

UNIVERSITY OF ALASKA FAIRBANKS
Student Learning Outcomes Assessment Plan
BS in Climate and Atmospheric Sciences (CAS)
College of Natural Sciences and Mathematics
2024

Expanded Statement of Institutional Purpose	Intended Objectives/Outcomes	Assessment Criteria and Procedures	Implementation (what, when, who)
MISSION STATEMENT: CAS provides a high-quality education that prepares students for professional success and personal satisfaction in careers that meet the challenges of atmospheric science problems in Alaska, the Arctic and around the world. GOAL STATEMENT: CAS will be recognized for high-quality educational programs that prepares students in weather forecasting and climate sciences as well as strong communication skills. CAS strives to be acknowledged as an excellent undergraduate program preparing students with strong technical skills while also valuing diversity, equity and inclusion.	1. Technical Knowledge Fundamental understanding of the components (dynamics, thermodynamics, radiation, cloud processes, and climate variations) of the Earth's atmosphere. Concentration-focused skills: 1) Forecasting Concentration graduates will be able to develop forecasts of the atmosphere at various time and space scales and 2) Climate Science concentration graduates will be able to analyze climate data and information to understand climate variability and change.	<u>Instrument:</u> Course projects/laboratory exercises that require analysis of data and internships. <u>Rubric:</u> Standard evaluation and mentor evaluations. <u>Min. Standard:</u> 80% of students meet or exceed expectations.	1. Meteorology knowledge exam before ATM101x, after ATM101x, after ATM401, and at the end of program. 2. Evaluations by job mentors in technical internships or research projects. 3. Student presentations (evaluation forms) 4. Forecast contest results (Forecasting concentration) 5. Summarized at the end of school year by faculty discussion for each student in the degree program.
	2. Ethical Knowledge Ethical guidelines are followed for all data collected and produced and for intellectual property.	<u>Instrument:</u> Group projects, course activities, research projects & internships <u>Rubric:</u> Based on existing accepted standards <u>Min. Standard:</u> For each question, 80% of students meet or exceed expectations.	1. FAIR data principles applied to research data. 2. Inclusion of ethical principles of engagement in indigenous communities in required courses (ATM 101X, ATM 220, ATM 311, ATM 456)

	3. Problem Solving Ability to engage in analytical thinking, problem solving and demonstrate subject expertise	<u>Instrument:</u> Project presentations and reports. <u>Rubric:</u> Evaluations of course presentations and written reports <u>Min. Standard:</u> 80% of the students meet or exceed expectations.	1. Evaluations by job mentors in technical internships or research projects. 2. Student presentations (evaluation forms) 3. Summarized at the end of school year by faculty discussion for each student in the degree program.
	4. Communication 4a. Written: Students should be able to compose clear text consisting of cogent arguments aimed at multiple audiences: professional and general audiences. 4b. Oral: Students should be able to deliver a clear professional presentation for varied audiences (professional and general audiences) and field questions related to presentation with confidence and poise.	<u>Instrument:</u> Project reports. <u>Rubric:</u> Varies according to product <u>Min. Standard:</u> 80% of students meet or exceed expectations. <u>Instrument:</u> Oral presentations. <u>Rubric:</u> Standard oral presentation evaluation rubric <u>Min. Standard:</u> 80% of students meet or exceed expectations.	1. Written text evaluations collected in courses will be summarized by faculty at end of school year. Courses include the following: ATM 401, ATM 446, ATM 415, and ATM 456 1. Oral presentation evaluations collected in courses will be summarized by faculty at end of school year. Courses include the following: ATM 445, ATM 446, ATM 415, and ATM 456.