

CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

COURSE MODIFICATION PROPOSAL

PROGRAM AREA _____

- 1. Catalog Description of the Course.** *[Include the course prefix, number, full title, and units. Provide a course narrative using underline for deletions and CAPITALS for additions including prerequisites/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 318 Mathematics for Secondary School Teachers (3)

Three hours of lecture IN THE COMPUTER LAB.

Prerequisite:

Current issues of modern secondary school math curriculum including abstract thinking, TECHNOLOGY USE and problem solving approaches to teaching. Content covers systems of geometry, algebra, precalculus, calculus, probability and statistics. IS GEOMETRY BASED, BUT SELECTED TOPICS FROM ALGEBRA, PRECALCULUS, AND CALCULUS WILL BE DISCUSSED. Designed for students intending to teach. SERVICE LEARNING PROJECT REQUIRED.

2. Mode of instruction

<u>Existing</u>			<u>Proposed</u>				
	Units	Hours Per Unit	Benchmark Enrollment		Units	Hours per Unit	Benchmark Enrollment
Lecture	<u>3</u>	<u>1</u>	<u>24</u>	Lecture IN THE LAB	<u>3</u>	<u>1</u>	<u>24</u>
Seminar	<u> </u>	<u> </u>	<u> </u>	Seminar	<u> </u>	<u> </u>	<u> </u>
Laboratory	<u> </u>	<u> </u>	<u> </u>	Laboratory	<u> </u>	<u> </u>	<u> </u>
Activity	<u> </u>	<u> </u>	<u> </u>	Activity	<u> </u>	<u> </u>	<u> </u>

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

Current issues of modern secondary school math curriculum: abstract thinking, TECHNOLOGY USE and problem solving approaches to teaching, etc. SERVICE LEARNING TEACHING PROJECT, OBSERVATIONS AND ASSESMENT.

TOPIC IN GEOMETRY:

- 1) EUCLIDEAN POSTULATES AND THEIR CONSEQUENCES, NON-EUCLIDEAN GEOMETRIES.
- 2) PLANE GEOMETRY, INCLUDING TRIANGLE, INCLUDING: TRIANGLE INEQUALITY, SIMILARITIES, CONGRUENCE, PROPERTIES OF TRIANGLES, PYTHAGOREAN THEOREM, TRIGONOMETRIC FUNCTIONS, LAW OF SINES, LAW OF COSINES, SOLVING TRIANGLES, CIRCLES AND POLYGONS THEOREMS.
- 3) GEOMETRIC CONSTRUCTIONS AND APPLICATIONS
- 4) 3D GEOMETRY: EUCLIDEAN POSTULATES IN SPACE, 3D MEASUREMENTS AND DERIVING FORMULAS FOR SPHERES, PRISMS, PYRAMIDS, CONES, CYLINDERS AND PLATONIC SOLIDS. CONNECTIONS WITH CALCULUS.
- 5) TRANSFORMATIONS; ISOMETRIES ON THE PLANE AND IN SPACE, SCALING, COMPOSITIONS OF TRANSFORMATIONS.

Systems of geometry, algebra, precalculus, calculus, probability and statistics: SELECTED TOPICS IN ALGEBRA, PRECALCULUS, CALCULUS, AS CONNECTED TO GEOMETRY: Theoretical and practical aspects.

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

Handbook of Research on Mathematics Teaching and Learning, NCTM, D. Grouws (Ed), Macmillan Publishing Co., (1992).
Modern Geometries, J. Smart, Brooks/Cole Publishing Co. (2000)
Integrating Research an the Graphical Represebtation of Functions, Romberg, Fennems, Carperter, Lawrence/Erlbaum, (2000).
 ACADEMIC CONTENT STANDARDS FOR K-12 STUDENTS AND CURRICULUM FRAMEWORKS FOR CALIFORNIA PUBLIC SCHOOLS.

5. 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 Changes made to meet the CCTC Single Subject Matter in Mathematics
☒ Course content Changes made to meet the CCTC Single Subject Matter in Mathematics
☒ References Changes made to meet the CCTC Single Subject Matter in Mathematics
☐ GE
☐ Other

6. If this modification results in a GE-related change indicate GE category affected:

A (English Language, Communication, Critical Thinking)	
B (Life Sciences)	
C (Fine Arts, Literature, Languages & Cultures)	
D (Social Perspectives)	
E (Human Psychological and Physiological Perspectives)	

7. Consultation

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

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

Ivona Grzegorzcyk _____ 2/15/04 _____
Proposer of Course Modification Date

Approvals

Program Chair

Date

Curriculum Committee Chair

Date

Dean

Date

California State University Channel Islands
Course Modification Consultation Sheet

1. Course Title: _____

2. Program Area: _____

Recommend Approval

Program Area/Unit	Program/Unit Chair	YES	NO (attach objections)	Date
Art				
Biology				
Business & Economics				
Education				
English				
History				
Liberal Studies				
Mathematics & CS				
Multiple Programs				
Psychology				
Library				
Information Technology				