BSc (6901) Major and Minors Offered

1. **Physics Major**
   - New curriculum structure since 2018; Learn the skill set 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 themes are important factors in 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 will continue to aggressively pursue astronomical research and recruit postgraduate students in astronomy.

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**Why Study Physics at HKU?**

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

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**Physics Major (Intensive) Curriculum in 2020 – 21**

- **Skill Set Courses**
  - Computing
  - Mathematics
  - Model building
  - Problem solving

- **Introductory Core Courses**
  - Calculus–based physics incorporating vectors
  - Mechanics, Electricity & magnetism, Heat & thermodynamics, Quantum physics

- **Advanced Core Courses**
  - Formal training in physics with more abstraction
  - Advanced mathematical tools required
  - Core university undergraduate education

- **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

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**Astrophysics Theme**
- Astronomy laboratory
- Cosmology
- Interstellar medium
- Observational astronomy
- Planetary science...

**Computational Physics Theme**
- Computational physics
- Data analysis & modeling in physics
- Machine learning in physics
- Theoretical physics...

**Experimental Physics Theme**
- Atomic & nuclear physics
- Laser & spectroscopy
- Physics laboratory
- Physical optics
- Solid state physics...

**Theoretical Physics Theme**
- Adv. electromagnetism
- Adv. quantum mechanics
- General relativity
- Particle physics
- Theoretical physics...
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)

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
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<tbody>
<tr>
<td>Year 1</td>
<td>PHYS1150 Problem Solving</td>
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<tr>
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<td>PHYS1650 Nature or COMP1117</td>
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<td>MATH 1013 or STAT 1603</td>
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<td>PHYS2055 Intro Relativity or PHYS2255 Intro E&amp;M</td>
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<thead>
<tr>
<th>Semester 1</th>
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<tbody>
<tr>
<td>Year 2</td>
<td>PHYS2150 Method I</td>
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<tr>
<td></td>
<td>PHYS2261 Intro Heat &amp; Thermo</td>
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<td>PHYS2265 Intro Quantum Phy</td>
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<td>PHYS2155 Method II</td>
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<td>PHYS2055 or PHYS2255</td>
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<tr>
<td></td>
<td>PHYS2160 Intro Comp Phy or PHYS2650 Modern Astro</td>
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Sample Major in Physics (Intensive, astrophysics theme) OR Major in Physics & Minor in Astronomy Year 1 & 2 Curriculum

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** 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. **