



# Course Selection Counselling Day

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# BSc Curriculum Structure

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

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

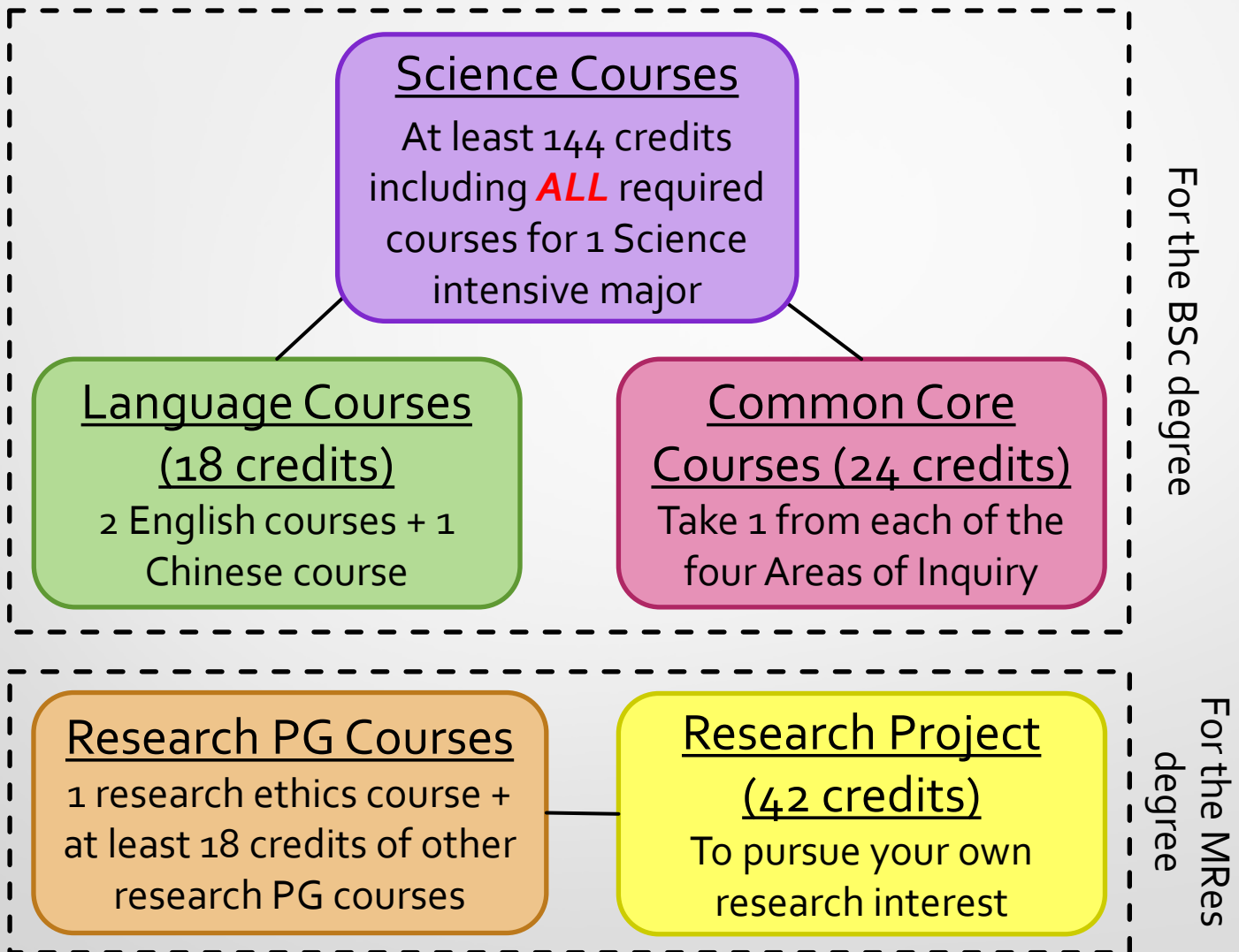
Disciplinary Courses  
To fulfill the requirements for at least 1 Science regular major or 1 Science intensive major

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 passed credits must not be  $\geq 240$ !!**

# BSc&MRes Curriculum Structure



**Total passed credits for the BSc degree must be  $\geq 240$ !!**

**Total passed credits for the MRes degree must be  $\geq 63$ !!**

# BSc&LLB Curriculum Structure

## 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+18 credits of disciplinary  
electives+12 credits of  
interdisciplinary core courses

## Interdisciplinary

Electives (12 credits)

2 interdiscip. courses as  
prescribed in the syllabus

## Language Courses

(12 credits)

1 English course + 1  
Chinese course

***Total passed credits must be no fewer than 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 of 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)

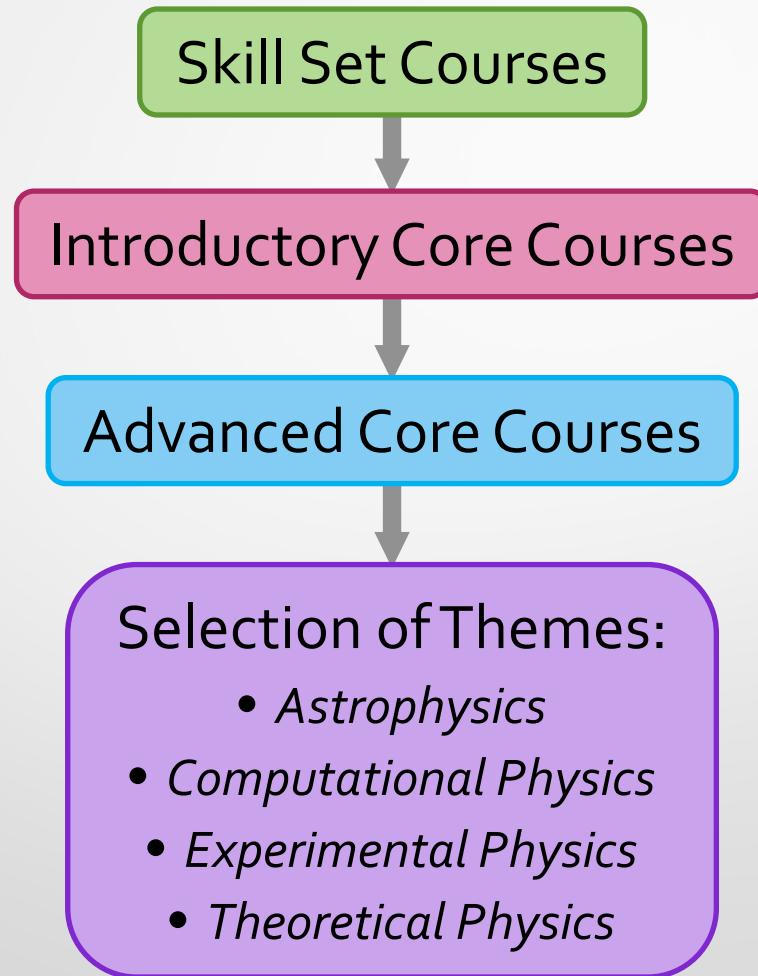
# Physics Major

- Aim: Educating all-rounded physics students which best fit their interest and expertise
- Large flexibility in curriculum, lead to diverse career paths
- **Reformed curriculum structure** for students since 2018
  - 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 life 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 has the option to select *either* the “regular” Major curriculum or the Intensive option
  - All required courses for the “regular” Major curriculum are included in the Intensive option
  - *No penalty* for students who cannot complete the Intensive option: we will just check the list of courses at graduation

# 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 (all 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\*

STAT1603 Intro Statistics\*

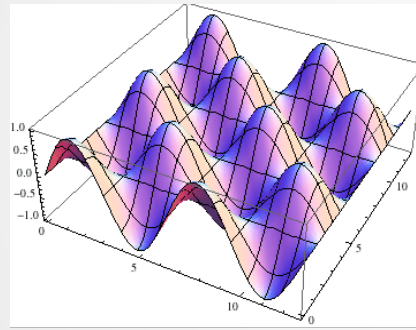
\*Select 2 out of 6 (all others are required courses)

# Themes for Physics or Physics (Intensive) Majors

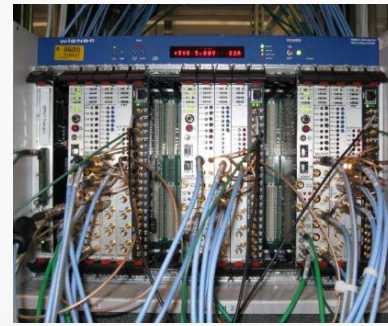
- *Optional* for students (may choose 0, 1, or 2 themes)



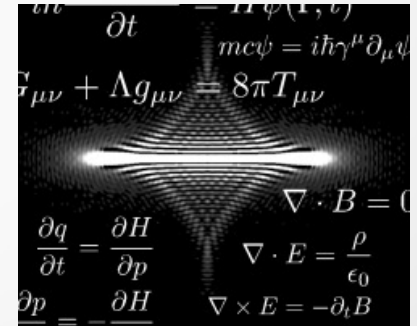
**Astrophysics**



**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
- Department issues certificate to graduates upon completion

# Capstone Requirement

- All HKU students need to complete capstone to graduate
- Students *had to fulfill 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)
  - PHYS4966 Physics Internship (6 credits; *offered in summer only*; AND the 24-credit prerequisite requirement need to be fulfilled before the start of the internship)
  - PHYS4999 Physics Project (12 credits; full year)

# Astronomy Minor

- Aim: Provide interested students with a fundamental outlook on the subject, with *minimal physics and mathematics requirements*
- **Revised curriculum structure** for students since 2018
  - 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):
    - ✓ PHYS 3650 Observational Astronomy
    - ✓ Any two advanced level astronomy electives

# Studying Astronomy in HKU

- Question: If I want to study astronomy in HKU, should I select the **Major in Physics (Intensive) with Astrophysics theme**, **Major in Physics-Minor in Astronomy combination**, or just the **Minor in Astronomy**?
- Answer:
  - The **Minor in Astronomy** is suitable for science or non-science students with minimal physics and math requirements
  - If you are interested 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

# Physics Minor

- Aim: Provide interested students with a fundamental outlook on the subject, with great flexibility to explore one's interest
- *Helpful* for studies of other science or non-science disciplines
- **Revised curriculum structure** since 2018
  - ❖ 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

# Points to Notes about Course Selections for Majors and Minors

- *Watch out for pre-requisite requirements!*
- *Beware of timetable clash!*
- The courses required (hence, the number of credits) for the Majors listed in the BSc syllabus is the *minimum*.
- 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/students/students/major-minor&phy-theme/guideline2223>



# 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

#Not counted towards 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 <sup>^</sup> <u>or</u> MATH1013 <sup>^</sup> <u>or</u> STAT1603 <sup>^</sup> <u>or</u> COMP1117 <sup>^</sup> XXX XXX XXX	PHYS2250 Intro Mechanics PHYS2055 Intro Relativity <u>or</u> 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 <u>or</u> PHYS2255 PHYS2160 Intro Comp Phys <sup>^</sup> <u>or</u> PHYS2650 Modern Astro <sup>^</sup> XXX XXX } Possibly 3000-level courses!

<sup>^</sup>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 <u>or</u> 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 <u>or</u> PHYS2255 XXX XXX XXX } Possibly 3000-level courses!

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

# Revised UG Courses Offered in 2022/23

- PHYS4653 Selected Topics in Astrophysics and Cosmology
  - The aim of the course is to offer an advanced introduction to cosmology as well as some current topics in astrophysics. It may be taken as a self-contained course or as background to research work in astrophysics or cosmology.

# Further advices 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 the research being done in the Department (webpage, seminars, talk to teachers, ...)
- **Watch out for emails** – get on the email list of the department (if you have declared or incline to declare majors) because information about many learning programs are announced this way
- **Give it a try!** – the only way to find out whether you like or you are capable to do research is to try doing it (e.g. doing research project)