Major Field Assessment:
Evaluation, Outcome, and Indication for Programmatic Change
B.S. Physics 2007-2008, 2008-2009

The purpose of the B.S. in Physics is to prepare students for graduate study in Physics and in other fields that require considerable scientific knowledge and laboratory experience, and/or to train physicists for employment in industry. To achieve this purpose the physics curriculum has three goals: to provide students with knowledge in the field of physics, to develop in students a comprehensive understanding of the professional aspects of physics, and to prepare students for career-based employment or graduate study.

Evaluation

This report is based on data gathered from the 5 students who completed the B.S. in Physics degree program during the academic years 2007-2008 and 2008-2009.

Goal 1 To provide students with knowledge in the field of physics

It is expected that students completing the undergraduate program in physics will compare favorably on a national basis with other seniors graduating in physics in their ability to demonstrate problem-solving and laboratory skills in the areas of classical mechanics, thermodynamics, electricity and magnetism, optics, special relativity, quantum mechanics, and statistical mechanics. To assess the success of the curriculum in producing this outcome, the Educational Testing Services physics field assessment is administered to graduating senior physics majors. The standards for student achievement are as follows: 75% of the graduates in the physics program who graduate with a cumulative GPA of 2.00 - 2.99 in their major will score above the 33rd percentile on the ETS physics field assessment, 75% of the graduates in the physics program who graduate with a cumulative GPA of 3.00 - 3.49 in their major will score above the 50th percentile on the ETS physics field assessment, and 75% of the graduates in the physics program who graduate with a cumulative GPA above a 3.50 in their major will score above the 66th percentile on the ETS physics field assessment. The result of this assessment is that 3 out of 4 (75%) of the students who graduated with a cumulative GPA of 2.00 - 2.99 performed above the 33rd percentile and 1 out of 1 (100%) of the students graduate with a cumulative GPA of 3.00 - 3.49 performed above the 50th percentile. These results are consistent with expectations.

It is also expected that graduates will respond favorably to the physics curriculum and overall learning environment. To assess the success in producing this outcome, the Southeastern Exit Survey was administered to graduating senior physics majors. The expected outcome was that 90% of the graduates would indicate satisfaction. The results of this assessment is that 3 out of 4 (75%) of the students were very satisfied with the overall quality of the degree program. Because of the small sample size, this result is not significantly different from the expectation.

Goal 2 To develop in students a comprehensive understanding of the professional aspects of physics

It is expected that students completing the undergraduate program in physics will demonstrate awareness of the diverse nature of physics and its applications as a body of knowledge and the importance of participation in professional societies, professional meetings and undergraduate research in the field of physics. To assess the success in producing this outcome, the Southeastern Exit Survey was administered to graduating senior physics majors. The expected outcome was that 80% of the graduates would indicate that they were given opportunities and support for attending professional physics meeting while at Southeastern. The result is that 3 out of 4 (75%) of the students were satisfied with their opportunities for research. Because of the small sample size, this result is not significantly different from the expectation.

Goal 3 To prepare students for career-based employment or graduate study

It is expected that one year after graduation, the majority of graduates will have career-based employment or will be in graduate school. To assess the success in producing this outcome, a survey was taken one year after the students' graduation. The expected outcome was that 60% of the graduates would be enrolled in graduate school or would be employed in a technical industry. The result for this reporting period is that 4 out of 5 (80%) of the graduates are enrolled in graduate school or employed in a technical industry. This result exceeds the expectation.

Outcome

The outcome of this assessment is that the stated goals were attained.

Indication for Programmatic Change

Since the B.S. in Physics program is achieving its stated goals, no changes to the program are indicated at this time.

GOAL ATTAINMENT FRAMEWORK

B.S., Physics
Department of Chemistry and Physics

For Academic Years 2007-2008, 2008-2009

Expected Outcome	Much Less than Expected	Less than Expected	Expected	More than Expected	Much More than Expected
% of graduates with a cumulative GPA of 2.00-2.99 scoring above the 33rd percentile on the ETS Major Field Achievement Test in Physics			75% (3/4) *75%*		
% of graduates with a cumulative GPA of 3.00-3.49 scoring above the 50th percentile on the ETS Major Field Achievement Test in Physics			100% (1/1) *75%*		
% of graduates with a cumulative GPA above 3.50 scoring above the 66th percentile on the ETS Major Field Achievement Test in Physics			N/A (0/0) *75%*		
% of graduates satisfied with their physics instruction, as indicated on the Southeastern Exit Survey			75% (3/4) *90%*		
% of graduates who feel they were given opportunities and support for attending professional physics meetings while a student at Southeastern as evidenced by the Southeastern Exit Survey			75% (3/4) *80%*		
% of graduates who have career employment or will be enrolled in graduate school as evidence by the Southeastern Physics Post Exit Survey			*60%*	80% (4/5)	