Assessment: Course Four Column

Fall 2017

El Camino: Course SLOs (NSC) - Biology

ECC: BIOL 11:Fundamentals of Zoology

Course SLOs	*Assessment Method Description*	*Results*	*Actions*
SLO #3 Content Knowledge (Mitosis) - The student will be able to describe key activities in cell replication. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2017-18 (Fall 2017) **Input Date:** 11/08/2013 **Inactive Date:** **Comments::**	**Exam/Test/Quiz -** a common set of 5 questions were used to assess all Biology Program content knowledge of Mitosis. **Standard and Target for Success:** 70% of students will score a 70% or higher on the assessment. **Additional Information:** **Related Documents:** Mitosis Assessment 2017.doc	**Semester and Year Assessment Conducted:** 2017-18 (Fall 2017) **Standard Met? :** Standard Not Met Total number of students who took assessment : 31 1) 5 out of 31 students scored 5/5, therefore 100% on the mitosis assessment 2) 11 out of 31 students scored 4/5, therefore 80% on the mitosis assessment a) 5 of those students missed Question #2, which was to match Prophase to the correct figure b) 3 of them missed Question #4, which was to choose the incorrect statement about mitosis. 2 of them chose the answer of cells will replicate DNA during the S phase of the cell cycle in preparation for mitosis, the other person chose the answer of the daughter cells are identical to the original cell. c) 3 missed Question #5, which asks to choose the statement(s) that properly describes the events of prophase. 2 chose the answer of E, in which all the	**Action:** The results suggest that students need more description of Prophase in the sequence of events of mitosis, this could be both visually and descriptive significance. More time should be spent on distinguishing this phase from a non-dividing cell using pictures and animations or videos. (02/26/2018) **Action Category:** Teaching Strategies

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		statements A, B. and C were correct as being events of prophase. 3) 9 out of 31 students scored 3/5, therefore 60% on the mitosis assessment a) 3 got both Question #2 and #5 wrong, which both had to do with prophase b) 3 got both Question #4 and #5 wrong. Question #4 was to choose the incorrect statement about mitosis and Question #5 was to choose the correct statement that properly describes the events of prophase. 4) 6 out of 31 students scored 2/5, therefore 40% on the mitosis assessment (02/26/2018) **% of Success for this SLO:** 50 **Faculty Assessment Leader:** Sanda Oswald **Faculty Contributing to Assessment:** Nancy Freeman **Related Documents:** Mitosis Assessment 2017.doc	

ECC: BIOL 12:Field Zoology

Course SLOs	*Assessment Method Description*	*Results*	*Actions*
SLO #2 Tools - The student will be able to use the compound and dissecting microscope to observe cells and microorganisms. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2017-18 (Fall 2017) **Input Date:** 07/01/2013 **Inactive Date:** **Comments::**	**Presentation/Skill Demonstration -** Students will use a compound and a dissecting microscope, and will prepare observe specimens. **Standard and Target for Success:** 70% of the students will demonstrate 70% of the skill level in using a microscope. **Additional Information:** Use the kinds of specimens described in the rubric, including preparing a wet mount, and through the use of low power and high power magnification settings. **Related Documents:** Bio 12 Fall 2017 SLO Results on Scope Use.xls	**Semester and Year Assessment Conducted:** 2017-18 (Fall 2017) **Standard Met? :** Standard Met We look for 70% of the students to earn a score of 70% or more on the assessment questions. Reviewer's Comments One section of Bio 12 Field Zoology was administered an assessment in the last exam cycle of the Fall 2017 semester. Standard Met 12/8/17 The students demonstrated a pretty firm grasp of how to handle a compound microscope, prepare slides, and find specimens under varying conditions. Twenty-two of the students enrolled took the assessment (23 grades were submitted for this section). Fifty percent of the students earned the highest score (demonstrated the whole range of steps) for scale of 1 to 4 on the rubric for Compound Scope use. When adding another group of students, those who earned/demonstrated the scope handling skills of 3 out of 4 on the rubric, about 72% successfully used the scope. There were two lower rankings. Three of the students could only demonstrate competency with a scope at the 2nd rubric, and still 3 more could only manage the first level of the rubric scale. Thus, approximately a quarter of the class was still having trouble with scope use as demonstrated during the assessment. Looking back on this, it bothers me that they didn't perform that well, and that there must be more I can construct of interacting hands-on moments in the midst of all the other curriculum content, lectures, One bright side, was that I also gave an assessment focused on the use of dissecting scopes, and had nearly 100% success for use of a dissecting scope (essentially, 22 of the 23 people demonstrated dissecting scope competency to a satisfactory level). I can think of several reasons why this kind of result occurred. I can also offer several ideas for reflecting on	**Action:** I will incorporate more checklists of slides for compound scopes, and a standard specimen or two for the dissecting scope. I will look at their skill level around the end of unit 2 before we get to larger specimens (03/02/2018) **Action Category:** Teaching Strategies

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		scope use as a part of this particular, focused field biology course. Additionally, I can think of a few ways to seek a better embedded action of repetition to try in the subsequent course in fall of 2019. To begin with, I waited until the 4th practical, right near the end of the semester to administer the assessment. The area of focus for content, and how that content can be studied, changes throughout the conceptual and hands-on activities for the curriculum. The introductory unit includes a small bit on molecules, unicellular life, including phyto and zooplankton species, but quickly moves on to more familiar, multicellular animal phyla. By units 3 and 4, the students are essentially not using a scope because we are on field trips, or the specimens were are dissecting, comparing, or studying are far too large for a compound scope, and to a degree, even for a dissecting scope (sharks, lizards, frogs). So perhaps I should have, or unofficially in a future class, provide an assessment more in line with part of units 1 and 2, and so, maybe give the assessment around week 8 – 10 of the semester. Perhaps more importantly, I need to contrive some more directed, one-on-one interactions and confirmations of student practice with the scopes in those first units. A few slides sets, such as for early developmental/immature stages (jellies, anemones, molluscs, crustaceans, and others) could allow me to more directly interact with students observing the specimens and getting that enhanced skill development with compound scopes and dissecting scopes. Also, I want to make sure they have skills with dissecting scopes as well. So having a standard assessment material set (and to unofficially in non-assessment years to keep checking) can help me to orchestrate more practice, feedback, and trouble-shooting for the skills for these tools of science. (12/8/2017) (03/02/2018) **% of Success for this SLO:** 72 **Faculty Assessment Leader:** Bryan Carey **Faculty Contributing to Assessment:** Bryan Carey	

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SLO #3 Content Knowledge (Energy Flow) - Students will use basic energy principles to explain the flow of energy in living systems, such as those that occur in the cellular metabolic pathways of photosynthesis and cell respiration, or the relationships observed between autotrophs and heterotrophs in ecosystems. **Course SLO Status:** Active **Course SLO Assessment Cycle:** 2017-18 (Fall 2017) **Input Date:** 11/08/2013 **Inactive Date:** **Comments::**	**Exam/Test/Quiz -** Apply a series of 5 questions, including at least one image used as reference, to address issues of energy flow and trophic levels form producers to consumers to decomposers **Standard and Target for Success:** I expect 70% of the questions or more will be correctly answered by the students on the exam. **Additional Information:** Make sure the image is clear, and perhaps even establish a projected image on the screen during the exam when the SLO questions are interpreted and responded to. **Related Documents:** Fall 2016 Field Zoo Bio 12 Section 1106 w SLo info to provide for assessment report.xlsx Bio 12 draft for SLO responses and report from Fall 2016 should be good to upload.docx	**Semester and Year Assessment Conducted:** 2017-18 (Fall 2017) **Standard Met? :** Standard Met The student responses conveyed a solid understanding of the content that was assessed. Nearly all of the questions seemed very clear and earned high responses (85 % or higher for students who selected the correct answers for 4 of 5 questions). The one question that had the most incorrect responses was a bit puzzling, for the range of incorrect choices were nearly all possible multiple choice responses. Thus the signal is not clear as to why a number of the students missed that one question…it is not as if the correct response was A and all the students with an incorrect response were consistently choosing, say the E, as the answer choice. Reflections from both myself and my colleagues allow us to think of some ways to rephrase those questions for better clarity, and to make sure more details related to that particular matter and energy content are further elucidated in future semesters. For example, if more time was spent lecturing on nitrogen fixing bacteria, and less time spent on eutrophication, then that might help explain students confusing runoff as only something that could happen in the phosphorous cycle and not as a consequence of the nitrogen cycle. One possible way could be to include one or more embedded images, such as the successful use and demonstration of an image for one of the current SLO questions. One solution would be more clarity in aspects of nitrogen cycle and phosphorous cycle, as well as a further emphasized explanation of the difference between nutrient and matter cycling within a system, while energy (usually light energy) flows through a system via handouts and/or homework questions. (12/7/2016) Action Category Teaching Strategies (03/02/2018) **% of Success for this SLO:** 85 **Faculty Assessment Leader:** Bryan Carey	**Action:** One solution would be more clarity in aspects of nitrogen cycle and phosphorous cycle, as well as a further emphasized explanation of the difference between nutrient and matter cycling within a system, while energy (usually light energy) flows through a system via handouts and/or homework questions. (12/7/2016) (03/02/2018) **Action Category:** Teaching Strategies

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