

Assurance of Student Learning 2019-2020	
Ogden College of Science & Engineering	Department of Mathematics
049 Master of Arts in Mathematics	
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<i>Use this page to list learning outcomes, measurements, and summarize results for your program. Detailed information must be completed in the subsequent pages.</i>		
Student Learning Outcome 1: Students will be able to communicate mathematics in a written form at a level commensurate with that of students completing a master's degree.		
Instrument 1	Discussion boards, regularly assigned quizzes, a midterm, and a final from MATH 501, Introduction to Probability and Statistics I. A score of 8 or higher on a 10-point multipart rubric will demonstrate students' ability to communicate mathematically. We expect at least 75% of students to meet this learning outcome.	
Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 1.		Met Not Met
Student Learning Outcome 2: Students will be able to write proofs of theorems in mathematics.		
Instrument 1	Assessments from MATH 503, Introduction to Analysis. A score of 8 or higher on a 10-point multipart rubric for problems given on assessments will indicate that students are able to use multiple strategies in problem solving situations. We expect at least 75% of students to meet this learning outcome.	
Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 2.		Met Not Met
Student Learning Outcome 3: Students will demonstrate their capacity to use multiple strategies and appropriate technology to apply mathematics in problem solving situations and will justify their solutions with sound logic.		
Instrument 1	Assessments from MATH 512, Geometry from an Advanced Perspective. A score of 8 or higher on a 10-point multipart rubric will demonstrate students' ability to choose appropriate strategies, including the use of technology, to solve problems and justify their solutions. We expect at least 75% of students to meet this learning outcome.	
Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 3.		Met Not Met
Student Learning Outcome 4: Students will demonstrate their capacity for collaboration in the mathematics classroom as a learner and as a teacher.		
Instrument 1	Discussion boards from MATH 511, Algebra from an Advanced Perspective. A score of 8 or higher on a 10-point multipart rubric will demonstrate students' ability to collaborate when working towards solutions to problems. We expect at least 75% of students to meet this learning outcome.	
Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 4.		Met Not Met
Program Summary (Briefly summarize the action and follow up items from your detailed responses on subsequent pages.)		
The MA in Mathematics will be undergoing a program change during the 2020-2021 academic year. This program revision will include possible course revisions to exiting courses and the development of new courses to align to the current needs of teachers in the region.		

Student Learning Outcome 1

Student Learning Outcome	Students will be able to communicate mathematics in a written form at a level commensurate with that of students completing a master's degree.		
Measurement Instrument 1	Discussion boards, regularly assigned quizzes, a midterm, and a final from MATH 501, Introduction to Probability and Statistics		
Criteria for Student Success	A score of 8 or higher on a 10-point multipart rubric will demonstrate students' ability to communicate mathematically.		
Program Success Target for this Measurement	75%	Percent of Program Achieving Target	100%
Methods	The artifacts from all enrolled students ($n = 7$) that were used to assess this SLO were required discussion boards, regularly assigned quizzes, a midterm, and a final.		
Based on your results, highlight whether the program met the goal Student Learning Outcome 1.		Met	Not Met
Actions (Describe the decision-making process and actions for program improvement. The actions should include a timeline.)			
Based upon previous semester implementations of a paper and project, it was determined that this assessment item was not helping students to reach the stated objective. As such, the course was transitioned to a greater focus on statistical interpretations at the conceptual level to help meet this SLO. Students are expected to write and reflect in a statistically precise way. This decision was reached after completing <i>Quality Matters</i> certification for the course and receiving feedback from the reviewers during that process and after reviewing SITE evaluations. Additionally, future improvements for the course are being considered as part of a program redesign that will occur during the 2020-2021 academic year.			
Follow-Up (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)			
We will continue to monitor student success on this learning outcome.			
Next Assessment Cycle Plan (Please describe your assessment plan timetable for this outcome.)			
The course used to assess this outcome is a core course in the MA in Mathematics Program and it is offered once a year. This will be assessed again during the spring 2021 semester when the course is taught again.			

Student Learning Outcome 2

Student Learning Outcome	Students will be able to write proofs of theorems in mathematics.		
Measurement Instrument 1	Assessments from MATH 503, Introduction to Analysis.		
Criteria for Student Success	A score of 8 or higher on a 10-point multipart rubric for problems given on assessments will indicate that students are able to use multiple strategies in problem solving situations.		
Program Success Target for this Measurement	75%	Percent of Program Achieving Target	83.3%
Methods	The artifacts from all enrolled students ($n = 6$) that were used to assess this SLO were homework, midterm, final.		
Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 2.			Met
Actions (Describe the decision-making process and actions planned for program improvement. The actions should include a timeline.)			
While we have plans to redesign the MA In Mathematics program, this course will remain part of the program and will not undergo a revision.			
Follow-Up (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)			
We will continue to monitor student success on this learning outcome.			
Next Assessment Cycle Plan (Please describe your assessment plan timetable for this outcome)			
The course used to assess this outcome is a core course in the MA in Mathematics Program and it is offered once a year. This will be assessed again during the fall 2020 semester when the course is taught again.			

Student Learning Outcome 3

Student Learning Outcome	Students will demonstrate their capacity to use multiple strategies and appropriate technology to apply mathematics in problem solving situations and will justify their solutions with sound logic.		
Measurement Instrument 1	Assessments from MATH 512, Geometry from an Advanced Perspective.		
Criteria for Student Success	A score of 8 or higher on a 10-point multipart rubric will demonstrate students' ability to choose appropriate strategies, including the use of technology, to solve problems and justify their solutions.		
Program Success Target for this Measurement	75%	Percent of Program Achieving Target	100%
Methods	The artifacts from all enrolled students ($n = 5$) that were used to assess this SLO were the midterm and final.		
Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 3.			Met
Actions (Describe the decision-making process and actions for program improvement. The actions should include a timeline.)			
During the upcoming program revision during the 2020-2021 academic year, course materials for this course will be developed that align with the new materials developed for MATH 511. These materials will be ready to use during the spring 2021 semester.			
Follow-Up (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)			
We will continue to monitor student success on this learning outcome.			
Next Assessment Cycle Plan (Please describe your assessment plan timetable for this outcome)			
The course used to assess this outcome is a core course in the MA in Mathematics Program and it is offered once a year. This will be assessed again during the spring 2021 semester when the course is taught again.			

Student Learning Outcome 4

Student Learning Outcome	Students will demonstrate their capacity for collaboration in the mathematics classroom as a learner and as a teacher.		
Measurement Instrument 1	Discussion boards and assignments from MATH 511, Algebra from an Advanced Perspective.		
Criteria for Student Success	A score of 8 or higher on a 10-point multipart rubric will demonstrate students' ability to collaborate when working towards solutions to problems. We expect at least 75% of students to meet this learning outcome.		
Program Success Target for this Measurement	75%	Percent of Program Achieving Target	75%
Methods	The artifacts from all enrolled students ($n = 8$) that were used to assess this SLO were assignments and discussion boards.		
Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 3.			Met
Actions (Describe the decision-making process and actions for program improvement. The actions should include a timeline.)			
During the upcoming program revision during the 2020-2021 academic year, course materials that will tend to elicit more collaboration will be developed. These materials will be ready to use during the fall 2020 semester.			
Follow-Up (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)			
We will continue to monitor student success on this learning outcome.			
Next Assessment Cycle Plan (Please describe your assessment plan timetable for this outcome)			
The course used to assess this outcome is a core course in the MA in Mathematics Program and it is offered once a year. This will be assessed again during the fall 2020 semester when the course is taught again.			