Course Selection Counselling Day

16 Aug 2025

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Use of this document

- This document provides basic information about course selection for students interested in majors/minors in physics.
- Students should check out the following pages for updated information about the syllabus.
  - **Faculty of Science** https://www.scifac.hku.hk/current
  - **Department of Physics** https://www.physics.hku.hk/undergraduate_studies/course_selection_guidelines/
- If you have any question, please contact your Academic Advisor or Course Selection Advisor for inquiries.
  - https://www.scifac.hku.hk/current/ug/academic/aa
- ***All curriculum shown here require the completion of any non-credit bearing courses as specified in the syllabus.***

Major Changes for Students Admitted to the First Year in 2025-26

- Choices of Regular Science Majors is reduced to 11:
  - Biochemistry
  - Biological Sciences
  - Chemistry
  - ~~Decision Analytics~~ (only for 2024 cohort or before)
  - Earth System Science
  - Ecology & Biodiversity
  - Environmental Science
  - Food & Nutritional Science
  - Geology
  - Mathematics
  - Molecular Biology & Biotechnology
  - Physics
  - ~~Risk Management~~ (only for 2024 cohort or before)
  - ~~Statistics~~ (only for 2024 cohort or before)
- Choices of Science Minors is reduced to 14:
  - ~~Actuarial Studies~~ (only for 2024 cohort or before)
  - Astronomy
  - Biochemistry
  - Chemistry
  - Computational & Financial Mathematics
  - Earth Sciences
  - Ecology & Biodiversity
  - Environmental Science
  - Food & Nutritional Science
  - Marine Biology
  - Mathematics
  - Molecular Biology & Biotechnology
  - Operations Research & Mathematical Programming
  - Physics
  - ~~Risk Management~~ (only for 2024 cohort or before)
  - Science Entrepreneurship
  - ~~Statistics~~ (only for 2024 cohort or before)

Major Changes for Students Admitted to the First Year in 2025-26

- Students are required to take the non-credit bearing English course CAES1001 instead of the 6-credit English course CAES1000 in Year 1.
- Students are required to take two 3-credit courses in artificial intelligence literacy.

New Timetabling Arrangements for 2025-2026

- All lecture sessions shall be standardized as 50 minutes per timeslot and start on the hour (i.e. 9:00 am, 10:00 am, etc.). The standard timeslots for daytime UG lectures (except for the UG clinical curricula offered by the Faculties of Dentistry and Medicine) are as follows:
  - Mondays to Fridays: 9:00 am to 6:50 pm
  - Saturdays: 9:00 am to 12:50 pm
- Wednesday afternoons (1:00 pm to 6:50 pm) and Saturday mornings (9:00 am to 12:50 pm) are reserved for Common Core (CC) lectures.

BSc Curriculum Structure

(For students admitted to the first year in 2025-26 and thereafter)

Common Core Courses (36 credits)
Take at least 1 but not more than 2 from each of the five Areas of Inquiry

Science Foundation Courses (12 credits)
2 courses giving students a comprehensive view of science

Science Courses
To fulfil the requirements for at least 1 Science regular major or 1 Science intensive major

Language Courses (12 credits)
2 English courses + 1 Chinese course

AI Literacy Courses (6 credits)
2 AILT-coded microcredential courses

Capstone Course(s) (each 6 or 12 credits)
Take one for each of your Science majors

Total credits passed: ≥ 240

BSc Curriculum Structure

(For students admitted to the first year in 2024-25 or before)

Common Core Courses (36 credits)
Take at least 1 but not more than 2 from each of the four Areas of Inquiry

Science Foundation Courses (12 credits)
2 courses giving students a comprehensive view of science

Science Courses
To fulfil the requirements for at least 1 Science regular major or 1 Science intensive major

Language Courses (18 credits)
2 English courses + 1 Chinese course

Capstone Course(s) (each 6 or 12 credits)
Take one for each of your Science majors

Total credits passed: ≥ 240

BSc&MRes Curriculum Structure

(For students admitted to the first year in 2025-26 and thereafter)

Science Courses
At least 144-150 credits including ***ALL*** required courses for 1 Science intensive major

Language Courses (12 credits)
2 English courses + 1 Chinese course

AI Literacy Courses (6 credits)
2 AILT-coded microcredential courses

Common Core Courses (24 credits)
Take 1 from each of the four ***selected*** Areas of Inquiry

For the BSc degree

Research PG Courses
1 research ethics course (3 credits) + 18 credits of Faculty-offered RPG courses

Research Project (42 credits)
To pursue your own research interest

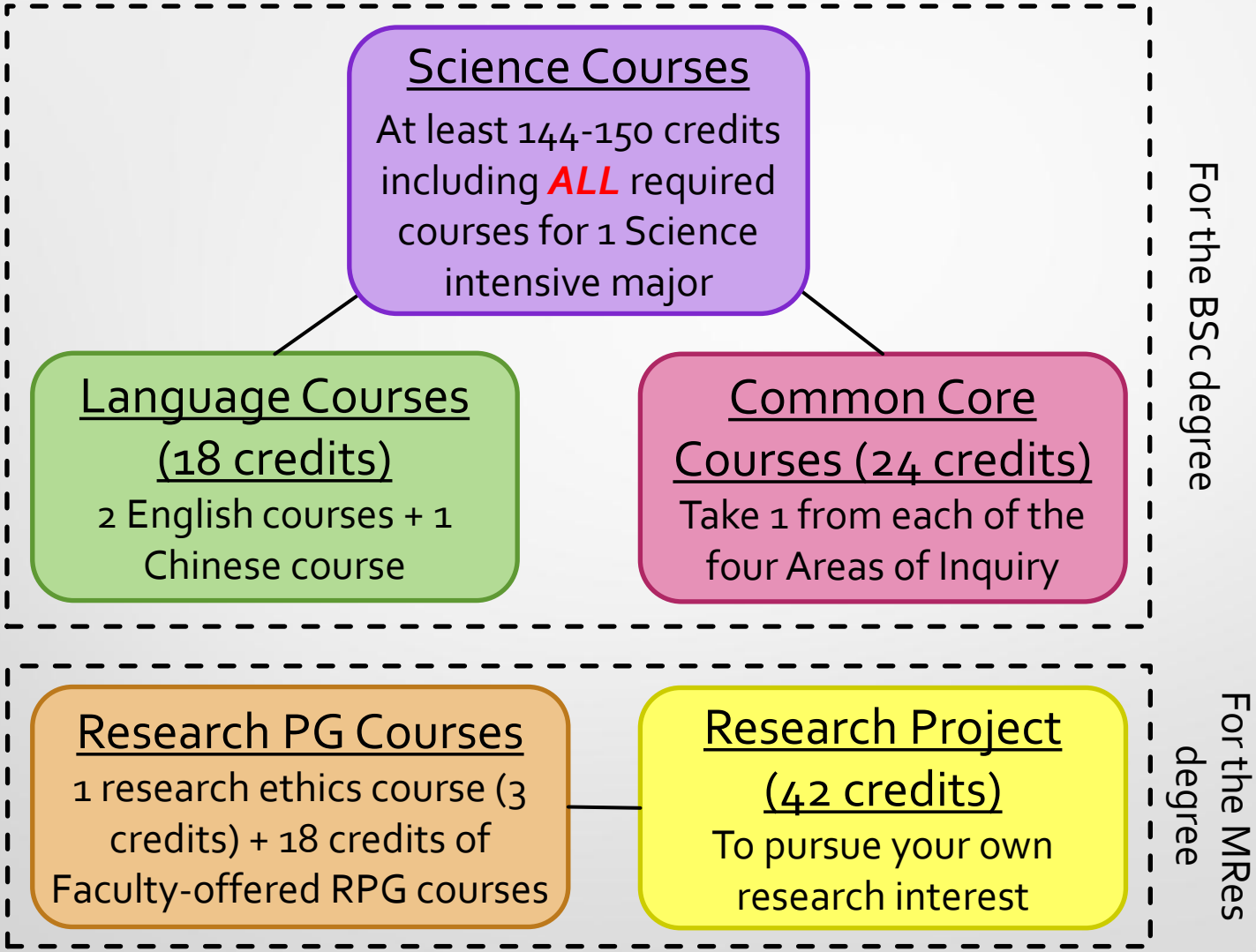
For the MRes degree

Total credits passed for the BSc degree: ≥ 240

Total credits passed for the MRes degree: ≥ 63

BSc&MRes Curriculum Structure

(For students admitted to the first year in 2024-25 or before)



Total credits passed for the BSc degree: ≥ 240

Total credits passed for the MRes degree: ≥ 63

BSc&LLB Curriculum Structure

(For students admitted to the first year in 2025-26 and thereafter)

Science Courses (96 credits)

ALL required courses for 1 Science regular major

Common Core Courses (24 credits)

Take 1 from each of the four ***selected*** Areas of Inquiry

LLB Professional Core (156 credits)

108 credits of law compulsory courses +30 credits of disciplinary electives+6 credits of capstone +12 credits of interdisciplinary core courses

Language Courses (6 credits)

1 English courses + 1 Chinese course

AI Literacy Courses (6 credits)

2 AILT-coded microcredential courses

Interdisciplinary Electives (12 credits)

Law & science interdiscip. electives as prescribed in the syllabus

Total credits passed: ≥ 300

BSc&LLB Curriculum Structure

(For students admitted to the first year in 2024-25)

Science Courses (96 credits)

ALL required courses for 1 Science regular major

Common Core Courses (24 credits)

Take 1 from each of the four Areas of Inquiry

LLB Professional Core (156 credits)

108 credits of law compulsory courses+30 credits of disciplinary electives+6 credits of capstone +12 credits of interdisciplinary core courses

Interdisciplinary Electives (12 credits)

Law & science interdiscip. electives as prescribed in the syllabus

Language Courses (12 credits)

1 English course + 1 Chinese course

Total credits passed: ≥ 300

BSc&LLB Curriculum Structure

(For students admitted to the first year in 2022-23 and 2023-24)

Science Courses (96 credits)

ALL required courses for 1 Science regular major

Common Core Courses (24 credits)

Take 1 from each of the four Areas of Inquiry

LLB Professional Core (156 credits)

126 credits of law compulsory courses including a capstone+18 credits of disciplinary electives+12 credits of interdisciplinary core courses

Interdisciplinary Electives (12 credits)

Law & science interdiscip. electives as prescribed in the syllabus

Language Courses (12 credits)

1 English course + 1 Chinese course

Total credits passed: ≥ 300

Majors and Minors

- **Physics Major** (96 credits; 16 courses)
  - ***Large flexibility*** in curriculum, lead to diverse career paths
- **Physics Major (Intensive)** (144 credits; 24 courses)
  - ***Comprehensive training*** in physics, targeted for students who want to pursue Master or PhD in physics or other science/technical disciplines
- **Astronomy Minor** (36 credits; 6 courses)
  - Suitable for all students (BSc or non-BSc) interested in the subject
  - Minimum physics & mathematics background needed
- **Physics Minor** (42 credits; 7 courses)
  - Skills learnt in could be useful in many science and non-science fields (e.g., chemistry, economics and finance)

Physics Major

- Aim: Educating all-rounded physics students which best fit their interest and expertise
- Large flexibility in curriculum, lead to diverse career paths
- **Student-centered curriculum**
  - Learn the "**physics skill set**" first:
    - ✓ Mathematics, problem-solving, model-building, and computing
  - Follow with **core courses** for physics undergraduates:
    - ✓ Introductory level (Years 1 and 2): fully integrating usage of calculus and vectors; stress daily connections
    - ✓ Advanced level (Years 3 and 4): formal training in physics with more abstraction and advanced mathematics

Physics Major (Intensive)

- Aim: Educating physics students with a solid foundation on the subject in both breath and depth
- ***Targeted for students who want to pursue further studies in physics and other science/technical disciplines***
- **New curriculum structure** for students since 2018
  - All students who major in physics can select ***either*** the regular Major ***or*** the Intensive option
  - All required courses for the regular Major are included in the Intensive option
  - ***No penalty*** for students who cannot complete the Intensive option

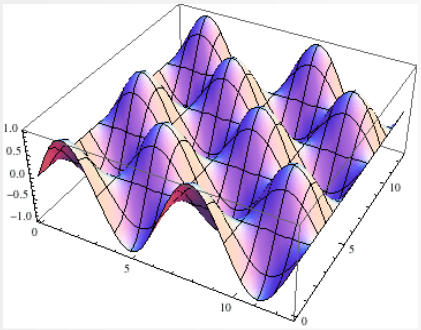
Physics Major (Intensive)

- *For students admitted to the first year in 2024-25 and thereafter, if they take the intensive major in physics, they are required take either PHYS4351 Advanced Quantum Mechanics or PHYS4450 Advanced Electromagnetism.*

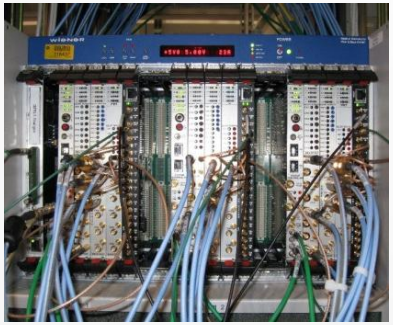
Themes for Physics or Physics (Intensive) Majors

- *Optional* for students (may choose 0, 1, or 2 themes)

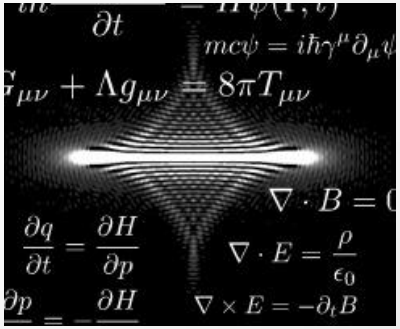
Astrophysics



Computational Physics



Experimental Physics



Theoretical Physics

- Cluster of courses to **build expertise** in specific areas
- Capstone project related to the theme
- Enhanced training to prepare for postgraduate studies
- **Student strength endorsed** by the Department with certificate of completion

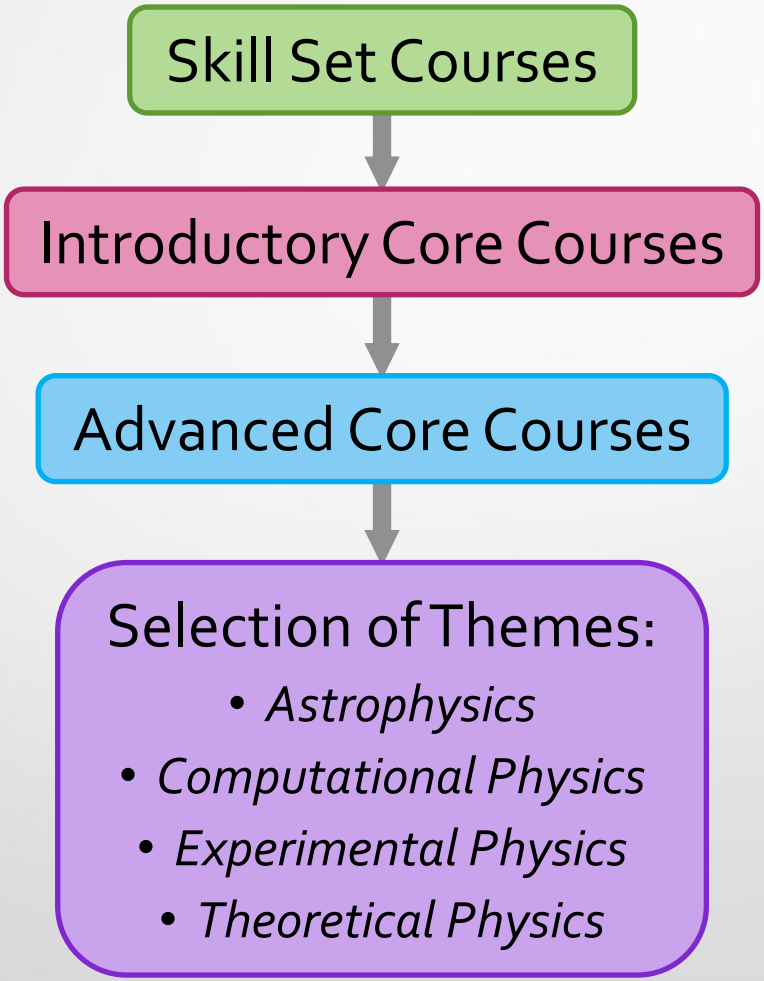
Capstone Requirement

- All HKU students need to complete capstone to graduate
- Students ***had to fulfil the 24 credits advanced level core course requirement in the major before taking the capstone course***
- The ***earliest*** that students are allowed to take capstone course is their ***year 3*** of study
- Capstone courses offered by Physics Department:
  - **PHYS3999 Directed Studies in Physics** (6 credits; one semester; offered in both Semester 1 and 2)
  - **PHYS4966 Physics Internship** (6 credits; ***offered in summer only***)
  - **PHYS4999 Physics Project** (12 credits; full year)

PHYS4966 Physics Internship

- **Requirement**: 8 weeks in academic and non-academic institutions overseas or locally during summer
- **Local research**: Spending summer to work with HKU professors
- **Overseas research**: University of Toronto, CERN, University of Oxford, Yale University, RIKEN, …
- **Local organizations**: HK Space Museum, HK Science Museum, HK Observatory, Ho Koon Nature Education cum Astronomical Centre, …
- **Education**: Maryknoll Secondary School, Cheung Sha Wan Catholic Secondary School, St Francis of Assisi's College, Yu Chun Keung No 2 Memorial College, …

Curriculum Structure for Physics or Physics (Intensive) Majors



Year 1&2 - Physics Major

Skill Set Courses

PHYS1150 Problem Solving in Phys*

PHYS2150 Method in Physics I*

PHYS2155 Method in Physics II*

PHYS2160 Intro Comp Phys*

+

Intro Core Courses

PHYS2055 Intro Relativity*

PHYS2250 Intro Mechanics

PHYS2255 Intro E & M

PHYS2261 Intro Heat & Thermo

PHYS2265 Intro Quan Phys

***Select 2 out of 5 (The others are required courses)**

Year 1&2 - Physics Major (Intensive)

Skill Set Courses

PHYS1150 Problem Solving in Phys

PHYS2150 Method in Physics I

PHYS2155 Method in Physics II

PHYS2160 Intro Comp Phys*

+

Intro Core Courses

PHYS2055 Intro Relativity

PHYS2250 Intro Mechanics

PHYS2255 Intro E & M

PHYS2261 Intro Heat & Thermo

PHYS2265 Intro Quan Phys

COMP1117 Computer Prog*

MATH1013 University Math II*

PHYS1650 Nature of the Universe*

PHYS2650 Modern Astro*

STAT1600/SDST1600 Statistics: Ideas & Concepts*

***Select 2 out of 6 (The others are required courses)**

Minor in Astronomy

- Aim: Provide training on both observational and theoretical aspects, with ***minimal physics and mathematics requirements***
- Suitable for both physics and non-physics major students
- **Large number of intro & advanced astrophysics courses** on offer
  - Introductory level courses (18 credits):
    - ✓ PHYS1650 Nature of the Universe
    - ✓ PHYS2650 Modern Astronomy
    - ✓ PHYS1250 Fundamental Physics ***or*** PHYS2055 Introductory Relativity ***or*** PHYS2160 Introductory Computational Physics ***or*** EASC2408 Planetary Geology
  - Advanced level courses (18 credits):
    - ✓ PHYS3650 Observational Astronomy
    - ✓ Any two advanced level astronomy electives

There are multiple ways to focus on studying astronomy in HKU.

- If I want to study astronomy in HKU, should I select the
  - Minor in Astronomy?
  - Major in Physics (Intensive) with Astrophysics theme?
  - Major in Physics - Minor in Astronomy combination?

➢ Minor in Astronomy is suitable for science or non-science students with minimal physics and math requirements

➢ If you want to pursue postgraduate research in astronomy/astrophysics, then choose EITHER Major in Physics (Intensive) with Astrophysics theme OR Major in Physics - Minor in Astronomy combination

➢ Slightly more restriction for the Major(intensive)+theme option (*a 4000-level course plus a project in astronomy*)

The flexible Minor in Physics curriculum provides a flavour of the discipline.

- Aim: Provide interested students with a fundamental outlook on the subject, with great flexibility to explore one's interest
- ***Helpful*** for study of other science or non-science disciplines
- **Flexible structure to cater to students' interest and ability**
  - Introductory level courses (24 credits):
    - ✓ PHYS 1250 Fundamental Physics
    - ✓ Any three intro level physics electives from PHYS1150, PHYS2055, PHYS2150, PHYS2155, PHYS2160, PHYS2250, PHYS2255, PHYS2261, PHYS2265
  - Advanced level courses (18 credits):
    - ✓ Any three advanced level physics courses

There are multiple pathways for students interested in BOTH physics and maths.

- If I want to study both physics and mathematics in HKU, should I select
  - Double major in Physics and Mathematics?
  - Major in Physics (Intensive) plus Minor in Mathematics?
  - Major in Mathematics (Intensive) plus Minor in Physics?

➢ Double major requires minimum of 192 credits while intensive major-minor combination requires minimum of 180 credits

➢ For double major, you need to complete two capstone courses (*exemption possible if project integrates or applies both majors*)

➢ More restriction on course selection for an intensive major; while a Minor provides only essential knowledge of subject

➢ At the end, the decision depends on a combination of your interest, ability, and career aspirations.

Points to Notes about Course Selections for Majors and Minors

- ***Watch out for pre-requisite requirements***
- ***Beware of timetable clash***
- The courses required for the Majors listed in the BSc syllabus is the ***minimum***. Likely ***need more*** for research postgraduate studies. Ask your **Course Selection Advisor** for details.
- **Course Selection Road Map for students** are available on the website:

  https://www.physics.hku.hk/undergraduate_studies/course_selection_guidelines/

Sample Major in Physics
Year 1&2 Curriculum (minimum)*

For students with
(1) HKDSE Physics **AND**
(2) HKDSE Extended Mathematics Module 1 **or** Module 2

	Semester 1	Semester 2
Year 1	PHYS1150 Problem Solving in Phys XXX XXX XXX XXX	PHYS2250 Intro Mechanics XXX XXX XXX XXX
Year 2	PHYS2150 Method in Physics I PHYS2261 Intro Heat & Thermo XXX XXX XXX	PHYS2255 Intro Elect & Magnetism PHYS2265 Intro Quantum Physics XXX XXX XXX

For reference only, you should consult your course schedule with Course Selection Advisor.

Sample Major in Physics
Year 1&2 Curriculum (minimum)*

For students with only HKDSE Physics

	Semester 1	Semester 2
Year 1	MATH1011 University Math I# PHYS1250 Fundamental Physics# XXX XXX XXX	PHYS1150 Problem Solving in Phys XXX XXX XXX XXX
Year 2	PHYS2150 Method in Physics I PHYS2250 Intro Mechanics PHYS2261 Intro Heat & Thermo XXX XXX	PHYS2255 Intro Elect & Magnetism PHYS2265 Intro Quantum Physics XXX XXX XXX

#These courses do not count towards the Major requirements.

****For reference only, you should consult your course schedule with Course Selection Advisor.***

Sample Major in Physics (Intensive) Year 1 & 2 Curriculum*

For students with
(1) HKDSE Physics **AND**
(2) HKDSE Extended Mathematics Module 1 **or** Module 2

	Semester 1	Semester 2
Year 1	PHYS1150 Problem Solving in Phys PHYS1650^ *or* MATH1013^ *or* SDST1600^ *or* COMP1117^ XXX XXX XXX	PHYS2250 Intro Mechanics PHYS2055 Intro Relativity *or* PHYS2255 Intro Elect & Magnetism XXX XXX XXX
Year 2	PHYS2150 Method in Physics I PHYS2261 Intro Heat & Thermo PHYS2265 Intro Quantum Physics XXX XXX	PHYS2155 Method in Physics II PHYS2055 *or* PHYS2255 PHYS2160 Intro Comp Phys^ *or* PHYS2650 Modern Astro^ XXX XXX } **Possibly 3000-level courses**

^Select 2 out of 6

For reference only, you should consult your course schedule with Course Selection Advisor.

Sample Major in Physics (Intensive, Astro theme) Year 1&2 Curriculum

For students with
(1) HKDSE Physics **AND**
(2) HKDSE Extended Mathematics Module 1 **or** Module 2

	Semester 1	Semester 2
Year 1	PHYS1150 Problem Solving in Phys PHYS1650 Nature of the Universe XXX XXX XXX	PHYS2250 Intro Mechanics PHYS2055 Intro Relativity *or* PHYS2255 Intro Elect & Magnetism PHYS2650 Modern Astronomy XXX XXX
Year 2	PHYS2150 Method in Physics I PHYS2261 Intro Heat & Thermo PHYS2265 Intro Quantum Physics XXX XXX	PHYS2155 Method in Physics II PHYS2055 *or* PHYS2255 XXX XXX XXX ***Possibly 3000-level courses***

For reference only, you should consult your course schedule with Course Selection Advisor.

Further Advice for Students Intended to Do Research after Graduation

- ***Keep your eyes wide open*** – learn more about different fields of physics
- ***Learn about the surroundings*** – find out more about modern physics research being done (check out Department webpage, attend colloquium, talk to teachers, etc)
- ***Watch out for emails*** – get on the email list of the department (if you incline to declare or have declared major); information about many learning programs are announced this way
- ***Give it a try!*** – the only way to find out whether you like or are capable to do research is to try doing it (e.g., informal research project during term time, summer research fellowship, etc)