Course Change Proposal
Form A

Academic Group (College):
NSM

Academic Organization (Department):
GEOLOGY

Date:
Oct 28, 2009

Type of Course Proposal:
New ___  Change _XX_  Deletion ___

Department Chair:
DAVE EVANS

Submitted by:
Dave Evans

Does this course fulfill a requirement for single-subject or multiple subject credential students? Yes ___ No _X_

For Catalog Copy:  Yes _XX_  No ___
CCE:  Yes ___ No ___

Semester Effective:
Fall _XX_  Spring ___, 2010

This course replaces experimental course Subject Area (prefix) and Catalog Number (course number):
n/a

This Catalog Number (course number) is being replaced:
GEOL 112

Change from:
Subject Area (prefix) & Catalog No. (course no.):
GEOL 112
Title:
Geophysics for Geologists
Units: 4

Change to:
Subject Area (prefix) & Catalog No. (course no.):
GEOL 112
Title:
Geophysics for Geologists
Units: 3

JUSTIFICATION:
The laboratory component of GEOL 112 is being eliminated; the units will change accordingly. This course change is being made in conjunction with a substantial program change for the B.S. degree in Geology. Includes GEOL 5 as an alternative to GEOL 10 and 10L.

NEW COURSE DESCRIPTION: (Not to exceed 80 words, and language should conform to catalog copy. See http://www.csus.edu/acaf/univmanual/crspsl.htm - Guidelines for Catalog Course Description)

Introduction to the principal geophysical concepts and techniques useful to geologists in the study of tectonics, the Earth’s interior and resource exploration. Includes the study of seismology, heat flow, gravity, borehole geophysics, electromagnetism and geodynamics. Field Trip. Fee Course.

Note:

Prerequisite: GEOL 5 or GEOL 10 and GEOL 10L; PHYS 5A; PHYS 5B which may be taken concurrently.

Corequisite:

CAN (California Articulation Number):

Graded: Letter _X_  Credit/No Credit ___
Instructor Approval Required? Yes ___ No _X_

Course Classification (e.g., lecture, lab, seminar, discussion):
C2 - Lecture
Title for SIS+/CMS (not more than 30 characters)
Geophysics for Geologists

Cross Listed?
Yes ___ No _X_
If yes, do they meet together and fulfill the same requirement, and what is the other course.
How Many Times Can This Course be Taken for Credit?  _1_

Can the course be taken for Credit more than once during the same term? Yes ___ No ___

FOR NEW COURSE PROPOSALS OR SUBSTANTIVE CHANGES ONLY:

Description of the Expected Learning Outcomes: Describe outcomes using the following format: “Students will be able to: 1), 2), etc.”
See the example at http://www.csus.edu/acaf/example.htm

Students who are successful in this course will be able to:

1) Explain what makes geophysics distinct from other disciplines in geology.
2) Distinguish between “forward problems” and “inverse problems” in geophysics and other aspects of science.
3) List the classical and modern subdivisions of Earth’s interior and explain the tests and data on which they are based.
4) List plate tectonic processes and constraints that can be evaluated using a variety of geophysical techniques.
5) Describe, illustrate and explain the particle motion, relative velocities, and origin of different types of seismic waves.
6) Use seismological data to locate earthquakes, estimate magnitude, determine moment tensors and infer tectonic setting.
7) Reduce, analyze and interpret geophysical exploration data, including data from seismic reflection, seismic refraction, gravity and electromagnetic surveys.
8) Analyze and interpret common geophysical well logs.

**Attach a list of the required/recommended course readings and activities [Note: it is understood that these are updated and modified as needed by the instructor(s).] This attachment should be forwarded only to your Dean’s office, not Academic Affairs.

Assessment Strategies: A description of the assessment strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers) which will be used by the instructor to determine the extent to which students have achieved the learning outcomes noted above:

Student assessment will be based on (1) Homework problem sets and (2) Exams.

For whom is this course being developed?

Majors in the Dept __ X ___ Majors of other Depts ___ Minors in the Dept ___ General Education ___ Other ___

Note: this course will be one of several elective courses offered on a rotating basis. Students will be required to take four such electives.

If yes, identify program(s): This course will be one of several elective courses that will be offered on a 2-year rotation. Students will be required to take 4 of the elective courses.

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer facilities, faculty, etc.)? Yes ___ No ___

If yes, attach a description of resources needed and verify that resources are available.

Indicate which department or programs will be affected by the proposed course (if any). ____________________________

The Department Chair’s signature below indicates that affected programs have been sent a copy of this proposal form.

Approvals: If proposed change, new course or deletion is approved, sign and date below. If not approved, forward without signing to the next reviewing authority, and attach an explanatory memorandum to the original copy.

Signatures:

Department Chair: ____________________________ Date: __/__/10

College Dean or Associate Dean: ____________________________ 4/30/10

CPSP (for school personnel courses ONLY)

Associate Vice President and Dean for Academic Programs