

Physics PhD

Expanded Statement of Institutional Purpose

Institutional Mission Reference

The PhD program of the Department of Physics contributes to the mission of the University by (a) extending the boundaries of knowledge through research, (b) offering a graduate program in a scientific field of importance to the region, (c) offering a graduate program of importance to society in which the University has unusual strength due to faculty expertise and geographical advantage, and (d) offering a graduate program that has achieved national prominence.

Institutional Goal(s) Supported

The specific initiatives of the Strategic Plan (Initiatives 2, 3, and 4) that are supported by this program are that the University have (a) Excellent Graduate Programs, (b) High-Quality Research, and (c) Nationally Prominent Programs. In addition, the general goal of high-quality teaching is supported

Intended Educational (Student) Outcomes, Methods for Assessment, Criteria for Success, Assessment Results, and Use of Results

Intended Outcome 1

Students must demonstrate the ability to communicate orally about topics in advanced physics.

Method for Assessing Outcome 1 and Criterion for Success: All students must complete four semesters of a graduate seminar in which they are each required to make presentations on assigned topics. Their performances are judged by assigned faculty members. The presentations of a research paper at a national physics meeting can be substituted for one semester of this seminar.

Summary of Assessment Data Collected for Outcome 1: Four PhD degrees have or will be awarded for the 2000-2001 academic year. All of the recipients have completed the seminar requirement.

Intended Outcome 2

Students must demonstrate the ability to communicate in writing about topics in advanced physics.

Method for Assessing Outcome 2 and Criterion for Success: Each student must complete a dissertation on his or her independent research, and the quality of writing in the dissertation is one of the criteria used to judge its acceptance.

Summary of Assessment Data Collected for Outcome 2: Four Ph.D degrees have or will be awarded for the 2000-2001 academic year. All of the recipients have completed a dissertation that has been accepted by the Department of Physics and the University.

Intended Outcome 3

Students must demonstrate adequate preparation to begin research in advanced physics.

Method for Assessing Outcome 3 and Criterion for Success: Each student must pass a rigorous candidacy examination that has both written and oral components. This examination covers all of the major fields of physics at an advanced level. A committee consisting of all the members of the faculty of the Department of Physics who are certified for graduate instruction grades the performance of a student of this candidacy examination.

Summary of Assessment Data Collected for Outcome 3: During the 2000-2001 academic year, one student attempted and completed the advanced level Ph.D candidacy examination.

Intended Outcome 4

A student must perform independent research, obtain results that are publishable in leading physics journals, and prepare a dissertation on the research.

Method for Assessing Outcome 4 and Criterion for Success: A student's progress is monitored by a faculty advisory committee that is appointed specifically for that individual student. The chair of that committee is the principal supervisor of the student's research. The committee must approve the dissertation and also conduct a public oral examination in which the student defends the contents of the dissertation. The faculty advisory committee determines whether or not the student successfully defended the dissertation.

Summary of Assessment Data Collected for Outcome 4: During the 2000-2001 academic year, there were eighteen active advisory committees.