

BSc (6901) Major and Minors Offered

1. Physics Major

- Learn the skill set (problem-solving, mathematics, etc) first
- **Themes** (can choose 0, 1, or 2): Astrophysics, Computational Physics, Experimental Physics, Theoretical Physics

2. Physics Major (Intensive)

- Solid foundation on the subject in both breath and depth
- Targeted for students who want to pursue further studies
- **Completion of Intensive Majors and/or themes are important factors in HKU physics postgraduate admission consideration**

3. Physics Minor

- Basic foundation of Physics
- Helpful for study of other science and non-science disciplines

4. Astronomy Minor

- Suitable for both science and non-science students
- Training on both observational and theoretical aspects
- Department aggressively pursues astronomical research and recruits postgraduate students in astronomy

Why Study Physics at HKU?

Understand how the world works
Do some fun experiments
Participate in forefront research
Develop quantitative, analytical & problem solving skills



Physics Major (Intensive) Curriculum in 2024 – 25

www.physics.hku.hk

Required courses:

PHYS1150*
PHYS2150*
PHYS2155*
PHYS2055*
PHYS2250^
PHYS2261^
PHYS2255^
PHYS2265^

Skill Set Courses

- Computing
- Mathematics
- Model building
- Problem solving

Introductory Core Courses

- Calculus-based physics incorporated with vectors
- Stress daily-life connection
- Mechanics, Electricity & magnetism, Heat & thermodynamics, Quantum physics

Advanced Core Courses

- Formal training in physics with more abstraction
- Advanced mathematical skills required
- Core undergraduate physics education

Select 2 out of the following 6 courses:

COMP1117
MATH1013
PHYS1650
PHYS2160*
PHYS2650
STAT1600

Selection of Themes

- (1) Course cluster to build expertise in specific area
- (2) Capstone project related to the theme
- (3) Enhanced training in physics for postgraduate studies

Astrophysics Theme

Observational astronomy
Astrophysics
Astronomy laboratory
Planetary science
Interstellar medium ...

Computational Physics Theme

Theoretical physics
Machine learning in physics
Computational physics
Data analysis & modeling in physics ...

Experimental Physics Theme

Physics laboratory
Fdn of laser & spectro
Physical optics
Atomic & nuclear physics
Solid state physics ...

Theoretical Physics Theme

Classical mechanics
Adv electromagnetism
Adv quantum mechanics
General relativity
Particle physics ...

For non-Intensive major, require only all 4 ^ courses plus 2 out of the 5 * courses

Our Research Groups

- Astrophysics
- Centre of Theoretical & Computational Physics
- Condensed Matter Experiments
- Condensed Matter Theory
- Nuclear Physics Experiments
- High Energy Physics Experiments
- Material Science
- Quantum Information Theory

Where did our students go for further studies in recent years?

- Harvard University
- Princeton University
- Stanford University
- MIT
- Columbia University
- University of Oxford
- University of Cambridge
- McGill University
- Brown University
- University of Illinois at Urbana-Champaign
- Imperial College London
- Johns Hopkins University
- University of Toronto
- Universität Hamburg
- Max Planck Institute for Radio Astronomy
- Max Planck Institute for Extraterrestrial Physics
- Max Planck Institute for Astronomy
- Leiden University

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

Select 2 out of 6

	Semester 1	Semester 2
Year 1	PHYS1150 Problem Solving PHYS1650 Nature <u>or</u> COMP1117 MATH 1013 <u>or</u> STAT 1603 XXX XXX XXX	PHYS2250 Intro Mechanics PHYS2055 Intro Relativity <u>or</u> PHYS2255 Intro E&M XXX XXX XXX
Year 2	PHYS2150 Method I PHYS2261 Intro Heat & Thermo PHYS2265 Intro Quantum Phy XXX XXX	PHYS2155 Method II PHYS2055 <u>or</u> PHYS2255 PHYS2160 Intro Compu Phys <u>or</u> PHYS2650 Modern Astro XXX XXX

Sample Major in Physics (Intensive, astrophysics theme) OR
Major in Physics & Minor in Astronomy Year 1 & 2 Curriculum

	Semester 1	Semester 2
Year 1	PHYS1150 Problem Solving PHYS1650 Nature of Univ XXX XXX XXX	PHYS2250 Intro Mechanics PHYS2055 Intro Relativity <u>or</u> PHYS2255 Intro E&M PHYS2650 Modern Astro XXX XXX
Year 2	PHYS2150 Method I PHYS2261 Intro Heat & Thermo PHYS2265 Intro Quantum Phy XXX XXX	PHYS2155 Method II PHYS2055 <u>or</u> PHYS2255 XXX XXX XXX

** Sample curriculum for reference only, more sample curriculum available at the Department webpage.
You should consult your course schedule with Course Selection Advisor for your own selection.