

2023-24 Annual Assessment Report Earth & Geographic Sciences

Bachelor Environmental & Earth Science

Academic Year 2023-2024

Bachelor Environmental & Earth Science Learning Outcomes

Scientific Communication MET

Students will communicate scientific information through written, oral, and graphical expression with clarity, logical organization, and use of scientific evidence to support their ideas.

MEASURES	RESULTS	ACTIONS
<p>Final Paper In Geology</p> <p>Students must pick a national park in the United States to research and write a paper about the geology of the national park by using scientific databases to find primary resources, then synthesize that information in written form. This culminates in a research paper discussing the geologic forces that shape a landscape and presenting graphical information and figures within the paper.</p> <p>Direct - Assignment</p> <p>Geology: GEOG 2100</p> <p>Target</p> <p>80% of students proficient or better</p>	<p>MET</p> <p>Final Paper In Geology</p> <p>■ Exceeded ■ Met</p> <p>0% 100%</p> <p><i>Values are not shown when too close to each other. Click or use arrow keys to see details.</i></p> <p>Exceeded: 75% Met: 25%</p> <p>Met Total: 100% Not Met Total:</p> <p>Analysis</p> <p>100% of the 4 majors in GEOG2100 (Geology) met or exceeded the criteria for assessment</p>	<p>Maintain Assessment Strategy</p> <p>Methods of instruction to prepare for final paper communicating scientific research appears to be successful, thus the method of instruction will be maintained.</p>

Scientific Process MET

Students will use the scientific process, including experimental design, analysis, and critical evaluation of information, and integration of evidence from relevant sources, in the context of environmental investigations.

MEASURES	RESULTS	ACTIONS
<p>Lab Report for Field-Based Study</p> <p>Students had to devise an experiment in the field to measure the water table and the direction of groundwater flow in an area known to have groundwater contamination from and oil spill. Students had to measure water table depth, map the contaminated area, and write a report of their findings.</p> <p>Direct - Assignment</p> <p>Environmental Hydrogeology: GEOG 4600</p> <p>Target</p> <p>80% of students proficient or better</p>	<p>MET</p> <p>Lab Report for Field-Based Study</p> <p>■ Met ■ Not Met</p> <p>0% 100%</p> <p>Met: 88% Not Met: 12%</p> <p>Met Total: 88% Not Met Total: 13%</p> <p>Analysis</p> <p>Seven of eight students met the criteria for evaluation. One student did not turn in a lab report despite being present at the lab.</p>	<p>Modify Policies / Procedures</p> <p>Not Started</p> <p>Increased communication about the numbers of points and impact on student's grade for not submitting lab reports in a timely manner.</p>

Earth Systems MET

Students will discuss the structure and composition of Earth's interior, surface, and atmosphere, and explain what it means to consider Earth as a system.

MEASURES	RESULTS	ACTIONS
<p>Final Exam in Earth Systems Science (GEOG1000)</p> <p>Students answer a cumulative question on the final exam about the role of climate change on impacting Earth's systems (atmosphere, hydrosphere, geosphere, biosphere). Students must show ability to evaluate and synthesize information from the course and apply it to a new situation. Students must show an understanding of the interactions between Earth's systems.</p> <p>Direct - Exam (Course)</p> <p><i>Introduction to Geography: GEOG 1000</i></p> <p>Target</p> <p>90% of students proficient</p>	<p>MET</p> <p>Final Exam in Earth Systems Science (GEOG1000)</p> <p>■ Exceeded</p> <p>0% 100%</p> <p><i>Values are not shown when too close to each other. Click or use arrow keys to see details.</i></p> <p>Exceeded: 100%</p> <p>Met Total: 100%</p> <p>Not Met Total:</p> <p>Analysis</p> <p>Although only three majors were in the course, all three majors exceeded expectations and got a full 10/10 points on a cumulative final exam question about synthesizing information related to Earth's spheres and Earth as a system.</p>	<p>Maintain Assessment Strategy</p> <p>Continue to emphasize the importance of the interaction of Earth's spheres in GEOG1000</p>

Interdisciplinary Analysis MET

Students will apply an interdisciplinary approach to analyze and propose solutions to environmental science problems.

MEASURES	RESULTS	ACTIONS
<p>Final Project in Water Resources</p> <p>Students complete a final project in which they need to create a water plan for a water-stressed city 50 years in the future. Students must take an interdisciplinary approach that accounts for economics, social issues, political issues, and environmental issues related to water supply.</p> <p>Direct - Assignment</p> <p><i>Tps: Water Resources & Society: GEOG 2006</i></p> <p>Target</p> <p>80% of students proficient or better</p>	<p>MET</p> <p>Final Project in Water Resources</p> <p>■ Exceeded ■ Met ■ Not Met</p> <p>0% 100%</p> <p>Exceeded: 60%</p> <p>Met: 20%</p> <p>Not Met: 20%</p> <p>Met Total: 80%</p> <p>Not Met Total: 20%</p> <p>Analysis</p> <p>Three students exceeded expectations, one met expectations, and one did not turn in the final project. Students adequately synthesized interdisciplinary data and applied it to the project assignment.</p>	<p>Maintain Assessment Strategy</p> <p>In the final weeks of the semester, cover a unit on the economic impacts and how to fund water infrastructure updates so the students are more prepared to complete their final project. Improve the project assignment by requiring an outline or a rough draft of the final project so the students don't have to complete the project without guidance and/or feedback.</p>