2022-2023

Biology BA/BS

Demonstrate Mastery of Core Concepts in the Field of Biology

Goal Description:

Students completing the core courses required for a BS will demonstrate knowledge of core concepts of cell biology, biodiversity, genetics and evolution.

Providing Department: Biology BA/BS

RELATED ITEMS/ELEMENTS

RELATED ITEM LEVEL 1

Mastery Of Core Curriculum
Learning Objective Description:

Students completing the core courses required for a BS will demonstrate knowledge of core concepts of cell biology, biodiversity, genetics and evolution.

RELATED ITEM LEVEL 2

Mastery of Core Curriculum
Indicator Description:

All students, regardless of concentration area, take the same core courses (BIOL 1406, BIOL 1407, BIOL 3450, and BIOL 4361). Faculty teaching each of these courses will agree on a set of embedded questions to include on the final exam. Students will correctly answer these embedded questions.

Criterion Description:

Students will score 70% on the embedded questions.

Findings Description:

During the past year, we started to develop the standard questions. Unfortunately, we were not able to fully integrate these questions into all sections of the core courses. For those sections that we were able to, students scored at or above 70% in BIOL 3450 and BIOL 4361. However, students scored below 70% in BIOL 1406 and 1407.

RELATED ITEM LEVEL 3

Mastery of Core Curriculum
Action Description:

Continue to implement the core questions in all sections of BIOL 1406, 1407, 3450, and 4361 and track students scores. In courses where students are falling short of 70%, assess where the failure lies and implement strategies to improve.

Demonstrate an Understanding of Scientific Reasoning and Critical Thinking

Goal Description:

Students completing an undergraduate degree in the Biological Sciences will demonstrate an understanding of scientific reasoning and the ability to think critically.

Providing Department: Biology BA/BS

RELATED ITEMS/ELEMENTS

RELATED ITEM LEVEL 1

Scientific Reasoning and Critical Thinking
Learning Objective Description:

Students completing an undergraduate degree in the Biological Sciences will demonstrate an understanding of scientific reasoning and the ability to think critically.

RELATED ITEM LEVEL 2

Scientific Reasoning and Critical Thinking

Indicator Description:

All students are required to take BIOL 2110 (Becoming a Professional Biologist) and BIOL 4110 (Undergraduate Seminar). Among other things, in BIOL 2110 acquire professional skills such as conducting literature searches and learning to read scientific literature, while BIOL 4110 reinforces important biological concepts through the critical reading of primary literature concerning the instructor's topic of choice. In both courses, students will take the common COSET Critical Thinking/Writing exam (BIOL 2110 students will serve as the pre-test population and BIOL 4110 students will serve as the post-test population).

Criterion Description:

Student scores will improve by 50% from the pre-test to the post-test.

Findings Description:

During the past year, COSET has decided to not use the Critical Thinking/Writing exam anymore. Therefore, we have no data to report.

RELATED ITEM LEVEL 3

Scientific Reasoning and Critical Thinking

Action Description:

As a department, we will need to assess whether we want to continue to assess critical thinking as part of our degree plan. If so, we will need to come up with an assessment tool.

Student Engagement in Undergraduate Research

Goal Description:

Students will engage in the process of scientific discovery by participating in faculty mentored research.

Providing Department: Biology BA/BS

RELATED ITEMS/ELEMENTS

RELATED ITEM LEVEL 1

Student Engagement in Undergraduate Research

Learning Objective Description:

Students will engage in the process of scientific discovery by participating in faculty mentored research.

RELATED ITEM LEVEL 2

Undergraduate Research

Indicator Description:

Students will enroll in BIOL 4095: Undergraduate Research Topics and participate directly in faculty mentored biological research, with the goal of producing publishable research and/or quality research that can be presented at scientific conferences.

Criterion Description:

50% of each graduating class will enroll in BIOL 4095. Using the departmental Faculty Evaluation Instrument, that in part documents faculty engagement with undergraduate researchers, the department chair will track the number of peer-reviewed publications and presentations at scientific conference on which our undergraduate students appear on the author line.

Findings Description:

24% of the graduating class of BA/BS in Biology participated in research that resulted in publications or conference presentaitons.

RELATED ITEM LEVEL 3

Undergraduate Research

Action Description:

Having fallen well short of our desired goal, we will need to assess how to improve the research experience for undergraduates to increase the number of publications and presentations. We will form a committee to identify the barriers to publications/presentations that faculty/students are facing and come up with possible interventions.

Update to Previous Cycle's Plan for Continuous Improvement Item

Previous Cycle's Plan For Continuous Improvement (Do Not Modify):

Closing Summary

We did not hit all of the benchmarks for this degree. We will discuss how we can improve moving forward by identifying areas where improvement is needed and devise strategies to hit each benchmark.

Update of Progress to the Previous Cycle's PCI:

We are continuing to discuss strategies on how to hit each of the benchmarks for the degree plan. We will form a committee to specifically address this.

New Plan for Continuous Improvement Item

Closing Summary:

We did not hit the benchmarks for this degree plan. We will continue to investigate strategies on improving each of the metrics for the degree plan.