

Crafton Hills College - Outcomes Assessment Report

General Education Outcome: Natural Science

Assessed: 2020-2021

Learning Outcomes Statement

Students successfully completing a course in this area will be able to apply a problem solving strategy such as the scientific method or other systematic process of inquiry and to recognize the contributions of science and technology in our world.

Means of Assessment (Measurement Method)

Students were assessed during either the Fall 2020, Spring 2021, or Summer 2021 semesters. Assessments occurred in 300 sections and resulted in a total of 6,338 assessments.

Summary of Evidence

Table 1: Number and Percent of students scoring 3 or Higher on the GEO.

GEO #	General Education Outcome	# 3 or higher	% 3 or higher
1	Students successfully completing a course in this area will be able to apply a problem solving strategy such as the scientific method or other systematic process of inquiry and to recognize the contributions of science and technology in our world.	5,152	81.29%

List of courses where outcomes were mapped to the GEO (28 Unique Courses).

ANAT-101		
ANAT-150		
ANAT-151		
GEOL-101		
GEOL-160		
MATH-995		
CHEM-151		
MICRO-102		
PHYSIC-251		

Use of Results/Proposed Actions – Individual Submissions

1	The ANAT program will continue to provide high-quality instructions and work with students' diversities to ensure that the target goals will continue to be met. The lead faculty will continue to work with and provide support to all adjunct faculty in this program.
2	All expectations and targets met.
3	Continue to monitor student progress and make modification where necessary.
4	Continue to try to make the assignments and understanding of content applicable to the online format.
5	Continue to try to make the assignments and understanding of content more applicable to the online format, at least for the background and lecture component.
6	Continue to try to make the assignments and understanding of content more applicable to the online format.
7	Encourage and practice the skill of critical thinking, via group activities, individual practice, homework, problem sessions.
8	I modified the labs into virtual labs that made labs more engaging and interesting. I intend to continue with this lab format. Students who made good use of office hours especially after the first exams in the course were able to subsequently improve their grades in the class.
9	In the school-closure model, students never received a microscope. However, microscopic measurements were done through online work and were demonstrated in live courses. I am counting this adaptation under the circumstances.
10	Many students did not complete Mastering Chemistry assignments. Will remind weekly of upcoming due dates and emphasize importance for course grade.
11	My instructions this Fall semester (2020) went pretty well considering all the uncertainties that came with hosting a hybrid online and in-person course. I was able to use zoom break rooms effectively for my virtual labs which made the labs a lot more interactive. The students tend to engage better when in small groups. The hybrid component also went quite well although in-person labs were cancelled for one week due to fire outbreaks close to campus. I was able to make adjustments to the course schedule that brought the class back on track. I will continue with similar teaching methods next semester, and I will add break rooms to lectures where feasible to get students to interact more in the lectures.
12	Nearly expectations and targets met. This course met where exams were online and there was huge potential to cheat by using the internet. I rewrote the lab reports to include a lot more problems that students needed to do on their own and where they were most likely to not find the answers unless they posted them to a homework help site which was not permitted. I am not surprised by the outcome since I found many students were very good at looking up answers online rather than learning and applying the information presented. The lab reports did even the playing field for those students that did study. For Outcome 4, some students did not choose to come to office hours to have me help them on the lab assignments even though I let them know I was available and that it would be confidential. The problems were also discussed many times in class, and they did not listen or take notes as to what is expected nor read the instructions, nor reference their lecture notes that they should have completed. They were given many opportunities for

	help and did not seek it, I am at a loss as to what I could have done differently, these are chemistry students wanting to become Nurses and dental hygienists.
13	Require students to attend office hours.
14	<p>Revise SLOs, update repetitious ones and include new ones to focus on other aspects of the course, not solely the laboratory.</p> <p>Microbiology requires more than analyzing the Unknown Project grandfathered in from professor [NAME] course design. I propose integrating additional ILOs (2, 5, possibly 4). As well as integrate Communication and Skillset PLOs. This will ideally require recrafting assignments and content to be able to measure these.</p>
15	Targets met.
16	The ANAT program will continue to provide unbiased high-quality instructions and work with students' diversities to ensure that the target goals are met. The lead faculty will continue to work with and provide support to all adjunct faculty in this program.
17	The Microbiology Series have been largely successful at completing the goals of training students beyond the classroom. Proposals arise on increasing retention beyond the first or second term (recruitment and retention) and regarding expanding the basic levels of research performed due to limited materials (financial support for materials).
18	There are only two enrolled in this section this semester.
19	This class is generally more engaged, asks many questions, and attends SI regularly.
20	This is a very useful method of evaluating the effectiveness of the teaching strategies and communication between the teacher and students which should be continued since it helps the teacher adjust his/her teaching methods to better the learning outcome of the students.
21	This section did not meet the target goal set by this program of 70.0%. There are multiple factors that may contributed to this. As remote synchronous format continues for the next semester, this program will focus on the use of additional CHC resources (e.g. tutoring center) to ensure that the target goal is met for the future.
22	This section did not meet the target goal set by this program of 70.0%. There are multiple factors that may contributed to this. As remote synchronous format continues for the next semester, this program will focus on the use of additional CHC resources (e.g. tutoring center) and offer of assistance from the lead faculty with the instructor of this section to ensure meeting target goal of this program.
23	This section did not meet the target goal set by this program of 70.0%. There are multiple factors that may contributed to this. As remote synchronous format continues for the next semester, this program will focus on the use of additional CHC resources (e.g. tutoring center) and offer of assistance from the lead faculty with the instructor of this section to ensure meeting target goal of this program.
24	This was a completely online course which means they did not work in lab in person. The one SLO that was not met was one that pertains mainly to lab. I'm not too worried about that. I will simply emphasize more analysis in the next semester.
25	<p>To increase student success:</p> <p>- I will spend more time with students on the project's outcomes, methods, and time frame</p>

	<p>for completion.</p> <p>- This project incorporates information students learned during the semester. Developing my overall curriculum will prepare students to</p> <p>problem solve and think critically when completing this project.</p>
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