

# Assessment: Assessment Plan

## Degree Program - AS - Mathematics (BA)

**CIP Code:** 27.0101.00

**Degree Program Coordinator:** Brock Williams

**Degree Program Coordinator Email:** brock.williams@ttu.edu

**Degree Program Coordinator Phone:** +18068341591

**Program Purpose Statement:** The BA degree and BS degrees are both designed to prepare students to enter a graduate program, to teach high school mathematics, or to work in private sector or government careers that require logical reasoning and problem-solving skills. The difference in the two programs is that the BS requires a science or engineering minor while the BA requires 2 additional humanities courses and 2 fewer math courses.

The BA and BS programs thus share identical learning outcomes.

**Modality:** Face-to-Face

### Student Learning Outcome: Proof Writing

Students will write clear correct proofs of results from algebra and analysis

**Outcome Status:** Active

**Outcome Type:** Student Learning

**Start Date:** 06/15/2015

**Additional Assessment Component:** Communication Literacy

### Assessment Methods

**Exam** - The students' abilities to write proofs of algebra results will be assessed using embedded questions on the final exam for regular long-semester sections of Math 3360. One or more proofs written as part of the final exam will be graded using the following rubric:

4 points: The proof is complete, clear, and correct.

3 points: The proof is missing a minor element or the argument lacks clarity.

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

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

We have set our benchmark based on several years' data on student performance on this assessment. The benchmark is re-assessed each year to ensure it is both reasonable and provides an aspirational target for continuous improvement in student learning. (Active)

**Criterion:** The average score using this rubric will be at least 2.0.

We have set our benchmark based on several years' data on student performance on this assessment. The benchmark is re-assessed each year to ensure it is both reasonable and provides an aspirational target for continuous improvement in student learning.

**Schedule:** Begin Fall 2016

**Exam** - The students' abilities to write proofs of analysis results will be assessed using embedded questions on the final exam for regular long-semester sections of Math 4350. One or more proofs written as part of the final exam will be graded using the following rubric:

4 points: The proof is complete, clear, and correct.

# Degree Program - AS - Mathematics (BA)

- 3 points: The proof is missing a minor element or the argument lacks clarity.
- 2 points: The proof is missing a major element or the argument is incorrect in one major point .
- 1 point: The proof is missing more than one major element or the argument is incorrect in more than one major point.

We have set our benchmark based on several years' data on student performance on this assessment. The benchmark is re-assessed each year to ensure it is both reasonable and provides an aspirational target for continuous improvement in student learning. (Active)

**Criterion:** The average score using this rubric will be at least 2.5.

We have set our benchmark based on several years' data on student performance on this assessment. The benchmark is re-assessed each year to ensure it is both reasonable and provides an aspirational target for continuous improvement in student learning.

**Schedule:** Begin Fall 2016

## Student Learning Outcome: Differential and Integral Calculus

Students will demonstrate the ability to solve problems using differential and integral calculus

**Outcome Status:** Active

**Outcome Type:** Student Learning

**Start Date:** 09/01/2016

### Assessment Methods

**Exam** - The students' abilities to solve problems using integral calculus will be assessed using embedded questions on the final exam for regular long-semester sections of Math 1452. 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.

We have set our benchmark based on several years' data on student performance on this assessment. The benchmark is re-assessed each year to ensure it is both reasonable and provides an aspirational target for continuous improvement in student learning. (Active)

**Criterion:** The average score using this rubric will be at least 2.5.

We have set our benchmark based on several years' data on student performance on this assessment. The benchmark is re-assessed each year to ensure it is both reasonable and provides an aspirational target for continuous improvement in student learning.

**Schedule:** Begin Fall 2016

**Exam** - The students' abilities to solve problems using differential calculus will be assessed using embedded questions on the final exam for regular long-semester sections of Math 1451. 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.

We have set our benchmark based on several years' data on student performance on this assessment. The benchmark is re-

# Degree Program - AS - Mathematics (BA)

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**Criterion:** The average score using this rubric will be at least 2.5.

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**Schedule:** Begin Fall 2016

## Student Learning Outcome: Linear Algebra and Differential Equations

Students will solve problems using linear algebra and differential equations.

**Outcome Status:** Active

**Outcome Type:** Student Learning

**Start Date:** 07/01/2016

**Additional Assessment Component:** Communication Literacy

### Assessment Methods

**Exam** - The students' abilities to solve problems using linear algebra will be assessed using embedded questions on the final exam for regular long-semester sections of Math 2360. 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.

We have set our benchmark based on several years' data on student performance on this assessment. The benchmark is re-assessed each year to ensure it is both reasonable and provides an aspirational target for continuous improvement in student learning. (Active)

**Criterion:** The average score using this rubric will be at least 2.5.

We have set our benchmark based on several years' data on student performance on this assessment. The benchmark is re-assessed each year to ensure it is both reasonable and provides an aspirational target for continuous improvement in student learning.

**Schedule:** Begin Fall 2016

**Exam** - The students' abilities to solve differential equations will be assessed using embedded questions on the final exam for regular long-semester sections of Math 3354. 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.

We have set our benchmark based on several years' data on student performance on this assessment. The benchmark is re-assessed each year to ensure it is both reasonable and provides an aspirational target for continuous improvement in student learning. (Active)

**Criterion:** The average score using this rubric will be at least 2.5.

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**Schedule:** Begin Fall 2016