

*SUNY Potsdam*  
*Student Learning Outcomes Assessment Plan - Physics*

***Department Name:*** Physics

***Date Submitted and Academic Year:*** Fall 2009 for AY2009-2010

***Department Mission Statement:***

The primary mission of the physics department is to provide a strong undergraduate education to our physics majors and to prepare them for jobs in the industry, graduate studies, and teaching in high schools. The physics department strives to promote science education under the General Education Program and also strives for excellence in teaching, research, and scholarship. The secondary mission of the department is to provide services to the campus community and the public.

It is the policy of the physics department to achieve and maintain the nationwide established level of the introductory and advanced undergraduate courses. All faculty members are expected to maintain the appropriate academic level in all class work, and to help in the continuous process of critical evaluation, planning, and further improvement of the various courses offered.

***Faculty Member Completing this Form:*** LP Brehm

***Update on prior years' "Application of Assessment Results:***

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**Intended Student Learning Outcome #1**

Students will demonstrate understanding of the conceptual, experimental and quantitative knowledge of calculus-based physics, both classical and modern, as represented by the syllabus coverage of the four-term introductory sequence of the major.

**Connection to Univ/Dept Mission**

**Links with other programs/departments**

- *Gen Ed Component* SP, LB
  
- *Related Courses* Cognate requirements for the major: CHEM 105-106, MATH 151-152
  
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**Measurable Criteria and Assessment Method(s)**

1. We plan to continue to have our majors (both 4 yr and 3-2) take the ETS major field test shortly before their completion of their Potsdam studies.
  
2. For our 3-2 students, explore the possible transmission of student academic progress from Clarkson back to SUNY Potsdam in order to evaluate our effectiveness in preparing them for that program.
  
3. Continue to monitor the results of the Content Specialty Test (available through the SOEPS) for our graduates who pursue the MST in preparation for teaching.

**Data Source/Results & Analysis**

**Application of Results/Action Plan for Improvement**

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**Intended Student Learning Outcome #2**

Students will demonstrate a sophisticated understanding of physics, including problem-solving, analytical, experimental, and library research (information literacy) skills commensurate with the standards and expectations of the particular upper division (elective) courses taken in fulfillment of major requirements.

**Connection to Univ/Dept Mission** See the above mission statement

**Links with other programs/departments**

- *Gen Ed Component*
- *Related Courses* The following courses are required of students in the 3-2 engineering program and thus pertain to a significant portion of Physics majors: MATH 253 & 390; CS 201.

**Measurable Criteria and Assessment Method(s)** See below.

(pertains to both of the above learning objectives)

1. We plan to continue to have our majors (both 4 yr and 3-2) take the ETS major field test shortly before their completion of their Potsdam studies.
2. For our 3-2 students, explore the possible transmission of student academic progress from Clarkson back to SUNY Potsdam in order to evaluate our effectiveness in preparing them for that program.
3. Continue to monitor the results of the Content Specialty Test (available through the SOEPS) for our graduates who pursue the MST in preparation for teaching.

**A general comment on Course-specific learning outcomes**

We have on hand a library of various diagnostic and assessment instruments (e.g., the FCI, Force Concept Inventory), developed by various offices of the professional Physics community, that are designed to gauge the degree to which students have successfully apprehended fundamental concepts in several basic subject areas. Generally, these instruments are intended to be used at both ends of the course so that the degree of *change* can be assessed. One of our faculty (EO) has employed some of these instruments in the courses that he teaches and these continue to be available for wider use by the department.

**Data Source/Results & Analysis**

**Application of Results/Action Plan for Improvement**

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<i>Summary of Action Plans for 2009-10</i>
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