

Program Assessment Report 2017-2018--Assessing PLOs 1 and 4

Note: The ACS (external accreditation) listed program assessment as one of our strengths in our 6 Year Periodic Review.

Program Name: Biochemistry

Program Learning Outcome: 1).Demonstrate comprehensive knowledge of the key principles of biochemistry; using a strong foundation in the disciplines of chemistry.

1. Identify the artifact(s) (i.e. student work or outputs) that you used to assess the PLO. [Projects, papers, presentations, portfolios, exam questions, specific assignments, capstone work]

Artifacts: 1. Thesis--written thesis and oral defense (capstone endpoint assessment for Biochemistry Research Track) and 2. Final Presentation for Biochemistry Capstone course (Biochemistry Pre-professional Track)

Click or tap here to enter text.

2. Identify the instruments (e.g. rubrics, surveys, spreadsheets, statistical software) used to assess the artifact(s) (i.e. the way in which student output are analyzed).

Instruments: 1. Rubric--scored by 3 member defense committee for THESIS

1. Rubric--scored by 3 member defense committee for THESIS							
2. Rubric--scored by course instructor in Biochemistry Capstone Course							
3. Rubric--scored by 3 member defense committee for THESIS							
4. Rubric--scored by 3 member defense committee for THESIS							
5. Rubric--scored by 3 member defense committee for THESIS							
6. Rubric--scored by 3 member defense committee for THESIS							
7. Rubric--scored by 3 member defense committee for THESIS							
8. Rubric--scored by 3 member defense committee for THESIS							
9. Rubric--scored by 3 member defense committee for THESIS							
10. Rubric--scored by 3 member defense committee for THESIS							
11. Rubric--scored by 3 member defense committee for THESIS							
12. Rubric--scored by 3 member defense committee for THESIS							
13. Rubric--scored by 3 member defense committee for THESIS							
14. Rubric--scored by 3 member defense committee for THESIS							
15. Rubric--scored by 3 member defense committee for THESIS							
16. Rubric--scored by 3 member defense committee for THESIS							
17. Rubric--scored by 3 member defense committee for THESIS							
18. Rubric--scored by 3 member defense committee for THESIS							
19. Rubric--scored by 3 member defense committee for THESIS							
20. Rubric--scored by 3 member defense committee for THESIS							
21. Rubric--scored by 3 member defense committee for THESIS							
22. Rubric--scored by 3 member defense committee for THESIS							
23. Rubric--scored by 3 member defense committee for THESIS							
24. Rubric--scored by 3 member defense committee for THESIS							
25. Rubric--scored by 3 member defense committee for THESIS							
26. Rubric--scored by 3 member defense committee for THESIS							
27. Rubric--scored by 3 member defense committee for THESIS							
28. Rubric--scored by 3 member defense committee for THESIS							
29. Rubric--scored by 3 member defense committee for THESIS							
30. Rubric--scored by 3 member defense committee for THESIS							
31. Rubric--scored by 3 member defense committee for THESIS							
32. Rubric--scored by 3 member defense committee for THESIS							
33. Rubric--scored by 3 member defense committee for THESIS							
34. Rubric--scored by 3 member defense committee for THESIS							
35. Rubric--scored by 3 member defense committee for THESIS							
36. Rubric--scored by 3 member defense committee for THESIS							
37. Rubric--scored by 3 member defense committee for THESIS							
38. Rubric--scored by 3 member defense committee for THESIS							
39. Rubric--scored by 3 member defense committee for THESIS							
40. Rubric--scored by 3 member defense committee for THESIS							
41. Rubric--scored by 3 member defense committee for THESIS							
42. Rubric--scored by 3 member defense committee for THESIS							
43. Rubric--scored by 3 member defense committee for THESIS							
44. Rubric--scored by 3 member defense committee for THESIS							
45. Rubric--scored by 3 member defense committee for THESIS							
46. Rubric--scored by 3 member defense committee for THESIS							
47. Rubric--scored by 3 member defense committee for THESIS							
48. Rubric--scored by 3 member defense committee for THESIS							
49. Rubric--scored by 3 member defense committee for THESIS							
50. Rubric--scored by 3 member defense committee for THESIS							
51. Rubric--scored by 3 member defense committee for THESIS							
52. Rubric--scored by 3 member defense committee for THESIS							
53. Rubric--scored by 3 member defense committee for THESIS							
54. Rubric--scored by 3 member defense committee for THESIS							
55. Rubric--scored by 3 member defense committee for THESIS							
56. Rubric--scored by 3 member defense committee for THESIS							
57. Rubric--scored by 3 member defense committee for THESIS							
58. Rubric--scored by 3 member defense committee for THESIS							
59. Rubric--scored by 3 member defense committee for THESIS							
60. Rubric--scored by 3 member defense committee for THESIS							
61. Rubric--scored by 3 member defense committee for THESIS							
62. Rubric--scored by 3 member defense committee for THESIS							
63. Rubric--scored by 3 member defense committee for THESIS							
64. Rubric--scored by 3 member defense committee for THESIS							
65. Rubric--scored by 3 member defense committee for THESIS							
66. Rubric--scored by 3 member defense committee for THESIS							
67. Rubric--scored by 3 member defense committee for THESIS							
68. Rubric--scored by 3 member defense committee for THESIS							
69. Rubric--scored by 3 member defense committee for THESIS							
70. Rubric--scored by 3 member defense committee for THESIS							
71. Rubric--scored by 3 member defense committee for THESIS							
72. Rubric--scored by 3 member defense committee for THESIS							
73. Rubric--scored by 3 member defense committee for THESIS							
74. Rubric--scored by 3 member defense committee for THESIS							
75. Rubric--scored by 3 member defense committee for THESIS							
76. Rubric--scored by 3 member defense committee for THESIS							
77. Rubric--scored by 3 member defense committee for THESIS							
78. Rubric--scored by 3 member defense committee for THESIS							
79. Rubric--scored by 3 member defense committee for THESIS							
80. Rubric--scored by 3 member defense committee for THESIS							
81. Rubric--scored by 3 member defense committee for THESIS							
82. Rubric--scored by 3 member defense committee for THESIS							
83. Rubric--scored by 3 member defense committee for THESIS							
84. Rubric--scored by 3 member defense committee for THESIS							
85. Rubric--scored by 3 member defense committee for THESIS							
86. Rubric--scored by 3 member defense committee for THESIS							
87. Rubric--scored by 3 member defense committee for THESIS							
88. Rubric--scored by 3 member defense committee for THESIS							
89. Rubric--scored by 3 member defense committee for THESIS							
90. Rubric--scored by 3 member defense committee for THESIS							
91. Rubric--scored by 3 member defense committee for THESIS							
92. Rubric--scored by 3 member defense committee for THESIS							
93. Rubric--scored by 3 member defense committee for THESIS							
94. Rubric--scored by 3 member defense committee for THESIS							
95. Rubric--scored by 3 member defense committee for THESIS							
96. Rubric--scored by 3 member defense committee for THESIS							
97. Rubric--scored by 3 member defense committee for THESIS							
98. Rubric--scored by 3 member defense committee for THESIS							
99. Rubric--scored by 3 member defense committee for THESIS							
100. Rubric--scored by 3 member defense committee for THESIS							

2. Rubric--scored by course instructor in Biochemistry Capstone Course

ASSESSMENT, SPRING 2018, WASILEWSKI
CHEM 490 (BIOCHEM, PreProf) FINAL PRESENTATION, BENCHMARK = 80% OF STUDENTS SCORING 75% OF MAXIMUM SCORE/CATEGORY

	Capstone Presentations				
Organization	Very little logical organization. 2 pts	Audience has difficulty following presentation because presenter jumps around. 4 pts	Presenter delivers much of the information in logical sequence which audience can follow. 6 pts	Presenter delivers information in logical, interesting sequence which audience can follow. 8 pts	100%
Subject Knowledge: Background	Presenter does not appear to understand information. Little evidence of background research demonstrated. Very general information presented. 8 pts	Presenter is uncomfortable with information. Evidence of some background research. 16 pts	Background research is evident. Moderate detail provided. 24 pts	Presenter demonstrates full knowledge of the material. Extensive background research demonstrated. 32 pts	100%
Subject Knowledge: Questions	Presenter is unable to answer most questions about subject 3 pts	Presenter can answer only basic questions. 6 pts	Presenter can answer most questions but doesn't provide significant detail. 9 pts	Presenter can answer questions with explanation and elaboration. 12 pts	100%
PPT Slides: Text and Figures	Presenter uses superfluous figures or no figures. Too much text (small and covers most of slide) on slides and text duplicates presentation. 3 pts	Presenter occasionally uses figures that rarely support text and presentation. Too much text. 6 pts	Figures relate to text and presentation. Text does not duplicate spoken word. 9 pts	Figures explain and reinforce text and presentation. Text does not duplicate spoken word. 12 pts	86%
Mechanics	Presentation has four or more spelling errors and/or grammatical errors. 2 pts	Presentation has three misspellings and/or grammatical errors. 4 pts	Presentation has no more than two misspellings and/or grammatical errors. 6 pts	Presentation has no misspellings or grammatical errors. 8 pts	100%
Eye Contact	Presenter reads report with little eye contact. 2 pts	Presenter occasionally uses eye contact, but still reads much of report. 4 pts	Presenter maintains eye contact most of the time but frequently returns to notes, computer screen, slides, etc. 6 pts	Presenter maintains eye contact with audience, seldom returning to notes, computer screen, slides, etc. 8 pts	86%
Oral Delivery: Voice and Pronunciation	Presenter does not speak clearly, incorrectly pronounces terms, and/or speaks too quietly for students in the back of class to hear. 2 pts	Presenter's voice is quiet. Presenter incorrectly pronounces terms. Audience members have difficulty hearing presentation. 4 pts	Presenter's voice is clear. Most words are pronounced correctly. Audience members can hear most of presentation. 6 pts	Presenter uses a clear voice and correct, pronunciation of terms so that all audience members can hear presentation. 8 pts	100%
Visual Delivery: Professional Dress and Stance	Presenter appears disheveled and/or leans or props against podium. 2 pts	Presenter appears neat but not dressed professionally and/or leans or props against podium. 4 pts	Presenter dresses professionally and uses good posture some of the time. 6 pts	Presenter dresses professionally and uses good posture throughout presentation. 8 pts	100%
				0-4 points timing Total Points:	

3. Describe program collaboration to plan, implement and use the results of assessment.

Results discussed at department meeting, followed by discussion of areas in need of improvement as well as plans to so so.

Explain the results of the assessment activities.

1. The benchmark set is a mean score of 75% of the maximum score in each category (2.25). The benchmark was met in each of the 6 categories. 100 % of students obtained 75% of the maximum score in 5 categories. The area with the most room for improvement is summarizing key concepts across a broad area of chemistry and will be the focus of department discussions (50% of students scoring 75% of maximum score).

2. The benchmark is set at 75% of maximum score in each category. The benchmark was met in all categories. The assessment summary is below.

Assessment Activity Report (CAS)

Faculty Name: Joan Wasilewski, Ph. D.

Semester: SPRING 2014 Department/Program: Chemistry Department and Biochemistry, Cell, & Molecular Biology Program

	Course Section	Course Outcome Selected to Assess	Type of Assessment Used	Assessment Data / Finding	Improvement (e.g., modifications, adjustments) Made to Course	Plans for Future Course Improvement Based on Finding
CHEM 490	1	Students will identify and critically analyze advanced topics in biochemistry, using appropriate methods of inquiry	Course embedded assessment (Scores on "Subject Knowledge: Background": (for final presentation—from Capstone Presentation Rubric)	Mean on final presentation = 30/32	None	Emphasize that they should increase preparation on topics to anticipate questions that are related to the topic, but not covered in the journal articles/review papers they present
			Course embedded assessment (Scores on "Subject Knowledge: Questions": (for final presentation—from Capstone Presentation Rubric)	Mean on final presentation = 11/12	Suggested preparing for questions beyond the papers/reviews they used to prepare	
		Students will effectively communicate advanced biochemistry topics using Powerpoint presentations	Course embedded assessment (Scores on "Powerpoint Slides:Texts and Figures— from Capstone Presentation Rubric)	Mean on final presentation = 12/12	Suggested changes in early presentations so they could improve for the final (they did)	Plan to continue approach of providing feedback on early presentations since it proved effective
		Functioning as a team member, students will design and present a presentation or panel discussion	Evaluation of group presentation for content and evidence of teamwork/coordination	Mean score A- for P1 and A for P2. leading to improvement in P2.	Suggestions were made after P1 primarily regarding organization and coordination	Discuss organization and coordination prior to P1.
		Students will produce a portfolio at the end of the semester consisting of outlines and supporting materials for each of their presentations and a reflection of their work during the semester	Grading the Portfolio/Reflection Paper	Mean grade: A	none	none

- Where applicable, outline the steps you will take to make improvements to the program based on the results of assessment activities identified in #3.

See above. In addition, discuss the instrument (rubric) used and whether modifications might lead to improved understanding of the data. Specifically, the department choose to pool data for all theses (primarily chemistry and biochemistry majors). While the PLO 1 for each is similar, there is an emphasis on biochemistry and less emphasis on broader overall chemistry knowledge for biochemistry majors. Chemistry majors take more chemistry courses across the 5 sub-disciplines. The decision to use the same rubric was due to sample size, but using separate, more program specific rubrics may make sense.

Program Assessment Report 2017-2018

Program Name: Biochemistry

Program Learning Outcome: 2).Apply critical thinking to solve biochemical and chemical problems and to designing experiments.

5. Identify the artifact(s) (i.e. student work or outputs) that you used to assess the PLO. [Projects, papers, presentations, portfolios, exam questions, specific assignments, capstone work]

Artifacts: Choose an item.

Other artifact(s)

Click or tap here to enter text.

6. Identify the instruments (e.g. rubrics, surveys, spreadsheets, statistical software) used to assess the artifact(s) (i.e. the way in which student output are analyzed).

Instruments: Choose an item.

Other instruments Used

Click or tap here to enter text.

7. Describe program collaboration to plan, implement and use the results of assessment.

Click or tap here to enter text.

Explain the results of the assessment activities.

Click or tap here to enter text.

8. Where applicable, outline the steps you will take to make improvements to the program based on the results of assessment activities identified in #3.

Click or tap here to enter text.

Program Assessment Report 2017-2018

Program Name: Biochemistry

Program Learning Outcome: 3).Proficiently record, analyze, and disseminate data utilizing chemical instrumentation and software.

9. Identify the artifact(s) (i.e. student work or outputs) that you used to assess the PLO. [Projects, papers, presentations, portfolios, exam questions, specific assignments, capstone work]

Artifacts: Choose an item.

Other artifact(s)

Click or tap here to enter text.

10. Identify the instruments (e.g. rubrics, surveys, spreadsheets, statistical software) used to assess the artifact(s) (i.e. the way in which student output are analyzed).

Instruments: Choose an item.

Other instruments Used

Click or tap here to enter text.

11. Describe program collaboration to plan, implement and use the results of assessment.

Click or tap here to enter text.

Explain the results of the assessment activities.

Click or tap here to enter text.

12. Where applicable, outline the steps you will take to make improvements to the program based on the results of assessment activities identified in #3.

Click or tap here to enter text.

Program Assessment Report 2017-2018

Program Name: Biochemistry

Program Learning Outcome: 4).Utilize chemical information resources in oral and written presentations of biochemistry-related information.

13. Identify the artifact(s) (i.e. student work or outputs) that you used to assess the PLO. [Projects, papers, presentations, portfolios, exam questions, specific assignments, capstone work]

Artifacts: 1. Thesis--written thesis and oral defense (capstone endpoint assessment for Biochemistry Research Track) and 2. Final Presentation for Biochemistry Capstone course (capstone endpoint assessment for Biochemistry Pre-professional track)

Other artifact(s)

Click or tap here to enter text.

14. Identify the instruments (e.g. rubrics, surveys, spreadsheets, statistical software) used to assess the artifact(s) (i.e. the way in which student output are analyzed).

Instruments: Rubrics (See PLO 1 for summary rubrics.) and Portfolio. Several theses were submitted as part of our external accreditation periodic review.

15. Describe program collaboration to plan, implement and use the results of assessment.

Results discussed at department meeting, followed by discussion of areas in need of improvement as well as plans to so so. In addition, individual research mentors will use results to improve research training of students in their laboratories.

Explain the results of the assessment activities.

1. Thesis--Categories 2, 3, and 4 address the written and oral communication PLO. Scores were 2.80, 2.80, and 2.92 (3.0) scale. Goals were met. The ACS external review evaluated our student theses as "good to excellent".

2. Capstone--The relevant categories for this PLO are "Subject Knowledge: Background" and "Subject Knowledge: Questions" on the Capstone final. Goals met for oral communication. The mean grade on the portfolio was an A. Goals met for written communication.

16. Where applicable, outline the steps you will take to make improvements to the program based on the results of assessment activities identified in #3.

Current process successful.

Program Assessment Report 2017-2018

Program Name: Biochemistry

Program Learning Outcome: 5).Adhere to the highest standards of ethical behavior in the practice of science and in protecting the environment.

17. Identify the artifact(s) (i.e. student work or outputs) that you used to assess the PLO. [Projects, papers, presentations, portfolios, exam questions, specific assignments, capstone work]

Artifacts: Choose an item.

Other artifact(s)

Click or tap here to enter text.

18. Identify the instruments (e.g. rubrics, surveys, spreadsheets, statistical software) used to assess the artifact(s) (i.e. the way in which student output are analyzed).

Instruments: Choose an item.

Other instruments Used

Click or tap here to enter text.

19. Describe program collaboration to plan, implement and use the results of assessment.

Click or tap here to enter text.

Explain the results of the assessment activities.

Click or tap here to enter text.

20. Where applicable, outline the steps you will take to make improvements to the program based on the results of assessment activities identified in #3.

Click or tap here to enter text.

Program Assessment Report 2017-2018

Program Name: Biochemistry

Program Learning Outcome: 6). Demonstrate the safe practice of chemistry.

21. Identify the artifact(s) (i.e. student work or outputs) that you used to assess the PLO. [Projects, papers, presentations, portfolios, exam questions, specific assignments, capstone work]

Artifacts: Choose an item.

Other artifact(s)

[Click or tap here to enter text.](#)

22. Identify the instruments (e.g. rubrics, surveys, spreadsheets, statistical software) used to assess the artifact(s) (i.e. the way in which student output are analyzed).

Instruments: Choose an item.

Other instruments Used

[Click or tap here to enter text.](#)

23. Describe program collaboration to plan, implement and use the results of assessment.

[Click or tap here to enter text.](#)

Explain the results of the assessment activities.

[Click or tap here to enter text.](#)

24. Where applicable, outline the steps you will take to make improvements to the program based on the results of assessment activities identified in #3.

[Click or tap here to enter text.](#)

Program Assessment Report 2017-2018

Program Name: Biochemistry

Program Learning Outcome: 7).Prepare to succeed in employment and higher education in chemistry and related fields.

25. Identify the artifact(s) (i.e. student work or outputs) that you used to assess the PLO. [Projects, papers, presentations, portfolios, exam questions, specific assignments, capstone work]

Artifacts: Choose an item.

Other artifact(s)

Click or tap here to enter text.

26. Identify the instruments (e.g. rubrics, surveys, spreadsheets, statistical software) used to assess the artifact(s) (i.e. the way in which student output are analyzed).

Instruments: Choose an item.

Other instruments Used

Click or tap here to enter text.

27. Describe program collaboration to plan, implement and use the results of assessment.

Click or tap here to enter text.

Explain the results of the assessment activities.

Click or tap here to enter text.

28. Where applicable, outline the steps you will take to make improvements to the program based on the results of assessment activities identified in #3.

Click or tap here to enter text.