Academic Affairs
University of Alaska Anchorage

3211 Providence Drive
Anchorage, AK 99508-4614
907.786.1050

2022 ANNUAL ACADEMIC ASSESSMENT REPORT FORM
(Due October 15 to the dean)

PROGRAM SECTION (Due to the dean on October 15)

Submission date: 9/30/2022

Submitted by: Mark Fitch, mafitch@alaska.edu

Program(s) covered in this report: Mathematics BA/BS

If you selected "Other" above, please identify. *(100 characters or less)*

College: College of Arts and Sciences

Campuses where the program(s) is delivered: ☒**Anchorage** ☐**KOD** ☐**KPC** ☐**MSC** ☐**PWSC**

Specialized accrediting agency (if applicable): N/A

If explanation is necessary, such as only some of the certificates and degrees are covered by the specialized accreditation, briefly describe:

INSTITUTIONAL STUDENT LEARNING CORE COMPETENCIES

In 2020, UAA launched a consensus-based, deliberative process to identify the key skillsets that help students achieve academic and post-graduation success. After a year-long process that included students, faculty, staff, administrators, alumni, and employers, the UAA community identified four core competencies at the heart of a quality UAA education. Students develop mastery of these competencies through curricular (e.g., courses), co-curricular (e.g., internships, conferences), and extra-curricular (e.g., student clubs) learning experiences.

After the stakeholder-based process in AY20, UAA is phasing in the integration of the core competencies into ongoing processes, including program student learning outcomes assessment. Personal, Professional, and Community Responsibility (PPCR) was integrated into the AY21 Annual Academic Assessment Report. The AY22 Annual Academic Assessment Report now also integrates Effective Communication.

Question #1 below is designed to engage program faculty in thinking about how they can or already do promote student learning in these two core competencies.

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1. **A.** ***Personal, Professional, and Community Responsibility: The knowledge and skills necessary to promote personal flourishing, professional excellence, and community engagement.***

- **If last year you provided your program's current or planned example of an intentionally designed course, assignment, or activity that develops and showcases the student learning in this core competency, please discuss that implementation and any observations you have regarding how well it is working.** ***(500 characters or less)***
  We noted that the emphasis on logic and axiomatics would lead to these skills and that the portfolio is a chance for them to realize this. Portfolios did include evidence that students recognize their ability to use their skills beyond mathematics. Without an explicit prompt we will likely not see comments on their application of these to personal, professional, and community responsibilities.
- **If last year you *did not* identify a current or planned example of an intentionally designed course, assignment, or activity that provides students the opportunity to develop and showcase this core competency, please identify one now.** ***(500 characters or less)***

B. ***Effective Communication: The knowledge and skills necessary to engage in effective communication in diverse contexts and formats.***

- **What would you hope a student would say if asked where in your program or support service they had the opportunity to develop proficiency in this core competency?** ***(500 characters or less)***
  They would note that written and oral communication of mathematics were required. They provide evidence of learning notations and forms for different fields of mathematics, of skill in typesetting, of ability to present to others in written and oral form.
- **Provide your program's current or planned example(s) of an intentionally designed course, assignment, or activity that showcases the student learning in this core competency.** ***(500 characters or less)***
  Typesetting is taught in MATH A264. Written and oral presentation is required in MATH A420 and STAT A308 which fulfill the GER capstone. MATH A401 has a writing requirement. Other courses have written and oral assignments dependent on individual instructors. Artifacts are collected for portfolios.

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PROGRAM STUDENT LEARNING OUTCOMES

2. **Please list the Program Student Learning Outcomes your program assessed in AY22. For each outcome, indicate one of the following: Exceeded faculty expectations, Met faculty expectations, or Did not meet faculty expectations.**

   Example: Communicate effectively in a variety of contexts and formats – Exceeded faculty expectations.

   Demonstrate knowledge of the techniques of modern mathematical subjects including all of algebra, analysis, discrete mathematics, and probability and statistics: Met expectations

   Demonstrate an ability to solve problems using skills such as deductive logic, data analysis, computation, modeling, connections, and other mathematical techniques: Met expectations

   Demonstrate an ability to create mathematical proofs: Met expectations

   Demonstrate an ability to read, write, and speak mathematics: met expectations

   Demonstrate cognizance of their mathematical knowledge, of mathematics around them, and of the benefit of continued study of mathematics: Met expectations

3. **Describe your assessment process in AY22 for these Program Student Learning Outcomes, including the collection of data, analysis of data, and faculty (and other, e.g., advisory board) conversations around the findings. *(750 characters or less)***

   The ETS Major Field Test for Mathematics is a graduation requirement for all math majors that provides an external validation of knowledge. From the student portfolios the department uses the comments from the student goals, description of courses taken, and reflections to measure five outcomes: knowledge, problem solving, proofs, communication, and cognizance. The presence of meaningful student artifacts from each of the required (core) fields of mathematics demonstrates meeting outcome I (knowledge).

   The exit survey questions address student cognizance of subject matter and need for life-long learning. They are also asked for general comments that can be used for program improvement.

4. **What are the findings and what do they tell the faculty about student learning in your program? *(750 characters or less)***

   Students are able to provide example assignments for each of the outcomes. The quality of their examples varies and roughly matches grades.

5. **Based on the findings, did the faculty make any recommendations for changes to improve student achievement of the Program Student Learning Outcomes? Please describe the recommended action, what improvement in student learning the program hopes to see with this change, the proposed timeline, and how the program will know if the change has worked. If no recommendations for changes were made, please explain that decision. *(750 Characters or less)***

   We want more comparative examples (improvement over multiple semesters). Linear algebra examples were week last year: we should ensure they identify a good example (talk to professors).

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Reflections on reading mathematics are sporadic. We need assignments to ensure students are aware of this and know how to document it. In order to assess the Personal, Professional, and Community responsibility we should make the program expectation of professionalism explicit in MATH A264 and others.

PROGRAM IMPROVEMENTS AND ASSESSING IMPACT ON STUDENT LEARNING

6. **In the past academic year, how did your program use the results of previous assessment cycles to make changes intended to improve student achievement of the Program Student Learning Outcomes? Please check all that apply.**

☐Course curriculum changes
☐Course prerequisite changes
☐Changes in teaching methods
☐Changes in advising
☐Degree requirement changes
☐Degree course sequencing
☐Course enrollment changes (e.g., course capacity, grading structure [pass/fail, A-F])
☐Changes in program policies/procedures
☐Changes to Program Student Learning Outcomes (PSLOs)
☐College-wide initiatives (e.g., High-Impact Practices)
☐Faculty, staff, student development
☒Other
☐No changes were implemented in AY22.

If you checked "Other" above, please describe. ***(100 characters or less)***
assessment (portfolio instructions improved). Curriculum changes were suggested and are pending.

7. **Do you have any information about how well these or other past improvements are working? Are they achieving their intended goals? Please include any data or assessment results that help you demonstrate this.** ***(750 characters or less)***
It is too early to tell if the examples in portfolios are making it easier for students.

8. **PROGRAMS ARE NOT REQUIRED TO RESPOND TO QUESTION #8 FOR THEIR REPORT DUE ON OCTOBER 15, 2022. IT IS HERE JUST FOR THEIR REFERENCE.**

9. **Do you have any examples of post-graduate success you want to highlight? For example, major scholarships, the percent of students who pass licensure examinations, the percent of students accepted to graduate programs, the percent in post-graduation employment in the field or a related field.** ***(750 characters or less)***

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DEAN SECTION (Due to the program on January 15)

1. **Based on the program's responses above, what guidance and support do you have for the program moving forward?** ***(750 characters or less)***
   The program is clearly thinking about possible improvements in their assessment process for the future; they are encouraged to continue to follow up on the issues raised in question 5. The indication is that this will be included in their next assessment plan.

2. **What is the program doing particularly well in terms of its processes for the assessment and improvement of student learning, for example, the achievement of the Program Student Learning Outcomes, the closing of equity gaps, or addressing the core competencies?** ***(750 characters or less)***
   The program has an engaged, thoughtful, reflective and adaptive process,which they are encouraged to continue. The program uses an exit survey and the ETS Major Field test to effectively assess student learning and their program specific student learning outcomes.

Dean's signature: Jenny McNulty **Date:** 1/9/2023