Ph.D. in Physics

Description

Graduate work in physics is planned primarily to meet the needs of students who are looking forward to professional careers in physics, either as teachers or as research physicists.

Minimum Total Credit Hours: 54

Course Requirements

In addition to the general Graduate School requirements, candidates for the Ph.D. must complete a minimum of 54 credit hours of graduate course work including 18 hours of PHYS 797 and 36 required classroom hours as described below exclusive of thesis credit (Phys 697), in a program approved by the student's advisory committee. A total of 30 hours of credit must be in physics courses at the 700 level. Core courses consisting of Thermodynamics and Statistical Mechanics (Phys 727), Advanced Mechanics (Phys 709), Quantum Mechanics (Phys 711, 712), Atomic and Nuclear Physics (Phys 707), Solid State Physics (Phys 725), and Advanced Electromagnetic Theory (Phys 721, 722) are required of all candidates. Of the 36 required classroom hours, up to six hours may be taken in a related field such as mathematics, chemistry, or engineering.

Other Academic Requirements

The preliminary examination shall cover the following fields: classical and quantum mechanics, thermodynamics, optics, electricity and magnetism, modern physics, and experimental physics.

The comprehensive examination has both written and oral components. The written part consists of three three-hour examinations as follows: 1) quantum mechanics; 2) classical mechanics, thermodynamics, and statistical mechanics; 3) electromagnetic theory. The oral part of the exam can be taken only after the written part has been passed.