

Program Assessment Plan
 American University
 Academic Program: CAS: Mathematics - BS

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Contact Person for Artur Elezi

Assessment:

Unit's Primary Department: Mathematics/Statistics

COLA Reader -1: Teresa Larkin

COLA Reader -2: Kathy McAdams

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 This has been replaced by another learning outcome - see below.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			
Assessment Measure	Target	Schedule/Cycle	Active
Direct Measure: Questions from final exams from the Foundations of Mathematics courses offered Fall 2010 and Spring 2011. Measure Type: Quiz/ Exam	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.	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.	Yes
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.	Yes

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			
Assessment Measure	Target	Schedule/Cycle	Active
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. Measure Type: Quiz/ Exam	We expect all of our majors to complete these questions with the rating of satisfactory or better.	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.	Yes
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.	No

Assessment Plan			
Assessment Measure	Target	Schedule/Cycle	Active
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 proofs on a scale of needs more work-satisfactory-proficient. The courses are: MATH 503, MATH 504, MATH 505, MATH 512, MATH 513, MATH 520, MATH 521, MATH 540, MATH 550, MATH 601. Measure Type: Survey	We expect that by the time they are done with the advanced courses, all our majors will demonstrate proficient mastery of proof techniques.	Based on course rotation, a complete cycle of advanced courses is two years. We expect to collect the data at the end of every semester during Fall 2011-Spring 2013. Final analysis will be done in May 2013.	Yes
Direct measure: This is a replacement for the indirect measure Focus Group above. A review assignment for the MATH 503 Proofs course will be given at the beginning of the FALL 2011 semester in MATH 540 Topology. The assignments will be rated on a scale of needs more work-satisfactory-proficient. Measure Type: Written Assignment	We expect all our students to have a rating of satisfactory or better.	Fall 2011.	Yes

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

Assessment Plan			
Assessment Measure	Target	Schedule/Cycle	Active
Direct Measure: Questions from final exams from the Foundations of Mathematics courses offered Fall 2010 and Spring 2011. Measure Type: Quiz/ Exam	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.	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.	Yes
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.	Yes

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

Assessment Plan			
Assessment Measure	Target	Schedule/Cycle	Active
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.	We expect our students to obtain a grade of C or better in all these courses.	Based on our course rotation, it takes two years for our students to go through the above courses.	No

Assessment Plan

Assessment Measure	Target	Schedule/Cycle	Active
<p>Our unit feels that this measure does not assess the three components of the learning outcome: (a) definitions, (b) procedures and (c) big theorems. The new measure will be to look at final exams and rate these three components (by the course instructor) on a scale of needs more work-satisfactory-proficient.</p> <p>Measure Type: Performance</p>	<p>Target for the new measure: all students expected to have a rating of satisfactory in all three components by the time they complete the Analysis Group courses.</p>	<p>The analysis of this measure will be completed in Spring 2013. Findings will be reported in early Fall 2013. Since the measure has changed, the cycle is now expected to be completed in Spring 2014.</p>	