Master of Philosophy (MPhil) and Doctor of Philosophy (PhD) Programs in Physics

Curriculum for Master of Philosophy (MPhil) Program in Physics

The Master of Philosophy (MPhil) program is designed to prepare students for teaching, further postgraduate studies, or advanced work in industry. To fulfill the degree requirements, students are expected to undertake coursework, attend and present seminars, and conduct thesis research.

Students are required to complete at least 12 credits of approved physics postgraduate courses. Full-time students are expected to complete the coursework requirements during the first two regular terms. Students with a first degree in an area other than Physics may be required to take additional courses.

Students are required to take and expected to complete the course requirements of PHYS 6770 Professional Development in Science (Physics) in their first year of study. The maximum time allowed for course completion is two years for full-time students, or three years for part-time students.

Full-time RPg students are required to take an English Language Proficiency Assessment (ELPA) Speaking Test administered by the Center for Language Education before the start of their first term of study. Students whose ELPA Speaking Test score is below Level 4, or who failed to take the test in their first term of study, are required to take LANG 5000 Foundation in Listening & Speaking for Postgraduate Students until they pass the course by attaining at least Level 4 in the ELPA Speaking Test before graduation.

In addition, students are required to complete and pass LANG 5010 Postgraduate English for Science Studies in the first year of study.

The credits earned from PHYS 6770, LANG 5000 and LANG 5010 cannot be counted toward the credit requirements.

MPhil students should register in PHYS 6990 MPhil Thesis Research as soon as possible. In the final stage of research, students are required to submit a thesis to the Department and, subsequently, to present and defend it.

Scientific Computation Concentration

In addition to the existing program requirements, students who opt for the Scientific Computation concentration are required to:

- Complete MATH 6915 Scientific Computation Seminar. The 1 credit earned cannot be counted toward the credit requirements;

- Complete MATH 6916 Student Seminars on Computation Related Research.

- Complete one computation related course from the list below as a part of

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the 12 credits of required coursework:

CHEM	5210	Computational Chemistry
MATH	5311	Advanced Numerical Methods I
MATH	5312	Advanced Numerical Methods II
MATH	5350	Computational Fluid Dynamics for Inviscid Flows
MATH	5360	Weather, Climate and Pollution
MSDM	5004	Mathematical Methods for Data Analysis
PHYS	5410	Numerical Modeling in Physics

- Conduct research in the area of scientific computation.

Curriculum for Doctor of Philosophy (PhD) Program in Physics

The Doctor of Philosophy (PhD) degree is conferred primarily in recognition of breadth of scholarship, depth of research, and power to investigate problems independently and efficiently. In fulfilling the degree requirements, students are expected to undertake coursework, attend and present seminars, and conduct thesis research.

Students are required to complete at least 12 credits of approved physics postgraduate courses. Full-time students are expected to complete the coursework requirements during the first two regular terms. Students with a first degree in an area other than Physics may be required to take additional courses.

Students are expected to take and complete PHYS 6770 Professional Development in Science (Physics) in their first year of study. The maximum time allowed for course completion is two years for full-time students, or three years for part-time students. HKUST MPhil graduates in Physics who have taken and passed this course before may be exempted from this requirement, subject to prior approval from the Department Head and PG Coordinator.

Full-time RPg students are required to take an English Language Proficiency Assessment (ELPA) Speaking Test administered by the Center for Language Education before the start of their first term of study. Students whose ELPA Speaking Test score is below Level 4, or who failed to take the test in their first term of study, are required to take LANG 5000 Foundation in Listening & Speaking for Postgraduate Students until they pass the course by attaining at least Level 4 in the ELPA Speaking Test before graduation.

In addition, students are required to complete and pass LANG 5010 Postgraduate English for Science Studies in the first year of study. HKUST MPhil graduates may be considered for exemption from this requirement, subject to approval from the Department Head and PG Coordinator.

The credits earned from PHYS 6770, LANG 5000 and LANG 5010 cannot be counted toward the credit requirements.

All PhD students are required to sit for a qualifying examination set by the Department and pass it within the first two years of study. After passing the qualifying examination,

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students with satisfactory academic records are admitted to PhD candidacy. The students can then register in PHYS 7990 Doctoral Thesis Research and formally begin doctoral thesis research. In the final stage of research, students are required to submit a thesis to the Department and, subsequently, to present and defend it.

Scientific Computation Concentration

In addition to the existing program requirements, students who opt for the Scientific Computation concentration are required to:

- Complete MATH 6915 Scientific Computation Seminar. The 1 credit earned cannot be counted toward the credit requirements;

- Complete MATH 6916 Student Seminars on Computation Related Research.

- Complete one computation related course from the list below as a part of the 12 credits of required coursework:

    CHEM 5210   Computational Chemistry
    MATH 5311   Advanced Numerical Methods I
    MATH 5312   Advanced Numerical Methods II
    MATH 5350   Computational Fluid Dynamics for Inviscid Flows
    MATH 5360   Weather, Climate and Pollution
    MSDM 5004   Mathematical Methods for Data Analysis
    PHYS 5410   Numerical Modeling in Physics

- Conduct research in the area of scientific computation.