

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. Increase number of 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: 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: 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: Graduate student participation in seminars

Goal/Objective/Outcome Number: Goal 2

Results

The departmental Graduate Advisor arranged weekly meetings of the

Graduate Seminar. All graduate assistants gave a talk in the Graduate (research) Seminar. Two TTU undergraduates and a professor from a university in Germany were visitors who presented at the seminar.

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
2011-2012	8	3	8	2
2012-2013	10	2	9	8
2013-2014	10	1	10	5
2014-2015	14	0	10	0
2015-2016	12	0	12	4

Attachments

No items to display.



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 nine students in 2015-16.

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

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

Two of the nine students earned the degree via the non-thesis option.

These students demonstrated breadth of knowledge of mathematics by passing comprehensive exams in two areas of mathematics approved by their advisory committee. In addition, the students completed the course MATH 6991-Research and Independent Study which required them 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.



Results: Number of Graduates per Year

Goal/Objective/Outcome Number: Goal 1

Results

The MS in MATH program achieved this goal by graduating 9 students during the 2015-16 academic year.

For the most recent five academic years the program is averaging 4.67 graduates per year which is just below the threshold of five graduates per year.

Attachments

 MS in Math graduate data



Goal 2: Increase Recruitment to Graduate Program to maintain/increase number of graduates

Goal/Objective/Outcome Number: Goal 1. Increase number of graduates per year

Program Changes and Actions due to Results

The MS in Math program has only two first year students in fall 2016. One is an incoming student beginning the program in August 2016 and the other is a returning student who began the program in mid-year (January 2016).

The department will have several assistantships available for the 2017-18 academic year and needs to aggressively recruit new students. We plan to set aside travel funds so that faculty can visit nearby universities to present talks/distribute recruiting materials to undergraduate student groups.

Link to Assessment

Link to Flight Plan: Enrollment, Tuition, and Scholarships

**Goal 2: Separate Leadership of Graduate and Teaching Seminars**

Goal/Objective/Outcome Number: Goal 2. Students will participate in extracurricular activities

Program Changes and Actions due to Results

The responsibility of running the Teaching Seminar will be removed from the Graduate Advisor and assigned to a different faculty member.

With the duties separated, the leaders of each seminar should have more time to recruit visitors to the department to make presentations. In addition, the Graduate Advisor should have more time to recruit new students to the program.

Link to Assessment

Link to Flight Plan: Improve Undergraduate Student Experience

**SLO 1: No modification necessary at this time**

Goal/Objective/Outcome Number: Learning Outcome 1. Students will demonstrate breadth and depth of mathematical knowledge

Program Changes and Actions due to Results

The faculty are satisfied that their graduate students demonstrate an appropriate breadth and depth of knowledge. No modifications necessary at this time.

Link to Assessment

Link to Flight Plan: