Course Student Learning Outcomes Assessment

MATH 070 Geometry

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General Information (Course Student Learning Outcomes Assessment)

Standing Requirements

Course Description

Basic Euclidean Geometry. Includes concepts of lines planes triangles congruence proofs inequalities parallel lines similarity areas and volumes.

Course Student Learning Outcomes

MATH 70 Geometry Outcome Set

Outcome

Outcome	Mapping
Outcome 1 Read, define and apply geometric vocabulary and symbols.	**Institutional Student Learning Outcomes:** Communicate 1, Communicate 2, Learn 1, Think 1
Outcome 2 Translate the physical world via geometric concepts and the relationships between geometric figures.	**Institutional Student Learning Outcomes:** Communicate 1, Communicate 2, Learn 1, Think 1
Outcome 3 Evaluate geometric data through deductive and inductive reasoning.	**Institutional Student Learning Outcomes:** Communicate 1, Learn 2, Think 1, Think 3
Outcome 4 Incorporate geometric figures in critical thinking and logical approaches to problem solving.	**Institutional Student Learning Outcomes:** Act 3, Communicate 1, Communicate 2, Communicate 3, Learn 1, Learn 2, Think 1, Think 2, Think 3

2014-2015 Assessment Cycle

Measurements

Outcomes and Measures

MATH 70 Geometry Outcome Set

Outcome

Outcome 1
Read, define and apply geometric vocabulary and symbols.

Measure: Math 070 SLO 1 - Fall 2014
Course level; Direct - Exam

Description of Measurement Tool: Students are given a departmental final with 9 multiple-choice embedded questions pertaining to specific topics for this SLO. Each problem is graded as correct or incorrect.

Criteria for Success: Individual & Collective Student Criterion: Individually, success is defined as answering 6 out of the 9 questions correctly.
Collectively, success is defined as 70% of the class being individually successful.

Cycle of Assessment: This outcome will be assessed in the Fall semester every three years.

For this report, the data was gathered in Fall 2014, collated, analyzed, reported, and discussed in Fall 2015, with recommendations implemented in Fall 2015.

Who is Responsible for Assessment Activity?: The Math 070 coordinator of record for 2014-2015, John Smith, is responsible for the assessment.

Findings

Finding per Measure

MATH 70 Geometry Outcome Set

Outcome

Outcome 1
Read, define and apply geometric vocabulary and symbols.

Measure: Math 070 SLO 1 - Fall 2014
Course level; Direct - Exam

Description of Measurement Tool: Students are given a departmental final with 9 multiple-choice embedded questions pertaining to specific topics for this SLO. Each problem is graded as correct or incorrect.

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For this report, the data was gathered in Fall 2014, collated, analyzed, reported, and discussed in Fall 2015, with recommendations implemented in Fall 2015.

Who is Responsible for Assessment Activity?: The Math 070 coordinator of record for 2014-2015, John Smith, is responsible for the assessment.

Findings for Math 070 SLO 1 - Fall 2014

Summary of Findings: One section of Math 70 was offered, and all finals were assessed (n=20).

Overall success rate:

80.6% of students correctly answered 6 or more of the 9 questions. 75% of the students passed the class.

Results: Criteria for Success Achievement Status: Met

Analysis of Findings: There was only one problem that was missed by more than 30% of the class. It required students to distinguish an altitude of a triangle from 3 internal line segments - one an altitude, one an angle bisector and the third a segment joining a vertex to an opposite side. Even though half of the students did not answer that question correctly, the students demonstrated mastery of the concept.

Recommendations: These findings will be discussed with the Math Department and future Geometry Instructors. Encourage instructors to focus on definition of altitude and finding it.

Overall Recommendations

No text specified

Plans of Action

Status Reports

2013-2014 Assessment Cycle

Measurements

Outcomes and Measures

MATH 70 Geometry Outcome Set

Outcome

Outcome 1
Read, define and apply geometric vocabulary and symbols.

Measure: Math 070 SLO 1
Course level; Direct - Exam

Description of Measurement Tool: Students are given a departmental final with 9 multiple-choice embedded questions pertaining to specific topics for this SLO. Each problem is graded as correct or incorrect.

Criteria for Success: Individual & Collective Student Criterion: Individually, success is defined as answering 6 out of the 9 questions correctly.
Collectively, success is defined as 70% of the class being individually successful.

Cycle of Assessment: This outcome will be assessed in the fall semester every three years.

For this report, the data was gathered in Fall 2013, collated, analyzed, reported, and discussed in Spring 2014, with recommendations implemented in Fall 2014.

Who is Responsible for Assessment Activity?: The Math 070 coordinator of record for 2013-2014, John Smith, is responsible for the assessment.

Outcome 2
Translate the physical world via geometric concepts and the relationships between geometric figures.

Measure: Math 070 SLO 2
Course level; Direct - Exam

Description of Measurement Tool: Students are given a departmental final with four multiple-choice embedded questions pertaining to specific topics for this SLO. Each problem is graded as correct or incorrect.

Criteria for Success: Individual & Collective Student Criterion: Individually, success is defined as answering 3 out of the 4 questions correctly.
Collectively, success is defined as 70% of the class being individually successful.

Cycle of Assessment: This outcome will be assessed in the fall semester every three years.

For this report, the data was gathered in Fall 2013, collated, analyzed, reported, and discussed in Spring 2014, with recommendations implemented in Fall 2014.

Who is Responsible for Assessment Activity?: The Math 070 coordinator of record for 2013-2014, John Smith, is responsible for the assessment.

Outcome 3
Evaluate geometric data through deductive and inductive reasoning.

Measure: Math 070 SLO 3
Course level; Direct - Exam

Description of Measurement Tool: Students are given a departmental final with 8 multiple-choice and two free-response embedded questions pertaining to specific topics for this SLO. Each problem is graded as correct or incorrect. No rubric was used for the free-response questions.

Criteria for Success: Individual & Collective Student Criterion: Individually, success is defined as answering 7 out of the 10 questions correctly.

Collectively, success is defined as 70% of the class being individually successful.

Cycle of Assessment: This outcome will be assessed in the fall semester every three years.

For this report, the data was gathered in Fall 2013, collated, analyzed, reported, and discussed in Spring 2014, with recommendations implemented in Fall 2014.

Who is Responsible for Assessment Activity?: The Math 070 coordinator of record for 2013-2014, John Smith, is responsible for the assessment.

Outcome 4

Incorporate geometric figures in critical thinking and logical approaches to problem solving.

Measure: Math 070 SLO 4
Course level; Direct - Exam

Description of Measurement Tool: Students are given a departmental final with 10 multiple-choice and one free-response embedded questions pertaining to specific topics for this SLO. Each problem is graded as correct or incorrect. No rubric was used for the free-response question.

Criteria for Success: Individual & Collective Student Criterion: Individually, success is defined as answering 7 out of the 11 questions correctly.
Collectively, success is defined as 70% of the class being individually successful.

Cycle of Assessment: This outcome will be assessed in the fall semester every three years.

For this report, the data was gathered in Fall 2013, collated, analyzed, reported, and discussed in Spring 2014, with recommendations implemented in Fall 2014.

Who is Responsible for Assessment Activity?: The Math 070 coordinator of record for 2013-2014, John Smith, is responsible for the assessment.

Findings

Finding per Measure

MATH 70 Geometry Outcome Set

Outcome

Outcome 1

Read, define and apply geometric vocabulary and symbols.

Measure: Math 070 SLO 1
Course level; Direct - Exam

Description of Measurement Tool: Students are given a departmental final with 9 multiple-choice embedded questions pertaining to specific topics for this SLO. Each problem is graded as correct or incorrect.

Criteria for Success: Individual & Collective Student Criterion: Individually, success is defined as answering 6 out of the 9 questions correctly.
Collectively, success is defined as 70% of the class being individually successful.

Cycle of Assessment: This outcome will be assessed in the fall semester every three years.

For this report, the data was gathered in Fall 2013, collated, analyzed, reported, and discussed in Spring 2014, with recommendations implemented in Fall 2014.

Who is Responsible for Assessment Activity?: The Math 070 coordinator of record for 2013-2014, John Smith, is responsible for the assessment.

Findings for Math 070 SLO 1

Summary of Findings: One section of Math 70 was offered, and all finals were assessed (n=19).

Overall success rate:

79% of students correctly answered 6 or more of the 9 questions.

Results: Criteria for Success Achievement Status: Met

Analysis of Findings: Our goal is met since more than 70% of students are successfully reading, defining and applying geometric vocabulary and symbols.

Recommendations: There are no recommendations at this time.

Outcome 2

Translate the physical world via geometric concepts and the relationships between geometric figures.

Measure: Math 070 SLO 2

Course level; Direct - Exam

Description of Measurement Tool: Students are given a departmental final with four multiple-choice embedded questions pertaining to specific topics for this SLO. Each problem is graded as correct or incorrect.

Criteria for Success: Individual & Collective Student Criterion: Individually, success is defined as answering 3 out of the 4 questions correctly.
Collectively, success is defined as 70% of the class being individually successful.

Cycle of Assessment: This outcome will be assessed in the fall semester every three years.

For this report, the data was gathered in Fall 2013, collated, analyzed, reported, and discussed in Spring 2014, with recommendations implemented in Fall 2014.

Who is Responsible for Assessment Activity?: The Math 070 coordinator of record for 2013-2014, John Smith, is responsible for the assessment.

Findings for Math 070 SLO 2

Summary of Findings: One section of Math 70 was offered, and all finals were assessed (n=19).

Overall success rate:

86% of students correctly answered 3 or more of the 4 questions.

Results: Criteria for Success Achievement Status: Exceeded

Analysis of Findings: Our students exceeded our expectations with an 86% success rate with translating real world situations using geometrical concepts and analyzing relationships between geometrical figures.

Recommendations: There are no recommendations at this time.

Outcome 3

Evaluate geometric data through deductive and inductive reasoning.

Measure: Math 070 SLO 3

Course level; Direct - Exam

Description of Measurement Tool: Students are given a departmental final with 8 multiple-choice and two free-response embedded questions pertaining to specific topics for this SLO. Each problem is graded as correct or incorrect. No rubric was used for the free-response questions.

Criteria for Success: Individual & Collective Student Criterion: Individually, success is defined as answering 7 out of the 10 questions correctly.
Collectively, success is defined as 70% of the class being individually successful.

Cycle of Assessment: This outcome will be assessed in the fall semester every three years.

For this report, the data was gathered in Fall 2013, collated, analyzed, reported, and discussed in Spring 2014, with recommendations implemented in Fall 2014.

Who is Responsible for Assessment Activity?: The Math 070 coordinator of record for 2013-2014, John Smith, is responsible for the assessment.

Findings for Math 070 SLO 3

Summary of Findings: One section of Math 70 was offered, and all finals were assessed (n=19).

Overall success rate:

63% of students correctly answered 7 or more of the 10 questions.

Results: Criteria for Success Achievement Status: Not Met

Analysis of Findings: Some students had difficulty with the proofs and inductive/deductive reasoning. Sour goal of 70% overall success was not met, but close.

Recommendations: Perhaps grade the proofs and free-response questions on a rubric. Correct/Incorrect does not account for various levels of inductive/deductive reasoning.

Outcome 4

Incorporate geometric figures in critical thinking and logical approaches to problem solving.

Measure: Math 070 SLO 4
Course level; Direct - Exam

Description of Measurement Tool: Students are given a departmental final with 10 multiple-choice and one free-response embedded questions pertaining to specific topics for this SLO. Each problem is graded as correct or incorrect. No rubric was used for the free-response question.

Criteria for Success: Individual & Collective Student Criterion: Individually, success is defined as answering 7 out of the 11 questions correctly.
Collectively, success is defined as 70% of the class being individually successful.

Cycle of Assessment: This outcome will be assessed in the fall semester every three years.

For this report, the data was gathered in Fall 2013, collated, analyzed, reported, and discussed in Spring 2014, with recommendations implemented in Fall 2014.

Who is Responsible for Assessment Activity?: The Math 070 coordinator of record for 2013-2014, John Smith, is responsible for the assessment.

Findings for Math 070 SLO 4

Summary of Findings: One section of Math 70 was offered, and all finals were assessed (n=19).

Overall success rate:

68% of students correctly answered 7 or more of the 11 questions.

Results: Criteria for Success Achievement Status: Not Met

Analysis of Findings: Although our goal is not met since less than 70% of students were successful, the 68% success rate is very close. Issue may be more with not using a rubric with the assessment tool.

Recommendations: Perhaps grade the proofs and free-response questions on a rubric. Correct/Incorrect does not account for various levels of inductive/deductive reasoning.

Overall Recommendations

No text specified

Plans of Action

Actions

MATH 70 Geometry Outcome Set

Outcome

Outcome 3

Evaluate geometric data through deductive and inductive reasoning.

Action: Math 070 SLO 3

This Action is associated with the following Findings

No supporting Findings have been linked to this Action.

Details of Plan of Action: These results will be shared with and discussed among all math faculty.

We will change the assessment tool and grade the proofs and free-response questions on a rubric since correct/Incorrect does not account for various levels of inductive/deductive reasoning.

All Math 70 instructors will be encouraged to grade proofs and problems involving inductive and deductive reasoning on a rubric, as well as give feedback for improvement throughout the semester.

Plan of Action Timeline: Instructor changes will be made Fall 2014. We will reassess this SLO in Fall of 2016.

Who is responsible for carrying out the Plan of Action?: The Math 070 coordinator(s) of record for 2016-2017 will be responsible for the assessment.

How will you determine if the Plan of Action has been effective?: This Plan of Action is considered successful if the overall success rate improves by 5 percentage points or more.

Additional Resources Required (if any):

Budget request amount: $0.00

Priority: Medium

Outcome 4

Incorporate geometric figures in critical thinking and logical approaches to problem solving.

Action: Math 070 SLO 4

This Action is associated with the following Findings

No supporting Findings have been linked to this Action.

Details of Plan of Action: These results will be shared with and discussed among all math faculty.

We will change the assessment tool and grade the proofs and free-response questions on a rubric since correct/Incorrect does not account for various levels of inductive/deductive reasoning.

All Math 70 instructors will be encouraged to grade free-response problem solving questions on a rubric, as well as give feedback for improvement throughout the semester.

Plan of Action Timeline: Instructor changes will be made Fall 2014. We will reassess this SLO in Fall of 2016.

Who is responsible for carrying out the Plan of Action?: The Math 070 coordinator(s) of record for 2016-2017 will be responsible for the assessment.

How will you determine if the Plan of Action has been effective?: Since our goal was almost met, success will still be defined as 70% of the class being individually successful.

Additional Resources Required (if any):

Budget request amount: $0.00

Priority: Low

Status Reports

Action Statuses

MATH 70 Geometry Outcome Set

Outcome

Outcome 3
Evaluate geometric data through deductive and inductive reasoning.

Action: Math 070 SLO 3

Details of Plan of Action: These results will be shared with and discussed among all math faculty.

We will change the assessment tool and grade the proofs and free-response questions on a rubric since correct/Incorrect does not account for various levels of inductive/deductive reasoning.

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Plan of Action Timeline: Instructor changes will be made Fall 2014. We will reassess this SLO in Fall of 2016.

Who is responsible for carrying out the Plan of Action?: The Math 070 coordinator(s) of record for 2016-2017 will be responsible for the assessment.

How will you determine if the Plan of Action has been effective?: This Plan of Action is considered successful if the overall success rate improves by 5 percentage points or more.

Additional Resources Required (if any):

Budget request amount: $0.00

Priority: Medium

Status for Math 070 SLO 3

No Status Added

Outcome 4
Incorporate geometric figures in critical thinking and logical approaches to problem solving.

Action: Math 070 SLO 4

Details of Plan of Action: These results will be shared with and discussed among all math faculty.

We will change the assessment tool and grade the proofs and free-response questions on a rubric since correct/Incorrect does not account for various levels of inductive/deductive reasoning.

All Math 70 instructors will be encouraged to grade free-response problem solving questions on a rubric, as well as give feedback for improvement throughout the semester.

Plan of Action Timeline: Instructor changes will be made Fall 2014. We will reassess this SLO in Fall of 2016.

Who is responsible for carrying out the Plan of Action?: The Math 070 coordinator(s) of record for 2016-2017 will be responsible for the assessment.

How will you determine if the Plan of Action has been effective?: Since our goal was almost met, success will still be defined as 70% of the class being individually successful.

Additional Resources Required (if any):

Budget request amount: $0.00

Priority: Low

Status for Math 070 SLO 4

No Status Added

Status Summary

No text specified

Summary of Next Steps

No text specified

2012-2013 Assessment Cycle

- **Measurements**
- **Findings**
- **Plans of Action**
- **Status Reports**