

CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

COURSE MODIFICATION PROPOSAL

Courses must be submitted by November 9, 2007, to make the next catalog production

DATE (CHANGE DATE IF REVISED): OCTOBER 30, 2007 REV 12.13.07

PROGRAM AREA(S): EDUCATION

1. Catalog Description of the Course. *[Follow accepted catalog format.]*
(If Cross-listed please submit prefixes for each discipline being modified)

OLD

Prefix EDMS Course# 526 Title MODERN METHODS IN MATHEMATICS TEACHING Units (3)
 3 hours lecture per week
 hours blank per week

- Prerequisites: Admission to the Multiple Subject Program
 Corequisites: EDMS 566 or EDMS 562

Description (Do not use any symbols):
 Students learn to apply techniques and materials to teaching mathematics in elementary and middle schools. Special attention will be given to mathematical reasoning, problem solving skills, multiple representations and approaches including verbal, symbolic, graphic. Modern methods, including mathematical modeling, use of new technology and modern educational software will be stressed. Needs of English Language Learners and exceptional children, technology for teaching and learning are integrated.

- Gen Ed Categories
 Lab Fee Required
 Hegis Code
- Graded
 CR/NC
 Repeatable for up to _____ units
 A - F
 Multiple Enrollment in (Student's same semester choice)

- Mission Based Learning Objectives: Interdisciplinary International Multicultural Service Learning
 American Institutions, Title V Section 40404: Government US Constitution US History (Refer to EO 405, for more information at: <http://senate.csuci.edu/comm/curriculum/resources.htm>)
 Service Learning Course

NEW

Prefix EDMS Course# 526 Title MODERN METHODS IN MATHEMATICS TEACHING Units (4)
 4 hours per week
 hours per week

- Prerequisites: Admission to the Multiple Subject Program
 Corequisites: EDMS 562, EDMS 565 or EDMS 575 or consent of instructor.

Description:
 Applying techniques and materials to teaching mathematics in self-contained classrooms in K-6 school settings. Special attention is given to mathematical reasoning, problem solving skills, multiple representations and approaches including verbal, symbolic, graphic. Modern methods, including mathematical modeling, use of new technology and modern educational software will be stressed. Designing assessment tools and using assessment data to differentiate activities for English Language Learners and exceptional children are integrated.

- Gen Ed Categories
 Lab Fee Required
- Graded
 CR/NC
 Repeatable for up to _____ units
 A - F
 Multiple Enrollment in same semester choice)

2. Mode of instruction (Hours per Unit are set for you)

Existing

| | Units | Hour Per Unit | Benchmark Enrollment | CS# Units (filled out by Dean) |
|---------------|----------|---------------|----------------------|--------------------------------|
| Lecture | 3 | 1 | 25 | _____ |
| Seminar | _____ | _____ | _____ | _____ |
| Laboratory | _____ | _____ | _____ | _____ |
| Activity | _____ | _____ | _____ | _____ |
| Field Studies | _____ | _____ | _____ | _____ |
| Indep Study | _____ | _____ | _____ | _____ |
| Other blank | _____ | _____ | _____ | _____ |

Proposed

| | Units | Hour Per Unit | Benchmark Enrollment | CS# Units (filled out by Dean) |
|------------|----------|---------------|----------------------|--------------------------------|
| Lecture | 4 | 1 | 25 | _____ |
| Seminar | _____ | _____ | _____ | _____ |
| Laboratory | _____ | _____ | _____ | _____ |
| Activity | _____ | _____ | _____ | _____ |
| Activity | _____ | _____ | _____ | _____ |
| Activity | _____ | _____ | _____ | _____ |
| Activity | _____ | _____ | _____ | _____ |

3. Course Content in Outline Form if Being Changed. *[Be as brief as possible, but use as much space as necessary]*

OLD

NEW

- Elementary and Middle School Mathematics Curriculum and Organization
- Balanced Content
- Balanced Content
- Characteristics of Effective Mathematics Learning Environment
- Traits of Effective Mathematics Teachers
- Learners' Needs and Learning Strategies
- Teaching Diverse Learners
- Planning Strategies
- Learner-Centered Instructional Strategies
- Infusing Information and Communication Technologies
- Assessment and Evaluation Strategies

- California standards for K-8 mathematics curriculum, Balanced approach to teaching the elementary school mathematics curriculum
- Characteristics of an effective mathematics learning environment
 - Developing problem-based learning activities
 - Modeling mathematical thinking
- Planning mathematics units and lessons
- Assessing learners' needs
- Differentiating tasks for diverse learners
- Selecting appropriate learner-centered instructional strategies
- Infusing information and communication technologies into mathematics instruction

4. Justification and Learning Objectives for the Course. (Indicate whether required or elective, and whether it meets University Writing, and/or Language requirements) *[Use as much space as necessary]*

OLD

This course is a required course in the Multiple Subject Teacher Credential Program. It meets the standards set by the California Commission on Teacher Credentialing.

Students who successfully complete this course will be able to:

1. plan and implement a mathematics program meeting the standards outlined in the California Mathematics Framework
2. use current research finding to inform curriculum planning, design and implementation
3. use appropriate tools to assess student understanding, skills and work
4. design standards-based learner-centered lessons
5. create instructional activities that promote universal access to mathematics content
6. integrate the use of manipulatives to bridge the stages of conceptual development
7. employ multiple approaches to teach lessons that develop conceptual understanding and enhance skills
8. infuse information and communication technology appropriately as a tool in mathematics learning
9. devise and apply rubrics to student work and student journals.

NEW

This course is a required course in the Multiple Subject Teacher Credential Program. It meets the standards set by the California Commission on Teacher Credentialing.

Students who successfully complete this course will be able to:

1. Plan and implement a mathematics program meeting the standards outlined in the California Mathematics Framework
2. Use current research finding to inform curriculum planning, design and implementation
3. Design and use appropriate tools to assess student understanding, skills and work
4. Develop standards-based, data driven, learner-centered lessons
5. Create instructional activities that promote universal access to mathematics content
6. Integrate the use of modeling/manipulatives to bridge the stages of conceptual development
7. Employ multiple approaches to teach lessons that develop conceptual understanding and enhance skills
8. Infuse information and communication technology appropriately as a tool in mathematics learning
9. Devise and apply rubrics to assess student work.
10. Plan a teaching unit that successfully meets the requirements for CCTC teaching performance assessment

5. References. *[Provide 3-5 references on which this course is based and/or support it.]*

- OLD** California Department of Education, (1999). **Mathematics Framework for California Public Schools**, <http://www.cde.ca.gov/cdepress/math.pdf>
- The National Council of Teachers of Mathematics, (2000) **Principles and Standards for School Mathematics** <http://standards.nctm.org>
- Burns, M. (2000). **About teaching Mathematics:A K-8 Resource**. Saucilito, CA. Math Solutions Publications.
- George Cathcart et al, (2003). **Learning Mathematics in Elementary and Middle Schools, Third Edition..** Columbus, OH. Merrill Prentice Hall.
- Ma, Liping. (1999). **Knowing and Teaching Elementary Mathematics**. New Jersey: Lawrence Erlbaum Associates.

- NEW** California Department of Education, (2006). **Mathematics Framework for California Public Schools**, <http://www.cde.ca.gov/cdepress/math.pdf>
- The National Council of Teachers of Mathematics, (2000). **Principles and Standards for School Mathematics** <http://standards.nctm.org>
- Preformance Assessment for California Teachers, (2007) Hamdbook for Elementary Mathematics Teaching Event.**

Burns, M. (2000). About teaching Mathematics:A K-8 Resource. Saucilito, CA. Math Solutions Publications.
Van de Walle, J. (2007). Elementary and Middle School Mathematics, 6/e. Boston, MA. Allyn and Bacon.

6. Indicate Changes and Justification for Each. [Check all that apply and follow with justification. Be as brief as possible but, use as much space as necessary.]

- Course title
- Prefix/suffix
- Course number
- Units
- Staffing formula and enrollment limits
- Prerequisites/corequisites
- Catalog description
- Course content
- References
- GE
- Other

Justification: Content of the course will be extended to reflect SB 1209 (Chapter 517, Statutes of 2006). The bill mandated all multiple subject professional teacher preparation programs implement a teaching performance assessment as of July 1, 2008 which must be completed and passed in order for candidates to be recommended for a teaching credential. Elementary mathematics is the chosen content area for the teaching performance assessment. A substantial part of this assessment task is embedded in the mathematics methods course. The State's mandated changes necessitate modifications and to the content with additional time dedicated to students' collecting and analyzing assessment data and designing and adapting instructional and assessment tasks.

7. General Education Categories: All courses with GE categories notations (including deletions) must be processed at 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)

-

UD Interdisciplinary

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8. New Resources Required. YES NO

If YES, list the resources needed and obtain signatures from the appropriate programs/units on the consultation sheet below.

- a. Computer (data processing), audio visual, broadcasting needs, other equipment)
- b. Library needs
- c. Facility/space needs

9. Will this course modification alter any degree, credential, certificate, or minor in your program? YES NO

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

10. Effective Date (Semester and Year – all modifications submitted prior to November 9th will be effective in the Fall 2008 catalog): Fall 2008

Merilyn Buchanan

Proposer of Course Modification

08/30/2007

Date

Approvals

Program/Course: EDMS 526

Program Chair(s)

Date

General Education Chair(s)

Date

Curriculum Committee Chair(s)

Date

Dean of Faculty

Date