

**Ogden College of Science & Engineering  
Department of Mathematics  
Proposal to Revise a Program  
(Action Item)**

Approved 5/06/2013

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**1. Identification of program:**

- 1.1 Current program reference number: 049
- 1.2 Current program title: Master of Arts in Mathematics
- 1.3 Credit hours: 30-34

**2. Identification of the proposed program changes:**

- A change of the admission requirements for the program using the new GRE scoring system and the new system adopted for the GAP score.
- Streamlining admission requirements so that candidates do not have to wade through requirements for mathematics and secondary education.
- Revised the list of core mathematics courses.

**3. Detailed program description:**

Old Program	New Program
<p>This program is intended for students who are secondary teachers in Kentucky who already hold teacher certification and are seeking rank change through attainment of a Master’s degree. This degree does not give a student initial teacher certification, nor is it intended to prepare a student for doctoral studies in mathematics.</p> <p>Admission Requirements: Either (1) a bachelor’s degree in mathematics or (2) completion of the following undergraduate courses: (a) a calculus sequence through multivariable calculus, (b) linear algebra, (c) discrete mathematics, (d) probability or calculus-based statistics, (e) abstract algebra, and (f) geometry. Applicants without a bachelor’s degree in mathematics may be admitted with at most one deficiency in the undergraduate courses listed above. <b>Applicants must have a 2.75 GPA in all required undergraduate mathematics courses or a GAP score of 3000.</b></p> <p>Mathematics --18 hours The following courses are required: <i>Core Mathematics Courses:</i> MATH 501 Introduction to Probability and Statistics I MATH 503 Introduction to Analysis <b>MATH 423G Geometry II or MATH 523 Topics from Geometry</b> <b>MATH 514 Applications and Modeling for Teachers</b></p> <p><i>Elective Mathematics Courses (6 hours required):</i> MATH 405G, 406G, 409G, 415G, 417G, 421G, 423G,</p>	<p>This program is intended for students who are secondary teachers in Kentucky who already hold teacher certification and are seeking rank change through attainment of a Master’s degree. This degree does not give a student initial teacher certification, nor is it intended to prepare a student for doctoral studies in mathematics.</p> <p>Admission Requirements: Either (1) a bachelor’s degree in mathematics or (2) completion of the following undergraduate courses: (a) a calculus sequence through multivariable calculus, (b) linear algebra, (c) discrete mathematics, (d) probability or calculus-based statistics, (e) abstract algebra, and (f) geometry. Applicants without a bachelor’s degree in mathematics may be admitted with at most one deficiency in the undergraduate courses listed above. <b>Applicants must have one of the following:</b> <b>(a) A minimum GAP score of 600.</b> [GAP = (GRE-V + GRE-Q) + (Undergraduate GPA x 100)]</p> <p><b>A minimum GAP score of 3000 for students who took the GRE prior to August 2011.</b> [GAP = (GRE-V+GRE-Q) x Undergraduate GPA]</p> <p><b>*Students who took the GRE prior to 2002 should contact the graduate advisor of the program.</b></p> <p><b>(b) A GRE score of at least 300</b> <b>Note that for the above two options WKU requires a minimum score of 139 for both the verbal and the</b></p>

431G, 432G, 435G, 439G, 450G, 470G, 475G, 500, 504, 509, 510, **511, 512**, 517, 523, 529, 531, 532, 535, 536, 539, 540, 541, 542, 550, 560, 570, 590, 599, STAT 549.

A maximum of 9 hours at the 400G level may be included in the entire program. Comprehensive exams in mathematics are required. A student who chooses to do a thesis is required to complete 6 hours of MATH 599 Thesis Research and Writing and to give an oral defense of the thesis.

#### Secondary Education (12-16 hours)

This program is designed to develop Teacher Leaders who can positively impact student learning in their classrooms and schools.

Courses and experiences include Professional Learning Communities in which students interact with other graduate students from various content areas and grade levels to discuss and work on real world challenges and promising practices they encounter in schools.

An Action Research Project for Teacher Leaders focusing on a classroom, school, or district issue is the capstone for the completion of the Secondary Education portion of the degree.

During the first course in the program, TCHL 500 *Foundations of Teacher Leadership*, students will complete an assessment process that will be used in determining which TCHL core courses they must take (see *Important Note* below). All students must either complete TCHL 540, 544, 548, 550, 554, and 558 or pass proficiency evaluations for these courses. TCHL 500, 530, and 560 are required for all students, and there are no proficiency evaluations that may be substituted for these courses.

#### **Secondary Education Admission Requirements** *(Criteria vary, depending on the student's undergraduate institution and GPA):*

##### **1. WKU Graduate: Admission**

**No qualifying GAP\*\* score will be required for graduates of the WKU B.A. in Mathematics program, as long as they have or are eligible for a teaching certificate for Secondary Mathematics (Grades 8-12). A copy of the certificate or statement of eligibility must be submitted with the application.**

##### **2. Graduate of a Kentucky Higher Education Institute other than WKU:**

**Applicants with undergraduate degrees from Kentucky higher education accredited universities must have a 2.75 GPA for all previous undergraduate coursework or a qualifying GAP\*\* score and must have or be eligible**

**quantitative parts on the GRE.**

**(c) For students that graduate from WKU with a mathematics major, a GPA of at least 3.3 in their mathematics major.**

**Applicants must also have or be eligible for a teaching certificate\* for Secondary Mathematics (Grades 8-12). A copy of the certificate or statement of eligibility must be submitted with the application.**

**\*Kentucky teachers whose certificates have expired may be admitted into the program, but they may enroll in no more than six hours before they must apply to the Kentucky Education Professional Standards Board for re-issued certificates. After completion of six hours, a student admitted with an expired certificate must submit a copy of the re-issued certificate before being allowed to register for any additional courses. Applicants from out-of-state with expired certificates must complete the requirements for their respective states to renew their certificates and submit a copy of the reissued certificate.**

Mathematics --18 hours

The following courses are required:

*Core Mathematics Courses:*

MATH 501 Introduction to Probability and Statistics I

MATH 503 Introduction to Analysis

**MATH 511 Algebra from an Advanced Perspective**

**MATH 512 Geometry from an Advanced Perspective**

*Elective Mathematics Courses (6 hours required):*

MATH 405G, 406G, 409G, 415G, 417G, 421G, 423G, 431G, 432G, 435G, 439G, 450G, 470G, 475G, 500, 504, 509, 510, **514**, 517, 523, 529, 531, 532, 535, 536, 539, 540, 541, 542, 550, 560, 570, 590, 599, STAT 549.

A maximum of 9 hours at the 400G level may be included in the entire program. Comprehensive exams in mathematics are required. A student who chooses to do a thesis is required to complete 6 hours of MATH 599 Thesis Research and Writing and to give an oral defense of the thesis.

#### Secondary Education (12-16 hours)

This program is designed to develop Teacher Leaders who can positively impact student learning in their classrooms and schools.

Courses and experiences include Professional Learning Communities in which students interact with other graduate students from various content areas and grade levels to discuss and work on real world challenges and promising practices they encounter in schools.

**for a teaching certificate\* for Secondary Mathematics (Grades 8-12). A copy of the certificate or statement of eligibility must be submitted with the application.**

**3. Graduate of an Out-of-State Institution of Higher Education**

**Applicants with undergraduate degrees from all other higher education accredited universities must have a 2.75 GPA for all previous undergraduate coursework or a qualifying GRE/GAP\*\* score and must have or be eligible for a teaching certificate\* for Secondary Mathematics (Grades 8-12). A copy of the certificate or statement of eligibility must be submitted with the application.**

**\*Kentucky teachers whose certificates have expired may be admitted, but they may enroll for only six hours before they must apply to the Kentucky Education Professional Standards Board for re-issued certificates. After completion of six hours, a student admitted with an expired certificate must submit a copy of the re-issued certificate before being allowed to register for any additional courses. Applicants from out-of-state with expired certificates must complete the requirements for their respective states to renew their certificates and submit a copy of the reissued certificate.**

**\*\*Qualifying GAP Score: 2200 or higher (GRE score multiplied by the undergraduate GPA) and a GRE Analytical Writing score of 3.5 or higher**

*Important Note:* While enrolled in TCHL 500, master's candidates will use several documents, including their KTIP assessments or in-kind examples, dispositions self-surveys, referrals from school personnel, and their respective School Improvement Plan, to develop with their respective program advisors individualized programs of study of 30-34 hours related to Kentucky Teacher Standards and professional goals. Each student's program of study will include some or all of the TCHL courses, at least one content course specific to their initial teaching certification areas, plus additional education-related or content courses.

Courses denoted with an asterisk below are required.

**Secondary Education**

Students must complete a total of at least 12 hours in education course work, including the following:

*Professional Education Core—9-16 hours*

\*TCHL 500 – Foundations of Teacher Leadership (3

An Action Research Project for Teacher Leaders focusing on a classroom, school, or district issue is the capstone for the completion of the Secondary Education portion of the degree.

During the first course in the program, TCHL 500 *Foundations of Teacher Leadership*, students will complete an assessment process that will be used in determining which TCHL core courses they must take (see *Important Note* below). All students must either complete TCHL 540, 544, 548, 550, 554, and 558 or pass proficiency evaluations for these courses. TCHL 500, 530, and 560 are required for all students, and there are no proficiency evaluations that may be substituted for these courses.

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Courses denoted with an asterisk below are required.

**Secondary Education**

Students must complete a total of at least 12 hours in education course work, including the following:

*Professional Education Core—9-16 hours*

\*TCHL 500 – Foundations of Teacher Leadership (3 hours)

\*TCHL 530 – Curriculum Development (3 hours)

TCHL 540 – Classroom Instruction: Instructional Strategies (1 hour)

TCHL 544 – Classroom Instruction: Equitable School and Community Partnerships (1 hour)

TCHL 548 – Classroom Instruction: Managing the Learning Environment (1 hour)

TCHL 550 – Student Assessment I: Fundamentals of Student Assessment (1 hour)

TCHL 554 – Student Assessment II: Standardized Testing (1 hour)

TCHL 558 – Student Assessment III: Classroom Tests and Instruments (2 hours)

\*TCHL 560 – Action Research Capstone for Teacher Leaders (3 hours)

*Education Electives—0-3 hours*

<p>hours)            *TCHL 530 – Curriculum Development (3 hours)            TCHL 540 – Classroom Instruction: Instructional Strategies (1 hour)            TCHL 544 – Classroom Instruction: Equitable School and Community Partnerships (1 hour)            TCHL 548 – Classroom Instruction: Managing the Learning Environment (1 hour)            TCHL 550 – Student Assessment I: Fundamentals of Student Assessment (1 hour)            TCHL 554 – Student Assessment II: Standardized Testing (1 hour)            TCHL 558 – Student Assessment III: Classroom Tests and Instruments (2 hours)            *TCHL 560 – Action Research Capstone for Teacher Leaders (3 hours)</p> <p><i>Education Electives—0-3 hours</i>            Students who successfully complete the proficiency examinations for TCHL 540, TCHL 544, TCHL 548, TCHL 550, TCHL 554, and/or TCHL 558 may substitute another education course with advisor approval. TCHL 520 <i>Principles of Action Research for Teacher Leaders</i> is strongly recommended.</p> <p>Secondary Education Mid-Point Assessment Requirements:            To ensure that all master’s candidates are proficient on Advanced Level Kentucky Teacher Standards, all <i>Critical Performances</i> associated with the above TCHL courses must be completed, <i>even if a candidate’s program of studies does not include the courses</i>. Except for TCHL 560, which should be taken toward the end of their program, candidates may only complete 6 hours in their Specialization Component before they have taken all TCHL courses and/or uploaded all Critical Performances and have achieved an average score of 3.0 on all performances and an average score of 3 on dispositions. Additional course work may be required based on the assessment results.</p> <p>Secondary Education Completion Requirements:            1. Successfully complete TCHL 560 (Course grade of C or higher).            2. Give acceptable presentation of action research in approved venue.            3. Achieve a minimum 3.0 GPA overall and in secondary education course work.</p> <p>Total program hours for the MA in Mathematics is 30-34 hours.</p>	<p>Students who successfully complete the proficiency examinations for TCHL 540, TCHL 544, TCHL 548, TCHL 550, TCHL 554, and/or TCHL 558 may substitute another education course with advisor approval. TCHL 520 <i>Principles of Action Research for Teacher Leaders</i> is strongly recommended.</p> <p>Secondary Education Mid-Point Assessment Requirements:            To ensure that all master’s candidates are proficient on Advanced Level Kentucky Teacher Standards, all <i>Critical Performances</i> associated with the above TCHL courses must be completed, <i>even if a candidate’s program of studies does not include the courses</i>. Except for TCHL 560, which should be taken toward the end of their program, candidates may only complete 6 hours in their Specialization Component before they have taken all TCHL courses and/or uploaded all Critical Performances and have achieved an average score of 3.0 on all performances and an average score of 3 on dispositions. Additional course work may be required based on the assessment results.</p> <p>Secondary Education Completion Requirements:            1. Successfully complete TCHL 560 (Course grade of C or higher).            2. Give acceptable presentation of action research in approved venue.            3. Achieve a minimum 3.0 GPA overall and in secondary education course work.</p> <p>Total program hours for the MA in Mathematics is 30-34 hours.</p>
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