Insert Academic Degree Name Here

Annual Program Report Template

Year:	2021-2022
Program:	Geology
Contact Person (include email & phone#)	Joseph Kruger, krugerjm@lamar.edu, 880-8233

Summary of Continuous Improvement Efforts since Last Report

Provide a brief description of how assessment results have been used for program improvement. Point to a specific example of how an assessment provided the program with data it could use for improvement and what that improvement was, if possible, also show evidence of the improvement. You may look at data from the two previous academic years to support this case.

Respond here:

For GEOL 3450 Petrology Lab, it was decided that the students may have had too many different types of rocks to identify for each of the three rock types. Because of this, the instructor decided to ask the students to identify a smaller number of rocks for each rock type and concentrated on the most common and most important rocks in each rock type. The 2022-2023 assessment of this lab should determine if the action plan is working or needs further modification.

We will not be able to implement an action plan for GEOL 4420 Paleontology because the instructor passed away during the semester he was teaching the course. The class was completed by another instructor that was not a Paleontologist, so we believe that this is in part the reason the students did not meet the target set. We can not modify the lab at this time because we have nobody to teach the course yet. We are currently searching for a Paleontologist and it is likely that the new faculty member will teach the lab differently. Therefore we will wait on the next assessment cycle after the course is taught again to determine what to do.

Will also consider raising the target to 80% Fair or better in each listed skill in the 2023-2024 assessment plan.

Program Highlights Since Last Report

Identify and briefly discuss any programmatic curriculum changes made since the last report (e.g. new courses, course changes, SLO changes, course deletions).

Respond here:

No programmatic curriculum changes made. Some courses used in the skills assessment may not be used every year due to course rotations, or no Geology students in the courses that year.

Table 1. Assessment Results and Analyses for Current Cycle.

STAGE 1: PLAN				STAGE 2: DO		STAGE 3: STUDY
Departmental Student Learning Goal	**Program Student Learning Outcome**	**Assessment**	**Assessment Method/Location**	**Benchmark Expectations**	**Data Results**	**Actions/Goals Based on Data Results*** What do the data tell you? How will you use this data? How were data from the last cycle used to make changes during this cycle, and What were the results of those changes?
No goals set.	Outcome-1: Undergraduate Geology students will develop proficiency in critical thinking as demonstrated using geologic principles while solving geologic problems using various techniques such as microscopy, mathematics, graphical representations, computational interpretations, and identification of minerals, rocks, and fossils.	Each year we will use input from the following courses if they are taught that year: GEOL 2471, GEOL 3420, GEOL 3450, GEOL 4330, GEOL 4101 (Geophysics Lab), GEOL 4410, and GEOL 4420 to assess the students' geologic problem-solving skills (including critical thinking) in lab and elsewhere using the various techniques and data sets mentioned in Outcome 1.	Instructors of the selected courses will rank student performance of the various skills determined to be important for Outcome-1 on a rubric where each skill for each student is ranked as Very Poor, Poor, Fair, Good, and Exemplary, then entered into an Excel spreadsheet. The percentage of all the students falling into each ranking for each skill is then calculated.	The target is an expectation of 75% Fair or better in each listed skill category when averaged for all courses assessed for this outcome.	The skill that did not meet the target was "Identification of hand specimens of minerals, rocks, and fossils." Only 74% of students scored Fair or better on this skill. The two courses that did not meet the target of 75% Fair or Better were GEOL 3450 Petrology and GEOL 4420 Paleontology. The faculty member that taught these courses will be instrumental in developing and implementing an action plan	In the next faculty meeting at the beginning of Fall 2022, we will discuss ideas regarding ways to improve our Geology majors' ability to identify hand samples of minerals, rocks, and fossils. These ideas will be implemented in lab courses that require the students to identify hand samples. We will assess how well the ideas worked during the next program assessment cycle and modify if necessary. For GEOL 3450 Petrology Lab, it was decided that the students may have had too many different types of rocks to identify for each of the three rock types. Because of this, the instructor decided to ask the students to identify a smaller number of rocks for each rock type and concentrated on the most common and most important rocks in each rock type. The 2022-2023 assessment of this lab should

					designed to improve the students' performance in this skill area. Students also scored below the target in "Mathematical analysis and solution of geologic problems." in GEOL 4330 Geophysics Lecture, but this did not occur in any other course so the average of all courses for this skill met the target. So, no action plan is needed for this skill.	determine if the action plan is working or needs further modification. We will not be able to implement an action plan for GEOL 4420 Paleontology because the instructor passed away during the semester he was teaching the course. The class was completed by another instructor that was not a Paleontologist, so we believe that this is in part the reason the students did not meet the target set. We can not modify the lab at this time because we have nobody to teach the course yet. We are currently searching for a Paleontologist and it is likely that the new faculty member will teach the lab differently. Therefore we will wait on the next assessment cycle after the course is taught again to determine what to do. Will also consider raising the target to 80% Fair or better in each listed skill in the 2023-2024 assessment plan.
No goals set.	Outcome-2: Undergraduate Geology students will develop field skills as demonstrated by the ability to perform geologic mapping and data gathering.	Each year we will use input from the following courses if they are taught that year: GEOL 3420, GEOL	Instructors of the selected courses will rank student performance of the various skills determined to	The target is an expectation of 75% Fair or better in each listed skill category when averaged for all	The average of all courses assessed showed that for all the skills assessed 75% or more of the students scored	No improvement plan needed. Will consider raising the target to 80% Fair or better in each listed skill in the 2023-2024 assessment plan.

		3600, GEOL 4101 (Physical Geography & Geomorphology Lab), GEOL 4101 (Geophysics Lab), and GEOL 4410 as a forum to evaluate the students' field geology skills.	be important for Outcome-1 on a rubric where each skill for each student is ranked as Very Poor, Poor, Fair, Good, and Exemplary, then entered into an Excel spreadsheet. The percentage of all the students falling into each ranking for each skill is then calculated.	courses assessed for this outcome.	Fair or better for all the skills assessed.	
No goals set.	Outcome-3: Undergraduate Geology students will develop proficiency in oral and written communication of scientific thinking applied to geologic concepts as demonstrated through oral presentations and technical writings.	Each year we will use input from the following courses if they are taught that year: GEOL 4101 (Physical Geography & Geomorphology Lab), GEOL 3420, GEOL 3450, GEOL 4420, GEOL 4101 (Geophysics Lab) and GEOL 4301 (Geology Seminar) as a	Instructors of the selected courses will rank student performance of the various skills determined to be important for Outcome-1 on a rubric where each skill for each student is ranked as Very Poor, Poor, Fair, Good, and Exemplary, then entered	The target is an expectation of 75% Fair or better in each listed skill category when averaged for all courses and student researchers assessed for this outcome.	The average of all courses assessed showed that for all the skills assessed 75% or more of the students scored Fair or better for all the skills assessed	No improvement plan needed. Will consider raising the target to 80% Fair or better in each listed skill in the 2023-2024 assessment plan.

		forum to evaluate the students' communication skills. A second measure of this outcome will come from faculty assessments of their student researchers.	into an Excel spreadsheet. The percentage of all the students falling into each ranking for each skill is then calculated. For the second measure, faculty that have student researchers that are engaged in any communication exercises such as written reports, posters, or oral presentations, will be asked to evaluate those students.			

Table 2. Continuous Improvement Results Since Last Report

Stage 4: ACT		
Actions/Goals Based on Data Results **Copy last cycle's actions/goals and report on progress toward continuous improvement on those here.*	**Status** *C=Complete* *P=Progressing* *N=No Action Taken*	**Discussion of Status** *If C, describe efforts that led to accomplishment of actions/goals.* *If P, provide update on progress made toward accomplishing actions/goals and what tasks remain* *If N, discuss why action toward accomplishing actions/goals has been delayed and what work will be initiated toward accomplishment.*
Outcome-1: Based on initial results in the Fall semester of 2022 for GEOL 3450 Petrology Lab, having fewer samples for the students to identify, and review for the lab exam, has helped. The students are able to spend more time on the most important samples and thus have more time to understand what properties of the rocks identify an unknown as a certain type of rock. We will have to wait until the 2022-2023 assessment results to see if this actually resulted in improved performance on the identification skill. We will need to wait until we teach GEOL 4420 Paleontology again before we can determine if the fossil identification skill is still a problem. If it is, we will implement an action plan at that time. Will consider raising the target to 80% Fair or better in each listed skill in the 2023-2024 assessment plan.	P	For GEOL 3450 Petrology, there was some improvement seen, but we will wait for the 2022-2023 assessment to determine if there was enough improvement after the action plan was initiated. We will need to wait until GEOL 4420 Paleontology is taught again and assessed before we can say if an action plan is needed for the lab or not. Getting a new instructor may be the only thing that is needed.
Outcome-2: Will consider raising the target to 80% Fair or better in each listed skill in the 2023-2024 assessment plan.	N	

Outcome-3: Will consider raising the target to 80% Fair or better in each listed skill in the 2023-2024 assessment plan.	N	