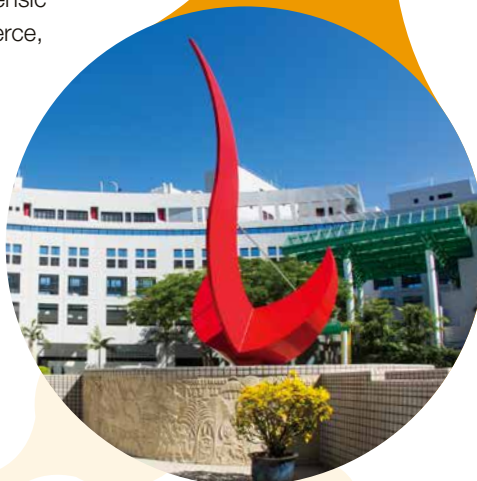


BSc in Physics (PHYS)



Physics encompasses everything from the tiniest elementary particles to the ultimate fate of the universe, and provides the foundation for all modern science and engineering. The BSc in Physics program gives students depth and breadth in their studies. Students will learn about exciting topics ranging from quantum computing, superconductivity and nanotechnology to quarks and black holes. The program prepares students for science-related careers, or for further studies in physics and related fields.

Since physics students are rigorously trained in generic analytical and problem-solving skills, they are well prepared to take up jobs with diverse natures in both government and the private sector. Students can work in education, research and development, technical sales, forensic science, medical industry, commerce, banking, etc. We offer internship opportunities in local technology companies and secondary schools so that students gain invaluable experience in real working environments. Our best graduates routinely go on to further studies at prestigious universities around the world.



Program Highlights

The BSc in Physics (PHYS) program offers one track and two options:

- **International Research Enrichment Track (IRE Track)** - This is an “elite program” in the School of Science to prepare outstanding students to pursue a career in research. Students in this track are guaranteed a summer research internship opportunity in a foreign university or national laboratory, as well as exchange opportunity in a renowned foreign university.
- **Honors Physics Option** - This option is intended for students planning to enter graduate school after their undergraduate studies at HKUST. The curriculum provides a strong foundation of courses and requires students to complete a research project and thesis in their final year.
- **Physics and Mathematics Option** - This option is intended for students with a strong interest in both physics and mathematics. It is particularly useful for students who plan to pursue further studies in theoretical physics.

Study Pathway

In Year 1, students will enroll in science foundation courses according to their interests and background, as well as language and other courses in other areas to fulfill the University Common Core requirement.

After completing the major pre-requisite courses, students can declare Physics (PHYS) as their major program at the end of Year 1. Students who are competent and interested in a research career can also apply for the International Research Enrichment (IRE) Track, which offers outstanding students additional resources and opportunities to nurture their research abilities. Students who are interested in emerging technology and innovation can opt for PHYS with an Extended Major in Artificial Intelligence.

Major in Physics with an Extended Major in Artificial Intelligence

The curriculum of this program is cross-disciplinary and practical. Students will learn solid knowledge in physics plus innovative applications of artificial intelligence in physics-related areas. Upon successful completion of the program, the student will be awarded the BSc degree in Physics with an Extended Major in Artificial Intelligence.

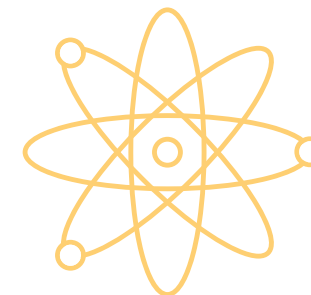
Research Excellence

Research Foci

- Cold Atoms, Optics and Quantum Information
- Condensed Matter Experiments and Advanced Materials
- Condensed Matter Theory, Statistical and Computational Physics
- Particle Physics and Cosmology
- Soft Matter and Biological Physics
- Wave Functional Materials and Physics

Research in the Physics Department covers a broad range of topics, from the smallest to the largest scale, with complementary strengths in theory and experiment. Faculty members work both independently and collaboratively, in affiliation with several research institutes and centers: the William Mong Institute of Nano Science and Technology, the Center for Metamaterials Research, the Center for Quantum Materials, the HKUST Energy Institute, the Center for Scientific Computation, and the Institute for Advanced Study's Center for Fundamental Physics and Center for Quantum Technologies.

Internship and Research Opportunities



Internship at a secondary school – teaching physics to a class of high school students



A PHYS student working under Prof. George Smoot (2006 Physics Nobel Laureate) on the development of a single-photon imaging detector in the Quantum Optics for Astrophysics and Cosmology Laboratory of HKUST



Summer internship sharing by the PHYS students



Internship at GP Electronics – developing hi-fi speakers in the engineering department



Ceremony for the first exhibition of a working quantum computer



Words from PHYS Graduate

I feel lucky that I have chosen the Physics program at HKUST. In HKUST, I have met professors who are patient and passionate, as well as talented schoolmates who are enthusiastic in research. Their support has made my university life much more enjoyable. Other than studying, I have participated in an exchange program at the Technical University of Denmark in Copenhagen and another exchange at Kyoto University in Japan. These precious experiences have broadened my horizon and helped me to find out the career path I want to develop after graduation.

LAU Wing Sum (Wing)

BSc in Physics, Class of 2020

Admissions Requirements

Prospective students may apply for the Science (Group A) program (JS5102) through direct choice in the JUPAS / Non-JUPAS admissions scheme.

Upon completion of the major pre-requisite courses at the end of the first year, students can declare major in BSc in Physics.

The pre-requisite courses include:

- PHYS 1111 General Physics I (for those with no calculus background) OR
PHYS 1112 General Physics I with Calculus (for those with calculus background) OR
PHYS 1312 Honors General Physics I (subject to students' preference and qualification)
- PHYS 1114 General Physics II (for those having completed PHYS 1111/1112/1312) OR
PHYS 1314 Honors General Physics II (subject to students' preference and qualification)

JOIN PHYS PROGRAM GO BEYOND YOUR LIMITS FIND TRANSFORMATION HERE

School of Science – Undergraduate Admissions

Tel : (852) 2358 5065
Email : ugscience@ust.hk
Website : science.hkust.edu.hk
Facebook : @hkust.science
Instagram : @hkust.ug.science

Department of Physics

Website: physics.ust.hk

PHYS website



PHYS WeChat



SSCI Linktree

