

# **Graduate Program in Physics and Astronomy**

## **Master's Degrees Learning Goals and Assessment**

The masters program in Physics and Astronomy trains Master of Science students at an advanced level in aspects of physics and astronomy.

### **Learning Goal 1 for Students: Master the fundamental knowledge of the field.**

Assessment of student achievement of Goal 1:

- Performance on homework, examinations and class participation in courses
- Comprehensive examination to assess basic knowledge
- Essay on a current topic in the field or a research thesis evaluated by faculty
- Placement in a career or a continuation of graduate study that requires ability in physics or astronomy

Role of the program in helping students to achieve Goal 1:

- Assure that students are being prepared in a coherent and academically rigorous fashion
- Effective monitoring of student progress
- Evaluations of teaching effectiveness of instructors in graduate courses
  - If effectiveness below expectations, work with instructors to improve effectiveness
- Periodic review of curricular offerings and assessment tools

### **Learning Goal 2 for Students: Engage in and conduct original research (for Master's degrees with thesis)**

Assessment of graduate student achievement of Goal 2:

- Assessment of quality of Master's thesis
  - Public defense of thesis
  - Critical reading of dissertation by a committee of graduate faculty members
  - Submission and acceptance of conference papers and of peer-reviewed articles based on the dissertation
- Achievement of students as evidenced by professional placements, selection to give conference presentations, peer-reviewed publications, and the awarding of individual grants

Role of graduate program in helping students achieve Goal 2:

- Provide an early introduction to research methods and opportunities for research
- Provide opportunities to present research and receive feedback

### **Learning Goal 3 for Students: Prepare to be professionals in physics or astronomy**

Assessment of graduate student achievement of Goal 3:

- Evaluations of teaching effectiveness of graduate student instructors
- Collection of placement data

Role of the program in helping students achieve Goal 3:

- Host professional development and career exploration activities
- Acquaint students with non-academic career opportunities

**The leadership of the Graduate Program of the Department of Physics and Astronomy** will regularly review the structure and content of the program and feedback received from assessments and surveys. These reviews are used to help improve the program so that it provides the best possible education for our students.