



The Chinese University of Hong Kong Department of Physics

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PHYSICS Programme

JS 4601 Science (Major in Physics)

JS 4690 Enrichment Stream in Theoretical Physics

Physics Curriculum/ Study Scheme

The physics curriculum at CUHK has a tradition of providing a rigorous and all-round training to students at a level comparable to any major research universities in the world.

Streams of Study

- Astrophysics and Particle Physics Stream
- Artificial Intelligence and Computational Physics Stream
- Quantum Science and Technology Stream
- Enrichment Stream in Theoretical Physics (JS 4690)

Double Majors

The *Physics-X Streamlined Path* provides a way for academically-strong students who want to have an intellectually stimulating and rewarding undergraduate experience to pursue a double major in Physics and a second discipline in either Mathematics or Earth System Science within the nominal period of study while maintaining academic rigor.

Experiential Learning Opportunities

CUHK Physics Department has put much effort in developing effective experiential learning activities, which form an integral part of a high quality education. Many of these activities are unique among physics programmes in Hong Kong.

Academic Honesty: <https://www.cuhk.edu.hk/policy/academichonesty/>



What you will acquire from your Programme... PHYSICS Programme Learning Outcomes

Knowledge Outcomes (Content)

Graduates will have possessed fundamental knowledge of physics, including the following:

- (K1) basic concepts and principles in classical mechanics, electrodynamics, quantum mechanics and thermodynamics;
- (K2) mathematical (analytic and numerical) methods and experimental methods for physics. Graduates are able to transfer and apply the acquired knowledge to different situations.

Skills Outcomes

Professional Skills

Graduates will have possessed the following professional skills to deal with representative physics problems and situations in different branches of physics at the undergraduate level:

- (S1) identifying the key factors and applying appropriate principles and assumptions in the formulation of physics problems;
- (S2) applying appropriate analytical and approximation methods;
- (S3) applying general experimental and measurement skills with prescribed procedures;
- (S4) analyzing experimental data and their level of uncertainty, and relating the experimental results with theoretical expectations;
- (S5) applying appropriate scientific programming skills; and
- (S6) reporting the solutions to physics problems, experimental or project studies concisely in speech and in writing.

Generic Competencies

Graduates will have acquired broad generic skills and good habits in their study, including

- (S7) the ability to identify the key issues and to attempt different methods in dealing with problems;
- (S8) the ability to manipulate precise and intricate concepts to construct logical arguments;
- (S9) the habit of paying attention to the details and their logical relationships when analyzing an issue;
- (S10) the ability to evaluate an issue critically based on evidence and scientific principles;
- (S11) being comfortable with numbers and formulas, and the ability to analyze an issue quantitatively;
- (S12) the ability to acquire knowledge effectively by self-study and to work independently;
- (S13) the ability to work effectively in a team;
- (S14) the ability to present information in a clear, concise and logical manner; and
- (S15) good time management skills.

Attitude/Value Outcomes

Graduates will have developed positive attitudes and values, including

- (A1) appreciation of physics principles and theories, and the beauty of physics;
- (A2) awareness of the impact of physics on social, economical, and environmental issues;
- (A3) willingness to take up responsibility in study and work;
- (A4) confidence in his/her own capabilities; and
- (A5) motivation for life-long learning.

