CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

NEW COURSE PROPOSAL

PROGRAM AREAS _____ MATH

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.]*

MATH 308 MODERN MATHEMATICS FOR ELEMENTARY SCHOOL TEACHING II– GEOMETRY, PROBABILITY AND STATISTICS (3)

Three hours of lecture per week.
Prerequisite: MATH 208 or consent of the instructor.
Current issues of modern math curriculum including abstract thinking and problem solving approaches to teaching. Content covers systems of geometry and geometric interpretation of real numbers, geometric constructions, mathematical modeling, basic probability and statistics. Problem solving strategies are stressed. Designed for students intending to become elementary school techers..

2. **Mode of Instruction.**

	Units	**Hours per Unit**	**Benchmark Enrollment**
Lecture	___3_____	___1_____	__24_____
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 for mathematics majors intending to teach.

Through this course, students will be able to

- Identify important issues of modern elementary mathematics curriculum
- Demonstrate effective problem solving approaches to teaching
- Apply effective teaching techniques to the instruction of geometry, algebra, precalculus, calculus, probability and statistics.
- Discuss content, pedagogy and teaching methods for various grade levels
- Use modern technology and mathematical software in the classroom
- Express ideas related to teaching of secondary school mathematics in oral and written form.

This course is not designed to satisfy the University Writing or Language requirements.

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]*

- modern math curriculum including abstract thinking and problem solving approaches to teaching
- systems of geometry and geometric interpretation of real numbers,
- geometric constructions
- mathematical modeling
- probability and statistics.
- problem solving strategies are stressed
-theoretical and practical aspects.

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

Problem Solving Approach to Mathematics for Elementary School Teachers, R.Billstein, S.,Liebskind, J.Lott, Addison Wesley (2000).
Handbook of Research on Mathematics Teaching and Learning, NCTM, D. Grouws (Ed), Macmillan Publishing Co., (1992)
Reflections on Statistics: Learning, teaching and Assesment in Grades K-12, Lajoie (ed).,Lawrence Erlbaum Ass., (1999).
Knowing andTeaching Elementary Mathematics, Liping Ma, Lawrence Erlbaum Ass., (1999).

7. List Faculty Qualified to Teach This Course.

All Mathematics faculty

8. Frequency.

a. Projected semesters to be offered: Fall ___X__ Spring _X____ Summer __X___

9. New Resources Required.

a. Computer (data processing), audio visual, broadcasting needs, other equipment

none

b. Library needs

none

c. Facility/space needs

none

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.

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Proposer of Course Date