Department of Physics and Astronomy: Assessment and Improvement, 2012

Department: Physics and Astronomy

Assessment Coordinator: Brad Johnson

Departmental Mission: As part of the overall mission of Western Washington University and the College of Sciences and Technology, the mission of the Department of Physics and Astronomy is to:

• Provide a curriculum in Physics and Astronomy with the breadth and depth to facilitate and support effective learning in the core areas of the discipline at all levels;
• Provide a range of courses in Physics and Astronomy that enhance the education of students of the Humanities, Arts, and Social Sciences;
• Provide the core curriculum in Physics for future Physics teachers and for science teachers in all disciplines;
• Provide courses at a variety of levels that serve the needs of other major programs within the College of Sciences and Technology;
• Provide students with opportunities to participate in original research, and encourage and support faculty research and the improvement of pedagogical methods;
• Provide an overall supportive and sustainable working and learning environment for students, faculty, and staff.

Departmental Student Learning Outcomes: Upon graduation, majors will
1) Have demonstrated mastery of the core concepts of Physics.
2) Have demonstrated understanding of quantitative reasoning and scientific inquiry.
3) Have demonstrated an ability to use lab equipment and interpret data.
4) Have demonstrated an ability to communicate ideas effectively, both verbally and in written form.
5) Have demonstrated an ability to solve problems, both independently and in groups.
<table>
<thead>
<tr>
<th>Assessment Measures</th>
<th>SLO’s Assessed</th>
<th>Results</th>
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</thead>
<tbody>
<tr>
<td>Final student portfolios from Phys 419</td>
<td>2,4</td>
<td>Assessment committee reviewed student portfolio work. The committee finds that students often struggle to articulate connections between quantitative parameters identified in their hypotheses and the causal claims, particularly in presenting experimental or model data.</td>
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</table>

**Program Changes Based on Assessment**

More instructional emphasis will be placed on the purpose of presenting data sets, specifically aimed at connecting quantitative evidence to qualitative statements about causal behavior. Related activities will be included starting in Phys 224, and will be added to all core program courses assessed (Phys 335, 363, 368, and 455).