

CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

NEW COURSE PROPOSAL

PROGRAM: MULTIPLE SUBJECT TEACHING CREDENTIAL PROGRAM

1. Catalog Description of the Course. *[Include the course prefix, number, full title, and units. Provide a course narrative including prerequisites and corequisites. If any of the following apply, include in the description: Repeatability (May be repeated to a maximum of ___ units); time distribution (Lecture ___ hours, laboratory ___ hours); non-traditional grading system (Graded CR/NC, ABC/NC). Follow accepted catalog format.]*

EDMS 526 MODERN METHODS IN MATHEMATICS TEACHING (3)

Three hours lecture/discussion per week.

Prerequisite: Admission to the Multiple Subject Credential Program.

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.

2. Mode of Instruction

	Units	Hours per Unit	Benchmark Enrollment
Lecture	<u>3</u>	<u>1</u>	<u>25</u>
Seminar			
Laboratory			
Activity			

3. 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]*

This course is a required course in the Multiple Subject Teaching 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.

4. Is this a General Education Course YES **NO**

If Yes, indicate GE category:

A (English Language, Communication, Critical Thinking)	
B (Mathematics & Sciences)	

C (Fine Arts, Literature, Languages & Cultures)	
D (Social Perspectives)	
E (Human Psychological and Physiological Perspectives)	

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

- California State Academic Content Standards
- Elementary and Middle School Mathematics Curriculum and Organization
- 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

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

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*. Saucilto, 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.

7. List Faculty Qualified to Teach This Course.

Merilyn Buchanan

8. Frequency.

a. Projected semesters to be offered: Fall X Spring X Summer

9. New Resources Required.

Mathematics Instructional Materials
Library Resources
Graphing Calculators
Instructional Software (including videos)

10. Consultation.

Attach consultation sheet from all program areas, Library, and others (if necessary)

11. If this new course will alter any degree, credential, certificate, or minor in your program, attach a program modification.

Merilyn Buchanan

01/09/03

Proposer of Course

Date