

NEW COURSE PROPOSAL

Courses must be submitted by October 15, 2011, and finalized by the end of the fall semester for the next catalog production.

Use YELLOWED areas to enter data.

DATE (*Change if modified and redate file with current date*)

OCTOBER 12, 2011; REV 10.27.11

PROGRAM AREA(S)

MA IN EDUCATION

1. Course Information. [Follow accepted catalog format.]

Prefix(es) (Add additional prefixes if cross-listed) and **Course No.** EDCI 641

Title: ADVANCED MATHEMATICS TEACHING METHODS **Units:** 3

X Prerequisites Admission into the MA in Education

Corequisites

Consent of Instructor Required for Enrollment

Catalog Description (Do not use any symbols): Investigates effective strategies for planning, learning, teaching, and assessing major mathematical concepts and content found in California and national Mathematics Curriculum Frameworks. Emphasizes deepening understanding and meeting the needs of all students, connections within the mathematics curriculum, communicating mathematical ideas, and incorporating technology.

Grading Scheme:

x A-F Grades

Credit/No Credit

Optional (Student Choice)

Repeatability:

Repeatable for a maximum of units

Total Completions Allowed

Multiple Enrollment in Same Semester

Course Level Information:

Undergraduate

Post-Baccalaureate/Credential

x Graduate

Mode of Instruction/Components (Hours per Unit are defaulted).

	Units	Hours per Unit	Benchmark Enrollment	Graded Component	CS & HEGIS # (Filled in by the De□n)
Lecture	3	1	20	X	
Seminar		1			
Laboratory		3			
Activity		2			
Field Studies					
Indep Study					
Other Blank					

Leave the following hours per week areas blank. The hours per week will be filled out for you.

3 hours lecture per week

hours blank per week

Is this course delivered online? Yes_____ No__x__

2. Course Attributes:

General Education Categories: All courses with GE category notations (including deletions) must be submitted to the GE website: <http://summit.csuci.edu/geapproval>. Upon completion, the GE Committee will forward your documents to the Curriculum Committee for further processing.

A (English Language, Communication, Critical Thinking)

A-1 Oral Communication

A-2 English Writing

A-3 Critical Thinking

B (Mathematics, Sciences & Technology)

- B-1 Physical Sciences
- B-2 Life Sciences – Biology
- B-3 Mathematics – Mathematics and Applications
- B-4 Computers and Information Technology

C (Fine Arts, Literature, Languages & Cultures)

- C-1 Art
- C-2 Literature Courses
- C-3a Language
- C-3b Multicultural

D (Social Perspectives)

E (Human Psychological and Physiological Perspectives)

UDIGE/INTD Interdisciplinary

Meets University Writing Requirement

Meets University Language Requirement

American Institutions, Title V Section 40404: ☐ Government ☐ US Constitution ☐ US History

Refer to website, Exec Order 405, for more information: <http://senate.csuci.edu/comm/curriculum/resources.htm>

Service Learning Course (Approval from the Center for Community Engagement must be received before you can request this course attribute).

3. Justification and Requirements for the Course. (Make a brief statement to justify the need for the course)

A. Justification: Provides in-service teachers the opportunity to develop and advance their classroom instruction and understanding of the research basis and technology advances that challenge the need for change to the traditional method of teaching mathematics throughout schooling sectors. This course is in line with CI's STEM initiative in preparing more highly qualified math and science teachers.

B. Degree Requirement:

- ☐ Requirement for the Major/Minor
- ☒ Elective for the Major/Minor
- ☐ Free Elective

Note: Submit Program Modification if this course changes your program.

4. Student Learning Outcomes. (List in numerical order. You may wish to use the following resource in utilizing measurable verbs: <http://senate.csuci.edu/comm/curriculum/resources.htm>)

Upon completion of the course, the student will be able to:

1. Analyze and describe how national and state standards, standardized testing, and public opinion influence the content and teaching of the mathematics curriculum across grade levels
2. Articulate a personal philosophy of mathematics education supported by current research and theory
3. Evaluate and critique mathematics unit and lesson plans and district adopted programs
4. Design and implement an assessment plan and analyze the results
5. Develop and justify an instructional plan that includes appropriate and measurable learning objectives, meaningful activities and effective assessment strategies
6. Adapt instructional plans to meet the needs and enrich the learning experience of all students
7. Incorporate a variety of digital technologies into the planned curriculum
8. Reflect upon and analyze own teaching practices with reference to appropriate theory and research

5. Course Content in Outline Form. [Be as brief as possible, but use as much space as necessary]

- Critical influences on mathematics curriculum content and instruction
- Inquiry into best practices in the teaching of mathematics
- Balancing the mathematics curriculum
- Identifying and responding to students' diverse needs through universal design and differentiated tasks
- Creating and teaching meaningful mathematics investigations
- Using and infusing technologies in mathematics teaching and learning

Does this course content overlap with a course offered in your academic program? **Yes** ☐ **No** ☒

If YES, what course(s) and provide a justification of the overlap.

Does this course content overlap a course offered in another academic area? **Yes** ☐ **No** ☒

If YES, what course(s) and provide a justification of the overlap.

Overlapping courses require Chairs' signatures.

6. Cross-listed Courses (Please note each prefix in item No. 1)

A. List Cross-listed Courses (Signature of Academic Chair(s) of the other academic area(s) is required).

List each cross-listed prefix for the course:

B. Program responsible for staffing:

7. References. [Provide 3 - 5 references]

Burns, M. (2000). *About Teaching Mathematics*. CA: Math Solutions Publications

English, L. (Ed). (2008). *Handbook of International Research in Mathematics Education*. 2nd ed. New York, NY: Routledge.

Lester, F. (Ed). (2007). *Second Handbook of Research on Mathematics Teaching and Learning*, NCTM, VA: Information Age Publishing.

Lajoie, S. (Ed). (1999). *Reflections on Statistics: Learning, teaching and Assesment in Grades K-12*, Lawrence Erlbaum Assoc..

Van de Walle, J. (2009). *Elementary and Middle School Mathematics: Teaching Developmentally*. 6th ed. MA: Allyn & Bacon.

8. Tenure Track Faculty Qualified to Teach This Course.

Merilyn Buchanan

9. Requested Effective Date: Fall 2012

First semester offered:

10. New Resources Requested. Yes ☐ **No** ☒

If YES, list the resources needed.

A. Computer Needs (data processing, audio visual, broadcasting, other equipment, etc.)

B. Library Needs (streaming media, video hosting, databases, exhibit space, etc.)

C. Facility/Space/Transportation Needs

D. Lab Fee Requested (please refer to Dean's Office for additional processing) **Yes** ☐ **No** ☒

E. Other

11. Will this new course alter any degree, credential, certificate, or minor in your program? Yes ☐ **No** ☒

If, YES attach a program update or program modification form for all programs affected.

Priority deadline for New Minors and Programs: **October 1, 2011** of preceding year.

Priority deadline for Course Proposals and Modifications: **October 15, 2011**, of preceding year.

Last day to submit forms to be considered during the current academic year: **April 15th**.

Merilyn Buchanan

10/6/2011

Proposer of Course (Type in name. Signatures will be collected after Curriculum approval)

Date

Approval Sheet

Program/Course: [REDACTED]

If your course has a General Education Component or involves Center affiliation, the Center will also sign off during the approval process.

Multiple Chair fields are available for cross-listed courses.

The CI program review process includes a report from the respective department/program on its progress toward accessibility requirement compliance. By signing below, I acknowledge the importance of incorporating accessibility in course design.

Program Chair		
	Signature	Date
Program Chair		
	Signature	Date
Program Chair		
	Signature	Date
General Education Chair		
	Signature	Date
Center for International Affairs Director		
	Signature	Date
Center for Integrative Studies Director		
	Signature	Date
Center for Multicultural Engagement Director		
	Signature	Date
Center for Civic Engagement Director		
	Signature	Date
Curriculum Chair		
	Signature	Date
AVP		
	Signature	Date