**UNIT REPORT**
## Mathematics MS - Final Annual Report
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## Mission Statement of Math Department

**Start:** 07/01/2017

**End:** 06/30/2018

**Providing Department:** Mathematics MS

**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

**Progress:** Ongoing

**Define Goal:**

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

## Goal 2. Students will participate in extracurricular activities

**Progress:** Ongoing

**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.

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

**Progress:** Ongoing

**Define Goal:**

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

## Assessment of MS student breadth and depth of knowledge

**Goal/ Outcome/ Objective:** Learning Outcome 1

**Type of Tool:** Exit Exam

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

**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.

## 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

**Frequency of Assessment:** annually

**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.

## 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

**Frequency of Assessment:** annually

**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.

## Results - Goal 2: Graduate student participation in seminars

**Goal/Objective/Outcome Number:** Goal 2

**Results:**

One graduate student presented a research poster at a national conference.

The departmental Graduate Advisor arranged weekly meetings of the Graduate Seminar.  The faculty typically present talks each week in the fall, while the graduate students present talks in the spring.  All graduate assistants gave a talk in the Graduate Seminar.  In addition, three students studying algebra regularly presented talks in an Algebra Seminar during the 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.

| | Teaching Seminar | | Graduate Seminar | |
|---|---|---|---|---|
| Academic Year | 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 |
| 2017-2018 | 32 | 2 | 11 | 1 |

## Results- Goal 1:Number of Graduates per Year

**Goal/Objective/Outcome Number:** Goal 1

**Results:**

The MS in MATH program graduated 4 students during the 2017-18 academic year which is just below our target of

graduating 5 students each academic year. For the most recent five academic years the program is averaging 5.2 graduates per year.  We anticipate having 4 graduates for the upcoming 2018-19 academic year.

Number of Degrees Awarded July 1-June 30

| | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 |
|---|---|---|---|---|---|---|---|---|
| Male | 2 | 2 | 5 | 1 | 4 | 7 | 2 | 1 |
| Female | 1 | 0 | 0 | 0 | 2 | 2 | 4 | 3 |
| Total MS in MATH | 3 | 2 | 5 | 1 | 6 | 9 | 6 | 4 |

## 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 four students in 2017-18.

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

All four students completed a thesis and demonstrated a depth of knowledge by defending their thesis and having it approved by an advisory committee.  One of the students published a research paper based on her thesis research.

## 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.

## 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 are involved in departmental seminars and have the opportunity to present research at nearby conferences.

No changes necessary at this time.

## 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.