Academic Year: 2015-2016

Course Name/Catalog Number: SCI 101

General Education Component: First-Year Seminar

UULO(s) assessed this year:
- ☐ Intellectual Breadth/Life-long Learning
- X ☐ Inquiry/Critical Thinking
- ☐ Communication
- ☐ Global/Multicultural Knowledge and Awareness
- ☐ Citizenship & Ethics

Other learning outcomes assessed this year:

Process: Please provide a brief narrative of the assessment process for this course. Include a description of the type of student work assessed (e.g., research papers, exams, etc.), the number and roles of people involved in the process, any tools used for the assessment (e.g., checklists, rubrics, etc.), and how student learning was evaluated.

In SCI 101, students work in teams of two researching a scientific question throughout the semester. At the end of their research, they create a scientific poster and present it to the class. The UULOs were assessed in 10% of randomly-selected student posters from each SCI 101 section for Fall 2015 (n = 26) and Spring 2016 (n = 16). The UULOs were assessed using the grading rubric on a scale of 2 points (Beginning), 3 points (Developing), 4 points (Proficient), to 5 points (Mastered). The posters were assessed by Alison Sloat, the SCI 101 coordinator, using the rubric that is used to grade the student posters. The seven Critical Thinking UULOs (2.1: Identifying a Problem; 2.2: Documentation of Sources; 2.3.1: Analysis; 2.3.2: Interpretation of Data and Results; 2.4: Analysis from Perspectives; 2.5: Identification of Future Work; and 2.6: Conclusions) are specified in the rubric and individually assessed. The scores were compared to previous semester's scores.

Results: Please provide a brief summary of the results of your assessment process. Include both what you learned about your students’ achievement of the specified learning outcomes and what you learned about the assessment process itself, if applicable.

Mean student achievement on the Critical Thinking UULOs between Fall 2014 to Spring 2016 is shown in Figure 1. Because of the demographics of the students, comparing Fall-Spring student scores is not as effective as comparing Fall-Fall student scores. In Fall 2015, students did not perform as well as the previous Fall 2014, particularly in the data analysis, conclusions, and future work categories. Some additional changes were made in the course in Spring 2016 including the implementation of Pre-Tests across all sections. These Pre-Tests are designed to spur the interest
of the student and to help in retention of the information taught during lecture. Student performance in the data analysis, conclusions, and future work improved in Spring 2016 after the implementation of these Pre-Tests in all sections. Students still struggle and could use improvement in identifying future research and work that is needed (UULO 2.5). This is a crucial component of the research process because it shows the students clearly understand the current state of research in that particular field of study, they can think critically about the current state of the research, and they can identify data gaps and/or future research that is needed in the area. This is a component of the course that will be specifically addressed in greater detail starting Fall 2016.

Figure 1. SCI 101 performance on Critical Thinking UULOs from Fall 2014 to Spring 2016.

Conclusions: Please describe how the results of this assessment process might be used to revise instruction in this course and/or refine the assessment process in future years.

After analyzing the current state of research, students still need improvement in identifying future research needs. Starting in Fall 2016, we will focus on this UULO in greater detail. We will also continue to work on improving UULO 2.2, which is the proper documentation of sources. In
certain sections, students in the Spring semester consistently made the same mistakes, which will be addressed for Fall 2016.

**Appendices:** Please attach any applicable assignment descriptions, rubrics, results tables, or graphic representations of results.