2016-2017 Assessment Cycle COS_Geology BS

Mission (due 1/20/17)

University Mission

The University of Louisiana at Lafayette offers an exceptional education informed by diverse worldviews grounded in tradition, heritage, and culture. We develop leaders and innovators who advance knowledge, cultivate aesthetic sensibility, and improve the human condition.

University Values

We strive to create a community of leaders and innovators in an environment that fosters a desire to advance and disseminate knowledge. We support the mission of the university by actualizing our core values of equity, integrity, intellectual curiosity, creativity, tradition, transparency, respect, collaboration, pluralism, and sustainability.

University Vision

We strive to be included in the top 25% of our peer institutions by 2020, improving our national and international status and recognition.

College / Department / Program Mission

College Mission

Provide the college mission in the space provided. If none is available, write "None Available in 2016-2017." Our mission is to serve our students, the citizens of Louisiana, the nation, and the world, through innovative and stimulating educational experiences and compelling research initiatives that create knowledge, deepen our basic understanding of the world around us, further economic development, and enhance quality of life. In support of our mission, The College of Sciences seeks to:

Develop broad-thinking students into mature, ethical professionals, scientists, and researchers with the necessary creativity, critical thinking, and problem solving skills required to make significant contributions to industry, government, and the academic sector.

Recruit and support top-notch teaching and research faculty engaged in scientific endeavors that are recognized nationally for their relevance and impact.

Enrich scientific research and education through on-campus collaborations, multidisciplinary programs, large-scale multi-institution initiatives, as well as partnerships with government and industry.

Foster scientific literacy within the University, the citizens of Louisiana, and the nation by providing stimulating courses for our students and by partnering with educators at the K-12 and community college level.

Provide leadership in the translation and application of research into practical solutions that will benefit our local community, the state of Louisiana, our natural environment, industries of the Gulf Coast region, and society as a whole.

The Ray P. Authement College of Sciences will emerge as a preeminent college of sciences in the Southeast and Gulf Coast region of the United States. The College will be recognized nationally for its innovative education, scholarly research activities addressing our nation's grand challenges, and for its diverse student body with exemplary academic achievements, leadership abilities, and global perspectives.

Department / Program Mission

Provide the department / program mission in the space provided. If none is available, write "None Available in 2016-2017".

Our mission is to provide maximum value to our students, our community, and society through education and research

focused on Energy and the Environment. Value for our students – Our goal is maximizing the return on investment for undergraduate and graduate students enrolled in our programs. We strive to provide the strongest set of skills, experiences, and opportunities for students who aspire to careers (in industry or academics) within the fields of energy and/or the environment. Value for our community - Our educational and research focus areas reflect the strengths and address the challenges of our region. Louisiana is at the forefront of the petroleum exploration and production industry and also boasts more than 40% of the wetlands in the U.S. These coastal wetlands are highly-productive and represent an enormous biological and economic resource. The state of Louisiana has identified "water management" and the "next wave of oil and gas production" as target areas for development. It is estimated that in Louisiana alone between 100,000 and 195,000 jobs will be created in these areas over the next 20 years. Our program will help provide the intellectual, research, and problem-solving capacity to address these needs. Value for society - The sustainability of energy and environmental resources are two of the biggest scientific challenges we face nationally and globally. Our goal is to provide the next generation of scientists with the tools to work within these fields and a framework for addressing complex problem solving. Relationship to UL's mission – Our mission reflects the University of Louisiana at Lafayette's commitment to achieving excellence in undergraduate and graduate education, in research, and in public service. Our focus on value for students, community, and society, mirrors UL's broader commitment to promote regional economic and cultural development and to find solutions to national and world issues. Relationship to FIRST Louisiana - The Fostering Innovation through Research in Science and Technology (FIRST) in Louisiana plan was adopted by the Board of Regents as the framework for research within their master plan for higher education. The plan identifies Earth Sciences (among the foundational sciences) as a target for expansion and growth. Our focus areas and mission are directly aligned with the translational research domains of Energy, Environmental Sciences (and Coastal sciences) identified in FIRST Louisiana. Vision: Excellence – We will become a preeminent institution in the Gulf Coast Region (and the U.S.) for training students in fundamental and applied research in the areas of Energy and the Environment. Our strategic plan includes goals and metrics in the areas of faculty productivity (teaching and research) and student success that are designed to evaluate our progress. Opportunity – We will offer unique educational and research opportunities to support the success of our students. These opportunities include internships, networking, research experiences, flexible degree plans, and original course content. Our strategic plan includes goals and metrics in the areas of student success (placement, time-to-degree, internship participation, research participation, etc.) that are designed to evaluate our progress. Community – We will serve the community through work in K-12 classrooms, teacher education programs, engagement with businesses, participation in philanthropic events, and local problem-solving. Our strategic plan includes goals and metrics involving employer surveys, recruiting activities, and enrollment numbers that are designed to evaluate our progress.

Assessment Plan (due 1/20/17)

Assessment List (Goals / Objectives, Assessment Measures and Criteria for Success)

Assessment List

Goal/Objective	notes, b) constru	able to master field methods, including: a) taking accurate and relecting a geologic map, a cross section and a stratigraphic column; ologic relations of a field area and interpreting its geologic historys.	and c)
Legends	SLO - Student Lo	earning Outcome/Objective (academic units);	
Standards/Outcomes			
Assessment Measures			
	Assessment Measure	Criterion	Attachments
	Direct - Project	We used two field-mapping projects, one in Wyoming (Sheep Mountain) and one in Utah (Onion Creek), to assess mastery in field methods. The Onion Creek mapping project in Utah is a 1-day mapping project in sedimentary rocks penetrated by a salt dome, similar to the subsurface conditions encountered in	

day mapping project in folded sedimentary rocks combined with the construction of two cross sections through the mapped area. Students have to apply their knowledge of field geology to produce maps, reports, and graphs. Difficult projects which require knowledge of many different geological subdisciplines, such as petrology, mineralogy, structural geology, and field methods (compass, maps, sections, etc). Especially field camp requires mastery of a very broad set of skills, ranging from petrology and structural geology to mapping techniques. At least 75% of the graduates in geology for the calendar year must meet the standard (70% or better).
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Goal/Objective	illustrations and t Geology class w	competent in using widely used software programs to produce qu to analyze data sets and imagery. One project from the Computer as used to assess data analysis skills using computer software: s resent geological data with software commonly used in the geosci	r Methods in students had to
Legends	SLO - Student Lo	earning Outcome/Objective (academic units);	
Standards/Outcomes			
Assessment Measures			
	Assessment Measure	Criterion	Attachments
	Direct - Project	The midterm exam from the Analysis of Geologic Data class was used to assess data analysis skills using computer software: students had to analyze and represent geological data with software commonly used in the geosciences. Individual assignments and tests in Computer Applications (Geol 437), SMT class (Geol 430), and Analysis of Geological Data (Geol 435) will be used to assess our student's ability to use computer software applied to geological problems. Data Analysis SP16, SP17, SP18; Computer Applications FA16, FA17, FA18; SMT-class: FA16, FA17, FA18. At least 70% of the graduates in geology for the calendar year must meet the standard (65% or better).	

Goal/Objective	Students will be able to communicate clearly and articulately their geologic knowledge, findings, and interpretations in written and oral presentations.
Legends	SLO - Student Learning Outcome/Objective (academic units);
Standards/Outcomes	
Assessment	

Assessment Measure	Criterion	Attachments
Direct - Presentation	The final exam (essay test) of our stratigraphy course was used to assess whether students are capable of communicating geologic knowledge in written form. Randomly selected presentations in the undergraduate seminar (Geol 499) will be used to assess the oral presentation skills. Essay tests in sedimentary petrology (Geol 339), carbonates (Geol 442), and stratigraphy (Geol 341) are used to assess the written communication skills of our geology majors. Sedimentary Petrology: FA16, FA17, FA18; Carbonates: SP15, SP16, SP17; Stratigraphy: SP16, SP17, SP18; Undergraduate Seminar: SP16, SP17, SP18. At least 70% of the graduates in geology for the calendar year must meet the standard (65% or better).	

Results & Improvements (due 9/15/17)

Results and Improvement Narratives

Goal/Objective

Assessment List Findings for the Assessment Measure level for Students will be able to master field methods, including: a) taking accurate and reliable field notes, b) constructing a geologic map, a cross section and a stratigraphic column; and c) observing the geologic relations of a field area and interpreting its geologic history based on these field observations.

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,		geologic map, a cross section and a stratigraphic column; and c) observing the of a field area and interpreting its geologic history based on these field
Legends	SLO - Student Le	arning Outcome/Objective (academic units);
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Assessment Measures		
	Assessment Measure	Criterion
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methods (compass, maps, sections, etc). Especially field camp requires mastery of a very broad set of skills, ranging from petrology and structural geology to mapping techniques. At least 75% of the graduates in geology for the calendar year must meet the standard (70% or better).

Assessment Findings

Assessment Measure	Criterion	Summary	Attachments of the Assessments	Improvement Narratives
Direct - Project	Has the criterion We used two field- mapping projects, one in Wyoming (Sheep Mountain) and one in Utah (Onion Creek), to assess mastery in field methods. The Onion Creek mapping project in Utah is a 1-day mapping project in sedimentary rocks penetrated by a salt dome, similar to the subsurface conditions encountered in Louisiana and Texas. The Sheep Mountain project is a three day mapping project in folded sedimentary rocks combined with the construction of two cross sections through the mapped area. Students have to apply their knowledge of field geology to produce maps, reports, and graphs. Difficult projects which require knowledge of many different geological subdisciplines, such as petrology, mineralogy, structural geology,	This assessment revealed significant deficiencies in geologic field mapping skills in this cycle. Only 47% of the projects reached the standard of 70% or better. The average is 67% with a STDV of 15. However, several students excelled (max is 89) and demonstrate that, in principle, we convey the right information.		- Assessment Process: Continuous monitoring: We will monitor this result and make changes to the relevant classes (Field Methods and Structural Geology if the problem persists. In the pas this criterion was met although we learned that problems, predominantly with the construction of cross sections exis and put more emphasis on this aspect in the Field Methods class. Since this is the first time this criterion is not met and no other adaptations have been implemented we will keep an eye on this for the upcoming assessment cycle and hope this is just an outlier.

Assessment List Findings for the Assessment Measure level for Students will be competent in using widely used software programs to produce quality geologic illustrations and to analyze data sets and imagery. One project from the Computer Methods in Geology class was used to assess data analysis skills using computer software: students had to analyze and represent geological data with software commonly used in the geosciences.

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Assessment Findings		

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Assessment List Findings for the Assessment Measure level for Students will be able to communicate clearly and articulately their geologic knowledge, findings, and interpretations in written and oral presentations.

Goal/Objective Students will be able to communicate clearly and articulately their geologic knowledge, findings, and interpretations in written and oral presentations.

Legends	SLO - Student L	earning Outcome/Obje	ctive (academic units)	· ,	
Standards/Outcomes					
Assessment Measures					
Widdoures	Assessment Measure	Criterion			
	Direct - Presentation	whether students are form. Randomly sele 499) will be used to sedimentary petrolog (Geol 341) are used majors. Sedimentary SP17; Stratigraphy:	ay test) of our stratigrate capable of communicated presentations in assess the oral present of the capable of	cating geologic ki the undergraduat ntation skills. Essa ates (Geol 442), a communication sl 17, FA18; Carbon ndergraduate Se	nowledge in written the seminar (Geol ay tests in and stratigraphy kills of our geology lates: SP15, SP16, minar: SP16,
Assessment Findings					
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	Direct - Presentation	Has the criterion The final exam (essay test) of our stratigraphy course was used to assess whether students are capable of communicating geologic knowledge in written form. Randomly selected presentations in the undergraduate seminar (Geol 499) will be used to assess the oral presentation skills. Essay tests in sedimentary petrology (Geol 339), carbonates	The criterion this year was assessed with a paper written by the students on the History of the North American Continent, based on the information they received during the 6-week long field camp. This is a very difficult assignment as it requires the synthesis and summary of the very long and varied history of North America		- Assessment Process: Targets / Criteria for Success changed: We will monitor the very successful outcome of this criterion in the upcoming assessment cycle and will adjust the criteria for success if needed.

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Reflection (Due 9/15/17)

Reflection

1) How were assessment results shared in the unit?

Please select all that apply. If "other", please use the text box to elaborate.

Distributed via email

Presented formally at staff / department / committee meetings (selected)

Discussed informally

Other (explain in text box below)

2) How frequently were assessment results shared in the unit?

Frequently (>4 times per cycle)
Periodically (2-4 times per cycle) (selected)
Once per cycle
Results were not shared this cycle

3) With whom were assessment results shared?

Please select all that apply.

Department Head (selected)

Dean / Asst. or Assoc. Dean

Departmental assessment committee

Other faculty / staff (selected)

4) What were the measurable or perceivable effects on your current (2016-2017) findings based on prior action plans (created in 2015-2016)?

We dedicated more resources in the field methods class to the construction of geologic cross sections, the proper use of the Brunton compass and the use of topographic maps. As a result, we saw improvements in the previous assessment cycle. However, this cycle we noted an unexpected weakness in the field mapping outcomes. We will have to see if this is a long-term trend and persists in the next assessment cycle or if this is the result of assessing an unusually weak group of students.

5) What has the unit learned from the current assessment cycle?

We have learned that overall our student population is learning the key elements of their profession, they are proficient in communicating geologic ideas, can solve geologic problems in the field (with some deficiencies in this cycle), and use computer software to present and analyze geologic data. The efficiency with which we teach our students the most important skills has improved because of the assessment analysis through the past years. Although we did not meet one of the criteria (field mapping), we will not make immediate changes and keep on monitoring the outcomes for now.

Attachments

Attachments

Upload any supporting documents related to your assessment plans, results, or improvements. Documents may include rubrics, survey questions, reports, etc. There is no limit to the number of documents you can upload.

Click "Select File" to upload document(s)

FA17 data.xls