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 in Physics and Mathematical Sciences (Double Major) should also refer to the instructions for programme in Mathematical Sciences. 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.

Programme	Study Years	Normal Load	Maximum Load
PHMS	All Years	22	22

* ICC courses will be system-allocated for year 1 and 2 as per standard study plan after main registration (between 17 Jul – 23 Jul 2024).

3. If you wish to read a course exceeding your maximum load, you can apply online through this link: https://raspberry.spms.ntu.edu.sg/overload/apply/default.aspx. Strong justification is needed for all overload requests. Approval may only be granted to a specific course. All requests are subject to approval.

4. The following courses are to be read during Semester 1 AY 2024/2025 (subject to 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

PHMS Year 1 – U24 intake			
Course Code	**Course Title**	**Course Type**	**Course AU**
PH1104	Mechanics	Core	3
PH1198	Physics Lab IA	Core	2
MH1100	Calculus I	Core	4
MH1200	Linear Algebra I	Core	4
MH1300	Foundations of Mathematics	Core	4
CC0002[#]	Navigating the Digital World	ICC Core	2

[#]Applicable to AY21 students onwards

PHMS Year 2 – U23 intake			
Course Code	**Course Title**	**Course Type**	**Course AU**
PH1105	Optics, Vibrations & Waves	Core	3
PH1107	Relativity & Quantum Physics	Core	3
MH2100	Calculus III	Core	4
PH2198	Physics Lab IIA	Core	2
PS0001	Introduction to Computational Thinking	Core	3
ML0004[#]	Career and Entrepreneurial Development for the Future World	ICC-Core	2
CC0006[#]	Sustainability: Society, Economy & Environment	ICC-Core	3

[#]Applicable to AY21 students onwards

PHMS Year 3 – U22 intake				
Course Code	**Course Title**	**Course Type**	**Course AU**	**Remarks**
PH2102	Electromagnetism	Core	4	
PH2103	Thermal Physics	Core	4	
PH3103	Technological Applications of Quantum Mechanics	Core	3	**ICC intakes only**
PH3101	Quantum Mechanics II	Core	4	
MH2500	Probability & Introduction to Statistics	Core	4	

GER-Core (non-ICC intakes only)				
Course Code	**Course Title**	**Course Type**	**Course AU**	**Remarks**
ET0001	Enterprise & Innovation	GER-Core	1	Index: 70165
PS0001	Introduction to Computational Thinking	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 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-
ML0003 Kickstart Your Career Success	To be confirmed; check with SPMSUndgrad
HY0001 Ethics & Moral Reasoning	To be confirmed; check with SPMSUndgrad
GC0001 Sustainability: Seeing Through the Haze	To be confirmed; check with SPMSUndgrad

PHY Major PE			
Course Code	**Course Title**	**Course Type**	**Course AU**
PH2104	Analytical Mechanics	Major-PE	4
PH3403	Cosmology	Major PE	3
PH3409	Geometric Methods in Mathematical Physics	Major-PE	4
PH4408	Nuclear Physics	Major PE	3
PH4411	Introduction to Experimental Particle Physics	Major PE	3

MATH Major PE			
Course Code	**Course Title**	**Course Type**	**Course AU**
MH3210	Number Theory	Major-PE	4
MH3220	Algebra II	Major-PE	4
MH3300	Graph Theory	Major-PE	4
MH3510	Regression Analysis	Major-PE	4
MH3512	Stochastic Processes	Major-PE	4
MH4300	Combinatorics	Major-PE	4
MH4301	Set Theory & Logic	Major-PE	4
MH4311	Cryptography	Major-PE	4
MH4320	Computational Economics	Major-PE	4
MH4510	Statistical Learning and Data Mining	Major PE	4
MH4511	Sampling and Survey	Major PE	4
MH4513	Survival Analysis	Major PE	4
MH4701	Mathematical Programming	Major PE	4

6. Please ensure that you can fulfil the respective Major-PE requirements when registering Major-PE courses:

   a. Matric Year 2020

      i. 16 AU of Physics courses, with at least two PH4XXX courses (including PH4421 if chosen).
      ii. 16 AU of Mathematics courses, with at least two MH4XXX courses (including MH4900 if chosen).
      iii. Students must do a Final Year Project: either PH4421 (Physics) or MH4900 (Mathematical Sciences).

   b. Matric Year 2021 onwards

      i. If PH4421 (Physics FYP) is selected:
         - Must take Professional Attachment (PH4416) during Special Terms
         - At least one PH4XXX course (including PH4421).
         - At least one MH4XXX course.

      ii. If MH4900 (Math FYP) is selected:
         - Must take Professional Attachment (PH4416) during Special Terms
         - At least 11 AU from Physics Major Prescribed Electives, with at least two PH4XXX courses.

- At least one MH4XXX course (including MH4900).

7. You are allowed to read higher level courses if you have met the pre-requisites and there are vacancies available. Pre-requisites may also be met through exemptions.

8. The location of the Mathematics Labs is 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

9. Students with Admission Year 2024 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. 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.

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. 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.

    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 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
PH7003	Graduate Solid-State Physics	PH3101 and PH3102	UE/BDE
PH7014	Optical Spectroscopic Techniques	PH3602	UE/BDE
PH7027	Plasma Physics and Fusion Energy	PPH2102 and PH2103	Major-PE or UE/BDE

12. Enquiries on curriculum may be directed to:
    a. Assoc Prof Cheong Siew Ann (cheongsa@ntu.edu.sg)
    b. Ms. Tan Soo Pei, Juliet (JulietTanSP@ntu.edu.sg)
    c. SPMSUndgrad@ntu.edu.sg – Math Curriculum

13. Enquiries on courses registration may be directed to 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/BDE vacancies are to be submitted through the online appeal system and will not be responded to if submitted otherwise.

14. Enquiries on network performance, Studentlink password or STARS PIN may be directed to NSS Service Desk using the IT Service Desk Form below:
    a. ServiceNow
    b. Password Services (To change or reset Network Account password)
    c. Service Desk Form: https://www.ntu.edu.sg/life-at-ntu/internet-account-and-policy/service-desk-form