

University of Alaska Fairbanks
Student Learning Outcomes Assessment Plan
Bachelor of Science (Mining Engineering)

College of Engineering and Mines
 May 2021

Expanded Statement of Institutional Purpose	Intended Objectives/Outcomes	Assessment Criteria and Procedures	Implementation (what, when, who)
Mission Statement: As the nation's northernmost accredited Mining Engineering Program, our mission is to advance and disseminate knowledge for exploration, evaluation, development and efficient production of mineral and energy resources with assurance of the health and safety of persons involved, and protection of the environment, through creative teaching, research, and public service with an emphasis on Alaska, the North, and its diverse peoples.	Meet student outcomes as defined by ABET accreditation. See note below & next page. Note: 1. The ABET outcomes changed nationally in Fall 2018. The new Outcome matrix is provided. 2. The communications outcomes defined by ABET meet the requirements of the UAF communication plan. 3. Curriculum change will be in effect from AY 2021-2022. Updated outcome matrix provided.	• Course Assessments • Review of Senior Project by Professionals • Program Review by Faculty • Student Survey • Exit Interview of Graduates	• Course assessment occurs every semester by individual faculty • The senior project is presented to the Alaska Miners Association members. • Program Faculty review the program annually • Students are surveyed for course & program assessment as needed • Exit Interviews are conducted with graduating seniors.
	To graduate competent engineers who: • Apply their engineering skills and knowledge, with consideration to health, safety and the environment • Pursue careers in mineral related industries • Are active among the local and professional mining community • Seek professional advancement of mining engineering technology and practices.	• Placement • Alumni Survey • Employer Survey • Industrial Advisory Board • FE Exam Pass rate	• Department monitors placement • Alumni & employer surveys are done every few years • Program Advisory meets every year*

*New Advisory Board will be constituted once the BOR mandated changes are finalized

B.S. Mining Engineering ABET Outcome Matrix (AY 2018-19, 2019-20, 2020-21)

Outcomes Matrix

Date: 8/23/2018

	MIN 103	MIN 104	MIN 202	MIN 225	MIN 226	MIN 301	MIN 302	MIN 313	MIN 370	MIN 407	MIN 408	MIN 409	MIN 443	MIN 454	MIN 482	MIN 484	MIN 489	MIN 490
1. Apply engg, sci, math				X	X			X	X			X	X	X				
2. Apply engg design						X	X		X			X		X	X	X		X
3. Communicate effectively							X			X	X		X				X	X
4. Ethical/Prof Responsibility		X								X							X	X
5. Team work			X				X		X									X
6. Experiments, data analysis			X				X	X	X									
7. Acquire knowledge, learning strategies	X									X					X	X		X

- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering (226,454), science (313), and mathematics (225,370,409,443)
- an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health (302), safety (301,370,454), and welfare, as well as global (490), cultural(490), social(490), environmental(490), and economic factors (409,482,490)
- an ability to communicate effectively with a range of audiences (408,489,490)
- an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global (104,407), economic (407,489,490), environmental (407,489,490), and societal contexts (407,489,490)
- an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment (202,490), establish goals, plan tasks, and meet objectives (302,370,490)
- an ability to develop and conduct appropriate experimentation (302,313,370), analyze and interpret data (202,302,313,370), and use engineering judgment to draw conclusions (302,370)
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies (103,407,482,484,490)

B.S. Mining Engineering ABET Outcome Matrix (New Effective AY 2021-22)

Outcomes Matrix - Mining Engineering

Date: 9/30/2020

	MIN 110	MIN 202	MIN 302	MIN 303	MIN 313	MIN 370	MIN 399	MIN 407	MIN 409	MIN 444	MIN 454	MIN 482	MIN 484	MIN 489	MIN 490	MIN 491
1. Apply engg, sci, math	X			X	X	X	X		X	X	X					
2. Apply engg design			X	X		X			X		X	X	X		X	
3. Communicate effectively			X				X	X						X	X	
4. Ethical/Prof Responsibility	X							X		X				X	X	
5. Team work		X	X			X									X	X
6. Experiments, data analysis		X	X		X	X										X
7. Acquire knowledge, learning strategies	X							X		X		X	X		X	X

- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering (110,454), science (313,444), and mathematics (303,370,399,409)
- an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health (302), safety (303,370,454), and welfare, as well as global (490), cultural(490), social(490), environmental(490), and economic factors (409,482,484,490)
- an ability to communicate effectively with a range of audiences (302,399,407,489,490)
- an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global (110,407,444), economic (407,489,490), environmental (407,489,490), and societal contexts (407,444,489,490)
- an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment (202,490), establish goals, plan tasks, and meet objectives (302,370,490,491)
- an ability to develop and conduct appropriate experimentation (302,313,370,491), analyze and interpret data (202,302,313,370,491), and use engineering judgment to draw conclusions (302,370)
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies (110,407,444,482,484,490,491)