Form E-1-A for Boston College Undergraduate Programs

Program: PHYSICS

1) Have formal learning outcomes been developed? What are they? (What specific sets of skills and knowledge does the department expect its majors to have acquired before they graduate?)

Graduating physics majors will be able to (assessment techniques in parentheses):

- demonstrate a broad understanding of classical and quantum physical principles (1-4)
- understand and articulate current prominent research questions in physics (4, 5)
- structure and implement independent inquiry on substantive questions in physics (4, 5)
- communicate research results in a scientifically appropriate manner (4, 5)
- demonstrate a level knowledge and research skills level sufficient to compete successfully for admission to graduate programs (3-7)

2) Where are these learning outcomes published? Be specific. (Where are the department’s learning expectations accessible to potential majors: on the web or in the catalog or in your department’s major handouts?)

Posted on the department website

2) Other than GPA, what data/evidence is used to determine whether graduates have achieved the stated outcomes for the degree? (What evidence and analytical approaches do you use to assess which of the student learning outcomes are being achieved more or less well?)

1 – Force Concept Inventory / Mechanics Baseline testing

2 - Exit survey data

3 - Physics GRE Subject Exam results (for students applying to graduate school)
   4 – Standardized evaluations for all Senior Thesis presentations (made by Undergraduate Affairs Comm. members)
   5 – Data on number of undergraduate students presenting research at national conferences

6 - Tracking of alumni
3) **Who interprets the evidence? What is the process?** (Who in the department is responsible for interpreting the data and making recommendations for curriculum or assignment changes if appropriate? When does this occur?)

Undergraduate Affairs Committee (UAC) and Education Program Administrator will collect and analyze data. After reporting to the faculty and receiving their input, the UAC will then

- work with instructors to develop specific strategies to better meet program goals;
- develop modifications to the curriculum to address any perceived deficiencies, subject to faculty approval;
- work with Education Program Administrator to develop and implement extracurricular programs for majors.