

Geoscience - Bachelor of Science - Full Review & SLOA

Current Compliance Year: 2023-2024

Full review

Recent Recommendations

Feedback will include recommendations from the last Expedited Review or from your most recent review by your school or college. You may not see any feedback or recommendations until you have completed your first full or mid-cycle review.

Response to Previous Recommendations (if any):

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Student Learning Outcomes

The previous Student Learning Outcomes Assessment has been submitted as its own report. Going forward you will use the following prompts to discuss the success of your most recent SLOA plan and address your assessment activities since your last SLOA report (typically the past two years or since your last program review).

Learning outcomes feedback from last review: Feedback and recommendations may not appear until after your first full or mid-cycle review.

Strong

Discuss your SLOA findings, changes you are making and what you hope to see as a result:

- | |
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| <p>A. Understanding of basic geologic concepts: Students take a Geoscience Concepts Inventory (GCI) test before and after Geos 101 and again after Geos 112 to assess learning gains or losses during the introductory sequence. Scores show improvement through the introductory sequence in Geosciences.</p> <p>B. Graduates demonstrate hands-on experience with geologic tools and techniques in the lab and/or in the field: The capstone field mapping course (GEOS 351) is evaluated with a rubric (for the Geology, Geospatial, and Paleontology concentration). Undergraduate research (GEOS 488) final report, poster, or presentation is evaluated with capstone rubric (for the Geophysics concentration). Results demonstrate capability of graduates to produce average to excellent work in the geosciences.</p> <p>C. Written and oral communication skills are consistent with professional standards: Papers and presentations in core classes are assessed with course-specific rubrics. Students show improvement throughout their degree program, with most students producing very good to excellent scores on written and oral presentations.</p> <p>D. Students employed or admitted to graduate programs within one year of graduation: Graduating seniors are asked to take the American Geological Institute (AGI) student exit survey.</p> |
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Discuss the curricular changes made based on assessing your SLO. If you haven't made any curricular changes, please explain why not and address what you did notice in the review, including strengths of your curriculum through the assessment of your outcomes:

No curricular changes during review period.

Are communication outcomes embedded in the SLOA Plan?

As of 2017 all Baccalaureate programs were required to embed the communication outcomes within their SLOA Plans, this is optional for non-Baccalaureate programs.

Embedded

Student Success

To access the Student Success Dashboard please sign into a UA computer with VPN connection (if not on campus). You will need your UA credentials and it is best accessed with the most updated version of Chrome, Edge, Firefox or Safari browsers; Internet Explorer is not supported. You will need to filter the data to see your programs. If you need assistance in finding the data for your programs, please contact your data liaison or [Julia Manfredini](#) in the PAIR office.

Data Liaisons

Each school or college has a team of Data Liaisons to help you analyze the data provided in the portal and may be able to help you see your data in multiple contexts. You can find a list of data liaisons on the resources page for Program Review.

The college or school level committee will also have access to this data with the goal that by providing these visualizations data availability will be increased.

Data supplied within the dashboard linked below is intended for Academic Program Review and not for any other purpose.

[Student Success Data Dashboard](#)

Previous Feedback: Feedback and recommendations may not appear until after your first full or mid-cycle review.

Student Success Data Trends:

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If equity gaps were found in any of your disaggregated student success data, please explain how you plan to address those gaps. Please contact your data liaison or make an appointment with [Julia Manfredini](#) to learn more about analyzing your data.

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Optional Data Explanation

Feel free to share more of your thoughts on the data provided.

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High Impact Practices

According to the AAC&U, High-Impact Educational Practices “have been widely tested and have been shown to be beneficial to college students from many backgrounds.” UAF is particularly interested in Undergraduate Research and/or Scholarly Activity because it is one of our mission fulfillment indicators, but all of these researched High-Impact Educational Practices should be reflected in your program’s student learning outcomes and curriculum.

Previous Feedback: Feedback and recommendations may not appear until after your first full or mid-cycle review.

High-Impact Practices Used in this Program

Please use the following fields to discuss how your program is using the high-impact practices, successes and known issues and solutions, or ways you are considering incorporating them in the future. If you are not using any of the high-impact practices listed, please use the "Other or None of These," field to share what your program is doing to help students be successful.

High Impact Practices that currently apply to your program:

Capstone Courses and Projects, Writing-Intensive Courses, Undergraduate Research, "Service Learning, Community-based Learning"
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Collaborative Assignments & Projects

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Undergraduate Research

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Diversity/Global Learning

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ePortfolios

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First Year-Seminars & Experiences

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Writing-Intensive Courses

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Service-Learning and/or Community-based Learning

In Fall 2020 the Geosciences Department launched an NSF-funded Geo Learning Community (GeoLC) for undergraduate geoscience majors and minors. The GeoLC provides financial, academic, and social support in the form of scholarships [REDACTED]/semester, contingent on GPA), supplemental instruction for 100-level courses, a required weekly study hall and optional social activities. Over four years the community has grown from a handful of students to 30 participants at all levels (freshmen - seniors). Students indicate that the community has helped us to attract and retain majors. Unfortunately, funding for the GeoLC expires at the end of the Spring 2024 semester. We are seeking to continue the GeoLC through the NSF S-STEM program.

Internships

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Capstone Courses & Projects

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Other or None of these (explain)

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Program Profile and Financial Data

The program review elements in this section usually stay consistent for departments. Any responses you provide will be saved for your next visit. So, when it's time for the next program submission, your previous narrative profile answers will be here, ready for editing. You can then decide if any updates are necessary, based on your needs for the next program review cycle.

Financial Data Resources

The Board of Regents shapes program review, through BOR Policy 10.06, to support budget increase advocacy in the state legislature. The standardized financial data template should be analyzed with your data liaison to assess your program's capacity and resource status.

To keep integrity and remain standard across all of UAF it is very important that you do not provide any additional or alternative data.

Financial Template

Your data liaison may have uploaded your template to the Google folder for this program, or you may do so now.

Previous Feedback: Feedback and recommendations may not appear until after your first full or mid-cycle review.

Cost Effectiveness

How does your department/program approach being cost effective?

Undergraduate student credit hour production in the Dept. of Geoscience increased from 796 credits in FY21 to 968 credits in FY22 Majors increased from 49 in FY21 to 57 in FY22, while the SCH load decreased slightly over the reporting period PAIR data indicate faculty FTEs changing from 8.19 in FY 2021 to 6.81 in FY 2022. The department has lost several faculty members in recent years and the decrease in FTEs reflects that. Adjunct FTEs dropped from 0.62 in FY 2021 to 0.55 in FY 2022. Staff FTEs remained at 0.62 during the review period reflecting our stable but part time office administrator. Graduate TA/RA FTEs dropped slightly from 3.63 in FY 2021 to 3.28 in FY 2022. Total department FTEs dropped from 13.06 in FY 2021 to 11.26 in FY 2022.
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Program's Value to Mission

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Duplicative Programs

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Community or Other Partnerships

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Value of Service Courses (Optional)

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Post-Graduate Success

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Submission

Submitter & Collaborator Names

Sean Regan and Sarah Fowell

College or School Review Committee

The college or school committees set the tone for helping each program feel seen during this process. We have provided you with strength-based feedback tags to attach to this program review. Please select as many as applicable.

Overall Recommendations

Increase graduates

Explanation of Recommendations

Address any equity gaps.

GEOS BS has excellent numbers SCH, FTE and graduation time. The program prepare professionals to be successfull in the different areas integrated by GEOS.

The only recommendation from this committee could be to try to recover the faculty FTEs. In order to maintain the students attraction it is important to maintain the faculty specialized in the diverse areas integrated by GEOS in polar regions. GEOS covers a wide open field with continuous interaction with other scientific disciplines. This is important in order to remain the choice of students and also important in relation to funding sources and programs.-

Student Learning Outcomes Assessment Feedback (tags)

Strong alignment with SLOA plan

Student Learning Outcomes Assessment Feedback (narrative)

SLOAs are appropriate and strongly align with the program mission.

Profile Feedback

Program is mission-centric to UAF or college/school, Collaborative with other UA programs, Providing job placement for graduates, Strong post-graduation success for students

Financial Feedback

High Tuition Revenues, High Grant Revenues, Operates at Low Cost, Productive Faculty, Opportunities to Increase Revenue

Student Success & Equity Feedback

GEOS BS - maintained the number of students through the evaluation period (135-138) providing good rates on SCH/FTE: ~ 37-42 Majors/FTE: 6-7. This program also has service-SCH evolving from 500-400. In terms of the students there is a rise in the [REDACTED] students from 9% to 17% also a rise in [REDACTED] now at 8% and a steady proportion of [REDACTED] students ~25%.

High-Impact Practices Feedback

GEOS BS provides several venues to gradually stimulate students into the program. For example GEO-Force is one of them oriented to high school students. While, another program is Geo Learning Community (GeoLC); focusing on undergraduate geoscience majors and minors.

Dean's Review Feedback

The geoscience BS is a strong degree program in CNSM and prepares students for professions in Alaska and beyond. metrics are strong, and I look forward to continued growth and excellence in this important program.

Vice Provost Feedback

Provided 4 SLOs; SLO #4 is a program outcome and not a SLO; the program might consider revising the SLOs to include more “action” words. (<https://tips.uark.edu/blooms-taxonomy-verb-chart/>). What are the professional standards for communication in this field (SLO#3)? Need to address closing the loop and continuous improvement.

HIPs - Provided overviews of some practices, not comprehensive of all that were identified (incomplete); could have used more details for each practice with specific examples. Not clear if these are required for all students or if students can choose from a group of options. Frequency of these opportunities? Required or optional? What proportion of students involved?

UNIVERSITY OF ALASKA FAIRBANKS

Geology and Geophysics, Undergraduate Program in Geoscience (B.S.)

Academic Outcomes Assessment Plan

MISSION STATEMENT: The Department of Geosciences educates all levels of students in geoscience principles through classroom and field-based instruction. The scholarly and research activities of the department enhance the educational program by stimulating inquiry and providing opportunities for the next generation of geoscientists to develop technical, analytical and practical skills through hands-on experiences.

GOALS: To prepare undergraduate students for careers or graduate studies in Geology, Paleontology, Geospatial Sciences, Geophysics, or related fields.

Intended Outcomes/Objectives	Assessment Criteria and Procedures	Implementation (what, when, who)
Upon completion of introductory courses (Geos 101 and 112), students will demonstrate understanding of basic geologic concepts, including: a) plate tectonics; b) geologic time; c) structure and composition of the Earth; and d) 3-D visualization.	Students will take a Geoscience Concept Inventory (GCI) before Geos 101 and after Geos 112 to assess learning gains or losses during the introductory sequence. Modification to instruction will target concepts that >30% students failed to grasp on the post-test and questions that reveal negative learning gains across the introductory sequence.	The GCI will be administered during the first Geos 101 class and repeated during the final Geos 101 exam and again during the final Geos 112 lab. Instructors will meet annually to discuss how to adjust instruction to address common misconceptions.
Graduates will be able to apply the scientific method to geologic questions and demonstrate hands-on experience with geologic tools and techniques in the lab and/or in the field.	Students in the Geology, Geospatial and Paleontology concentrations will complete a field-based capstone course (Geos 351). Final projects will be evaluated with the capstone rubric. Student input and feedback is gathered and analyzed via an on-line survey. Students in the Geophysics Option will conduct at least 2 credits of undergraduate research (Geos 488). The final report, poster, or presentation will be evaluated with the capstone rubric.	Geos 351 (Field Geology) is offered alternate summers. 351 faculty will compile and review capstone project rubrics, discuss how deficiencies can be addressed within Geos 351 or prerequisite courses, and recommend program changes. Faculty advisors will fill out the "capstone" rubric and results will be compiled annually. Geophysics faculty will meet annually to discuss how to address any deficiencies.

Graduates will demonstrate skills in written and oral communication consistent with professional standards.	Students will write multiple drafts of a research paper in core courses (Geos 315, Geos 309, Geos 483, Geos 351). Final papers will be assessed with a course-specific rubric. Students will present results of research or experiments in oral and/or poster presentations for core courses (incl. Geos 112 and Geos 483). Oral presentations will be assessed with the "O" rubric.	Assessments of written and oral presentations will be compiled and reviewed annually by faculty teaching O and W courses.
Students seeking employment or continued education in geoscience or related fields will be employed or admitted to graduate programs within one year of graduation.	Graduates will complete an on-line exit survey designed and distributed by the American Geological Institute (AGI).	Survey results will be reviewed and discussed annually.

Fiscal Report for __GEOS__ Department/Program				
	FY2021	FY2022	FY2023	
Total Student Credit Hours (SCH)	2560	2629	2479	
Service SCH	549	444	396	
Department FTEs	13.065	11.2625	10.74	
Total SCH per Department FTE	195.94	233.43	230.82	
Service SCH per Department FTE	42.02	39.42	36.87	
Majors in Programs	135	143	138	
Department FTEs	13.065	11.2625	10.74	
Majors per Department FTE	6.51	6.84	7.36	
Total Unrestricted Expenditures				
Total Restricted Expenditures				
Total Unit/Central Support Allocated to Program(s)				

Tuition Revenue			
State Appropriation Revenue			
Restricted/Sponsored Project Revenue			
Fees			
Other UA Receipts/Revenue			
Workload allocation: Teaching Units	198	175	164
Workload allocation: Service Units	176.8	195.5	190.5
Workload allocation: Research Units	55.7	59.5	55.5

Full-time Equivalent Worksheet**	FY2021	FY2022	FY2023
Faculty FTEs	8.19	6.8125	6.61
Adjunct FTEs	0.625	0.55	0.1
Staff FTEs	0.62	0.62	0.62
Graduate TA/RA FTEs	3.63	3.28	3.41
Total Departmental FTEs	13.065	11.2625	10.74

****Note: FTE definitions and calculations for the purpose of Academic Program R**

Definitions for the compiling staff

Provided in SCH tab in the student success data provided by PAIR.
Sum rows labeled as "In unit, outside department, Service" and "Outside unit, Service" in the SCH tab of the data provided by PAIR.

FTE = Full-time equivalent employee. Use the worksheet below to calculate for each employee type, and then use the total from row 31 here.

Sum for all programs from the Majors Total tab in the data provided by PAIR.
From row 31 below or row 5 above

Total Expenditures made from budgets with an F1 or F7 fund type designation, from provided cycle report data filtered by Data Liasion
Total Expenditures made from budgets with revenue of the F2 or S2 fund type designation, from provided cycle report data filtered by Data Liasion

Expenses incurred for direct support of instruction within orgs identified as central or academic support, if applicable

Receipts to college from tuition generated by the department/program (F1).
NOTE: under the current 80/20 percent tuition distribution model generating units receive 80%. PLEASE USE PAIR REPORTED SCH TO REPLACE ZEROES IN CELL CALCULATIONS.

Appropriations for current funds operation of the university from the general fund of the State of Alaska through the annual budget cycle. This category also includes TVEP and State Mental Health Trust funds, if allocated to the department. (F1)

Revenue from external sponsors; includes grants, contracts, sponsored projects & restricted (grant) accounts funded by UA Foundation funds (F2/S2)

Course Fees (9159)

e.g. Performance and Sales Receipts, Space Rental Revenue, Indirect Cost Recovery (F1/F7); NOTE: COURSE FEES (9159) REPORTED ABOVE

Department facultys' workload units assigned to teaching

Department facultys' workload units assigned to service

Department facultys' workload units assigned to research

Base assumption: 12-month full-time = 1.0 FTE. 9-month = 0.75 FTE.

Split appointments are multiplied by the % of effort assigned to this department. Part-time are multiplied by the % of effort assigned. F9 faculty on sabbatical count as 67% of one 9-month 0.75 FTE (or 0.50 FTE).

Base assumption: 40 units/credits = 1.0 FTE. Total # of credits taught by adjuncts in a year divided by 40 = the FTE of adjuncts in that year.

Base assumption: 12-month full-time = 1.0 FTE. 9-month = 0.75 FTE.

Split appointments are multiplied by the % of effort assigned to this department. Part-time are multiplied by the % of effort.

Base assumption: 40 hours/week for 12 months = 1.0 FTE. 9-month = 0.75 FTE.

Sum of all employee FTEs

view are different than for other institutional reporting processes (e.g.

Definitions for the programs and reviewing committees

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Receipts to college from tuition generated by the department/program, based on the campus's active tuition distribution model, which determines how much the unit receives of their generated tuition, and how much the campus keeps (in addition to the out-of-state surcharges) to support central offices/functions. The current distribution model is 80/20, where the unit/college receives 80% of their generated in-state tuition.

Appropriations for current funds operation of the university from the general fund of the State of Alaska through the annual budget cycle.

Revenue from external sponsors; includes grants, contracts, sponsored projects & restricted (grant) accounts funded by UA Foundation funds

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FACULTY		% CNSM	% of year	Part-time %	FTE	Teach WL	Res WL	U
		0.25	0.75	1	0.19	9	18	
		1.00	0.75	1	0.75	20	4	
		1.00	0.75	1	0.75	17	9	
		0.50	0.75	1	0.38	6	22.5	
		1.00	0.75	1	0.75	15	12	
		1.00	0.75	0.75	0.56	11	9.3	
		0.75	0.75	1	0.56	15	7	
		0.25	0.75	1	0.19	9	18	
		1.00	0.75	1	0.75	18	9	
		1.00	0.45	0.6	0.27	15	2	
		0.50	0.75	1	0.38	11	16	
		0.75	0.75	1	0.56	15	11	
		0.25	0.75	1	0.19	6	20	
		1.00	0.75	1	0.75	16	11	
		1.00	1	1	1.00	15	8	
		0.50	0.33	1	0.17	?	?	
					8.19	198	176.8	

ADJUNCTS	FA20 #cred	SP21 #cred	SM21 #cred	
	6	6	6	0.45
	6			0.15
		1		0.025
				0.625

TA/RA's	# of hours
	1040
	360
	920
	740
	1000
	560
	1080
	200
	760
	180
	180
	353
	180
	7553
	3.63

Staff		
	1286	0.62

Serv WLU

3 30

6 30

4 30

1.5 30

3 30

2.2 22.5

8 30

3 30

3 30

1 18

3 30

4 30

4 30

3 30

7 30

? 0

55.7

FACULTY		% CNSM	% of year	Part-time	% FTE	Teach WL	Res WLU	Serv WLU
		0.25	0.75	1	0.1875	6	21	3
		1.00	0.75	1	0.75	19	5	6
		1.00	0.75	1	0.75	13	11	6
		0.25	0.75	1	0.1875	7	20	3
		0.50	0.75	1	0.375	6	16.5	7.5
		0.50	0.75	1	0.375	12	15	3
		0.75	0.75	1	0.5625	12	10	8
		0.25	0.75	1	0.1875	9	18	3
		1.00	1	1	1	29	5	6
		1.00	0.75	1	0.75	16	13	1
		0.50	0.75	1	0.375	10	17	3
		0.50	0.75	1	0.375	11	16	3
		0.75	0.75	1	0.5625	15	11	4
		0.50	0.75	1	0.375	10	17	3
					6.8125	175	195.5	59.5

ADJUNCTS	FA21 #cred	SP22 #cre	SM22 #cred
	6	6	0.3
			2 0.05
			2 0.05
			6 0.15
			0.55

TA/RA's	# of hours
	380
	840
	760
	560
	920
	760 Job# 30384081
	760
	760
	180
	180
	360
	180
	180
	6820 3.28

Staff	
	1286 0.62

30

30

30

30

30

30

30

30

40

30

30

30

30

30

FACULTY	% CNSM	% of year	Part-time	% FTE	Teach WL	Res WL	Serv WL
	0.25	0.75	1	0.1875	4	24	2
	1.00	0.925	1	0.925	19	12	6
	0.25	0.75	1	0.1875	7	20	3
	0.50	0.75	1	0.375	6	16.5	7.5
	0.50	0.75	1	0.375	12	15	3
	0.75	0.75	1	0.5625	15	10	8
	0.25	0.75	1	0.1875	9	18	3
	1.00	1	1	1	29	4	7
	1.00	0.75	1	0.75	17	10	3
	1.00	0.75	1	0.75	10	17	3
	0.50	0.75	1	0.375	11	16	3
	0.75	0.75	1	0.5625	15	11	4
	0.50	0.75	1	0.375	10	17	3
				6.6125	164	190.5	55.5

ADJUNCTS	FA22 #cred	SP23 #cre	SM23 #cred
		1	0.025
		3	0.075
			0.1

TA/RA's	# of hours
	1020
	740
	370
	740
	370
	370
	380
	740
	740
	370
	360
	360
	180
	180
	180
	7100
	3.41

Staff		
	1286	0.62

30
37
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33
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