



Final Annual Report

Tennessee Tech University

President

Provost

College of Arts and Sciences

Mathematics

Mathematics MS



Mission Statement of Math Department

Department/Unit Contact: Allan Mills

Mission/Vision/Goal Statement

The mission of the TTU Department of Mathematics is to promote the learning of mathematics through effective teaching, research, and public service. Such learning opportunities are provided to students of all disciplines in support of the mission of the University.



Goal 1. Average at least 5 graduates per year

Define Goal

The MS in Mathematics degree program will average at least 5 graduates per year

Intended Outcomes / Objectives



Goal 2. Students will participate in extracurricular activities

Define Goal

Mathematics graduate students will participate in extracurricular activities related to mathematics. These activities will include participation in the departmental Graduate Seminar and Teaching Seminar, presenting research, and the opportunity to attend lectures by guest speakers.

Intended Outcomes / Objectives



 **Learning Outcome 1. Students will demonstrate breadth and depth of mathematical knowledge**

Define Goal

All MS in Mathematics candidates will demonstrate a command of principles of general mathematics and their particular area of interest

Intended Outcomes / Objectives

 **Assessment of MS student breadth and depth of knowledge**

Goal/ Outcome/ Objective: Learning Outcome 1


Type of Tool: Exit Exam

Rationale

Each non-thesis student's mathematics knowledge is assessed by two written comprehensive exams.

Each thesis student's general mathematics knowledge is assessed by his/her performance on an oral exam and his/her understanding of a particular area of interest is assessed by the thesis and the thesis defense.

Frequency of Assessment: each semester as needed as students complete the degree program

 **Assessment- Goal 1: Count of the number of MS in Mathematics graduates in the previous July 1-June 30 time period**

Goal/ Outcome/ Objective: Program Goal 1


Type of Tool: Graduation Rate

Rationale

The number of students earning the MS in Mathematics in the previous year is determined and trends are tracked using a 5-year average of the number of graduates.

Frequency of Assessment: annually



 **Assessment-Goal 2: Count of the number of presentations by graduate students and guest speakers**

Goal/ Outcome/ Objective: Program Goal 2

Type of Tool: Meeting Records, Survey

Rationale

The number of presentations during the previous year by graduate students (in the Graduate Seminar and Teaching Seminar, at Student Research Day, or at a conference) is counted. A count of the number of presentations by guest speakers is also made.

Frequency of Assessment: annually



Results - Goal 2: Graduate student participation in seminars

Goal/Objective/Outcome Number: Goal 2

Results

Two graduate assistants presented research talks (1 at a national conference, 1 at a regional conference). Three graduate students presented talks in the Algebra Seminar that was organized in the 2016-17 academic year.

The departmental Graduate Advisor arranged weekly meetings of the Graduate Seminar. All graduate assistants gave a talk in the Graduate (research) Seminar. In addition, three students studying algebra regularly presented talks in an Algebra Seminar that began this academic year.

The leader of the Teaching Seminar arranged for weekly meetings. All graduate teaching assistants participated in the Teaching Seminar including classroom visits to watch experienced instructors teaching lower division mathematics classes.



Academic Year	Teaching Seminar		Graduate Seminar	
	Graduate Student Presentations	Guest Presentations	Graduate Student Presentations	Guest Presentations
2012-2013	10	2	9	8
2013-2014	10	1	10	5
2014-2015	14	0	10	0
2015-2016	12	0	12	4
2016-2017	8	0	8	2

Attachments

No items to display.



Results- Goal 1: Number of Graduates per Year

Goal/Objective/Outcome Number: Goal 1

Results

The MS in MATH program achieved this goal by graduating 6 students during the 2016-17 academic year.

For the most recent five academic years the program is averaging 5.4 graduates per year which is just above the threshold of five graduates per year.

The attached file contains a table showing the number of MS in Mathematics graduates in each of the seven most recent academic years.

Attachments

 MS in MATH graduation data


Results: Learning Outcome 1-Depth and Breadth of Knowledge of Mathematics
Goal/Objective/Outcome Number: Learning Outcome 1

Results

The MS in Mathematics was awarded to six students in 2016-17.

Each student demonstrated a breadth of knowledge of mathematics by completing the coursework on his/her Program of Study.

Five of the six students completed a thesis and demonstrated a depth of knowledge by defending their thesis and having it approved by an advisory committee.

One student earned the degree via the non-thesis option. He demonstrated breadth of knowledge of mathematics by passing comprehensive exams in two areas of mathematics approved by his advisory committee. In addition, the student completed the course MATH 6991-Research and Independent Study which required him to learn a mathematical topic in depth and make a presentation (written and oral) to the faculty member supervising the course.

Attachments

No items to display.


Modification- Goal 1: Average at least 5 graduates per year
Goal/Objective/Outcome Number: Goal 1

Program Changes and Actions due to Results

The MS program is graduating, on average, 5 students per year.

No modifications necessary at this time.

Link to Assessment

Link to Flight Plan:

**Modification- Goal 2: Student participation in extracurricular activities**

Goal/Objective/Outcome Number: Goal 2: Student participation in extracurricular activities

Program Changes and Actions due to Results

The department's graduate assistants continue to be involved in departmental seminars and have the opportunity to present research at nearby conferences.

No changes necessary at this time.

Link to Assessment

Link to Flight Plan:

**Modification- Learning Outcome 1- Student breadth and depth of mathematics knowledge**

Goal/Objective/Outcome Number: Learning Outcome 1

Program Changes and Actions due to Results

The mathematics graduate faculty are satisfied that students completing the MS in mathematics program are demonstrating breadth and depth of mathematical knowledge.

No changes necessary at this time.

Link to Assessment

Link to Flight Plan: