

**NEW COURSE PROPOSAL**

**Courses must be submitted by November 2, 2009, for priority catalog review.**

DATE (Change if modified and redate file with current date) **APRIL 6, 2010; REV 4.27.10**  
 PROGRAM AREA(S) **EDUCATION & MATH**

**1. Course Information.** [Follow accepted catalog format.]

**Prefix(es)** (Add additional prefixes if cross-listed) **and Course No. EDUC 819 & MATH 819**

**Title:** CSET Mathematics Exam 111 Prep Course **Units: 2**

x Prerequisites Math 208 and 308 or permission of instructor

Corequisites

Consent of Instructor Required for Enrollment

**Catalog Description** (Do not use any symbols): A preparation course for the CSET Mathematics Exam 111. Provides a review of parallelism, plane Euclidean geometry, three-dimensional geometry, transformational geometry, probability, and statistics. Focuses on relationships between topical areas, and on more complex problem solving. Repeatable up to four units.

**Grading Scheme:**

- A-F Grades
- Credit/No Credit
- Optional (Student Choice)

**Repeatability:**

- Repeatable for a maximum of 4 units
- Total Completions Allowed 2
- Multiple Enrollment in Same Semester

**Course Level Information:**

- Undergraduate
- Post-Baccalaureate/Credential
- Graduate

**Mode of Instruction/Components** (Hours per Unit are defaulted).

	Units	Hours per Unit	Benchmark Enrollment	Graded Component	CS & HEGIS # (Filled in by the Dean)
Lecture		1			
Seminar		1			
Laboratory		3			
Activity	2	2	25	x	
Field Studies					
Indep Study					
Other Blank					

Leave the following hours per week areas blank. The hours per week will be filled out for you.  
 4 hours activity per week  
 hours blank per week

**2. Course Attributes:**

**General Education Categories:** All courses with GE category notations (including deletions) must be submitted to 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)**  
**UDIGE/INTD Interdisciplinary**  
**Meets University Writing Requirement**  
**Meets University Language Requirement**

**American Institutions, Title V Section 40404:**  Government  US Constitution  US History  
Refer to website, Exec Order 405, for more information: <http://senate.csuci.edu/comm/curriculum/resources.htm>

**Service Learning Course** (Approval from the Center for Community Engagement must be received before you can request this course attribute).

**3. Justification and Requirements for the Course.** (Make a brief statement to justify the need for the course)

A. Justification: Justification: The State of California's Commission on Teacher Credentialing has developed a subject matter credential in math called Foundation Level Math. Addressing the advertised shortages in math and science teaching, this course will help prepare future teachers with the content required for one of the two subject matter exams to meet subject matter competency for this credential. This fulfills the need for an expedited pathway for producing math and science teachers as advocated by the CSU Chancellor's Office.

B. Degree Requirement:  Requirement for the Major/Minor **Note: Submit Program Modification if this course changes your program.**  
 Elective for the Major/Minor  
 Free Elective

**4. Learning Objectives.** (List in numerical order. You may wish to use the following resource in utilizing measurable verbs: <http://senate.csuci.edu/comm/curriculum/resources.htm>)

Upon completion of the course, the student will be able to:

- Apply the Parallel Postulate and its implications
- Prove theorems involving similarity and congruence
- Solve problems involving similarity and congruence
- Apply the properties of triangles to geometric proofs – Pythagorean Theorem, Exterior Angle Theorem, Triangle Inequality
- Explain and apply the trigonometric ratios
- Apply and justify the properties of polygons – sum of angles of a convex polygon (interior and exterior)
- Apply the classical geometric constructions
- Find and derive the formulas for the area, surface area, and volume for geometric figures (two and three dimensional)
- Explain the ideas of parallelism and perpendicularity of lines and planes in three dimensions
- Explain and apply the basic properties of rotations, translations, and reflections in two and three dimensions
- Explain, apply, and prove the basic properties of dilations
- Prove the formulas for permutations and combinations
- Apply the principles of permutations and combinations
- Calculate basic probabilities, including conditional probabilities
- Interpret probabilities
- Solve probability problems using normal, binomial, and exponential distributions
- Compute and interpret the mean, median, mode, quartiles, range, variance, and standard deviations for discrete and continuous distributions
- Determine the likely correlation coefficient based on a regression line
- Apply the method of least squares
- Apply the chi-square test

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

- Basic geometry vocabulary, postulates, and theorem review
- Deductive reasoning for geometric proofs
- Vertical Angle Theorem
- Parallel Postulate
- Parallel and perpendicular lines and planes
- Similarity and congruence
- Properties of triangles, polygons, and circles

- Area, surface area and volume of solids
- Geometric constructions
- Trigonometric ratios
- Loci
- Geometric transformations, dilations
- Permutations and Combinations
- Basic probability
- Conditional probability
- Probability interpretation (including using distributions)
- Statistics
- Mean, median, mode (for discrete and continuous distributions)
- Quartiles
- Range
- Variance
- Standard deviation
- Correlation
- Normal distributions
- Binomial distributions
- Exponential distributions
- Least Squares Method
- Chi-square test

Does this course content overlap with a course offered in your academic program? **Yes**  **No**

If YES, what course(s) and provide a justification of the overlap.

Does this course content overlap a course offered in another academic area? **Yes**  **No**

If YES, what course(s) and provide a justification of the overlap.

Overlapping courses require Chairs' signatures.

**6. Cross-listed Courses** (Please note each prefix in item No. 1)

**A.** List Cross-listed Courses (Signature of Academic Chair(s) of the other academic area(s) is required).  
List each cross-listed prefix for the course: EDUC & MATH

**B.** Program responsible for staffing: EDUC

**7. References.** [Provide 3 - 5 references]

See Subject matter standards [http://www.cset.nesinc.com/PDFs/CS\\_mathematics\\_SMR.pdf](http://www.cset.nesinc.com/PDFs/CS_mathematics_SMR.pdf)

**8. Tenure Track Faculty Qualified to Teach This Course.**

Merilyn Buchanan, and all math faculty

**9. Requested Effective Date:**

First semester offered: Summer 2010 through Extended Education

**10. New Resources Requested.** **Yes**  **No**

If YES, list the resources needed.

**A.** Computer Needs (data processing, audio visual, broadcasting, other equipment, etc.)

Access to CI Learn—existing resource

B. Library Needs (streaming media, video hosting, databases, exhibit space, etc.)

C. Facility/Space/Transportation Needs

D. Lab Fee Requested (please refer to Dean's Office for additional processing) Yes  No

E. Other

11. Will this new course alter any degree, credential, certificate, or minor in your program? Yes  No

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

Priority deadline for New Minors and Programs: October 5, 2009 of preceding year.

Priority deadline for Course Proposals and Modifications: November 2, 2009, of preceding year.

Last day to submit forms to be considered during the current academic year: April 15<sup>th</sup>.

Jeanne M. Grier & Ivona Grzegorczyk

April 6, 2010

Proposer of Course (Type in name. Signatures will be collected after Curriculum approval)

Date

## Approval Sheet

**Program/Course:** EDUC/MATH 819

If your course has a General Education Component or involves Center affiliation, the Center will also sign off during the approval process.

Multiple Chair fields are available for cross-listed courses.

Program Chair		
	Signature	Date
Program Chair		
	Signature	Date
Program Chair		
	Signature	Date
General Education Chair		
	Signature	Date
Center for International Affairs Director		
	Signature	Date
Center for Integrative Studies Director		
	Signature	Date
Center for Multicultural Engagement Director		
	Signature	Date
Center for Civic Engagement Director		
	Signature	Date
Curriculum Chair		
	Signature	Date
Dean of Faculty		
	Signature	Date