

**Bachelor of Science in Mathematics AY 2011/12**

Student Learning Outcomes	Assessment Methods & Criteria	Student Learning Evidence	Utilization of Evidence
<p>The graduate will have mastered the basic mathematics content of calculus, linear algebra, and differential equations.</p>	<p>Each graduate's application component in the MATH 4998 research paper will be evaluated. The graduate will score at least 75% on this evaluation.</p>	<p>Only one student took MATH 4998 Senior Seminar this academic year. He spent most of his efforts on the research project and presented his paper the last week of classes. He was evaluated by five faculty members and received an overall grade of 82%.</p>	<p>In Senior Seminar from the previous academic year, several students struggled to complete their research projects on time. The department decided to increase the number of credit hours for MATH 4998 from two to three to allow more time for research and also to allow for a review of calculus, linear algebra, and differential equations.</p>
<p>The graduate will have mastered the basic mathematics content of calculus, linear algebra, and differential equations.</p>	<p>Each graduate will take Educational Testing Services Major Field Test in Mathematics. The department will use this exam for the first time in the fall of 2010, so the 2010-2011 results will be used primarily to establish a baseline.</p>	<p>The department required this exam for the first time in the fall of 2010. The scores for the five 2010-2011 graduates were 161, 155, 146, 137, and 137. The national percentiles for these scores were 62, 47, 28, 12, and 12 respectively. The Major Field Test includes many questions on topics other than calculus, linear algebra, and differential equations. We are awaiting the results for this year's graduate.</p>	<p>The Senior Seminar has been modified to be worth three credit hours instead of two. The extra time in this class will be spent on the research project and a review of calculus, linear algebra, and differential equations.</p>

<p>The graduate will be able to construct basic mathematical proofs.</p>	<p>Each graduate will score at least 75% on a portfolio of proofs. The portfolio will include at least one proof from each 3000 and 4000 level math theory course the student has taken. The assessment will be done in Math 4998 by a team of faculty, but the proofs will be collected in the 3000 and 4000 level courses taken.</p>	<p>The portfolio was presented for Abstract Algebra, Advanced Calculus, and Fundamentals of Mathematics Courses. The student earned a 75%. The proofs were acceptable but were taken largely from lectures and did not demonstrate the student's abilities decisively.</p>	<p>We will continue to use the portfolio method with more explicit instructions provided to the student on presenting his or her own proofs. Over the last two years, the portfolio assessment method has allowed students to show their abilities to write proofs.</p>
<p>The graduate will be able to communicate mathematical ideas and results clearly.</p>	<p>Each graduate will score at least 75% on a joint faculty evaluation of his or her presentation of the Math 4998 research paper.</p>	<p>A panel of professors evaluated the student in this category. The student's score was 86%.</p>	<p>No changes were recommended.</p>
<p>The graduate will be able to communicate mathematical ideas and results clearly.</p>	<p>Each graduate will score at least 75% on an evaluation of his or her ability to use correct notation and terminology. The assessment will be done on the graduate's research project in Math 4998.</p>	<p>The graduate made an 80% on this component.</p>	<p>No changes were recommended.</p>
<p>The graduate will be able to communicate mathematical ideas and results clearly.</p>	<p>Each graduate will score at least 75% on a joint faculty evaluation of his or her use of professional literature on the MATH 4998 research paper.</p>	<p>The graduate scored 80% on this component.</p>	<p>No changes were recommended.</p>

<p>The graduate will be able to use technology effectively in mathematics.</p>	<p>An assignment (or assignments) will be given in MATH 2057, MATH 3065, and/or MATH 3085 that will require the use of a computer algebra system and/or programming with a graphing calculator. Each graduate will score at least 75% on this assignment.</p>	<p>MATH 3065 Differential Equations students were given a Mathematica (Computer Algebra System) project to complete. Each student was given a different differential equation to solve and plot. All students completed the project adequately.</p>	<p>During the winter recess, several faculty members gained access to Mathematica and MAPLE through the LSUs PAWS network. Mathematica was used in MATH 3065 Differential Equations during the spring 2012 semester and will be used in MATH 4065 Numerical Analysis fall 2012. Math 2057 Multidimensional Calculus students were given several CAS presentations fall 2011. The free source software SAGE was used.</p>
<p>The graduate will be prepared to find appropriate employment or to continue on to graduate school.</p>	<p>At least 75% of the graduates will have found employment or will have been accepted to graduate school within 6 months of receipt of their degree.</p>	<p>Five students graduated altogether in the 2010-2011 academic year. Four of the five joined the second cohort of the Central Louisiana Academic Residency for Teachers (CART) program to obtain teacher certification and a Master of Natural Science from LSU. The fifth is employed as a math teacher at Grant Junior High School. She is also working on a Master of Arts in Teaching at Northwestern State University. The student that graduated spring 2012 owns a nursery in Forest Hill, LA, and continues to manage this operation.</p>	<p>The department will continue monitoring the employment activity and graduate studies pursuits of its graduates. The department will also continue its support of the CART program.</p>

<p>The graduate will be prepared to find appropriate employment or to continue on to graduate school.</p>	<p>Each graduate will indicate on a departmentally-made survey that he or she received appropriate advising about the mathematics degree program and on career paths. This will be done during degree checkout.</p>	<p>Our May graduate completed the survey at the end of the semester. His evaluation indicated overall satisfaction with advising.</p>	<p>Faculty members will continue offering competent academic and career advice to its students.</p>
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