SCIENCE AND ENGINEERING PANEL

MINUTES

December 13, 2005
2:00 — 4:00 p.m.
TSC 203

I. Minutes of 11/29/05 SEP meeting

- **APPROVED**

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

A. ENGR 305 ENGINEERING BIOLOGY MATTERS (3, FaSp)
Issue: upper division numbering for a course without prerequisites and taken by freshmen

- **11/29/05 SEP MEETING:** Still in discussion
- **TODAY'S MEETING:** Still in discussion

B. ASTE 291 TEAM PROJECTS I (1, max 4, FaSp)
ASTE 491 TEAM PROJECTS II (1, max 4, FaSp)

- **TODAY'S MEETING:** In discussion

C. ISE 382 INTRODUCTION TO COMPUTER SYSTEMS (2, Sp)

- **TODAY'S MEETING:** In discussion

DEFERRED ITEMS:

III. VITERBI SCHOOL OF ENGINEERING: BIOMEDICAL ENGINEERING

Req. by Michael Khoo

Add a new course: Eff. Fall 2006

BME 408 FUNDAMENTALS OF CRANIOFACIAL BIOTECHNOLOGY (2, Sp)
Biomedical engineering and technology applied to oral health professions. Dental biomaterials, CAD-CAM, digital dental technology and tissue engineering applications to craniofacial diseases, disorders and enhancements. Recommended preparation: BME 404, BME 410.

- **11/29/05 SEP MEETING: DEFERRED TO PANEL.** The panel was concerned that there are no prerequisites for this course and suggests that the department make the proposed recommended preparation courses into prerequisites. Given that a prerequisite to the course would be 410, the panel requests the department consider choosing a number for the proposed course higher than 410, *i.e.* not 408 as currently proposed. Concern was also expressed regarding the grading strategy in that if implemented as proposed, students would reach the "W" deadline without any way to determine a likely course grade. The problem is that 75% of the final grade is based on Student Project Presentations, but the project proposals aren't submitted until the 11th week of the semester. Even the formation of teams (when required) for the projects appears likely not to occur before the "W" date.

- **12/13/05 SEP MEETING:** No response from department. Continued deferral.

NEW ITEMS:

IV. VITERBI SCHOOL OF ENGINEERING Req. by Yannis Yortsos

Revise a course: Eff. Fall 2006

NEW: ENGR 102 ENGINEERING FRESHMEN ACADEMY (2, Fa)
Introduction to the profession of engineering. Ethical, political and societal consequences of engineering innovations and the impact of engineering on everyday life. Team projects and guest lectures. Open to freshmen only. Graded CR/NC.

OLD: ENGR 102ab ENGINEERING FRESHMEN ACADEMY (1-1, FaSp)
Introduction to the profession of engineering. Ethical and societal consequences of engineering innovations and the impact of engineering on everyday life. Team project and guest lectures. Open to freshmen only. Graded CR/NC.

- **NOTE:** This revision will add one unit to the B.S., Civil Engineering (Building Science) degree, raising the minimum required units from 135 to 136.

- **DEFERRED TO PANEL.** The panel requests sample student schedules for the 6 current programs that already require the course. Concern was also expressed about the increase in units for BSCE (Bldg Sci), and the fact that the actual section sizes have been considerably larger than described in the proposal.

V. VITERBI SCHOOL OF ENGINEERING: MORK FAMILY DEPARTMENT OF CHEMICAL ENGINEERING AND MATERIALS SCIENCE Req. by Theodore T. Tsotsis

Add a new area of emphasis: Eff. Fall 2006

B.S., Chemical Engineering (Nanotechnology) *[131 unit program]*

- **DEFERRED TO PANEL.** The panel was concerned that two semesters of directed research is required in the senior year. What is the department's strategy for guaranteeing that students will be able to find research advisors for individual research projects? The panel suggests that the department consider creating a new 400-level course available to all students in the program, which could incorporate a research project if the department deemed it essential.

Includes a new course:

CHE-487 NANOTECHNOLOGY AND NANOSCALE ENGINEERING THROUGH CHEMICAL PROCESSES (3)
Properties and processing of nanomaterials including polymeric, metallic, and ceramic nanoparticles, composites, colloids, and surfactant self-assembly for templated nanomaterial production. Prerequisite: CHEM 105aL OR CHEM 115aL OR MASC 110L.

- **APPROVED.**

VI. VITERBI SCHOOL OF ENGINEERING: INFORMATION TECHNOLOGY PROGRAM

Req. by Ashish Soni

Revise a course: Eff. Fall 2006

NEW: ITP 168x INTRODUCTION TO MATLAB (2, FaSpSm)
Fundamentals of MATLAB: a high-performance numeric computation and visualization environment. Overview of linear algebra and matrix manipulation; using 2-D and 3-D plotting routines; programming in MATLAB; basic numerical analysis.

- **NOTE:** The revised version of this course will be letter graded.

OLD: ITP 068x INTRODUCTION TO MATLAB (2, FaSpSm)
Fundamentals of MATLAB: a high-performance numeric computation and visualization environment. Overview of linear algebra and matrix manipulation; using 2-D and 3-D plotting routines; programming in MATLAB; basic numerical analysis. Graded CR/NC. Not available for degree credit.

- **APPROVED.** The panel noted that there is no statement in the syllabus with information about resources for students with disabilities.

VII. LAS

Req. by Peter Starr

Add a new minor: Eff. Fall 2006

Minor in Mathematical Finance *[42 unit program]*

- **APPROVED.** The minor will be listed in the Interdisciplinary Programs section of the Catalogue with page references to it in the Mathematics and Finance and Business Economics sections. The panel approves this minor despite the clear violation of the established guideline limiting the number of units which may be required because of its interest to its identified audience, and the fact that for the most likely populations who will take this minor, the actual number of additional units is only 20-24, which is within the guideline. The panel explicitly does not intend to establish a precedent for increasing units in minors.

VIII. LAS: EARTH SCIENCES

Req. by Thomas Henyey

Revise a course: Eff. Fall 2006

NEW: GEOL 440L GEOPHYSICS AND GEOENGINEERING (4, Sp)
Plate tectonics, magnetic and gravity fields, earthquakes, seismic waves, reflection and refraction seismics, heat transport, mantle convection, deep Earth structure, data analysis. Includes field trip. Prerequisite: MATH 126; corequisite: PHYS 135bL or PHYS 152L.

OLD: GEOL 440 GEOPHYSICS AND GEOENGINEERING (4, Sp)
Earth's gravity, magnetic field, earthquakes, seismic wave propagation, internal constitution and dynamics, heat flow and internal temperatures with geoengineering and plate tectonics applications. Lecture, 3 hours; discussion, one hour. Prerequisite: MATH 126; corequisite PHYS 135L or PHYS 152L.

- **APPROVED.**

Members present	**Members absent**	**Guests**
Gary Adolphson (support staff)	Gene Bickers (*ex-officio*)	Richard Fliegel
Mihram Agbabian	Kelvin J.A. Davies	
Christopher M. Gould (chair)	Elizabeth Garrett (*ex-officio*)	
Veronica Ann Greene	David Glasgow (*ex-officio*)	
Douglas Hammond	Peter Starr (*ex-officio*)	
Brian Lickel		
Edward Maby		
Frank Potenza		
Jennifer Smith (student)		
Edwenna Werner (for Ken Servis, *ex-officio*)		

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Christopher Gould, chair
Science and Engineering Panel

Date