### Program Learning Goals

Academic scholarship and general expertise in the field of Applied Physics

### Assessment Plans

**Assessment:**
- Grades in graduate courses.
- Successful completion of the qualifying exam by the end of the 5th semester by PhD. students, demonstrating adequate knowledge in Mechanics, Electrodynamics, Quantum Mechanics, Statistical Mechanics and Mathematical Methods.
- Successful completion and defense of the thesis.
- Successful teaching reviews for those students engaged in teaching.

**Role of the Program:**
- Admission to the program is only with approval of the graduate program director.
- Assignment of a personal advisor within the first year – this advisor, preferably, will be the future thesis adviser.
- Personalized schedule and registration in required graduate program courses- (Foreign students are advised to also take language courses and courses to improve their communication and teaching skills.)
- Upon successful completion of the qualifying exams, the candidate is asked to choose a thesis adviser and formulate a thesis subject.
- Within a year after qualifying exams, the thesis committee is formed and the candidate proposes his thesis investigation (proposal). At this time the committee ascertains the scientific value of the proposed research and the candidate’s knowledge and ability to complete the proposed investigations in a timely fashion. Additional yearly status meetings may be requested by the committee.
Every graduate student files an annual progress report on his/her research with the graduate program director, with copies to his thesis committee and the thesis advisor. This report, which includes the student’s independent research, publications, presentations, outreach and general scholarship, serves to keep track of the students progress toward a degree.

Students and their advisors are alerted to any administrative and/or academic deficiencies and upcoming deadlines (quals, prelims etc) by the graduate program director.

The current status of all graduate students is assessed at a yearly faculty meeting. In this meeting the advisers report on their progress and any academic or administrative issues may be clarified.

All graduate students are advised to teach as a part of their graduate career, to become familiar with academic instruction and to learn teaching and management skills.

Use of the Teaching Assistance Program and its workshops for teacher training.

Review of the curriculum to insure that course offerings are sufficient and current in content.

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<tr>
<th>Engage in original research</th>
<th><strong>Assessment:</strong></th>
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<tbody>
<tr>
<td></td>
<td>• Preliminary proposal completed and defended by the end of year four.</td>
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<td>• Dissertation prepared and defended successfully.</td>
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<td>• Attendance and presentations (posters or talks) at local and national venues during the graduate career.</td>
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<td>• Publication of scholarly articles in peer-reviewed journals on the research in the dissertation project.</td>
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**Role of the Program:**

- Advisor and advisory committee introduce students to research possibilities in the first semester.
Advise students to meet with their advisor and committee frequently throughout the student’s graduate career.
- Graduate program seminar series to showcase local and visiting scientists, and to present the most current research in Applied Physics.
- Provide public opportunities for the students to present their research and gather feedback from peers and colleagues.
- Provide courses that have a research and writing component with critical feedback.
- Track publications and presentations, and nominate eligible student candidates for awards.

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<tr>
<th>Career preparation</th>
<th>Assessment:</th>
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<td></td>
<td>Graduate student teaching evaluations.</td>
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<td>Track number of publications, presentations, and outreach activities.</td>
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<td>Placement of students upon completion of degree.</td>
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Role of the Program:
- Provide students access to teaching skills classes.
- Provide students with an academic atmosphere that fosters professionalism by treating students as junior colleagues and expecting them to act in that manner.
- Provide networking opportunities by providing access to seminar speakers and visiting scholars through one-on-one meetings, funding to local and national meetings and professional organizations.
- Keep students informed of professional development opportunities as they become available.
- Keep students informed of the job opportunities both academic and non-academic available to them.
- Attainment of employment or academic positions requiring the expertise obtained with their PhD degree in Applied Physics.
Physics, Applied – MS

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<tr>
<th>Program Learning Goals</th>
<th>Assessment Plans</th>
<th>Findings</th>
<th>Proposed Change</th>
<th>Closing the Loop (re-assessment)</th>
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| Master the fundamental knowledge of the field. | **Assessment:**  
- Performance on homework, examinations and class participation in courses  
- Comprehensive qualifying examination to assess basic knowledge in physics  
- 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 applied physics.  
**Role of the Program:**  
- 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 is below expectations, work with instructors to improve  
- Periodic review of curriculum offerings and assessment tools | | | |
| Engage in and conduct original research (for Master’s degrees with thesis) | **Assessment:**  
- Assessment of quality of Master’s thesis  
- Public defense of thesis  
- Critical reading of thesis by a committee of graduate faculty members  
- Submission and acceptance of conference papers and of peer reviewed articles based on the thesis  
- Achievement of students as evidenced by professional placement, selection for conference presentations, peer-reviewed publications, and the awarding of individual grants | | | |
### Role of the Program:
- Provide an early introduction to research methods and opportunities for research
- Provide opportunities and support to present research and receive feedback

### Prepare professionals working in applied physics

### Assessment:
- Evaluations of teaching effectiveness of graduate student instructors
- Collection of placement and awards data

### Role of the Program:
- Host professional development and career exploration activities
- Acquaint students with non-academic career opportunities

The leadership of the Graduate Program of the Department of Applied Physics will regularly review the structure and content of the program and feedback received from assessments, surveys and students. These reviews are used to improve the program to achieve the goal of providing the best possible education for students.