Mathematics BS

College of Arts & Sciences - Mathematics

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All undergraduate degree programs at Tennessee Tech require at least one course in mathematics and many require several courses. The Department of Mathematics provides a variety of general education courses, introductory and advanced undergraduate courses in support of STEM majors, and graduate-level courses for the MS in mathematics and other graduate programs.

As a central part of a STEM-infused comprehensive institution, the Department of Mathematics strives to create successful learners of the subject of mathematics in the university community and in the community where we live. Learning opportunities are provided to students of all disciplines to advance their understanding of mathematical concepts and their effective use of analytic practices and critical thinking as useful in their studies and everyday life. The departmental faculty conduct research in mathematics and as part of interdisciplinary teams and provide service to the department, college, University, and mathematical community.

The mission of the TTU Department of Mathematics is to promote the learning of mathematics through effective teaching, research, and pub TJ0 Tc 0 Tw 3.772 0 Td( )Tj0.217 0 Td( )TjEMC /P <</MCID 14 >>BDC -0.001 Tc 0.003 Tw -

SLO 2: All students graduating from the University will be "mathematically literate" and able to apply their knowledge from the mathematics courses in their curricula.

A departmentally developed curriculum map can be found in Appendix 1 that shows the connections between courses and student learning outcomes.

PG 1: Recruit and retain a strong number of students

1. Count Mathematics graduates in the previous July 1- June 30 time period: Each May the number of graduates earning the BS in Mathematics in the previous year is determined and trends are tracked using a 5-year average of the number of graduates.

   Threshold of Acceptability: 15 graduates a year

PG 2: Increase the use of technology

1. Faculty Annual Report: As part of their annual effort report each faculty member list the type of technology used in courses.

PG 3: Improve initial math course placement

1. Math Placement*:* Each year the department chair determines if a placement procedure is in place and whether it needs to be adjusted.

   Threshold of Acceptability: The instances of poor placement should be decreasing.

PG 4: Faculty involved in outreach activities

1. Faculty Annual Report: As part of their annual effort report each faculty member list STEM Center activities.

SLO 1: Demonstrate an understanding of mathematics

1. ETS Major Field Test: The ETS Major Field Test in Mathematics is designed to measure student performance so that meaningful comparisons between similar schools throughout the country can be made. All graduating mathematics majors are expected to take the Major Field Test during their final semester at TTU.

   Threshold of Acceptability: 50% of TTU graduates score at the 60th percentile or higher.

SLO 2: Mathematically literate

1.

3. For non-math majors, the math faculty designed a simple assessment using three common questions on each of the finals in Math 1530 and Math 1910, respectively. Math 1530 was chosen because engineers do not normally take it while Math 1910 is mostly engineers.

PG 1: Recruit and retain a strong number of students

The table below shows the number of graduates per year. The BS in Mathematics program

Average Scores on ETS Major Field Test in Mathematics

National Average

As it can be seen, the first time pass rates are dismal. Also, the final pass rates for licensure is quite low for the last two years. All students who earned the degree in secondary education mathematics passed the exam because passing the exam is a degree requirement.

Appendix 1: Math BA Curriculum Map

The table below is a curriculum map showing how the required mathematics courses relate to learning goals for mathematics majors. The mathematics majors take at least 3 additional courses that reinforce these goals.

Provide Students with Conceptual Understanding and Computational, Reasoning and Communication Skills to Begin a Career or Pursue Graduate Education.												
	Required Courses											
	1910	**1920**	**2010**	**2110**	**2120**	**3400**	**3430, 4310, or 4410**	**3810**	**4010**	**4110**	**4470**	**4530**

II. Computational Skill												
a) Students will demonstrate algebraic, computational, & algorithmic skills to determine solutions to mathematical problems and interpret the results	X	X	X	X	X			X			X	X
b) Students will utilize technology to solve problems and interpret results												
III. Reasoning & Communication Skills												
a) Students will write sound mathematical proofs						X	X		X	X		X
b) Students will explain orally or in writing the methodology used to solve math or statistical problems						X	X		X	X	X	X