I. DEPARTMENT / PROGRAM

Department: The Department of Mathematical Sciences

Program: Masters of Arts in Teaching Middle School Mathematics

II. SUMMARY OF CHANGE REQUESTED (360 WORDS MAXIMUM)

The Department of Mathematical Sciences proposes a retitling of the program Masters of Arts in Teaching Middle School Mathematics (MAT MSM) to Masters of Arts in Teaching School Mathematics (MAT SM). The proposal also includes a change of title and description of four courses that form the core of the degree: M570, M572, M573 and M574. These parallel proposals have been submitted for consideration to the faculty senate through the electronic curriculum system (e-Curr).

The rationale for the proposal is as follows: we seek to expand the appeal of the degree from its current targeted audience of only middle school math teachers to a larger audience that includes both middle school and high school math teachers. The proposal, if approved, would respond to the increased demand we have experienced for masters-level, all-online mathematics courses that are specifically tailored to the meet the needs of grades 5-12 mathematics teachers. This increase in demand is driven by several factors. Grades 5-12 mathematics teachers seek masters-level programs that will support their work as mathematics teachers. Grades 5-12 teachers seek to complete masters-level programs as a means for salary increases. Finally, HS teachers seek masters-level mathematics courses to meet the qualifications required to offer dual-enrollment courses.

As an extant program seeking a new title along with associated course title and description changes, the proposal does not require any new resources.

The program is unique among the MUS system as an all-online masters-level mathematics degree aimed at supporting the special work of teaching mathematics in grades 5-12. The nearest equivalent is MSU's MSMMME degree. Important distinctions exist. Whereas the MSMMME targets HS teachers and takes a mathematical content-focused approach (i.e. requiring advanced courses in analysis, abstract algebra, statistics) the MATSM targets both middle and high school teachers and takes a mathematical process-focused approach (i.e. requiring courses that examine the foundations of probability, geometry, algebra and statistics from a problem solving perspective).
III. ENDORSEMENTS AND APPROVALS

Requestor: Matt B. Roscoe
Phone: 406 243 6689
Program Chair: Emily Stone
Dean: Jenny McNulty
Graduate School Dean (If Graduate Level)
Library Dean (Required for #11 below only)

☐ Resources included in the proposal are sufficient to adequately support the new program’s library needs.

Signature: Matt B. Roscoe Date 10/13/17
Email: matt.roscoe@umontana.edu
For the chair:
Signature: [Name], Assoc. Chair Date 10/13/17
Signature Date 10/13/17
Signature Date 10/13/17
Signature Date 10/13/17

Provost:
Signature Date
IV. TYPE OF PROPOSAL

Any additional required forms are listed after each type of proposal and must accompany this form. Proposals for a new degree or center require notification in advance of this proposal. See the Office of the Provost’s curriculum website for information and instructions.

Level I Proposals:

- 1a. Placing a program into moratorium (Program Termination Form)
- 1b. Withdrawing a program from moratorium
- 2. Adding, retitling, terminating or revising a campus certificate of 29 credits or fewer
- 3. Adding a BAS/AA/AS Area of Study
- 4. Offering an existing program via distance or online delivery
- 5. Retitling an existing postsecondary educational program
- 6. Terminating an existing postsecondary educational program (Program Termination Form)
- 7. Consolidating existing postsecondary educational programs (BOR Curriculum Proposal Form)
- 8. Adding a new minor where there is a major or concentration (option) in a major (BOR Curriculum Proposal Form)
- 9. Revising a program substantially (e.g. changing program focus) (BOR Curriculum Proposal Form)
- 10. Adding a temporary Certificate or AAS Degree Program Approval limited to 2 years

Level II Proposals:

- 11. Establishing a new postsecondary educational program (Curriculum Proposal and Reviewed Intent to Plan Form)
- 12. Exceeding the 120 credit maximum for baccalaureate degrees Exception to policy 301.11
- 13. Forming a college, division, school, department, institute, bureau, center, station, laboratory or similar unit (Curriculum Proposal or Center/Institute Proposal and Approved Intent to Plan Form)
- 14. Eliminating or consolidating an academic, administrative, or research unit.
- 15. Retitling an academic, administrative, or research unit.

V. CIP CODE (CLASSIFICATION OF INSTRUCTIONAL PROGRAMS)

The BOR requires a CIP Code (Classification of Instructional Programs) for tracking and reporting of degrees. Use the CIP Code website to identify the most applicable code.

CIP Code: 13.1311

VI. METHOD OF DELIVERY

Will more than 50% of the proposed program be delivered via online or distance methods?

- Yes [x] No

The current MATSM is delivered all online. The proposed MATSM will also be delivered all online.
MA in Teaching School Middle Mathematics

The Program

The Master of Arts in Teaching School Middle Mathematics (MATMSM) degree addresses the specific need for highly qualified teachers of mathematics across the middle- and high-school grade levels. Students in this program learn mathematics content and pedagogy to provide them with skills and expertise to teach middle-school students appropriate mathematics. The program is available entirely online.

Students can begin the program in any summer. During the 2nd year students will work on their final project during the school year with their advisor and committee, then present their results in the final summer term.

Teachers in MATMSM Program will learn mathematics content and pedagogy to provide them with skills and expertise to teach appropriate mathematics. One course is specific to mathematics pedagogy (C&I 542). Another course (C&I 588) focuses on classroom research. In addition, appropriate pedagogy and technology will be modeled in all courses. All components of this program are offered online. Students can complete the program in two calendar years by taking three courses each summer and two courses each academic year.

MATMSM Program Summary

Core Courses (24 credits):

Course Title
M 500 (3 cr) Current Mathematical Curricula
M 501 (3 cr) Technology in Mathematics for Teachers
M 570 (3 cr) Calculus for Middle School Teachers
M 572 (3 cr) Algebra for Middle School Teachers
M 573 (3 cr) Geometry for Middle School Teachers
M 574 (3 cr) Probability and Statistics for Middle School Teachers
C&I 542 (3 cr) Supervision and Teaching of Mathematics
C&I 588 (3 cr) Action Research in Classrooms

Electives (6 credits):

Course Title
C&I 552 (3 cr) Models of PD in math and science
The rationale for the proposal is as follows: we seek to expand the appeal of the degree from its current targeted audience of only middle school math teachers to a larger audience that includes both middle school and high school math teachers. The proposal, if approved, would respond to the increased demand we have experienced for masters-level, all-online mathematics courses that are specifically tailored to the meet the needs of grades 5-12 mathematics teachers. This increase in demand is driven by several factors. Grades 5-12 mathematics teachers seek masters-level programs that will support their work as mathematics teachers. Grades 5-12 teachers seek to complete masters-level programs as a means of advancing on their negotiated salary schedule. Finally, HS teachers seek masters-level mathematics courses to meet the qualifications required to offer dual-enrollment courses.
C&I 519 (3 cr) Authentic assessment  
M 510 (3 cr) Problem Solving for Teachers  
(3 cr) Cognate Field Course chosen with Advisor  

Odd spring 15 weeks  
Odd fall 15 weeks  
Fall/Spring 15 weeks

Professional Paper:

Students, under the direction of an advisor, are required to prepare a professional paper and give an oral presentation of the research topic chosen. The professional project is planned and evaluated by a committee of at least three faculty that must include at least two from Mathematical Sciences and one from Curriculum and Instruction.

Proposed Rotation Entering Even Summer:

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* Professional paper presentation in last semester of coursework

Proposed Rotation Entering Odd Summer:

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* Professional paper presentation in last semester of coursework

Students can finish the degree in two summers and two academic years by taking 9 credits each summer and 6 credits each academic year (9+6+9+6=30).
IX. SUBMISSION

1. Submit a hard copy of this form with all required signatures to the Office of the Provost.

2. Submit an electronic copy of this Word document, along with all other required BOR forms (in Word) to jasminezink.laine@mso.umt.edu

- After approval by the Provost, the proposal will be submitted to the Faculty Senate Office.
- After approval by the appropriate Curriculum Committee (ASCRC or Graduate Council), the full Faculty Senate must approve the proposal.
- Upon Faculty Senate approval, the Office of the Provost will submit the proposal to OCHE for the next possible OCHE/BOR meeting.
  - Note that BOR and internal UM deadlines require submission quite in advance of the BOR meeting.
- The Office of the Provost will notify the proposer once the change has been approved by OCHE/BOR.