

SCIENCE AND ENGINEERING PANEL

MINUTES

*February 14, 2006
12:00 — 2:00 p.m.
TSC 203*

I. Minutes of 1/17/06 SEP meeting

➤ **APPROVED.**

II. Report on items deferred to Chair and Curriculum Office:

A. CHE 491 NANOTECHNOLOGY RESEARCH FOR UNDERGRADUATES (2)

- **1/17/06 SEP MEETING: DEFERRED TO CURRICULUM OFFICE**, pending a shorter, less narrative course description.
- **APPROVED.** REVISED DESCRIPTION: Independent research in nanotechnology. Research project selected by the student in close consultation with a research mentor.

B. B.S. CHEMICAL ENGINEERING (NANOTECHNOLOGY)

- **1/17/06 SEP MEETING: DEFERRED TO CURRICULUM OFFICE**, pending approval of the CHE 491 course.
- **APPROVED.**

C. ENGR 102 ENGINEERING FRESHMEN ACADEMY (2, Fa)

- **1/17/06 SEP MEETING: DEFERRED TO PANEL CHAIR** pending feasible sample programs for all affected majors presently requiring the course.
- **APPROVED.** Engineering represents that ongoing program revisions to include this course will reduce the total number of required units. The School is urged to provide feasible sample programs on all department web sites affected by this course.

NEW ITEMS:

III. VITERBI SCHOOL OF ENGINEERING: COMPUTER SCIENCE

Req. by Gerard Medioni

Revise a minor program:

Eff. Fall 2006

Minor in Computer Science [32 unit program]

Reduce total required units from 32 to 25; reduce upper division units from 16 to 12; drop CSCI 107 as a lower division requirement; move CSCI 351 and CSCI 377 from upper division requirements to list of upper division electives from which students choose 12 units.

- **DEFERRED TO CURRICULUM OFFICE.** The panel objects to the admission requirement of “in good standing” as the requirement is not defined and there is no justification provided for any admission requirement. The panel recognizes that 12 upper division units is below the required 16 upper division units for minors, but feels that the minor nevertheless conforms to the spirit of the guidelines. (The minor does require four upper division courses, which elsewhere in the University would satisfy the 16 unit requirement.) The minor is acceptable if the admission requirement is removed.

IV. VITERBI SCHOOL OF ENGINEERING: ELECTRICAL ENGINEERING

Req. by John Choma, Jr.

Revise a degree program:

Eff. Fall 2006

B.S., Electrical Engineering [131 unit program]

Replace Electromagnetics and Energy Conversion track with Electromagnetics and Solid State; add three “specialization” areas to the new track; revise the specific courses required for each new specialization. Drop the Communications and Networks specialization in the Communication, Control and Signal Processing track.

- **DEFERRED TO PANEL.** This proposal is incomplete in that appropriate Catalog copy (showing required courses organized by course and not rearranged into sample schedules) are missing for 8 of the degree tracks. It was noted that contrary to statements by the School of Engineering, this program revision to incorporate ENGR 102 does not reduce required units below the prior level.

Includes a revised crosslist:

NEW: EE 437 INTRODUCTION TO CONDENSED MATTER PHYSICS (4, Irregular, Sp)
(Enroll in PHYS 440)

OLD: EE 437 FUNDAMENTALS OF SOLID STATE (3)
(Enroll in MASC 437)

- **DEFERRED TO PANEL CHAIR, noting** that PHYS 440 has a corequisite of PHYS 438a.

V. LEONARD DAVIS SCHOOL OF GERONTOLOGY

Req. by Liz Zelinski

Revise a degree program:

Eff. Fall 2006

B.S., Gerontology [128 unit program]

Change name of degree to **B.S., Human Development and Aging.**

- **DEFERRED TO CURRICULUM OFFICE,** pending resolution of GERO 416 and GERO 491. In addition, revised new Catalogue copy is required which includes the course name changes and reinstates the verbiage for the Science, Health and Aging track. **NOTE:** There was one abstention from a member of the school.

Includes 3 revised courses:

A. NEW: GERO 416 HEALTH ISSUES IN ADULTHOOD (4, Sp)
Physiological, psychological, and social health problems of adults as they are impacted by health choices throughout life.

OLD: GERO 416 HEALTH ISSUES IN AGING (4, Sp)
Physiological, psychological, and social health problems of older people; organizational factors in health care delivery.

- **DEFERRED TO CURRICULUM OFFICE** for signature from Policy, Planning and Development.
NOTE: Signature received by CCO on 2/15/06.

B. NEW: GERO 491 PRACTICUM (2-8, max 8, FaSpSm)
Supervised experience in one or more community agencies. Graded CR/NC.

OLD: GERO 491 GERONTOLOGY PRACTICUM (2-8, max 8, FaSpSm)
Supervised experience in one or more community agencies that serve older adults. Graded CR/NC.

- **DEFERRED TO PANEL CHAIR.** The panel does not believe that 8 units of practicum can be reasonably accomplished by any student in a single term and suggests that a more realistic unit value would be “2-4, max 8.” The panel suggests that the revised course description not drop the phrase “community agencies that serve adults.” The provided syllabus does not explain what student must do in order to achieve a passing grade. The specific requirement to “attend all classes” is unclear as this course is an internship with journal entries serving as other coursework. The panel was disturbed by the discovery in the syllabus that the degree program requires this course to be taken as a 4-unit course the first time it is taken, and not, at the student’s discretion, in 2-unit increments as appears to be possible from the catalog description of the course. The school is asked either to alter that policy or to exhibit it explicitly in the course description. The syllabus provided by GERO states that it is for a 4-unit offering, but the syllabus has only enough hours of work (130 hours) for a 2-unit offering.

C. NEW: GERO 492 SENIOR SEMINAR (4, Sp)
An in-depth integration of major research and professional themes in the study of human development and aging.

OLD: GERO 492 SENIOR SEMINAR IN AGING (4, Fa)
An in-depth integration of major themes in scientific and professional gerontology, leading to the preparation of the senior paper.

- **APPROVED.**

VI. LAS: EARTH SCIENCES

Req. by Thomas Henyey

A. Revise 2 degree programs:

Eff. Fall 2006

1. **B.A., Earth Sciences** [128 unit program]

- **APPROVED**, with one abstention from a member of the department. It was noted that the two GEOL courses that are cross-listed in BISC (474 and 483) should be listed as BISC and not as GEOL in the degree requirements.

Includes 3 revised courses:

- a. NEW: GEOL 315L MINERALS AND EARTH SYSTEMS (4, Fa)
Minerals and their formation in Earth geosystems; includes discussions of mineral properties, crystal structures, uses and biogeochemical importance. Lecture, 3 hours; laboratory, 6 hours; required field trips. Corequisite: CHEM 105aLg or CHEM 115aLg; recommended preparation: any introductory GEOL course. (Duplicates credit in former GEOL 215aL.)

NEW: GEOL 316L PETROLOGIC SYSTEMS (4, Sp)

Formation and identification of igneous, metamorphic and sedimentary rocks; interpretation of tectonic and environmental settings based on rock type and chemistry. Lecture, 3 hours; laboratory, 6 hours; required field trips. Prerequisite: GEOL 315L. (Duplicates credit in former GEOL 215bL.)

OLD: GEOL 215abL MINERALOGY AND PETROLOGY (4-4, FaSp)

Introduction to the study of minerals and rocks; chemical bonding and crystal chemistry; mineral identification and paragenesis; rock identification and paragenesis; processes of formation of igneous, sedimentary, and metamorphic rocks. Lecture, 3 hours; laboratory, 6 hours; required field trips. Corequisite: CHEM 105aL or CHEM 115aL; recommended preparation: GEOL 105Lg.

➤ **APPROVED.**

b: NEW: GEOL 385 RESEARCH METHODS IN THE EARTH SCIENCES (2, Fa)
Nature of scientific inquiry and history of physical sciences; strategies and methodologies for research in earth sciences; introduction to science writing and quantitative methods. Recommended Preparation: any introductory GEOL course. Lecture, 1.5 hours; attend on seminar per week. (Duplicates credit in former GEOL 485ab.)

OLD: GEOL 485ab SENIOR SEMINAR (2-2, FaSp)

Analysis and discussion of selected topics in earth sciences; topics will be chosen by students and faculty to focus on areas of recent advances. Open to senior Earth Sciences or Environmental Studies majors only. Graded IP.

➤ **APPROVED.** The panel recognizes that “attendance” in the grading breakdown refers to outside seminars that students will write reports about. The recommended preparation of “introductory GEOL course” was inserted during the meeting with the agreement of the department’s representative, Dr. Hammond, at the meeting.

c. NEW: GEOL 433L PALEONTOLOGY AND EVOLUTION IN DEEP TIME (4, Fa)
Origin and evolution of life; Precambrian life; evolutionary history of major groups during the Phanerozoic; mass extinctions; deep time and evolutionary processes. Recommended Preparation: any introductory GEOL course. Lecture, 3 hours; laboratory, 3 hours; required field trips. (Duplicates credit in former GEOL 333L.)

OLD: GEOL 333L PALEONTOLOGY AND THE EVOLUTION OF LIFE (4, Fa)

Origin and evolution of life; major marine fossil groups and their evolutionary history; utilization of fossils in age determinations; fossils and reconstructing ancient environment, geography and ecology. Lecture, 3 hours; laboratory, 3 hours; field trips.

➤ **APPROVED.** The recommended preparation of “introductory GEOL course” was inserted during the meeting with the agreement of the department’s representative, Dr. Hammond, at the meeting.

➤ **NOTE:** Two additional course revisions were presented, and approved, at the SEP meeting.

- d. **GEOL 320L SURFICIAL PROCESSES AND STRATIGRAPHIC SYSTEMS (4, Fa)**
Processes of erosion, sediment transport, and deposition that shape the land surface; landscape response to tectonism; recognition and interpretation of depositional environments in the stratigraphic record.

NEW COREQUISITE: GEOL 315L
OLD PREREQUISITE: GEOL 215bL

➤ **APPROVED.**

- e. **GEOL 412 OCEANS, CLIMATE, AND THE ENVIRONMENT (4, Sp)**
Survey of physical, chemical, and geological oceanography; emphasizing the role of the ocean in environmental problems, including modulation of climate and atmospheric composition, biogeochemical cycling, oceanic productivity and pollutant transport; discussion section covers problem sets illustrating simple calculations.

NEW COREQUISITE: CHEM 105bL, MATH 126; recommended preparation: PHYS 151Lg, PHYS 152L or PHYS 135abL
OLD PREREQUISITE: CHEM 105bL or CHEM 115bL, MATH 126; recommended preparation: PHYS 151Lg, PHYS 152L or PHYS 135abL

➤ **DEFERRED TO CURRICULUM OFFICE** for a shorter course description (approximately 25 words).

2. **B.S., Geological Sciences [128 unit program]**

- **APPROVED** with one abstention from a member of the department. It was noted that the two GEOL courses that are cross-listed in BISC (474 and 483) should be listed as BISC and not as GEOL in the degree requirements.

B. Add 2 new minors:

Eff. Fall 2006

1. **Geobiology Minor [16-24 unit program]**

- **DEFERRED TO PANEL CHAIR**, with one abstention from a member of the department, for revised Catalogue copy. The revised copy should not list required courses separately for students in specific majors, but rather should be a single list for all students. It was noted that this is a large minor (48 units), but its intended audience (GEOL and BISC majors) will have taken many of the required courses. The department is urged to revise the Catalogue copy to properly advise potential minors by highlighting the minor guideline requiring students to take four upper division courses not in their major or offered by their major department. It was also noted that the two GEOL courses that are cross-listed in BISC (474 and 483) should be listed as BISC and not as GEOL in the minor requirements.

2. **Geohazards Minor [24 unit program]**

- **APPROVED** with one abstention from a member of the department.

Members present

Gary Adolphson (support staff)
Mihram Agbabian
Kelvin J.A. Davies
Christopher M. Gould (chair)
Veronica Ann Greene
Douglas Hammond
Frank Potenza
Jennifer Smith (student)

Members absent

Gene Bickers (*ex-officio*)
Elizabeth Garrett (*ex-officio*)
David Glasgow (*ex-officio*)
Brian Lickel
Edward Maby
Kenneth Servis (*ex-officio*)
Peter Starr (*ex-officio*)

Guests

Edwenna Werner (for Dean Servis)

Christopher Gould, chair
Science and Engineering Panel

Date