Academic Program: CAS: Mathematics - BS

Unit's Primary Department: Mathematics/Statistics

Learning Outcome: Elementary Concepts

Students will be able to demonstrate proficiency with elementary concepts from the required courses in the major including the Calculus sequence, Linear Algebra, Differential Equations, Modern Algebra, Analysis, and Complex Analysis. This has been replaced by another learning outcome - see below.

Outcome Year: 2010-2011
Start Date: 12/06/2010
Outcome Status: Archived Learning Outcome

Assessment Plan

<table>
<thead>
<tr>
<th>Assessment Measure</th>
<th>Target</th>
<th>Schedule/Cycle</th>
<th>Active</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Measure: Questions from final exams from the Foundations of Mathematics courses offered Fall 2010 and Spring 2011.</td>
<td>We expect all of them to successfully complete the final exam with a particular attention given to reasonable approaches to solving problems and performing proofs.</td>
<td>The data will be collected in May 2011 and reviewed by members of the mathematics faculty. A report will be issued on the progress at the beginning of Fall 2011.</td>
<td>Yes</td>
</tr>
<tr>
<td>Measure Type: Quiz/ Exam</td>
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</table>

Indirect Measure: Focus group meeting with students by faculty members who did not have the students in that class (Foundations of Mathematics) in Spring 2011. To be conducted in mid-April. 
Measure Type: Focus Group

No target identified.

The data will be collected in May of 2011 and reviewed by members of the mathematics faculty. A report will be issued on the progress at the beginning of Fall 2011.

Learning Outcome: Construct Proof

Students will be able to construct rigorous proofs of mathematical statements.

Outcome Year: 2010-2011
Start Date: 12/06/2010
Outcome Status: Active Learning Outcome

Assessment Plan

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<td>Direct Measure: The final exams from the Foundations of Mathematics courses offered Fall 2010 and Spring 2011 will be rated on a scale of needs more work-satisfactory-proficient.</td>
<td>We expect all of our majors to complete these questions with the rating of satisfactory or better.</td>
<td>The data will be collected in May 2011 and reviewed by members of the mathematics faculty. A report will be issued on the progress at the beginning of Fall 2011.</td>
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Indirect Measure: Focus group meeting with students by faculty members who did not have the students in that class (Foundations of Mathematics) in Spring 2011. To be conducted in mid-April. This has since been replaced by a direct measure - see below.
Measure Type: Focus Group

No target identified.

The data will be collected in May of 2011 and reviewed by members of the mathematics faculty. A report will be issued on the progress at the beginning of Fall 2011.

Indirect measure: At the end of each semester, faculty members teaching the advanced math courses listed below will complete a chart rating the ability of our majors to carry out mathematical courses.

We expect that by the time they are done with the advanced courses, all our majors will Based on course rotation, a complete cycle of advanced courses is two years. We expect
Learning Outcome: Draw Connections

Students will be able to draw connections between concepts from different courses in the mathematics curriculum.

It has been determined that outcome is hard to access and has been archived.

Outcome Year: 2010-2011  
Start Date: 12/06/2010  
End Date: 09/01/2011  
Outcome Status: Archived Learning Outcome

Learning Outcome: Definitions, Procedures and Big Theorems - Analysis

Students will be able to demonstrate correct knowledge of definitions as well as mastery of procedures and big theorems in the advanced courses of the Analysis Group: MATH 504, MATH 520, MATH 521, MATH 540, MATH 550. This replaces the "Elementary Concepts" learning outcome above.

Outcome Year: 2011-2012  
Start Date: 09/01/2011  
Outcome Status: Active Learning Outcome

Learning Outcome: Definitions, Procedures and Big Theorems - Analysis

Students will be able to demonstrate correct knowledge of definitions as well as mastery of procedures and big theorems in the advanced courses of the Analysis Group: MATH 504, MATH 520, MATH 521, MATH 540, MATH 550. This replaces the "Elementary Concepts" learning outcome above.

Outcome Year: 2011-2012  
Start Date: 09/01/2011  
Outcome Status: Active Learning Outcome

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Outcome Year: 2011-2012  
Start Date: 09/01/2011  
Outcome Status: Active Learning Outcome

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<td>Direct measure: The assessment committee will look at the grades of our majors from the following courses: MATH 504, MATH 520, MATH 521, MATH 540, MATH 550.</td>
<td>We expect our students to obtain a grade of C or better in all these courses.</td>
<td>Based on our course rotation, it takes two years for our students to go through the above courses. The analysis of this measure will be completed in Spring 2013. Findings will be reported in early</td>
<td>Yes</td>
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<td>Fall 2013.</td>
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