**Annual Assessment Report for 2018-2019 AY**

Reports completed on assessment activities carried out during the 2018-2019 AY will be due September 30th 2019 and must be e-mailed to the Director of Assessment, Dr. Melissa Jordine (mjordine@mail.fresnostate.edu).

Provide detailed responses for each of the following questions within this word document. Please do NOT insert an index or add formatting. Furthermore, only report on two or three student learning outcomes even if your external accreditor requires you to evaluate four or more outcomes each year. Also, be sure to explain or omit specialized or discipline-specific terms.

Department/Program: \_\_\_Physics\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Degree \_\_BS\_\_\_

Assessment Coordinator: \_\_\_Yongsheng Gao and Douglas Singleton\_\_\_\_\_\_\_

1. Please list the learning outcomes you assessed this year.

*The SLOs addressed during this cycle of assessment were SLO 1.1 and SLO 3.1*

1. What assignment or survey did you use to assess the outcomes and what method (criteria or rubric) did you use to evaluate the assignment? **Please describe the assignment and the criteria or rubric used to evaluate the assignment in detail and, if possible, include copies of the assignment and criteria/rubric at the end of this report.**

*The assessment assignment for the 2018-2019 cycle, which we used to assess SLO 1.1 and 3.1, was to have upper division students take the Physics Major Field Test (MFT) as part of the required course, Physics 115, Quantum Mechanics. The MFT is a product of Educational Testing Services (ETS). According to the ETS website, “ETS offers comprehensive national comparative data for the Major Field Tests, enabling you to evaluate your students' performance and compare your program's effectiveness to programs at similar institutions nationwide.” Six upper division undergraduate students took the Physics MFT. The criteria that we used to assess if the students satisfied the assessment is that the students would score at or above the median score. The median score for 2018-2019 corresponded to the 47th percentile. The results of the Physics MFT for the six students are given in the table below*

Score Percentile

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Student #1 |  | 166 | | **82** | |  | |  |  | |
| Student #2 |  | | 152 | | **55** | |  |  |  |
| Student #3 |  | | 149 | | **47** | |  |  |  |
| Student #4 |  | | 148 | | **43** | |  |  |  |
| Student #5 |  | | 143 | | **31** | |  |  |  |
| Student #6 |  | | 126 | | **3** | |  |  |  |

*From the above table two students met the requirement of scoring at the median or above and two students completely met the requirement to be above the median, one student just met the requirement, one student was slightly below, and two other students were well below assessment mark.*

1. What did you learn from your analysis of the data? Please include sample size (how many students were evaluated) and indicate how many students (number or percentage instead of a median or mean) were designated as proficient.

*The three students who met the mark of being at the median or above had significantly better GPAs and had taken more advanced classes than the other three students. The three students who passed with the median score or above were all heavily involved in research. Thus, this indicates we should support student research more. The results for this assessment – that 50% of the students meet the assessment mark – is in line with previous times that the MFT assessment was given.*

1. What changes, if any, do you recommend based on the assessment data?

*The assessment scores were reviewed by the coordinator and department chair, and were discussed with faculty. The failing scores of three of the students indicate a weakness in problem solving at both the introductory and advanced level. One possible strategy to address the low scores would be to institute recitation/problem solving sessions in conjunction with upper division courses. However, there are workload issues and funding issues connected with this approach. Another recommendation is to have our UG students get involved in research as early as feasible.*

1. If you recommended any changes in your response to Question 4 in last year’s assessment report, what progress have you made in implementing these changes? If you did not recommend making any changes in last year’s report please write N/A as your answer to this question

*We were not able to find funding to institute a full recitation/problem solving session, but we did have general faculty tutoring hours – once per week faculty would volunteer to do general tutoring for physics majors in a set room. However, we were unable to continue this due to lack of time that faculty were able to volunteer to this.*

1. What assessment activities will you be conducting during the next academic year?

*Next year we will use the review of papers from PHYS 190, PHYS 104 and PHYS 110 and other upper division classes as our assessment activity. We will use the departmental rubric to evaluate the student writing.*

1. What progress have you made on items from your last program review action plan?

*Strategies to address several action items were formulated. A particular action item addressed was to offer new computational physics classes and this was accomplished.*