Department: Physics and Astronomy

Name: Prof. Gary Shoemaker, Chair

Contact: shoemaker@csus.edu, 916-278-6518

Assessment Committee: Profs. Gary Shoemaker, Vassili Sergan and Chris Taylor

1. What goals or learning objectives/outcomes were assessed in AY’s 2006-2007?
The Assessment Committee in our department has been inactive over the last two years. In May 2007, our department selected and impaneled a new committee. No learning outcomes were assessed this past year.

2. How did you assess these learning outcomes?
a. Describe the measures you used and the information gathered.
b. As a result of these assessments what did you learn about the program’s success in helping its students achieve these learning outcomes?
See answer to item (1) above. I would like to add that our website has attracted some favorable response from our alumni, who have provided some feedback about our program. Because we graduate only about 6 to 7 students per year, extensive surveys are not very useful to us since the statistics are too limited to draw any firm conclusions. However, these anecdotal responses are very helpful and we have taken this kind of input from current students and alumni very seriously in shaping changes in our program. One activity that our current committee is considering is to try to obtain anonymous results from our students on the GRE exam in Physics. Although the results from this exam will be skewed toward students who are attempting to go on into graduate studies in Physics, it is the only nationwide exam given that covers the discipline of Physics very comprehensively for material at the undergraduate level. These results could provide a useful gauge as to how our graduating students compare with the national average.

3. As a result of faculty reflection on these results, are there any program changes anticipated?
(a) If so, what are those changes?
Our department curriculum committee will be making recommendations to the physics faculty at the beginning of the Fall 2007 semester to make a few changes in our BS degree requirements. The anticipated program change involves a revamping of an existing course (Physics 156) in the attempt to plug some holes in our core theoretical curricula. Our decision was based upon some student input, comparison of course offerings to programs within our own system as well as other comparable programs, and the expectations of graduate programs regarding appropriate student preparation. A course change proposal will be
submitted this upcoming Fall. This course will be required for our BS students and thus will necessitate the elimination of one elective in order to maintain the current level of required units for this program.

**b) How will you know if these changes achieved the desired results?**

We intend to track BS graduates under this program requirement and have these graduates respond to a survey of a few questions regarding the usefulness of this new requirement. However, with so few graduates it will take at least five years to accumulate enough data to draw any meaningful conclusions.

**4. Did your department engage in any other assessment activities such as the development of rubrics, course alignment?**

Please note that our department did develop extensive rubrics in our Assessment Plan of 2001. In terms of course alignment, we initiated two important changes in our program effective Fall 2004. We added a 2-unit senior project requirement (Physics 191) to both our Physics BA and BS degree programs that replaced our previous seminar course (Physics 190), though we retained the seminar attendance requirement in a different format. Also, we added a special certificate program in *Scientific Instrument Development* that aligned three existing courses: Physics 115 & 116 (Electronics) and Physics 175 (Advanced Lab) as requirements (note that 116 is an elective in the general BA and BS degree programs). In addition, we added a new course Physical Science 75 (Shop Practices), which is a 2-unit lecture and shop practicum that is taught by our shop supervisor, Rod Sorenson. The Chair interviewed a number of local technical companies and government agencies about the certificate program and the response was uniformly enthusiastic. These programs have not been in effect long enough to properly assess, but our department does plan to track our graduates of the last two years (and subsequent) regarding these changes (see item (5) below).

**5. What assessment activities are planned for the upcoming academic year?**

Our present Assessment Committee will meet again in late August to consider further assessment activities. One activity that we have already agreed upon is to continue to develop surveys to be given to our recent graduates that will provide data regarding recent programmatic changes.