Agenda Item #16-11
Effective: Summer 2016

Proposed Program Revision for
Mathematics for Teacher Education Option

First, the Department of Mathematics and Computer Science has revised one required course in the M.A. in Mathematics – Mathematics Education Option (Secondary) degree program.

MAT 5300 – Curriculum and Assessment in Mathematics Education

is replacing-

MAT 4800 – Diagnosis, Remediation, and Technology in Teaching Mathematics, K-12.

Second, the Higher Learning Commission has issued a new requirement that dual-credit teachers must have 18 hours of coursework in the discipline in which they wish to teach. Many community colleges have interpreted this as meaning 18-hours of content coursework. Because many of our students seek this type of certification, we are looking to provide a dual-credit option in the program.
Third, for about three years, we have required students to complete two distinct independent study projects and so we seek to put this requirement into the degree program description.
Finally, after studying other similar degree programs and other programs at Eastern, we have decided that the GRE requirement is not a necessary entrance requirement for this degree option. We do not use the results of the test for any coursework or degree work and so we wish to eliminate it.

Current Catalog Listing

Program Mission for the Master of Arts in Mathematics with Secondary Mathematics Education Option: The Option in Secondary Mathematics Education, a predominantly summer program, strengthens the professional preparation of junior and senior high school teachers. Special courses required by the option allow students to share their experiences and to revitalize their teaching methods.
Admission Requirements: To be eligible for degree candidacy, applicants must meet all the requirements for admission to the Graduate School (see "Admission to Graduate Degree and Certificate Programs"). GRE scores are required. In addition, applicants must submit evidence of successful completion of accredited teacher education programs from Eastern Illinois University or other equally accredited institutions. Applicants must also possess a valid teaching certificate. Two years teaching experience is highly recommended. Note: This is not a certificate granting program.
Degree Audit: The graduate plan of study is the EIU Degree Audit, which is generated automatically in the Degree Audit Reporting System (DARS) at the time of degree or certificate candidacy. Modifications of the standard EIU Degree Audit are submitted by the graduate coordinator to the certification officer in the Graduate

School at the time modifications are approved. The Degree Audit serves as an unofficial summary of requirements for the program. Degree and certificate candidates are advised to review the comprehensive summary of the Degree Audit process specified on the "Requirements for All Degree and Certificate Candidates" section of the Graduate Catalog. Individual programs may require candidates to submit plans of study in addition to the Degree Audit, candidates should consult with the program coordinator.

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: 28)
- Graduate Education Courses. Credits: 4
- (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 5409 - Teachers as Researchers in Mathematics Education Credits: 1
- 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 I Credits: 1 to 6
- MAT 59902 - Independent Study II Credits: 1 to 6

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 I Credits: 2 to 4
- MAT 53352 - Topics in Mathematics II Credits: 2 to 4
- MAT 53353 - Topics in Mathematics III 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
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 I Credits: 2 to 4
- MAT 53352 - Topics in Mathematics II Credits: 2 to 4
- MAT 53353 - Topics in Mathematics III Credits: 2 to 4

Proposed Revised Catalog Listing

Program Mission for the Master of Arts in Mathematics with Secondary Mathematics Education Option: The Option in Secondary Mathematics Education, a predominantly summer program, strengthens the professional preparation of junior and senior high school teachers. Special courses required by the option allow students to share their experiences and to revitalize their teaching methods.
Admission Requirements: To be eligible for degree candidacy, applicants must meet all the requirements for admission to the Graduate School (see "Admission to Graduate Degree and Certificate Programs"). ~~GRE scores are required~~. In addition, applicants must submit evidence of successful completion of accredited teacher education programs from Eastern Illinois University or other equally accredited institutions. Applicants must also possess a valid teaching certificate. Two years teaching experience is highly recommended. Note: This is not a certificate granting program.
Degree Audit: The graduate plan of study is the EIU Degree Audit, which is generated automatically in the Degree Audit Reporting System (DARS) at the time of degree or certificate candidacy. Modifications of the standard EIU Degree Audit are submitted by the graduate coordinator to the certification officer in the Graduate School at the time modifications are approved. The Degree Audit serves as an unofficial summary of requirements for the program. Degree and certificate candidates are advised to review the comprehensive summary of the Degree Audit process specified on the "Requirements for All Degree and Certificate Candidates" section of the Graduate Catalog. Individual programs may require candidates to submit plans of study in addition to the Degree Audit, candidates should consult with the program coordinator.

Degree Requirements

Candidates for the Master of Arts in Mathematics with Secondary Education Option must complete a minimum of 32 semester hours, regardless of program focus. Additionally, candidates must complete an action research project and a classroom-based teaching project. ~~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**~~

Core Classes (14 credits)
~~**Total. Credits: 32**~~
~~(Mathematics Total. Credits: 28)~~
- ~~Graduate Education Courses. Credits: 4~~
- ~~(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 5409 - Teachers as Researchers in Mathematics Education Credits: 1
- MAT 5410 - Action Research in Mathematics Education. Credits: 3

- MAT 5300 – Curriculum and Assessment in Mathematics Education. Credits: 3
- MAT 5700 - Topics in Teaching Mathematics. Credits: ~~2 to 4~~ 3
- ~~(repeatable, 6 hours required)~~
- MAT 59901 - Independent Study I Credits: ~~1 to 6~~ 2
- MAT 59902 - Independent Study II Credits: ~~1 to 6~~ 2

No more than 9 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~~

Candidates must choose from one of the following two options to obtain an additional 9 semester hours for the degree program.

Option A – Dual Credit Pathway:

9 semester hours selected from-

- 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 I Credits: 2 to 4
- MAT 53352 - Topics in Mathematics II Credits: 2 to 4
- MAT 53353 - Topics in Mathematics III Credits: 2 to 4

Option B –Education Pathway:

No more than 6 hours chosen from:

- Graduate Education Courses. Credits: up to 6

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

~~**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~~
~~**11 Semester Hours Selected From:**~~

At least 3 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 I Credits: 2 to 4
- MAT 53352 - Topics in Mathematics II Credits: 2 to 4
- MAT 53353 - Topics in Mathematics III Credits: 2 to 4

Date approved by the department or school: 11/30/15
Date approved by the college curriculum committee: 12/11/15
Date approved by
CAA:
CGS: