

# CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

## NEW COURSE PROPOSAL

PROGRAM AREAS BIOLOGICAL AND PHYSICAL SCIENCES, MATH AND COMPUTER SCIENCE

- 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 101. COLLEGE ALGEBRA (3)**

Three hours of lecture per week.

Prerequisite: A passing score on the Entry Level Mathematics Examination.

Topic include: basic set theory, number systems and their algebraic properties; systems of equations and inequalities; basic analytic geometry, matrix algebra and elementary functions; and problem solving.

### **2. Mode of Instruction.**

	<b>Units</b>	<b>Hours per Unit</b>	<b>Benchmark Enrollment</b>
Lecture	<u>3</u>	<u>1</u>	<u>24</u>
Seminar	<u>          </u>	<u>          </u>	<u>          </u>
Laboratory	<u>          </u>	<u>          </u>	<u>          </u>
Activity	<u>          </u>	<u>          </u>	<u>          </u>

- 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]*

The course is offered for non-majors. May be used to satisfy Mathematics Concentrations requirements for Liberal Studies students.

Through this course, students will be able to

- Improve their advanced algebraic skills
- Demonstrate the understanding of methods of analytic geometry
- Apply algebraic skills and matrix algebra to problem solving
- Apply functions and their graphs to problem solving
- Organize and express ideas clearly and convincingly in oral and written forms.

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

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

If Yes, indicate GE category:

<b>A (English Language, Communication, Critical Thinking)</b>	
<b>B (Mathematics &amp; Sciences)</b>	
<b>C (Fine Arts, Literature, Languages &amp; Cultures)</b>	
<b>D (Social Perspectives)</b>	
<b>E (Human Psychological and Physiological Perspectives)</b>	

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

Equations, Inequalities, and Modeling.  
Constructing Models to Solve Problems.

Scatter Diagrams and Curve Fitting.  
 Functions and Graphs.  
 Families of Functions, Transformations, and Symmetry.  
 Operations with Functions.  
 Inverse Functions.  
 Quadratic Functions and Inequalities.  
 Complex Numbers.  
 Zeros of Polynomial Functions.  
 The Theory of Equations.  
 Exponential and Logarithmic Functions.  
 Systems of Equations and Inequalities.  
 Systems of Linear Equations  
 Nonlinear Systems of Equations.  
 Partial Fractions.  
 The Linear Programming Model.  
 Matrices and Determinants.  
 Solving Linear Systems Using Matrices.  
 The Conic Sections.  
 Sequences, Series, and Probability.  
 Mathematical Induction.

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

\*College Algebra, Mark Dugopolski, © 2003 / 0-201-75526-2 / Addison Wesley

\*College Algebra, Judith Beecher, Judith Penna, Marvin Bittinger, © 2002 / 0-201-74140-7 / Addison Wesley

**7. List Faculty Qualified to Teach This Course.**

All Math faculty

**8. Frequency.**

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

**9. New Resources Required.**

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

Use of a computer lab.

b. Library needs

Existing resources

c. Facility/space needs

Existing resources

**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.**

\_\_\_\_ Ivona Grzgorczyk \_\_\_\_\_ 1/8/03 \_\_\_\_\_  
 Proposer of Course Date

