

## Assessment Findings

### Finding per Measure

#### Hawaii Pacific University ILOs with PLOs (Copy 1)

##### Written Communication

Students will organize their thoughts and feelings, synthesize relevant information and concepts, and effectively, clearly, and persuasively communicate their perspectives through written language.

##### Outcome: PLO8

Communicate scientific information in written reports.

- ▼ **Measure:** CHEM 4095 Literature Review Paper  
*Course level Direct - Student Artifact*

##### Details/Description:

The written review paper in the CHEM 4095 Biochemistry Seminar (the capstone course of the biochemistry program) in Spring 2017 will be used to assess the University Written Communication ILO and the PLO 8 of the Biochemistry program (Communicate Scientific Information in Written Reports). Each student will write a review paper on an approved topic in biochemistry which is of interest to and chosen by the student. The review will be based on a coherent collection of original research papers. Topics must be approved in advance by the instructor. The review should include sections on background, the current status of research or treatment (if a disease), and future directions. A scientific review paper is a critical synthesis of the literature, therefore, the review should reflect the student's own insights, interpretation, and critical appraisal of the literature. The review papers will be scored against a rubric modified from the University's Written Communication rubric.

Acceptable Target:	60% of students achieve a 60% on the rubric
Ideal Target:	75% of students achieve a 75% or higher on the rubric
Implementation Plan (timeline):	Assignment will be given during the Spring 2017 semester and scored on the rubric during the same semester.
Key/Responsible Personnel:	Gideon Berger and Yongli Chen

#### Supporting Attachments:

[Chem 4095 literature review assignment 2017 \(Adobe Acrobat Document\)](#)

#### Findings for CHEM 4095 Literature Review Paper

**Summary of Findings:** CHEM 4095 is the capstone course for the Biochemistry major. It is cross listed with the Chemistry major capstone course CHEM 4910. A total of 7 students (5 biochemistry majors and 2 chemistry majors) were enrolled in the course in Spring 2017. Of the 5 biochemistry majors, 4 completed the course and one took an incomplete. The Literature Review assignment rubric (attached) includes competencies for both Written Communication and Information Literacy. Assignments from the 4 Biochemistry majors who completed the assignment were assessed. The combined average score for the assignment (including both Written Communication and Information Literacy competencies) was 89.5% of the maximum score (an average of 28.6 of 32 rubric points). The range for was 87-91%. When considering the 20 rubric points for Written Communication competencies (5 criteria x maximum 4 points each), the average was 86.3% and the range was 85-90%. The summary of individual rubric scores is included in the attachment. All 4 students reached the acceptable target

of a 60% score and all 4 reached the ideal target of 75%.

The scores showed no collective weaknesses for either of the 5 criteria. All competency scores are 75% or higher.

Overall, this assessment as performed revealed no weaknesses in student outcomes or performance for Written Communication competencies.

Results :

Acceptable Target Achievement: Exceeded;  
Ideal Target Achievement : Exceeded


Recommendations:

The assessment revealed no weaknesses in student outcomes or performance, and we have no curricular recommendations. However, the narrow range of scores may suggest a rubric or application of the rubric that did not discern well between the highest performing and lowest performing students. At the same time, the assessment was conducted by only one faculty member. The Chemistry and Biochemistry program should consider reviewing the application of the rubric and scoring methods to ensure an effective use of rubrics across the program and between years and consider having multiple reviewers during years where the ILO is assessed University-wide.

Reflections/Notes:

none

Substantiating Evidence:

 Spring 2017 Biochem\_ literature review.xlsx (Excel Workbook (Open XML))

## Overall Recommendations

The assessment rubric used in 2017 was also used as a grading tool for the assignment. Because there are few gradations in scoring each competency, this may have given less power to discern between different levels of quality for the grading of assignments that translate into a student grade. Although using the assessment rubric for dual purposes is efficient, the Chemistry and Biochemistry program should consider reviewing the application of the rubric and scoring methods to ensure an effective use of rubrics across the program and between years, including when rubrics are used for dual purpose of assessment and grading. For example, at least one scoring rubric method developed involves scoring competencies to one decimal (e.g., 3.3) where the decimal score is used to calculate the grade, but only the integer is used as the assessment score (e.g., 3.3 is used for grading for finer resolution and 3 is used for the rubric, which reflects the highest level of the given competency that was firmly achieved). In other words, decimal scores are always rounded down (e.g., a 3.8 would be a 3 for the assessment rubric score). This method is viewed by multiple members of the program as effective.

The program should also consider when to have multiple reviewers (e.g., one reviewer in addition to the primary instructor for the assignment) during years where the ILO is assessed University-wide.

## Overall Reflection

None.

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