Course Change Information

What change is being proposed? (If more than one, what changes are being proposed?)
Title and transcript abbreviation change, description change.

What is the rationale for the proposed change(s)?
Originally 3 methods courses were converted directly for semesters, faculty have compressed these into 2.

What are the programmatic implications of the proposed change(s)?
(e.g. program requirements to be added or removed, changes to be made in available resources, effect on other programs that use the course)?
Already accounted for in revised program. Three mathematics teaching methods courses have been combined into two semester courses.

Is approval of the request contingent upon the approval of other course or curricular program request? No

General Information

Course Bulletin Listing/Subject Area  Education:Teaching & Learning
Fiscal Unit/Academic Org  School of Teaching & Learning - D1275
College/Academic Group  Education & Human Ecology
Level/Career  Graduate, Undergraduate
Course Number/Catalog  5712
Course Title  Methods in Teaching STEM Secondary Mathematics II
Previous Value  Fundamental Ideas of School Mathematics I: Algebra
Transcript Abbreviation  STEMMathMethods2
Previous Value  FundIdeasSchMath1
Course Description  This course will increase pedagogical content knowledge of geometry and measurement as appropriate for Grades 7-12. Concepts such as similarity, transformations, representations, justification, and spatial reasoning will be included.
Previous Value  Designed to increase intern pedagogical content knowledge of patterns, functions, modeling and algebra as appropriate for grades 7-12 teaching.
Semester Credit Hours/Units  Fixed: 3

Offering Information

Length Of Course  14 Week, 7 Week, 4 Week (May Session), 12 Week (May + Summer)
Flexibly Scheduled Course  Never
Does any section of this course have a distance education component?  No
Grading Basis  Letter Grade
Repeateable  No
Course Components  Lecture
Grade Roster Component  Lecture
Credit Available by Exam  No
Admission Condition Course  No
Off Campus  Never
Campus of Offering  Columbus

Prerequisites and Exclusions

Prerequisites/Corequisites  Admission to the STEM major or MEd.
Exclusions  Not open to students with credit for 749.01.
Cross-Listings

Subject/CIP Code

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Quarters to Semesters

Modified or re-envisioned course that includes substantial parts of the content and learning goals of one or more quarter courses

List the current courses by number and title that are to be subsumed into proposed course

EDUTL 749.01: Fundamental Ideas of School Mathematics I

Requirement/Elective Designation

Required for this unit's degrees, majors, and/or minors

Course Details

Course goals or learning objectives/outcomes

* Examine various theories of learning and teaching as they relate to topics from Algebra and calculus
* Demonstrate understanding of the recommendations of the NCTM Principles and Standards for patterns, functions, modeling, and algebra
* Differentiate between conceptual and instrumental types of mathematical knowledge, and identify the essential components of teaching strategies and methods aimed at development of the students' conceptual understanding of mathematics
* Become familiar with the scope and sequence (learning progressions) of the mathematics curriculum through the middle and the secondary grades
  
Examine affective factors that influence mathematics learning
* Become experienced in designing exploratory and open-ended mathematical tasks of the problem solving nature, and demonstrate the ability to incorporate these activities into the secondary curriculum
* Examine their beliefs and conceptions about mathematics, mathematics teaching, and mathematics learning through continuous reflection on their past and present experiences as mathematics doers and thinkers
* Demonstrate an awareness and understanding of the research findings on cognitive obstacles in the learning of mathematics at all levels and demonstrate the ability to incorporate those findings in their teaching
* Become familiar with different methods of assessment. Students will examine the place of formal and informal assessment strategies in the secondary mathematics curriculum, and develop methods for evaluation of students' conceptual understanding
Content Topic List

- Defining constructs—Equality and variable
- Perspectives on Algebra: NCTM Principles and Standards
- Conceptual vs. algorithmic knowledge of mathematics
- Learning theories and the NCTM Principles and Standards
- Assessing mathematical thinking
- Cognitive obstacles in learning mathematics
- Growth of mathematical understanding; Concept definition and concept image
- Curriculum: Planning for instruction Lesson and unit planning
- Assessing mathematical thinking
- Cognitive obstacles in learning mathematics
- Growth of mathematical understanding; Concept definition and concept image
- Curriculum: Planning for instruction Lesson and unit planning

Attachments

Comments

- Approved by T&L GSC 1/19/2012 (by Mercerhill,Jessica Leigh on 01/19/2012 04:52 PM)

Workflow Information

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