Insert Academic Degree Name Here

Annual Program Report Template

Year:	2022-23
Program:	Earth Sciences
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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:

No action taken. However, the targets for all the outcomes will be increased from 70% fair or better to 75% fair or better to help highlight areas where improvements are needed. This will continue to increase every year until we identify these areas.

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:

For the 2023-2024 assessment year, we will increase the number of core and upper division courses in the Earth Science program that take at least one field trip. This is expected to help with the student's field skills.

For the 2023-2024 assessment year, the Communication outcome will use writing samples, oral presentations, and graphical assignments from more courses to assess the communication skills.

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?
The Goals of the Earth Science B.S. degree is to give majors a solid foundation in the Earth Sciences so that they understand the ongoing processes operating in the Lithosphere, Hydrosphere and Atmosphere. This will enable them to go on for advanced training in graduate school or in industry.	Solving Earth Science problems using basic scientific principles in the laboratory and elsewhere. Undergraduate Earth Science majors will develop proficiency in critical thinking as demonstrated by the use of scientific principles while solving Earth Science problems using various techniques such as map reading, using principles of chemistry and physics as related to the atmosphere, hydrosphere and lithosphere, and identification of minerals. The rationale behind this outcome is to determine if our students have the skill set needed to	Critical thinking	Means of Assessment for Outcome 1: Each year we will use input from the following courses if they are taught that year: GEOL 2471, GEOL 3390, GEOL 4360, GEOL 4370, and GEOL 4380 to assess the above skills. Participating faculty members teaching the above upper-division courses will be asked to complete the following rubric at the end of their courses. Results from	The target is an expectation of 70% Fair or better for each listed skill.	Target met. Six Earth Science majors took **GEOL 2471**, 4380, 3390, 4370 or **4360** this year, all scored Good.	Target was met, and the sample size is too small to evaluate potential changes adequately. However, the assessment plan for 2023-2024 will have an increase in the target to an expectation of 75% Fair or better for each listed skill to determine where improvement is most needed.

	critically evaluate earth science data and solve earth science problems.		each class will be changed to the percentage of students falling into each quality category (Very Poor to Exemplary). These percentages will be averaged for each skill and each category to determine the total percentage scores for each skill and quality category.			
	Solving Earth Science problems using basic Earth Science principles in the field. Undergraduate Earth Science students will develop field skills as demonstrated by the ability to use geologic and topographic maps and gather data. The rationale for this outcome is to determine if our students have the field skills necessary to gather geologic	Geology field skills	Means of Assessment for Outcome 2: Each year we will use input from the following courses if they are taught that year: GEOL 4101 (Oceanography lab), GEOL 4101 (Physical Geography & Geomorphology Lab), GEOL 4360 (Field	The target is an expectation of 70% Fair or better in each listed skill category. This would occur for example with a normal distribution of 10% Very Poor, 20% Poor, 40% Fair, 20% Good, and 10% Exemplary.	Target met. Six Earth Science majors took GEOL **2471**, 4380, 3390, 4370 or 4360 this year, two scored Good and four Fair.	Other than the earth science core courses described in the plan, more field trips on other core courses could benefit students' field skills. During the 2023-2024 academic year, we will try to offer core course field trips as time, money, and faculty availability permit. Faculty will also be highly encouraged to take at least one field trip in each of the upper-level required courses and electives as money and time permit. The assessment plan for 2023-2024 will also have an increase

	data, record this data, analyze it, and generate an interpretation.		Geology of Texas) as forums to evaluate the students' field skills. Participating faculty members teaching the above upper division courses will be asked to complete the following rubric at the end of their courses. Results from each class will be changed to the percentage of students falling into each quality category (Very Poor to Exemplary). These percentages will be averaged for each skill and each category to determine the total percentage scores for each skill and quality category. Very Poor			in the target to an expectation of 75% Fair or better for each listed skill to determine where improvement is most needed.

			Poor Fair Good Exemplary Field recognition of geologic landforms, structures, and materials Identifies geologic landforms, structures, rocks, and minerals correctly less than 60% of the time. Identifies geologic landforms, structures, rocks, and minerals correctly 60% to 69% of the time. Identifies geologic			

			landforms, structures, rocks, and minerals correctly 70% to 79% of the time. Identifies geologic landforms, structures, rocks, and minerals correctly 80% to 89% of the time. Identifies geologic landforms, structures, rocks, and minerals correctly 90% of the time or better. Ability to employ appropriate field techniques of data gathering Does not use appropriate field techniques			

			to gather field data. Rarely uses appropriate field techniques to gather field data. Occasionally uses appropriate field techniques to gather field data. Frequently uses appropriate field techniques to gather field data. Consistently uses appropriate field techniques to gather field data Ability to record field observations in a field notebook in the appropriate format Does not record field			

			observations in a field notebook correctly and in the appropriate format. Rarely records field observations in a field notebook correctly and in the appropriate format Occasionally records field observations in a field notebook correctly and in the appropriate format. Frequently records field observations in a field notebook correctly and in the appropriate format Consistently records field observations in a field notebook correctly and in			

			the appropriate format			
	Undergraduate Earth Science students will develop proficiency in oral and written communication of scientific thinking applied to Earth Science concepts as demonstrated through oral presentations and technical writings. The rationale for this outcome is to determine if our students have the ability to effectively communicate Earth Science concepts to other Earth Scientists, as well as non-specialists, orally and in writing.	Oral and written communication	Each year we will use input from the following courses if they are taught that year: GEOL 2377, and GEOL 3101 (Assistant geology lab instructor) and GEOL 4360, as forums to evaluate the students' communication skills. Participating faculty members teaching the above courses will be asked to complete the following rubric at the end of their courses. Results from each class will be changed to the percentage of students falling into each quality category (Very Poor to	The target is an expectation of 70% Fair or better in each listed skill category. This would occur for example with a normal distribution of 10% Very Poor, 20% Poor, 40% Fair, 20% Good, and 10% Exemplary.	Target met. Five students scored >70% Fair in each listed skill category. Three scored Good and two Fair.	More earth sciences courses should be included when evaluating written communication skills. This will be implemented in the 2023-2024 academic year assessment plan. The assessment plan for 2023-2024 will also have an increase in the target to an expectation of 75% Fair or better for each listed skill to determine where improvement is most needed.

			Exemplary). These percentages will be averaged for each skill and each category to determine the total percentage scores for each skill and quality category. Very Poor Poor Fair Good Exemplary Organization and clarity of Geol 1403 & 1404 lab assignments and other expectations of lab students Does not present organized and clear instructions			

			and expectations of lab students students Rarely presents organized and clear instructions and expectations of lab students Occasionally presents organized and clear instructions and expectations of lab students Frequently presents organized and clear instructions and expectations of lab students Consistently presents organized and clear instructions and expectations of lab			

			Writing Skills (clarity, sentence structure, spelling, grammar, reference citation) Does not demonstrate excellent writing skills. . . . . Rarely demonstrates excellent writing skills Occasionally demonstrates excellent writing skills Frequently demonstrates excellent writing skills Consistently demonstrates excellent writing skills			

			Ability to communicate orally (diction, elocution, & body language) Does not communicate effectively orally. . Rarely communicates effectively orally. Occasionally communicates effectively orally. Frequently communicates effectively orally Consistently communicates effectively orally. Ability to record data in a laboratory or field notebook in the appropriate format			

			Does not record data in notebooks accurately nor in the appropriate format. . . Rarely records data in notebooks accurately and in the appropriate format Occasionally records data in notebooks accurately and in the appropriate format. Frequently records data in notebooks accurately and in the appropriate format			

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.*
No actions taken	N	No action goal needed for this cycle but increase expectations next evaluation year may show areas that need improvement.
No actions taken	N	No action goal needed for this cycle but increase expectations next evaluation year may show areas that need improvement, including the number of classes that require or offer field trips.
No actions taken	N	No action goal needed, for this cycle but increase expectations next evaluation year may show areas that need improvement. Also, writing samples, oral presentations, and graphical products from more classes will be used to evaluate the students' oral, written, and graphical communication skill.