Path	-NA-

PHY Major PE (APHY)				
Course Code	Course Title	Course Type	Course AU	Remarks
PH3404	Physics of Classical and Quantum Information	Major PE	3	PHQT take as BDE only
PH3406	Open Quantum Systems	Major PE	4	PHQT take as BDE only
PH3603	Biophysics	Major PE	3	
PH4404	Nanoscale Physics	Major PE	3	
PH4414	Introduction to Spintronics	Major-PE	4	
PH4418	Physics in the Industry	Major PE	4	
PH4601	Physics of Semiconductor and Spintronic Devices	Major-PE	4	PHME take as BDE only
PH4603	Soft Condensed Matter Physics			
PH4605	Medical Physics for Radiotherapy	Major PE	4	PHMP take as BDE only
PH4608	Plasmonics and Metamaterials			

PH4421	Final Year Project (AY19 batch and after)	Major PE	10	
PH4420	Professional Internship (AY19 batch and after)	Major PE / ICC-core	10	Non-ICC – Major PE ICC intake – ICC core

PHY Major PE (PPHY)				
Course Code	Course Title	Course Type	Course AU	Remarks
PH3404	Physics of Classical and Quantum Information	Major PE	3	
PH3406	Open Quantum Systems	Major PE	4	
PH4404	Nanoscale Physics	Major PE	3	
PH4414	Introduction to Spintronics	Major-PE	4	
PH4418	Physics in the Industry	Major PE	4	
PH4508	Introduction to General Relativity	Major-PE	3	
PH4421	Final Year Project (AY19 batch and after)	Major PE	10	
PH4420	Professional Internship (AY19 batch and after)	Major PE / ICC-core	10	Non-ICC – Major PE ICC intake – ICC core

6. You are allowed to read higher level courses provided that you have met the pre-requisites and there are vacancies available. Pre-requisites may also be met through exemptions.
7. The locations of the Mathematics Labs are as follow.

Mathematics Lab	Location
COMP LAB 1	SPMS-MAS-03-02
COMP LAB 2	SPMS-MAS-03-03
COMP LAB 3	SPMS-MAS-03-04

8. Students with Admission Year 2023 who are intending to take up higher level courses whereby the pre-requisites are fulfilled through exemptions are to write in to [SPMSUndgrad@ntu.edu.sg](mailto:SPMSUndgrad@ntu.edu.sg). Exemptions will only be updated after add/drop period and will only be reflected at the end of the semester, together with semester results release.
9. Students who are interested may take graduate courses as prescribed electives or unrestricted electives where applicable. **A minimum CGPA of 4.00 is required for the application.** All applications for Graduate Courses are subject to approval.
- Students from **non-ICC intakes** will be required to fulfill at least 10 AU of level 4 [excluding PH4405/PH4415 Final Year project (10 AU/11 AU) or PH4407/PH4413/PH4417/PH4421 Professional Internship (10 AU/11AU)] and above courses as part of their graduation requirement under Major PE.
  - Students from **ICC intakes** will be required to take at least 3AU of PH4xx courses (excluding PH4421 Final Year Project/PH4420 Professional Internship).

Graduate course information may be found from <https://www.ntu.edu.sg/spms/about-us/physics/grad/course-info>. Students may write in to [SPMSundgrad@ntu.edu.sg](mailto:SPMSundgrad@ntu.edu.sg) for more details on the application process. These are the graduate courses offered in AY2023 Semester 2:

Course Code	Course Title	Pre-requisite	Course Type Offered
PH7015	Advanced Optics	PH2101 or PH2301	Major-PE or UE/BDE
PH7021	Quantum Information	PH3404 or MH2500	Major-PE or UE/BDE
PH7024	Graduate Quantum Mechanics	PH3101	Major-PE or UE/BDE

10. Students who have taken courses as pre-requisites during exchange programme in the current Semester, please submit your waiver request via the Online Waiver Application using this link: <https://walnut.spms.ntu.edu.sg/waiver/student/default.aspx>. Please upload a copy of the course matching details and a copy of your exchange transcript (if any) in pdf format in your application. This is subjected to approval from approving officer.
11. Enquiries on curriculum may be directed to :
  - Assoc Prof Cheong Siew Ann ([cheongsa@ntu.edu.sg](mailto:cheongsa@ntu.edu.sg))
  - Ms Tan Soo Pei, Juliet ([JulietTanSP@ntu.edu.sg](mailto:JulietTanSP@ntu.edu.sg))
12. Enquiries on courses registration may be directed to [SPMSundgrad@ntu.edu.sg](mailto:SPMSundgrad@ntu.edu.sg). Your matriculation number must always be included in your e-mail. Please refrain from sending multiple similar e-mails as this will not expedite the response but rather it will cause undue delay. All enquiries will be attended to and will be replied as soon as possible, depending on the nature of the request. Appeals for GER-PE and UE vacancies are to be submitted through the online appeal system and will not be responded to if submitted otherwise.
13. Enquiries on network performance, Studentlink password or STARS PIN may be directed to NSS Service Desk using the IT Service Desk Form below:
  - [ServiceNow](#)
  - [Password Services](#) (To change or reset Network Account password)
  - Service Desk Form: <https://www.ntu.edu.sg/life-at-ntu/internet-account-and-policy/service-desk-form>