

UNIVERSITY OF ALASKA FAIRBANKS
Student Learning Outcomes Assessment Plan
Mathematics Ph.D. Degree
 College of Natural Sciences and Mathematics
 Adopted Fall 2025

Expanded Statement of Institutional Purpose	Intended Objectives/Outcomes	Assessment Criteria and Procedures	Implementation (what, when, who)
MISSION STATEMENT: We provide high-quality advanced mathematics education and training responsive to the needs of individual students, the diverse population of Alaska, and the national and international mathematics communities. GOAL STATEMENT: To assure that our graduates attain a solid grounding in advanced mathematics, and are equipped to succeed as active mathematical professionals.	Mastery of base knowledge for teaching and research: Students will attain a level of technical ability and knowledge to succeed as educators and researchers, including significant depth in several topic areas.	Students will demonstrate increasing mastery through performance in course work, TA or similar duties, and qualifying exams in 3 topical areas, one of which will be the dissertation focus.	The student and their graduate committee assess student progress at least annually, with input from instructors, and TA supervisors. Remedial steps may be required to address deficiencies. Assessments are conveyed to the PhD program chair.
	Capability to conduct independent mathematical research: Students will be able to formulate research objectives, find and absorb relevant work of others, and complete projects through publication.	The thesis document is the primary basis for assessment. Input from the advisor is sought on independence of work and progress toward publication in peer-reviewed journals.	The graduate committee and department chair assess the thesis as program completion nears. Factors include quality of the research, the student's contribution to any joint work, and the placement of the work within the larger research field. Final assessments are conveyed to the PhD program chair.
	Communication skills consistent with professional mathematical standard: Students will have oral presentation skills sufficient to prepare and present professional talks on research subjects, and writing skills sufficient to produce professional publications.	Oral: Before advancement to candidacy, students deliver a departmental presentation outlining a research problem they intend to study. The main results of that study are presented in a second public presentation as part of the thesis defense. Written: The thesis document will be evaluated for clarity and style. Professional publication (if it occurs before graduation) will be noted.	The oral presentations are evaluated by the graduate committee with input from other faculty who attend. The dissertation is assessed by the advisor and graduate committee. Final assessments are conveyed to the PhD program chair.