## BIOL141L & BIOL142L EP Student Learning Outcomes for Spring, 2014

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| Communicate orally | Presentation of Data Orally | 1. Demonstrate the ability to gather materials suitable to the laboratory exercise.  
2. Demonstrate the ability to conceptualize the laboratory material and data collected and organize them into an informative and persuasive presentation.  
3. Demonstrate the ability to use digital technology to analyze and process data and information and develop new information.  
4. Demonstrate the ability to use digital technology to present results and other relevant content, including textual and graphical forms.  
5. Demonstrate the ability to use digital technology to communicate. | - Oral presentations  
- Final project presented to public in poster form. |

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| 1. Demonstrate the ability to gather materials suitable to the laboratory exercise. | Oral Presentations  
Journal of search strategy for background literature | Students scored 93% on presentation grades.*  
40% listed strategy and sources in notebook.** |
2. Demonstrate the ability to conceptualize the laboratory material and data collected and organize them into an informative and persuasive presentation.

| Poster Presentation Grade from Instructor | Students scored 93% on public poster presentation grades.* Students scored on average 90% on the rubric's question, “Did the presenter explain the poster clearly and knowledgeably?” |

3. Demonstrate the ability to use digital technology to analyze and process data and information and develop new information.

| Oral Presentations | Students scored 93% on presentation grades.* |
| Poster Production | Students scored 93% on public poster presentation grades.* |

4. Demonstrate the ability to use digital technology to present results and other relevant content, including textual and graphical forms.

| Oral Presentations | Students scored 93% on presentation grades.* |
| Poster Production: specifically the use of technology to upload the correct file type needed by the Printer. | Approx. 66% had problems with the files sent to us that needed to be fixed before sending to the Printer. |

5. Demonstrate the ability to use digital technology to communicate.

| Oral Presentations | Students scored 93% on presentation grades.* |
| Poster Production | Students scored 93% on public poster presentation grades.* |

6. Improve comfort levels of students giving

| Student survey given on line in class to all students. | 64% of the total students responded they felt more comfortable giving oral presentations |
Instruments used to Assess SLOs

**BIOL141L, BIOL142L Oral Presentations:** There were four group presentations given in BIOL141L. Presentations were in group form to start students in a more “comforting” situation to give talks. The final presentation of BIOL141L was an individual oral presentation. In addition, in BIOL142L, students presented three times with one individual presentation and two group presentations (the final presentation was on their findings of their research project). So for the two semesters students presented individually twice and in groups six times. Students were instructed that we expected them to present a clear summary using their data and library resources and following all proper citation formats as they would do in a writing assignment.

**BIOL142L Final Research Project- Group Oral Presentation and Poster Session to Public**

Group of students (2-4) worked on independent research project through the latter 2/3 of the semester and presented results to the class and then to the public in a “Poster Bash” open to the public and review of faculty from the department not teaching the class.

**BIOL142L Journal of search strategy for background literature**

As part of their Research Laboratory Notebook they were to keep a journal on the strategy they were using to find sources of information for laboratory reports and their final research project.

**Pre-Instruction Before Grading**

Maintaining consistency of grading was essential since there were 13 sections and seven instructors involved in this course. A rubric for the oral reports was developed at the beginning of the fall 2013 semester and used with some revisions in the second semester to allow students know what was expected and to assist instructors in grading uniformly across sections.

In addition to the rubric in each semester a lecture was given by the instructors using the rubric to review on how to give a presentation (i.e. items like need to not use notes, looking at audience, being audible, types of presentation slides, use of citations, etc.) were reviewed.

A rubric was developed at the beginning of the second semester for the final research project poster presentation. In addition to this rubric used for grading, faculty from the Biology Department reviewed a sample of 20 or so posters on the final day of class.
In addition to the rubric a lecture was given that covered what is needed in a layout for a poster and what important items need to be addressed (like size of print, limited space to tell the story, etc.). In a second lecture the classes went through the process of creating their first draft of the poster so that they understood the technical needs of the powerpoint file needed to send to the printer. Example of posters were shown to them also and uploaded to the Angel course site.

**Use of Assessment Information for the Future**

Overall each instructor saw increase in comfort by the students in giving oral presentations during the course of the two semesters. At the beginning most reported their students were particularly nervous and tended to attempt to use note throughout the talk. However by the second semester, students were noticeably more comfortable and most would not use notes throughout the presentation. The scores of oral presentations represent pooled data from 11 of the 13 sections and show that by the second semester the average scores of presentations were in the low 90% range. Looking at the second semester data students scored increasing better as the semester moved along and generally had the highest scores at the last presentation.

The presentation scores and the increase in comfort level (student survey) results from this first run of the revised general biology laboratory curriculum suggest to us that we are able to give the type of instruction needed to assist students in giving an oral presentation. We focused more on group presentations even in the second semester since we were unsure of the time constraints of the course but now realize that we have the time to fit in more individual presentations. This will provide a more accurate assessment of the oral presentation outcomes.

The scores for Poster presentations also were in the 90% range suggesting the students were well prepared for this item. The Poster presentation gave the students a chance to talk to the “public” an experience not received from in class presentations. The environment was made to resemble a conference as much as possible with even a second class presenting their posters also and was held in the atrium of the Loyola Science Center. We did use a somewhat random evaluation of posters by three faculty in the department (not involved in the course) and they used a standardized rubric to assess the posters. Their assessment in terms of “Did the presenter explain the poster clearly and knowledgeably?” showed that students asked scored 90% on this question.

While students did well in the presenting of information particularly in the poster presentation they still appear to have problems with the technical side of presentations. Approximately 66% had problems with getting their file in the proper format when sending to the instructors and they had to be fixed before sending to the Printer. In the future we plan to spend more time on the formatting to minimize this problem and have students send in a draft earlier than they did this year.

Locating resources was another key item we hoped to impress on our students particularly when designing their oral presentations or poster presentation. One way to track this was the requirement for them to keep a journal of the strategy they used to find resources (what search system did they use, database, etc.) and resources used. As can be seen by my section’s assessment only
40% kept track of their strategy. In the future, this needs to be checked earlier in the semester so that students know it is important to place into their laboratory notebooks.