Civil Engineering - Bachelor of Science - Mid-Cycle Review & SLOA Year

Current Compliance Year: 2022-2023
Mid-Cycle 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):

This is the first round of reviews/reports under the new SLOA reporting system.

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 will be provided once you have completed a full or mid-cycle review.

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

The learning outcome assessment is based on data collected from specific courses and FE exam. CGEE faculty evaluates and discusses collected data (e.g. of assessment methods, evaluation and interpretation of collected data, modifications of curriculum).
Data collected during this 2-year cycle include course material from 8 courses offered in AY 2020-2021. Collected student work includes: CE331 homework, ES 341 homework, CE438 cap stone design projects, ESM450 homework/paper, CE438 final presentations, ESM422 project, CE341 homework/paper, CE302 homework/paper, CE424 homework/paper. FE exam results (from NCEES) are obtained in addition to the student work samples. Selection of courses used for learning outcome assessment is based on mapping all courses to the outcomes they serve as shown in the SLOA plan for BSCE.
CE faculty members assessed student outcomes by evaluating student work products (e.g. homework, exams, lab reports) to gauge levels of achievement for particular student outcome. Each faculty member voted individually on the degree of attainment (e.g. “met target”) for each student outcome and commented on what if any continuous improvement action should be taken. Voting sheets for faculty as well as compiled data are stored on departmental google drive.
Faculty recommended that the assessment process and performance indicators shall be largely maintained as is. The existing program shall be maintained for all outcomes. Faculty should discuss sampling design for selecting student data in the future cycles. Outcome 1 and 2 will be monitored more closely during next review cycle.

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:

Assessment of learning outcomes (outcome 1 and outcome 2) contributed to decision on adding the DRT F210 Intermediate CAD class to the required classes for the BSCE. At the same time, senior capstone series was reduced to one course: CE F438 Design of Engineered Systems (3 credits). The topics covered in the course that was removed (CE F437) are now covered in other added courses (such as DRT F210), in other courses in the curriculum (e.g., ESM F450), or in the remaining senior design course (CE F438).
The BS CE curriculum was restructured to reduce the overall number of credit hours (125 hours) and allow more students to complete the degree within four years. The curricular changes were made in response to merger with another department. In 2020, the department of Civil and Environmental Engineering was merged with the department of Geological Engineering, forming the department of Civil, Geological and Environmental Engineering (CGEE). This merger led to a number of changes to the BS CE curriculum.

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 will be provided once you have completed a full or mid-cycle review.

Student Success Data Trends:

Decline in majors,Decline in degrees awarded,No change in SCH,No change in persistence,Increase in pass rates

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.

This summary is based on BS CE department data summarized under tab "Graduation-Informed Persistence", FY2020-2021 and FY2021-2022. Persistence rate for [redacted] and [redacted] students is within 75-82%. Persistence rate for [redacted], [redacted], [redacted], [redacted], and [redacted] students is consistent between categories (80-86%), with one outlier in FY20-21 for [redacted] category. Persistence rate for [redacted] dropped to 53.8% in FY21-22, while the rest of the age groups maintain consistent persistence rate (79-85%). No persistent equity gaps were identified, but persistence rate for [redacted] could be monitored in the next 2-year cycle.

Optional Data Explanation

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

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 will be provided once you have completed a 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," filed to share what your program is doing to help students be successful.

High Impact Practices that currently apply to your program:

Collaborative Assignments and Projects,Writing-Intensive Courses,Capstone Courses and Projects

Other or None of these (explain)

Submission

Submitter & Collaborator Names

Svetlana Stuefer, Yuri Shur, Srijan Aggarwal, Nima Farzadnia, Margaret Darrow

Submitter Email

slstuefer@alaska.edu

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

Explanation of Recommendations

Student Learning Outcomes Assessment Feedback (tags)

Strong alignment with SLOA plan,"Clear, concise presentation of findings"

Student Learning Outcomes Assessment Feedback (narrative)

There are several direct assessment measures in the SLOA plan. There is also a good discussion of curricular changes that are directly connected to the analysis of assessments, such adding the DRT F210 Intermediate CAD course, and adding topics from the capstone to other courses that are offered earlier. The committee thanks the program for updating and including the November 2022 SLOA Plan.

Profile Feedback

Financial Feedback

Student Success & Equity Feedback

The program includes discussion on student persistence, but the committee feels it would be helpful to see some discussion of the tags that you have chosen: There has been a significant decline in majors during the assessment period. It would be great to know how Civil Engineering plans to support an increase in majors as well as degrees awarded. It is worth looking at trends like these and trying to identify causes and actions that the program may be able to take.

High-Impact Practices Feedback

Well done! The program incorporates the kinds of practices that have been shown to engage and support students as well as build the student community with program faculty. You have a good assortment of collaborative assignments. It would have been good to include some more information about the program's capstone design course.

UNIVERSITY OF ALASKA FAIRBANKS

Student Learning Outcomes Assessment Plan

Bachelor of Science in Civil Engineering

College of Engineering and Mines

November 16, 2022

Expanded Statement of Institutional Purpose	Intended Objectives/Outcomes	Assessment Criteria and Procedures	Implementation (what, when, who)
Educational Objectives of the B.S. Civil Engineering Program: 1. Our graduates use their education to pursue professional careers in civil engineering and/or related fields in the public or private sectors, and/or graduate education. 2. Our graduates possess knowledge required to meet the challenges of civil engineering problems, including those unique to remote locations and cold regions including Alaska. 3. Our graduates demonstrate professionalism through clear communication, actively serving the community, teamwork, commitment to ethical standards, and pursuit of licensure.	**Students have an ability to:**	**Student work obtained from the following classes:**	
	1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	FE exam results, obtained from National Council of Examiners for Engineering and Surveying (NCEES)	Nationwide exam, required for all BSCE students, administered every semester
		Homeworks and exams from ES 341 and CE 331	Student work samples collected ~ every 2nd year by instructor, scored by three faculty members, based on established standard rubrics
	2. Apply engineering design to produce solutions that meet specific needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	Term project from CE 432 (Steel design) and final project of capstone design class CE 438	
	3. Communicate effectively with a range of audiences	Written paper for ESM 450, Oral presentation of CE 438 capstone design project	
	4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	Exam questions from ESM 450 about ethical & safety concerns in engineering projects	
	5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	Survey in ESM 450 about teamwork	Each student ranks the other members of his team, annually
	6. Develop and conduct appropriate experimentation, analyze and interpret data…	Independent experiment-based project report in CE 344 and ESM 422	Student work samples collected ~ every 2nd year by instructor, scored by three faculty members, based on established standard rubrics
	7. Acquire and apply new knowledge as needed, using appropriate learning strategies	Written paper in CE 341 involving research of scientific literature	
	8. Knowledge of northern issues	Written paper in CE 302 e.g. about ice roads or building Alaska highway	

Submitted by: Svetlana Stuefer, November 2022