UNIT REPORT Mathematics MA - Assessment Plan Summary

# **Mathematics MA**

## **Deliver A Curriculum With Appropriate Discipline Specific Knowledge**

#### **Goal Description:**

The curriculum will address the discipline specific knowledge dictated by professional societies and/or professionals in the workforce.

RELATED ITEMS/ELEMENTS ------

#### **RELATED ITEM LEVEL 1**

## Understanding Mathematical Structures

## Learning Objective Description:

Students will prove theorems or solve problems or explain concepts in the following core areas

- abstract algebra structures such as groups, rings, fields, functions, homomorphisms, and isomorphisms.
- differential and integral calculus
- probability and statistics, particularly inferential statistics, and
- transformational geometry to include isometrics and non-isometric transformations such as circles of inversion.

#### **RELATED ITEM LEVEL 2**

#### **MA Comprehensive Oral Examination**

#### **Indicator Description:**

Students in the MA program will take an oral examination over the four areas covered in the objective. The oral examination will be scored by a committee of faculty using a rubric developed and approved by department faculty.

#### **Criterion Description:**

100% of the MA students will receive a grade of "Pass" or "High Pass" on each of the four areas according to the attached rubric.

#### **Findings Description:**

All MA students passed their oral exams with either a "pass" or "high pass".

In fact, one of our recent MA graduates was accepted into several highly competitive PhD programs in Mathematics Education.

#### **RELATED ITEM LEVEL 3**

## Continue to prepare MA students for careers and graduate programs.

#### **Action Description:**

We plan to continue preparing our MA students for PhD programs in mathematics education.... we have seen recent success in providing leading programs (Ohio State, Florida) with our qualified applicants.

## **Develop Research Skills**

#### **Goal Description:**

Students will develop research skills commensurate with graduate student status.

RELATED ITEMS/ELEMENTS -----

**RELATED ITEM LEVEL 1** 

#### **Demonstrate Research Skills**

#### Learning Objective Description:

## Students completing the MA in Mathematics will demonstrate research skills.

#### **RELATED ITEM LEVEL 2**

Research Project Assessment

## Indicator Description:

MA students complete an independent research project. The student works with a supervising professor who describes the oversees and evaluates the work required of the student. A grade is assigned based on the individual requirements set forth by the supervising professor. **Criterion Description:** 

Students will be rated at least 80% on the project rubric.

## **Findings Description:**

All students received a score of at least 80% on their research projects.

#### **RELATED ITEM LEVEL 3**

Continue with current plan

#### **Action Description:**

Because of the success we have had with our current assessment of research projects (and because of the relatively small size of our MA program) we will continue this plan.

## Update to Previous Cycle's Plan for Continuous Improvement

#### Previous Cycle's Plan For Continuous Improvement (Do Not Modify):

Because of a lack of demand for MA classroom-based courses, and an anticipated surge in demand for online MA courses, we will begin the process of developing online versions of all MA courses, with the intention of offering these courses exclusively online over the next two years. This will allow current high school and middle school teachers the ability to earn our MA degree without added pressure of attending courses in the afternoon just after a long day of teaching. In Summer 2017, three online courses will be developed for use in Fall 2017 and Spring 2018. Summer 2018 will be spent converting more courses online.

#### Update of Progress to the Previous Cycle's PCI:

We have had success with MA students being accepted in very competitive PhD programs. We will continue to encourage our MA students to pursue this career path.

## Converting to online degree plan.

## **Closing Summary:**

Beginning in Fall 2017, our MA program will convert to an online program. All courses will be either converted to online format or new courses will be developed. This will allow current high school and middle school teachers the ability to earn our MA degree without added pressure of attending courses in the afternoon just after a long day of teaching. In Summer 2017, three online courses will be developed for use in Fall 2017 and Spring 2018. Summer 2018 will be spent converting more courses online.

One idea is to offer the MA degree (18 hours) with a "minor" in secondary education, in which students would perform an internship (with courses within College of Education) which would allow them to teach in a high school during one semester, after which they would receive teaching certification (assuming exams are passed). This would allow a student with a BS in math (for example) to receive within 2 years both a graduate degree and secondary certification.

Another idea is an 18-hour certificate to teach at the community college level. Currently, in order to teach at a 2-year school, only 18 hours of graduate credit is required (half a masters degree). We could design certificate program for those interested in teaching at a 2-year school. Both of these would contribute to the state's 60x30 initiative.