

PROGRAM REVIEW UPDATE 2016-2017

Program: Geology

Division: STEMPS

Date: 9-27-2016

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Audience: Deans, Vice Presidents of Student Services and Academic Services, All Planning and Allocation Committees. This document will be available to the public.

Purpose: To document significant program accomplishments, plans and needs between Triennial Program Reviews. This update should provide a snapshot of your program.

Uses: This update will be used to inform the campus and community about your program. It will also be used in the processes of creating Dean's Summaries, determining College Planning Priorities and allocating resources.

Time Frame: This update should reflect on program status during the 2015-16 academic year. It should describe plans starting now and continuing through 2017-18.

Topics: The first section of this Program Review Update focuses on general program reflection and planning. The second, third and fourth sections focus on reflection and planning regarding Student Learning Outcomes. Only instructional programs need to complete Sections 2, 3, and 4.

Scope: While this Program Review Update does ask for some analysis of data, detailed data reports in the form of appendices should be reserved for the Triennial Program Review.

Instructions:

- 1) Please fill in the following information as completely as possible.
 - 2) If the requested information does not apply to your program, please write "Not Applicable."
 - 3) Optional: Meet with your dean to review this document before October 10, 2016.
 - 4) Send an electronic copy of this form to the Program Review Committee Chair and your Dean by October 10, 2016.
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Part One: Program Snapshot

A. Have there been any significant changes to your program, your program's data or your program's needs since the previous Program Planning Update?

If there are any changes, describe the relevant information and its significance in the space below.

These changes might have originated from within the program or because of an external source (the institution or the state, for example). Possible sources of relevant information might include, but are not limited to, the following:

- Data generated by your program
- Data from the Office of Institutional Research (<http://goo.gl/Ssfik2>)
- CEMC Data
- Retirements
- State Mandates
- Labor Market Data
- SLO/SAO Data (<http://goo.gl/iU2yIZ>)

No new changes

B. What objectives, initiatives, or plans from the 2015 Program Review Update have been achieved and how? PRUs from 2015 are available here: <http://goo.gl/9iF3m9>

Implementation of revised laboratory exercises and formats, with emphasis on visual graphical analysis replacing and/or augmenting abstract arithmetic calculations. Additional emphasis on group work and experiential collaboration in the laboratory setting. Integrating geologic maps experiences with the experiential earth materials (rocks and minerals) exercises and labs, which has allowed students to learn both major facets of the laboratory course over the entire semester (instead of segregated first-half vs. second-half of the semester approach).

C. Discuss at least one example of how students have been impacted by the work of your program since the last program review update (if you did not already answer this in Question B).

Students have had the opportunity to work through lab activities through collaborative experiential question & explore self-directed processes. A major impact was that students were able to move at their own speed through the available activities, with some students moving rapidly and finishing an hour to an hour and a half ahead of other students who wanted & needed to explore more slowly and/or more thoroughly. Students were also allowed to learn and experience course topics over the entire semester, instead of segregated into individual labs and/or portions of the semester. For example, Geologic History Puzzles were, in the past, was the major focus of one lab, whereas now it is introduced slowly and over 5-6 labs.

D. What obstacles has your program faced in achieving objectives, initiatives, or plans?

As cited in the previous program review, one major problem continues to be activities which necessitate students sitting in one spot for longer than 3-5 minutes, because they then lose motivation, lose focus, migrate to long discussions on unrelated topics, etc, which all leads to low lab objective productivity. We are continuing to work on creating lab stations and a lab environment that keeps the students physically moving around the room, without becoming stationary for too long.

Another problem is the 'loud and chaotic' environment that is created when 25-30 students are broken into 10-12 groups all simultaneously working on different aspects of lab activities and concepts, and all working at their own speeds. From one viewpoint, this is a loud, boisterous, exciting environment of experiential student exploration and learning. From someone else's viewpoint, this is a messy, loud, inefficient, chaotic environment. Some students flourish in the experiential lab environment. Other students, who have little experience and exposure to the open, collaborative, experiential environment, want to work quietly by themselves.

As a result, students have been given the opportunity to work on some of the lab exercises at home or in the library (portions of the day's lab that do not require on-campus lab materials or equipment). A positive outcome is that this works well for students who want to work on their own in a quiet environment. A negative outcome is that many students use this as a way to put off part of their lab assignment (until later), and then complain about homework in a 1-unit lab class (forgetting that they chose not to complete it during lab time, and that they chose to make it homework).

E. What are your most important plans (either new or continuing) for next year?

We are continuing to create new geology lab activities and exercises; continuing to work on trying new and different methods to allow non-science majors to become successful with numerical, quantitative analysis; continuing to revise and experiment with lab activity configurations that create the most successful student flow and student learning experiences; and continuing to balance group

collaborative activities with activities that students can work on individually if they prefer.

F. Instructional Programs: Detail your department's plans, if any, for adding DE courses, degrees, and/or certificates. For new DE degrees and/or certificates (those offered completely online), please include a brief rationale as to why the degree/certificate will be offered online.

In the latest round of updates, I will set up the Geology 1 & 12 laboratory sections so that we can explore the possibility of offering them in the hybrid format. This has worked successfully for the Historical Geology 3 lab course. I will also be working with preparing a geology course to participate in the OEI (state online educational exchange) when LPC joins that program.

G. Do plans listed under Question E or Question F connect to this year's planning priorities (listed below)? If so, explain how they connect.

Planning Priorities for 2016-17

- ***Establish regular and ongoing processes to implement best practices to meet ACCJC standards***
- ***Provide necessary institutional support for curriculum development and maintenance***
- ***Develop processes to facilitate ongoing meaningful assessment of SLOs and integrate assessment of SLOs into college processes***
- ***Expand tutoring services to meet demand and support student success in Basic Skills, CTE and Transfer courses.***

As explained earlier in this report, we constantly evaluate, revise and modify the flow, timing and success of the evolving pedagogical experiences created. This creates best practice for freshman/sophomore college students to benefit from the unique opportunities of their hands on science lab class.

H. Instructional programs: Did your program meet its program-set standard for successful course completion? ___yes ___no

(This data can be found here: <http://goo.gl/Ssfik2>)

If your program did not meet your program-set standard, discuss possible reasons and how this may affect program planning or resource requests.

I. Units with SAOs: Using SAO data from last year, describe the impacts of SAO practices on student learning, achievement, or institutional effectiveness. Describe the practices which led to the success. (Copy the box below if you would like to discuss multiple examples). SAO data can be found here: <http://goo.gl/iU2yIZ>

SAO:
Describe the quantitative or qualitative results:
Discuss any actions taken so far (and results, if known):
Discuss your action plan for the future:

Part Two: Course-Level SLO Assessment Schedule

THIS SECTION HAS BEEN REMOVED. PLEASE SKIP TO PART THREE.

Part Three: Assessment Results
(Instructional Programs Only)

1. Describe an example of how your program used **course SLO data (SLOs)** from last year (2015-16) to impact student learning or achievement. (Copy the box below if you would like to discuss multiple examples).

Course: Geology 1 Laboratory
Course SLO: Students demonstrate a working knowledge of geologic laboratory processes, geologic concepts , geologic identification, geologic analysis and/or geologic applications
Describe the quantitative or qualitative results: Concern: Historically, many students have not had the patience to wait for all of their peers to complete an activity, with the students who completed an activity leaving before (and therefore without) checking or confirming their work.
Discuss any actions taken so far (and results, if known): Blackboard quiz-forms were created for some of the experiential lab exercises. Students can now work those activities at their own pace, getting real-time, on-the-spot feedback on the correctness of their approach, process and results without having to wait for all of the other students in class to finish. Additionally, they are able to repeat the quiz-form, improving their scores. Results have exceeded expectations. Students began having spirited interactions as they hashed out the correct answers, they turned in later, similar exercises with higher quality responses, and they left the lab session knowing much more of what they had completed correctly or incorrectly.
Discuss your action plan for the future: To continue to work with this format of in-class, hands-on lab exercises with companion online quizzes available for real-time feedback. The only major drawback is that the following semester, the exact same materials must be placed out in exactly the same order and sequence, and this is labor intensive for the laboratory technician. Budgetary limitations have meant some materials were too expensive to duplicate. Photographic documentation of lab set ups has streamlined this process to a great extent.

2. Degree/Certificate granting programs only: Describe an example of how your program used **program-level SLO data (PSLOs)** from last year (2015-16) to impact student learning or achievement. (Copy the box below if you would like to discuss multiple examples).

Degree/Certificate: Geology AS-T

Program SLO: Upon completion of this degree, students should be able to demonstrate proficiency in basic earth processes (e.g., plate tectonics).

Describe the quantitative or qualitative results: To date, student results have shown that students are, by and large, demonstrating mastery, above-average, or at least average, understanding of these important basic course concepts.

Discuss any actions taken so far (and results, if known): no (re)actions necessary at this point.

Discuss your action plan for the future: to continue to assess and monitor student learning and progress on the essential fundamentals of their geology courses

Part Four: Program Curriculum Map (Instructional Programs with Degrees/Certificates Only)

Background: Program-level Student Learning Outcomes

Program-level Student Learning Outcomes (PSLOs) are defined as the knowledge, skills, abilities, or attitudes that students have at the completion of a degree or certificate. Faculty within a discipline should meet to discuss the expected learning outcomes for students who complete a particular series of courses, such as those required for a certificate or a degree. PSLOs should be the big things you want students to get out of a degree or certificate. PSLOs should be developed throughout the program and in multiple courses. Discussions might also involve colleagues in other programs regarding prerequisites and transfer courses or community stakeholders regarding job expectations.

It is recommended that each program have 3-6 PSLOs. Discipline faculty members might need to have a more comprehensive list based on the requirements of external stakeholders (employers, state requirements, etc.). For most programs, PSLOs are only assessed through linked course-level SLOs. You might assess PSLOs in a capstone project or capstone course that many students complete when earning a certificate or degree. Alternatively, you could assess development of a set of skills as students advance through different courses in your program (ENG 1A -> ENG 4 or 7).

Program-level outcomes should

1. **describe** what students are able to do after completing a degree or certificate;
2. be **limited** in number (3-6 outcomes);
3. be **clear** so that students and colleagues can understand them;
4. be **observable** skills (career-specific or transferable), knowledge, attitudes, and/or values;
5. be **relevant** to meet the needs of students, employers, and transfer institutions;
6. be **rigorous** yet realistic outcomes achievable by students

Curriculum Map Directions

Note: If you have multiple degrees/certificates, choose one to map. If you have already submitted mapping to the SLO committee and do not wish to make changes, you may copy that mapping into this chart or attach the map you already created.

1. In the boxes across the top row, review all the non-GE courses required for your degree/certificate. (including those that aren't in your discipline). Make any desired changes to those courses. (Electives do not need to be included, though they may).
2. In the left column, write the program learning outcomes you have drafted for your program.
3. In the boxes in the center of the page, mark the course SLO that maps to the program SLO you have identified. Each program SLO should map to multiple courses in your program.

Example: English Associate's Degree for Transfer						
Program Learning Outcomes	Required Courses in Degree/Certificate					
	Eng 4	Eng 7	Eng 35	Eng 41	Electives* (Eng 20, 32, 45, 44)	MSCM 1*
1. Identify and evaluate implied arguments in college-level literary texts.	x					
2. Write an academic essay synthesizing multiple texts and using logic to support a thesis.	x	x				
3. Write a research paper using credible sources and correct documentation.	x	x				x
4. Analyze an author's use of literary techniques to develop a theme.			x	x	x	

*Including electives is optional.

Your Program's Map – see attached pdf file of the Geology Discipline Coordinator's SLO eLumen mapping page for the Geology Program AS-T degree SLO's.

Degree or Certificate:														
Program Learning Outcomes (3-6 recommended)	Required Courses in Degree/Certificate													
1.														
2.														
3.														
4.														
5.														
6.														

1. Did you make any changes to your existing mapping? (circle one)

Yes

No

This degree/certificate did not have previous mapping

2. If you answered "yes" to Question 1, explain what changes you made.

Elumen, the latest version, did not bring over any mapping, so I completed the SLO mapping for the Geology AS-T courses.

3. Reflection Questions: The following questions are for the consideration of your program as you look at your completed chart. You do not need to record your responses here. If you discuss these questions with others (for example, at a department meeting), you may want to take minutes documenting your discussion.

- a. How many courses help students achieve each program outcome? Do students have enough opportunities to achieve the outcome?
- b. In which course(s) are students likely to demonstrate satisfactory achievement of each program outcome? In other words, which courses(s) might be an official or unofficial capstone requirement?

All of the required Geology AS-T courses help students achieve their program outcomes. Yes, students have enough opportunities to achieve the program outcomes.