CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

NEW COURSE PROPOSAL

PROGRAM AREA ______ BIOLOGICAL AND PHYSICAL SCIENCES

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.]

PHYS 100: INTRODUCTION TO PHYSICS I (4)

Three hours of lecture and one three-hour lab per week. Lab fee required.

A non-calculus based introduction to the concepts and principles of physics. The areas covered include classical mechanics, wave motion and thermal physics. Practical examples will be used to illustrate the relationship between physics and other disciplines, especially the life sciences, and to develop problem-solving skills. Laboratory sessions will include computer-simulated experiments.

GenEd: B1

2. Mode of Instruction.

	Units	Hours per Unit	Benchmark Enrollment
Lecture	3	1	20
Seminar			
Laboratory	1	3	20
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 will become a lower-division requirement for Biology majors who are not considering medical school. It will form part of the Science concentration within the Teaching and Learning Option of the Liberal Studies major. Because it requires a mathematical background in high-school algebra and trig only, and does not use calculus, it is likely to appeal to those with a curiosity for exploring physics but who do not yet have skills in calculus.

Through this course, students will be able to

- explain the basic concepts and principles of physics
- apply problem-solving skills to practical problems of everyday life
- demonstrate the role of physics in other disciplines, and apply their understanding to these disciplines
- search and retrieve practical information
- use a variety of simulation programs to derive conclusions about experimental situations
- organize and express ideas clearly and convincingly in oral and written forms.

 4. Is this a General Education Course
 YES
 NO

 If Yes, indicate GE category:
 X

 A (English Language, Communication, Critical Thinking)
 B

 B (Mathematics & Sciences)
 X

 C (Fine Arts, Literature, Languages & Cultures)
 D

 D (Social Perspectives)
 E

 E (Human Psychological and Physiological Perspectives)
 X

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

Measurement and units Dimensional analysis, estimation and significant figures Vectors and motion in one and two dimensions Work and energy Momentum and collisions Circular and oscillatory motion Traveling waves: transverse and longitudinal Sound waves and the Doppler effect Superposition and interference of waves: standing waves and beats Temperature and thermometers Heat and internal energy First Law of Thermodynamics and applications Kinetic theory of gases

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

Text Book: College Physics. R.A.Serway, J.S.Faughn. 6th Ed. Harcourt College Publishers, 2003. (ISBN 0-03-0351146)

(Other references: *College Physics*. J.D. Wilson and A.J. Buffa, 5th edition, Prentice Hall, 2003 (ISBN 0-13-067644-6). *Contemporary College Physics*, E. Jones, R. Childers, McGraw-Hill, 1999 *Conceptual Physics*, Paul G. Hewitt, 9th edition, Addison Wesley Publishing, 2001).

7. List Faculty Qualified to Teach This Course.

New Physics faculty

8. Frequency.

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

9. New Resources Required.

- a. Computer (data processing), audio visual, broadcasting needs, other equipment
- b. Library needs
- c. Facility/space needs Lab to be run in the PC or Physics Lab

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.

____Geoff Doughtery_____ Proposer of Course

____12/12/02_____

Date