PROPOSAL FOR AN UPPER DIVISION CLUSTER COURSE

Name of faculty member: Dr. Michael L. Cummings

Title of proposed course: Astrogeology

When is the course to be offered? Summer Annually

Name of Cluster/Cluster coordinator: Global Environmental Change/ Ansel G. Johnson

Please address the following items in your narrative, keying your text to the corresponding item below:

A. COURSE DESCRIPTION (100 words or less).

G 456 Astrogeology (4)
Geology and astronomy are combined to explore the evolution of the universe and the solar system. Comparative geologic evolution of the planets is emphasized. A significant component of the course is hands-on geologic field investigations and astronomical observations. A required field study at Malheur Field Station located south of Burns, Oregon provides opportunity to explore the universe and the solar system using a 14-inch telescope. Geologic field investigations in southeastern Oregon will occupy the day. Recommended for K-12 teachers and students interested in K-12 teaching, astronomy, and geology.

B. COURSE DEVELOPMENT. Please indicate whether the course is based on an existing course (and if so, please specify), or is a new course in development. If the course is a revision of an existing course, please explain what form the revision will take (this may be addressed under item C).

Note: Please be aware that the new General Education requirement is based on different premises from the former "distribution" requirement, and therefore the academic role of upper division courses in General Education will necessarily be different from the previous role.

This course was developed for General Education, and Teacher Education. It involves an aspect of Environmental Change in its emphasis.

C. GENERAL EDUCATION GOALS. Please describe how your pedagogical goals for the course promote the University's goals of General Education as adopted by the Faculty Senate. Please review the relevant sections of the General Education Working Group Report (the document adopted by the Senate in 1993) or the September 16, 1994, report of the General Education Committee (both documents are available in the Office of University Studies, 245 CH). Applicants are reminded that the upper division courses are expected to focus on program goals related to Human Experience and Ethical Issues & Social Responsibility, while continuing to build on the Inquiry and Communication program goals. Course instructors should use active learning strategies and challenge students to display increasingly sophisticated research and communication abilities. Examples of strategies for each of the General Education program goals are listed in the General Education Working Group Report and the report of the General Education
Committee. Attention should also be given to how this course functions in tandem with other courses in the cluster in working toward curricular integration within the cluster.

Colleagues are also reminded that upper division UNST courses are a replacement of the former distribution requirement for coursework in the Arts and Letters, Sciences, and Social Sciences. The Committee therefore anticipates upper division courses with scholarly content of the highest standard, consistent with the content level of the "distribution" courses under the previous General Education requirement, and befitting the University's core undergraduate curriculum.

This course addresses Goal 1 Inquiry and Critical Thinking, and Goal 2 Communication. This course requires two papers to be written covering the two facets of the course. One paper deals with the Astronomical observations made at the Field Station. The second paper is written based on observations made while on trips in eastern Oregon. The student will be using methods of inquiry and critical thinking to incorporate lecture material, reading assignments and the observations made for the two papers. This course is a smaller course, so the students interact actively during the course.

D. COURSE OUTLINE. Please provide a detailed outline of the proposed course. This need not be a completed syllabus, but should include an outline of topics, a preliminary reading list, and the name(s) of instructor(s) committed to teaching the course during its first year.

This course is taught by Dr. Michael L. Cummings annually during the summer session. He is assisted by Bob Duke.

Topics:
Introduction
Impact Structures
Early Evolution of the Solar System
Planetary Geology
Introduction to telescopes and Astronomical Observations
Geologic Overview of Southeastern Oregon
Astronomical Observations
Geologic Field Investigations - Diamond Craters
Observations in deep Space
Brothers and Basin and Range fault zones
Steens Mountain
Evolution of Stars and the Development of Chemical Elements
Geochemical Evolution of the Earth
Asteroids, Meteors and Comets

This course takes place partially at PSU, and Partially at Malheur Field Station in Eastern Oregon