

**Proposed Program Revisions to Masters in Mathematics –
Mathematics Education (Secondary Option)**

The changes for the program are precipitated by a number of factors-

- A new course (MAT 5409) is being added to required set of courses. Course proposal is attached.
- The title of MAT 5410 needs to be changed to better reflect the course content and to not conflict with the title of MAT 5409. A separate executive action request for this title change (along with listing MAT 5409 as a prerequisite for MAT 5410) is attached.
- The new MAT 5409 adds 1 credit hour to the program. This increase will be offset by reducing the number of required credit hours for graduate level education course by 1 credit.
- For the last few years we have been requiring two independent study courses for the implementation and evaluation of an action research project, substituting the hours for elective courses. This proposal formalizes the requirement. Including these projects explicitly in the program listing will make this clear to candidates.
- A number of course name changes took place last summer. The revisions reflect these course name changes.
- Need to clarify the required number of and type of credit hours for content courses.

Masters in Mathematics – Mathematics Education (Secondary Option)

CURRENT CATALOG LISTING

Degree Requirements

Candidates for the Master of Arts in Mathematics with Secondary Education Option must complete a minimum of 32 semester hours without a thesis or 30 semester hours with a thesis selected and approved by the Mathematics Department as outlined below.

Curriculum for the 32 Hour Option Without a Thesis

Total. Credits: 32

(Mathematics Total. Credits: 27)

- Basic Education Courses. Credits: 5 (Contact the department of education for current list of appropriate courses)

Specific Requirements in Mathematics are as follows

- MAT 4800 - Diagnosis, Remediation, and Technology in Teaching Mathematics, K-12. Credits: 2
- MAT 5410 - Introduction to Research in Mathematics Education. Credits: 3
- MAT 5700 - Topics in Teaching Mathematics. Credits: 2 to 4 (repeatable, 6 hours required)

6 Semester Hours Chosen From:

- MAT 4750 - Linear Programming. Credits: 3
- MAT 4760 - Linear Algebra. Credits: 4
- MAT 4830 - Introduction to Complex Analysis with Applications. Credits: 3
- MAT 4850 - Operations Research. Credits: 3
- MAT 4855 - Introduction to Topology. Credits: 3
- MAT 4860 - Mathematical Analysis. Credits: 4
- MAT 4870 - Data Structures and Algorithm Analysis. Credits: 3

- MAT 4900 - History of Mathematics. Credits: 3
- MAT 4910 - Number Theory. Credits: 3
- MAT 4970 - Principles of Operating Systems. Credits: 3
- MAT 5035 - Topics in Computer Science. Credits: 4
- MAT 5100 - Abstract Algebra. Credits: 4
- MAT 5151 - Probability. Credits: 4
- MAT 5152 - Statistics. Credits: 4
- MAT 5200 - Higher Geometry. Credits: 4
- MAT 5210 - An Introduction to Differential Geometry. Credits: 4
- MAT 5220 - Topology. Credits: 4
- MAT 5301 - Real Variables. Credits: 4
- MAT 5330 - Complex Variables. Credits: 4

Curriculum for the 30 Hour Option With a Thesis

Total. Credits: 30

(Mathematics Total. Credits: 25)

Same as Non-Thesis option with the following changes:

No independent study required

MAT 5950 - Thesis. Credits: 3 to 6 required

5 Semester Hours Selected From:

- MAT 4750 - Linear Programming. Credits: 3
- MAT 4760 - Linear Algebra. Credits: 4
- MAT 4830 - Introduction to Complex Analysis with Applications. Credits: 3
- MAT 4850 - Operations Research. Credits: 3
- MAT 4855 - Introduction to Topology. Credits: 3

- MAT 4860 - Mathematical Analysis. Credits: 4
- MAT 4870 - Data Structures and Algorithm Analysis. Credits: 3
- MAT 4900 - History of Mathematics. Credits: 3
- MAT 4910 - Number Theory. Credits: 3
- MAT 4970 - Principles of Operating Systems. Credits: 3
- MAT 5035 - Topics in Computer Science. Credits: 4
- MAT 5100 - Abstract Algebra. Credits: 4
- MAT 5151 - Probability. Credits: 4
- MAT 5152 - Statistics. Credits: 4
- MAT 5200 - Higher Geometry. Credits: 4
- MAT 5210 - An Introduction to Differential Geometry. Credits: 4
- MAT 5220 - Topology. Credits: 4
- MAT 5301 - Real Variables. Credits: 4
- MAT 5330 - Complex Variables. Credits: 4

Masters in Mathematics – Mathematics Education (Secondary Option)

REVISED CATALOG LISTING

~Changes are in red~

Degree Requirements

Candidates for the Master of Arts in Mathematics with Secondary Education Option must complete a minimum of 32 semester hours without a thesis or 30 semester hours with a thesis selected and approved by the Mathematics Department as outlined below.

Curriculum for the 32 Hour Option Without a Thesis

Total. Credits: 32

(Mathematics Total. Credits: ~~27~~ 28)

- ~~Basic Education Courses. Credits: 5~~

(Contact the department of education for current list of appropriate courses)

- Graduate Education Courses. Credits: 4

Specific Requirements in Mathematics are as follows

- MAT 4800 - Diagnosis, Remediation, and Technology in Teaching Mathematics, K-12. Credits: 2
- MAT 5409 – Teachers as Researchers in Mathematics Education. Credits: 1
- ~~MAT 5410 – Introduction to Research in Mathematics Education. Credits: 3~~
- MAT 5410 – Action Research in Mathematics Education. Credits: 3
- MAT 5700 - Topics in Teaching Mathematics. Credits: 2 to 4 (repeatable, 6 hours required)
- MAT 59901 – Independent Study 1. Credits: 2
- MAT 59902 – Independent Study 2. Credits: 2

~~6 Semester Hours Chosen From:~~

12 Semester Hours Chosen From:

- MAT 4750 - Linear Programming. Credits: 3
- MAT 4760 - Linear Algebra. Credits: 4
- MAT 4830 - Introduction to Complex Analysis with Applications. Credits: 3
- MAT 4850 - Operations Research. Credits: 3
- MAT 4855 - Introduction to Topology. Credits: 3
- MAT 4860 - Mathematical Analysis. Credits: 4
- MAT 4870 - Data Structures and Algorithm Analysis. Credits: 3
- MAT 4900 - History of Mathematics. Credits: 3
- MAT 4910 - Number Theory. Credits: 3
- MAT 4970 - Principles of Operating Systems. Credits: 3
- MAT 5035 - Topics in Computer Science. Credits: 4
- MAT 5100 - Abstract Algebra. Credits: 4
- MAT 5151 - Probability. Credits: 4

- MAT 5152 - Statistics. Credits: 4
- MAT 5200 - Higher Geometry. Credits: 4
- MAT 5210 - An Introduction to Differential Geometry. Credits: 4
- MAT 5220 - Topology. Credits: 4
- MAT 5301 - Real Variables. Credits: 4
- MAT 5330 - Complex Variables. Credits: 4
- MAT 53351 – Topics in Mathematics 1. Credits: 2 to 4
- MAT 53352 – Topics in Mathematics 2. Credits: 2 to 4
- MAT 53353 – Topics in Mathematics 3. Credits: 2 to 4

Curriculum for the 30 Hour Option With a Thesis

Total. Credits: 30

(Mathematics Total. Credits: 25)

Same as Non-Thesis option with the following changes:

No independent study required

MAT 5950 - Thesis. Credits: 3 to 6 required

~~5 Semester Hours Selected From:~~

11 Semester Hours Selected From:

- MAT 4750 - Linear Programming. Credits: 3
- MAT 4760 - Linear Algebra. Credits: 4
- MAT 4830 - Introduction to Complex Analysis with Applications. Credits: 3
- MAT 4850 - Operations Research. Credits: 3
- MAT 4855 - Introduction to Topology. Credits: 3
- MAT 4860 - Mathematical Analysis. Credits: 4

- MAT 4870 - Data Structures and Algorithm Analysis. Credits: 3
- MAT 4900 - History of Mathematics. Credits: 3
- MAT 4910 - Number Theory. Credits: 3
- MAT 4970 - Principles of Operating Systems. Credits: 3
- MAT 5035 - Topics in Computer Science. Credits: 4
- MAT 5100 - Abstract Algebra. Credits: 4
- MAT 5151 - Probability. Credits: 4
- MAT 5152 - Statistics. Credits: 4
- MAT 5200 - Higher Geometry. Credits: 4
- MAT 5210 - An Introduction to Differential Geometry. Credits: 4
- MAT 5220 - Topology. Credits: 4
- MAT 5301 - Real Variables. Credits: 4
- MAT 5330 - Complex Variables. Credits: 4
- MAT 53351 – Topics in Mathematics 1. Credits: 2 to 4
- MAT 53352 – Topics in Mathematics 2. Credits: 2 to 4
- MAT 53353 – Topics in Mathematics 3. Credits: 2 to 4

Effective Fall 2013

Date approved by the Mathematics and Computer Science Department: April 23, 2012 _____

Date Approved by the College of Sciences Curriculum Committee: September 14, 2012

Date Approved by the Council on Teacher Education: _____

Date Approved by Council on Graduate Studies: _____