

UNIVERSITY OF ALASKA FAIRBANKS
Student Learning Outcomes Assessment Plan
Bachelor of Science in Geological Engineering
 College of Engineering and Mines
 October 31, 2022

Expanded Statement of Institutional Purpose	Intended Objectives/Outcomes	Assessment Criteria and Procedures	Implementation (what, when, who)
MISSION STATEMENT: To advance and disseminate knowledge related to geologic hazard assessment; engineering site selection; construction and construction material production; groundwater and geo-environmental engineering; and mineral and energy exploration, evaluation, development and production, through creative teaching, research and public service with an emphasis on Alaska, the North and its diverse peoples. STATEMENT OF EDUCATIONAL OBJECTIVES OF THE GEOLOGICAL ENGINEERING BS PROGRAM: 1) Our graduates use their broad education to serve as the foundation of successful careers in geological engineering and/or related fields in the public or private sectors, and/or graduate education. 2) Our graduates possess technical knowledge required to meet the unique challenges of geological engineering problems, especially those germane to cold regions including Alaska. 3) Our graduates demonstrate professionalism through clear communication, actively serving the	(1) An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	DIRECT (embedded assignments): GE261, GE326, GE405 INDIRECT: graduating senior exit survey	Every offering by pertinent course instructor Every year, coordinated by GE480 instructor
	(2) An ability to 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	DIRECT (embedded assignments): GE381/382, GE480, GE376, GE440 INDIRECT: graduating senior exit survey	Every offering by pertinent course instructor Every year, coordinated by GE480 instructor
	(3) An ability to communicate effectively with a range of audiences	DIRECT (embedded assignments): GE101, GE375, GE381/382, GE480, <u>including written reports and oral presentations</u> INDIRECT: graduating senior exit survey	Every offering by pertinent course instructor Every year, coordinated by GE480 instructor
	(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	DIRECT (embedded assignments): GE101, GE420, GE480 INDIRECT: graduating senior exit survey	Every offering by pertinent course instructor Every year, coordinated by GE480 instructor
	(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	DIRECT (embedded assignments): GE326, GE405 INDIRECT: graduating senior exit survey	Every offering by pertinent course instructor Every year, coordinated by GE480 instructor
	(6) An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to	DIRECT (embedded assignments): GE326, GE405, GE420 INDIRECT: graduating	Every offering by pertinent course instructor Every year, coordinated by

Submitted by: Margaret Darrow

community, teamwork, commitment to ethical standards, and life-long learning.	draw conclusions	senior exit survey	GE480 instructor
	(7) An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	DIRECT (embedded assignments): GE375, GE420, GE480, GE376, GE441	Every offering by pertinent course instructor
		INDIRECT: graduating senior exit survey	Every year, coordinated by GE480 instructor
	(8) A knowledge of engineering applications as related to geological resources and geohazards in Alaska and an ability to practice engineering in Arctic-related projects	DIRECT (embedded assignments): GE261, GE375, GE381/382, GE376, GE441	Every offering by pertinent course instructor
		INDIRECT: graduating senior exit survey	Every year, coordinated by GE480 instructor