Degree Program Assessment Plan

Degree Program - AS - Mathematics (MA)

CIP Code: 27.0101.00
Degree Program Coordinator: Alex Wang
Degree Program Coordinator Email: alex.wang@ttu.edu
Degree Program Coordinator Phone: 8068347626

Program Purpose Statement: M.A. Degree in Mathematics. 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.

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.

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

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 evidence of the ability to appropriately incorporate new mathematical content into their classroom activities.

Criterion: The portfolios of at least 60% of the graduating teachers will contain evidence of a specific instance in which they have appropriately incorporated new mathematical content in their classroom activities.
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...
### Degree Program - AS - Mathematics (MA)

<table>
<thead>
<tr>
<th>Criterion:</th>
<th>The average score on the embedded assessment will be at least 2.5.</th>
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<tbody>
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<td>Schedule:</td>
<td>To begin in the 2016-17 cycle.</td>
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<tr>
<th><strong>Student Learning Outcome:</strong> Training to Teach AP and College Courses</th>
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<tbody>
<tr>
<td>Students will demonstrate the ability to effectively teach AP, dual credit, and community college courses in algebra, statistics, pre-calculus, and calculus</td>
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<td><strong>Outcome Status:</strong> Active</td>
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<td><strong>Outcome Type:</strong> Student Learning</td>
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<td><strong>Start Date:</strong> 09/01/2016</td>
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<td><strong>End Date:</strong> 09/01/2017</td>
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**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 the ability to effectively teach AP, dual credit, and community college courses in algebra and statistics.

**Criterion:** The portfolios of at least 60% of the graduating students will present 3 specific pieces of evidence from their coursework demonstrating the ability to effectively teach AP, dual credit, and community college courses in algebra or statistics.

**Schedule:** Begin Fall 2016

#### 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 the ability to effectively teach AP, dual credit, and community college courses in pre-calculus and calculus.

**Criterion:** The portfolios of at least 60% of the graduating students will present 3 specific pieces of evidence from their coursework demonstrating the ability to effectively teach AP, dual credit, and community college courses in pre-calculus or calculus.

**Schedule:** Begin Fall 2016

### 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**
Degree Program - AS - Mathematics (MA)

**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.

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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 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.

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**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.

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**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 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.