

Assessment: Assessment Plan

Degree Program - AS - Mathematics (MA)

CIP Code: 27.0101.00

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Program Purpose Statement: This program has not accepted new students for several years and none are expected in the foreseeable future.

This program consists of 36 hours of graduate work, including 3 hours of credit for a departmental report. The student must complete three sequences chosen from algebra, analysis, geometry, probability and statistics, modeling and applications, and computer literacy. This degree is offered primarily for those students who wish to teach mathematics at the secondary level or at a junior/community college.

Modality: Fully Online (86-99% Online)

Student Learning Outcome: Application to teaching

Students will apply the mathematical content knowledge gained in this program to improve the depth and clarity of explanations given to students and to improve classroom activities

Outcome Status: Active

Outcome Type: Student Learning

Start Date: 09/01/2015

Assessment Methods

Portfolio Review - MA students are required to assemble a portfolio as part of their graduation requirements. The portfolios of graduating students will be examined for direct evidence of how the mathematical knowledge learned in this program has improved the depth and clarity of explanations given to students.

(Active)

Criterion: The portfolios of at least 60% of the graduating teachers will contain evidence of a specific instance in which the mathematical knowledge learned in this program has improved the depth or clarity of explanations given to students.

Schedule: Begin Fall 2015

Embedded Assessments - As part of the final project for Math 5378, students are required to provide an action plan describing how the statistical techniques learned in the class can be applied and assessed in their own classrooms. These final projects will be examined for direct evidence that students have learned to successfully apply their content knowledge to their teaching using the following rubric:

4 points: The student's action plan gave multiple applications of the content and a reasonable plan for assessing student learning.
3 points: The student's action plan gave only one application of content knowledge or the plan for assessing student learning was weak.

2 points: The student's action plan gave only one application of content knowledge or the plan for assessing student learning was weak.

1point: The student's action showed no evidence of the ability to apply content knowledge to teaching.

(Active)

Criterion: The average score on the embedded assessment will be at least 2.5.

Schedule: To begin in the 2016-17 cycle.

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Student Learning Outcome: Knowledge of Applied Mathematics

Students will demonstrate the ability to solve problems in applied mathematics.

Outcome Status: Active

Outcome Type: Student Learning

Start Date: 09/01/2017

Assessment Methods

Exam - The students' abilities to solve problems using modular arithmetic, countability, and tilings will be assessed using embedded questions on the final exam for regular long-semester sections of Math 5377. One or more problems on the final exam will be graded using the following rubric:

4 points: The solution is complete and correct.

3 points: The solution is missing a minor element or is incorrect in a minor point.

2 points: The solution is missing a major element or is incorrect in one major point.

1 point: The solution is missing more than one major element or is incorrect in more than one major point. (Active)

Criterion: The average student score on the embedded problems will be at least 2.5.

Exam - The students' abilities to solve problems in chaos theory, applied topology, probability and statistics will be assessed using embedded questions on the final exam for regular long-semester sections of Math 5378. One or more problems on the final exam will be graded using the following rubric:

4 points: The solution is complete and correct.

3 points: The solution is missing a minor element or is incorrect in a minor point.

2 points: The solution is missing a major element or is incorrect in one major point.

1 point: The solution is missing more than one major element or is incorrect in more than one major point. (Active)

Criterion: The average student score on the embedded problems will be at least 2.5.

Student Learning Outcome: Knowledge of Analysis

Students will demonstrate the ability to solve problems and write proofs in analysis.

Outcome Status: Active

Outcome Type: Student Learning

Start Date: 09/01/2017

Assessment Methods

Exam - The students' abilities to solve problems involving limits of sequences and functions will be assessed using embedded questions on the final exam for regular long-semester sections of Math 5366. One or more problems on the final exam will be graded using the following rubric:

4 points: The solution is complete and correct.

3 points: The solution is missing a minor element or is incorrect in a minor point.

2 points: The solution is missing a major element or is incorrect in one major point.

1 point: The solution is missing more than one major element or is incorrect in more than one major point. (Active)

Criterion: The average student score on the embedded problems will be at least 2.5.

Exam - The students' abilities to write proofs involving the theories of differentiation and integration will be assessed using embedded questions on the final exam for regular long-semester sections of Math 5367. One or more problems on the final exam

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will be graded using the following rubric:

4 points: The proof is complete and correct.

3 points: The proof is missing a minor element or is incorrect in a minor point.

2 points: The proof is missing a major element or is incorrect in one major point.

1 point: The proof is missing more than one major element or is incorrect in more than one major point.

(Active)

Criterion: The average student score on the embedded problems will be at least 2.5.