

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	