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 PG courses. Full-time students are expected to complete the coursework requirements during the first two regular terms. To fulfill the degree requirements, two courses must be selected from PHYS 5200/5210, 5250/5260 and 5310. Students with a first degree in an area other than Physics may be required to take additional courses.

In addition, an MPhil student is required to register in PHYS 6000 Physics Seminar for two regular terms.

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. Any student who has performed unsatisfactorily will be asked to re-submit the thesis. The result of the second attempt of the thesis defense will be either Pass or Fail. Students are allowed a total of two attempts to pass the thesis requirement.

Scientific Computation Concentration

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

- Complete MATH 6915 (1-credit), which cannot be counted toward the credit requirements;

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

  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
  CHEM 5210 Computational Chemistry
  PHYS 5410 Numerical Modeling in Physics

- Conduct research in the area of scientific computation; and

- Give a one-hour seminar on the related research within their first four regular terms of study.

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 PG 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.

In addition, PhD students are required to register in PHYS 6000 Physics Seminar for two terms.

All PhD students are required to sit for a qualifying examination set by the Department and pass it within the first two years of studies. After passing the qualifying examination, 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. Any student whose performance is unsatisfactory will be asked to re-submit the thesis. The result of the second attempt of the thesis defense will be either Pass or Fail. Students are allowed a total of two attempts to pass the thesis requirement.

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    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
    CHEM 5210   Computational Chemistry
    PHYS 5410   Numerical Modeling in Physics

- Conduct research in the area of scientific computation; and

- Give a one-hour seminar on the related research within their first four regular terms of study.