

## Academic Assessment Report - AY 2012-2013

**College, School/Department, Name of Program: NAHS, Mathematics, Mathematics**

**Program SLOs:**

- SLO1:** Use mathematics as a problem solving tool. (KU 1, 2; GE K1, S3, S4, V3)
- SLO2:** Recognize connections between various topics in mathematics. (KU 1, 4; GE S4)
- SLO3:** Demonstrate the ability to write and understand mathematical argument. (KU 1,4; GE S1, S4)
- SLO4:** Effectively communicate mathematics via written word, formal presentation and informal dialogue. (GE S2, V4)
- SLO5:** Use technology to explore and demonstrate mathematical ideas. (KU 2, 4; GE S5)
- SLO6:** Do research in their selected program option. (KU 1, 3, 4; GE K1, S1, S3, V5)

Program Level Student Learning Outcomes	Assessment Measure(s)	Assessment Criteria	Results of Assessment	Action Taken
<b>SLO #1</b>	Direct: capstone final written project	Senior Seminar MATH 4890  scored final paper using SLO rubric	<p><u>Fall 2012:</u> (41 students participated) 12% did not meet expectations; 76% met expectations; 12% exceeded expectations.</p> <p><u>Spring 2013:</u> (37 students participated) 8% did not meet expectations; 57% met expectations; 35% exceeded expectations.</p> <p>Students were assessed on a scale of 1 to 5, where an assessment of 1 or 2 did not meet expectations, 3 or 4 met expectations, and 5 exceeded expectations.</p>	In both semesters, a strong majority of students have met or exceeded expectations for this SLO. No action need be taken at this time.
	Direct: comprehensive content assessment	scored assessment using SLO rubric  This test assesses SLO's in all core mathematics courses: the calculus	<p><u>Fall 2012:</u> Overall results for inclass content assessment (41 students participated): 68% did not meet expectations; 17% met expectations; 15% exceeded expectations.</p> <p>Overall results for takehome content assessment (40 students participated): 20% did not meet expectations; 48% met expectations; 33% exceeded</p>	The inclass test results are an issue that the department will be grappling with over the next year, as we move forward with our program evaluation.

	sequence, linear algebra, and probability.	expectations. <u>Spring 2013</u> : Overall results for inclass content assessment (39 students participated): 64% did not meet expectations; 21% met expectations; 15% exceeded expectations.	
Direct: Calculus 1 final exam questions	<p><u>Fall 2012</u>: two common questions across sections of MATH 2415</p> <p><u>Spring 2013</u>: common final across all sections of MATH 2415</p>	<p><u>Fall 2012</u>: (88 students participated) Question 1, measured SLO 2, 3, 4, 5. Results for expectations: not met: 14.7% met: 50% exceeded: 35.2%</p> <p>Question 2, measured SLO 1, 3, 5. Results for expectations: not met: 26.2% met: 45.4% exceeded: 28.4%</p> <p><u>Spring 2013</u>: (134 students participated) There are twenty questions on the final exam. 15 questions measured SLO 1, 20 questions measured SLO 2, 9 questions measured SLO 3, 11 questions measured SLO 4, and 6 questions measured SLO 5. Overall results for expectations: not met: 29.8% met: 53.7% exceeded: 16.5%</p>	A majority of students have met or exceeded expectations. However, there is a discrepancy when this is compared to the students' performance on the comprehensive content assessment. These issues will be addressed and discussed over the next year.
Indirect: graduating student survey	<p>2 students participated</p> <p>tabulation of survey results</p>	50% of respondents strongly agree that they have met this SLO; 50% agree.	<p>Unfortunately, the number of students participating in the survey this school year is quite low. The department will be more proactive in the future, to ensure that a majority of graduating students fill out the survey.</p> <p>Concerning this particular SLO, no action need be taken at this time.</p>

<b>SLO #2</b>	Direct: capstone final written project	Senior Seminar MATH 4890  scored final paper using SLO rubric	<p><u>Fall 2012</u>: (41 students participated) 12% did not meet expectations; 73% met expectations; 15% exceeded expectations.</p> <p><u>Spring 2013</u>: (37 students participated) 5% did not meet expectations; 73% met expectations; 22% exceeded expectations.</p> <p>Students were assessed on a scale of 1 to 5, where an assessment of 1 or 2 did not meet expectations, 3 or 4 met expectations, and 5 exceeded expectations.</p>	In both semesters, a strong majority of students have met or exceeded expectations for this SLO. No action need be taken at this time.
	Direct: comprehensive content assessment	scored assessment using SLO rubric	See above.	See above.
	Direct: Calculus 1 final exam questions	scored common questions across all sections of MATH 2415	See above.	See above.
	Indirect: graduating student survey	2 students participated  tabulation of survey results	50% of respondents strongly agree that they have met this SLO; 50% agree.	No action need be taken at this time.
<b>SLO #3</b>	Direct: capstone final written project	Senior Seminar MATH 4890  scored final paper using SLO rubric	<p><u>Fall 2012</u>: (41 students participated) 20% did not meet expectations; 66% met expectations; 15% exceeded expectations.</p> <p><u>Spring 2013</u>: (37 students participated) 19% did not meet expectations; 57% met expectations; 24% exceeded expectations.</p> <p>Students were assessed on a scale of 1 to 5, where an assessment of 1 or 2 did not meet expectations, 3 or 4 met expectations, and 5 exceeded expectations.</p>	In both semesters, a strong majority of students have met or exceeded expectations for this SLO. No action need be taken at this time.

	Direct: comprehensive content assessment	scored assessment using SLO rubric	See above.	See above.
	Direct: Calculus 1 final exam questions	scored common questions across all sections of MATH 2415	See above.	See above.
	Indirect: graduating student survey	2 students participated  tabulation of survey results	50% of respondents strongly agree that they have met this SLO; 50% agree.	No action need be taken at this time.
<b>SLO #4</b>	Direct: capstone final written project	Senior Seminar MATH 4890  scored final paper using SLO rubric	<u>Fall 2012</u> : (41 students participated) 12% did not meet expectations; 73% met expectations; 15% exceeded expectations.  <u>Spring 2013</u> : (37 students participated) 11% did not meet expectations; 65% met expectations; 24% exceeded expectations.  Students were assessed on a scale of 1 to 5, where an assessment of 1 or 2 did not meet expectations, 3 or 4 met expectations, and 5 exceeded expectations.	In both semesters, a strong majority of students have met or exceeded expectations for this SLO. No action need be taken at this time.
	Direct: comprehensive content assessment	scored assessment using SLO rubric	See above.	See above.
	Direct: capstone final oral presentation	scored presentation using GE rubric	<u>Fall 2012</u> : (41 students participated) 27% did not meet expectations; 46% met expectations; 27% exceeded expectations.  <u>Spring 2013</u> : (38 students participated) 13% did not meet expectations; 58% met expectations; 29% exceeded expectations.	In each semester, a majority of students have met or exceeded expectations for this SLO. No action is required at this time.

	Direct: Calculus 1 final exam questions	scored common questions across all sections of MATH 2415	See above.	See above.
	Indirect: graduating student survey	2 students participated  tabulation of survey results	50% of respondents strongly agree that they have met this SLO; 50% agree.	No action need be taken at this time.
<b>SLO #5</b>	Direct: capstone final written project	Senior Seminar MATH 4890  scored final paper using SLO rubric	<u>Fall 2012</u> : (41 students participated) Of those papers to which this was applicable, 100% exceeded expectations.  <u>Spring 2013</u> : (37 students participated) Of those papers to which this was applicable, 100% met or exceeded expectations.  Students were assessed on a scale of 1 to 5, where an assessment of 1 or 2 did not meet expectations, 3 or 4 met expectations, and 5 exceeded expectations.	In both semesters, a strong majority of students have met or exceeded expectations for this SLO. No action need be taken at this time.
	Direct: comprehensive content assessment	scored assessment using SLO rubric	See above.	See above.
	Direct: Calculus 1 final exam questions	scored common questions across all sections of MATH 2415	See above.	See above.
	Indirect: graduating student survey	2 students participated  tabulation of survey results	50% of respondents agree that they have met this SLO; 50% neither agree nor disagree.	No action need be taken at this time.
<b>SLO #6</b> (Note: this is a capstone-specific	Direct: capstone final written project	Senior Seminar MATH 4890, 41 students participated	<u>Fall 2012</u> : (41 students participated) 7% did not meet expectations; 73% met expectations; 20% exceeded expectations.	In both semesters, a strong majority of students have met or exceeded expectations for this SLO. No action need be taken at this time.

SLO.)	Direct: capstone final written project	scored final paper using SLO rubric	<p><u>Spring 2013</u>: (37 students participated) 8% did not meet expectations; 62% met expectations; 30% exceeded expectations.</p> <p>Students were assessed on a scale of 1 to 5, where an assessment of 1 or 2 did not meet expectations, 3 or 4 met expectations, and 5 exceeded expectations.</p>	In both semesters, a strong majority of students have met or exceeded expectations for this SLO. No action need be taken at this time.
	Indirect: graduating student survey	2 students participated  tabulation of survey results	100% of respondents agree that they have met this SLO.	No action need be taken at this time.