ALAMO COLLEGES

PALO ALTO COLLEGE

Program or Certificate: Pre-Nursing, Associate of Science
Academic Year Assessed:
Program Lead Faculty: Sara Wilkins and Linda Ibarra-Gonzales
Department Chair: George E. Hagen

#1	**Apply the Scientific Method to the processes of learning, critical thinking, and problem solving.**
	Assessment Measure for this Outcome: Assessment of this measure is obtained from the completion of the **Unknown Project** in Biology 2420, Microbiology for Nursing and Allied Health, a sophomore level capstone course for pre-nursing majors**.** The **Unknown Project** assesses a student's ability to identify an unknown microbe. Students are expected to use their knowledge of the characteristics of microbes and laboratory skills in the identification process. Students submit a written report detailing the process and identity of the microbe. A matrix is used to evaluate.
	Courses in the degree plan that address this outcome: **BIOL 2420**
	Achievement Target for this Measure: 70% success
	Results: Tallying data from Spring 2014 and Summer 2014, including 4 total classes, the average grade received on the Unknown Project paper was a 79.3 (n = 59 students). Eighty-one percent (81%) received a grade over 70, while 19% received a grade below 70. Two students did not submit an Unknown Project paper; therefore, these should be treated as missing data sets.
	Target Met or Not Met: Met
	New Action Plans: There will not be a change to this learning outcome. Faculty of Microbiology feel this is an excellent method to analyze the application of the scientific method to the process of learning, critical thinking, and problem solving. While 19% of the students did receive a grade below 70, some of these students did not follow the clear instructions regarding the format of the paper, bibliography guidelines, submitting the paper on time, etc., which was all outlined in the detailed scoring matrix/rubric. Microbiology faculty will encourage the students to submit the Unknown Project on time to possibly alleviate the issue of missing data sets in the future, and reinforce the scoring matrix/rubric and discuss with the students the details of how the project will be assessed. Not submitting the Unknown paper also adversely affects their grade tremendously. Microbiology faculty will continue to use the same scoring matrix/rubric, same microbial organisms, and same biochemical tests. We will also still collaborate on the calendar and due dates.
	Evaluation of Previous Cycle's Action Plans: Microbiology faculty have collaborated and agreed upon the same scoring matrix/rubric to use for all classes so we are consistently using the same grading parameters. The Microbiology faculty also follow the same calendar with due dates, and have also agreed to use the same microbial organisms and biochemical tests to analyze the unknown organisms.
#2	**Communicate clearly and in a way that reflects knowledge and understanding of the human body and demonstrates the ability to adapt information to different audiences and applications.**
	Courses in the degree plan that address this outcome: **BIOL 2402**
	Assessment Measure for this Outcome: Assessment of this goal is obtained from a **written research paper** assigned during A&P II, a sophomore-level capstone course for pre-nursing majors**.** The paper assesses a student's ability to apply the anatomical and physiological concepts learned in A&II to a pathophysiological

	condition. Students are expected to research scholarly literature and adapt this information as per a set of guidelines using the APA method. A matrix is used to evaluate.
	Achievement Target for this Measure: 70% success
	Results: Data was collected from three of the four Spring 2014 laboratory sections. The total number of students from which grades were collected is 45 (n = 45). Forty of the forty-five students (89%) received a 70 or above on this assignment.
	Target Met or Not Met: The target was met.
	New Action Plans: A new action plan is not necessitated.
	Evaluation of Previous Cycle's Action Plans: The Anatomy and Physiology faculty standardized the guidelines for the completion of the research paper several years ago. However, prior to the Spring 2014 semester, the faculty collaborated on the design of the grading rubric for the research paper. This is used by all of the Anatomy and Physiology faculty to grade the research papers.

#3	**Interpret graphs, tables, and images of anatomical and physiological data to demonstrate analysis skills.**
	Courses in the degree plan that address this outcome: **BIOL 2402**
	Assessment Measure for this Outcome: Assessment of this goal is obtained from successful completion of several questions as part of three laboratory practicals administered throughout the semester. Students are presented with EKG tracings, enzyme assay, blood typing and respiratory volume data and expected to provide an analysis on the basis of a set of questions.
	Achievement Target for this Measure 70% success of the specific questions on the lab practicals
	Results: A total of eight questions addressing the analysis of EKG tracings, enzyme assays, blood typing and respiratory volumes were part of two of the three laboratory practicals in the Spring 2014 semester. (It should be noted that the third practical does not cover activities relative to the data that was collected.). The following are the results for each question: Question 1 (blood typing): 71% success; Question 2 (EKG tracing): 91% success; Question 3 (respiratory volume): 51% success; Question 4 (enzyme assay): 9% success; Question 5 (enzyme assay): 64% success; Question 6 (enzyme assay): 62% success; Question 7 (enzyme assay): 46% success; Question 8 (enzyme assay): 42% success. In summary, 70% success was met in only 25% of questions.
	Target Met or Not Met: Not met.
	New Action Plans: It is speculated that the time given to analyze the enzyme assay and respiratory volume data is insufficient. For example, three of the five enzyme assay questions are part of a question set of four items, as are the other two questions. The Anatomy and Physiology faculty have agreed to reduce the question set to include only two questions rather than four. This should provide adequate time to analyze the data.
	Evaluation of Previous Cycle's Action Plans: The laboratory practicals have all been standardized; however, questions may be changed to reflect different data or reworded for clarity. Thus, all sections use the same practical questions, consequently, all students are tested over the same content. Faculty have the liberty to make any changes to the standardized test as long as the new questions address the standardized objectives for the content. This standardization process of the laboratory practicals, laboratory objectives as well as laboratory practical review sheets, and laboratory assignments will allow us the Anatomy and Physiology faculty to determine if the proposed new action plan will increase the success rate.
#4	**Correlate laboratory techniques and technology with Science concepts.**

ALAMO COLLEGES

PALO ALTO COLLEGE

	Courses in the degree plan that address this outcome **BIOL 2420**
	Assessment Measure for this Outcome: Assessment of this goal is obtained from the completion of laboratory skills on the first lab practical in Biology 2420, Microbiology for Nursing and Allied Health. The completion of selected essential laboratory skills provides students an opportunity to demonstrate their abilities in using **the microscope** and incorporating **aseptic technique during a Gram Stain and creating a quadrant-streak plate,** critical techniques required in any laboratory or clinical setting in a health-related profession. Evaluation is accomplished through the hands-on demonstration of microscope use and using aseptic technique during the performance of a Gram stain and creating a quadrant-streak plate free of contaminants.
	Achievement Target for this Measure 70% success of the skill demonstrations for the lab practical
	Results: Tallying data from Spring 2014 and Summer 2014, including 4 total classes, the average grade received on the Laboratory Skills portion of Practical 1 in Microbiology was an 81.5 (n = 61 students). Eighty-five percent (85%) received a grade over 70, while 15% received a grade below 70. Laboratory skills included performing a quadrant-streak plate correctly using aseptic technique and performing a Gram stain using aseptic technique, which included the ability to properly mount and view the Gram stain under the microscope.
	Target Met or Not Met: Met
	New Action Plans: There will not be a change to this learning outcome. Faculty of Microbiology feel this is an excellent method to analyze the appropriate use of laboratory techniques and technology with Science concepts. While 15% of the students did receive a grade below 70, all students had a study guide for the practical that listed these techniques that would be demonstrated on the practical so they could prepare ahead of time. Also, students were given several opportunities to repeatedly practice these techniques during lab time before the practical, and students were reminded several times by their Microbiology lab instructor about having to perform these skills on the practical. Microbiology faculty will continue to use the same practical skills techniques that will be graded using the same grading format across all the Microbiology 2420 lab courses. We will also still collaborate on the practical review sheet, calendar and due dates.
	Evaluation of Previous Cycle's Action Plans: The Microbiology faculty have collaborated about using the same practical lab test with the same practical skills to perform. The same answer sheet, same practical questions, same point values, same review study guide, and the same Microbiology lab calendar were used by all the Microbiology faculty.