

# Physics

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Associate Dean and Physics Program Director, Professor of Mathematics: Fisher

Professors: Dale, Forest, Shropshire

Research Professor: Spielman

Associate Professors: McNulty, Tatar

Assistant Professor: Stonaha

Lecturers: Bernabee, Hoskins

Adjunct Faculty: Fontenot-Durfee, Franckowiak, Millward

Affiliate Faculty: Khandaker, Wells

Professors Emeritus: Cole, Harmon, Parker

| Program Description  | Type   | Degree |
|--|--------|--------|
| Doctor of Philosophy in Applied Physics, Ph.D. ( <a href="http://coursecat.isu.edu/graduate/scienceengineering/physics/daphilosophyappliedphysics/">http://coursecat.isu.edu/graduate/scienceengineering/physics/daphilosophyappliedphysics/</a> ) | Degree | Ph.D.  |
| Master of Science Programs, M.S. ( <a href="http://coursecat.isu.edu/graduate/scienceengineering/physics/msscience/">http://coursecat.isu.edu/graduate/scienceengineering/physics/msscience/</a> )   | Degree | M.S.   |

## General Objectives of Graduate Programs

The objectives of our graduate degrees, which are the Doctor of Philosophy in Applied Physics and Master of Science in Physics, are to develop a core competence in the fundamental physical science that is appropriate for the level of the degree, to develop more generalized skills of quantitative reasoning that are applicable to any discipline, and to understand the nature and influence of physics in particular, and science in general, upon our society. Additional objectives for these students include the development of (1) broad, fundamental technical skills and knowledge, (2) strong communication skills, and (3) the capability to think critically and work independently. The expectations for each of these objectives have a “level” that is appropriate for the degree.

The learning objectives of the master's degree in physics are mastery of the “core” subjects of electromagnetism, non-relativistic quantum mechanics, and theoretical methods of classical physics (principally mechanics).

The communication objectives for these degrees are writing and speaking skills that are sufficient for students to represent themselves, their projects, and their organizations at regional, national, or international scientific meetings. Our expectations are that these students will obtain critical thinking skills and an ability to work independently at a level that will require minimal or no supervision by a more senior scientist or management.

The educational objectives of the doctoral degree in applied physics include all of those of the master's degree program, plus mastery of additional graduate-level classes of the student's choosing, plus completion of an original doctoral research thesis project with the objective of mastery of planning, executing, and publishing original research in physics at the highest level of the discipline. The communication objectives at this level are writing and speaking skills that are sufficient to teach in higher education, attract interest and funding to their projects, and to represent themselves, their projects and their organizations at regional, national, or international scientific meetings. Our expectations are that these students will develop critical thinking skills and an ability to work

independently such that they are capable of initiating and leading their own scientific projects, and can work at a level that requires no supervision.