

SCIENCE AND ENGINEERING PANEL

MINUTES

*April 18, 2006
12:00 — 2:00 p.m.
TSC 203*

I. Minutes of 3/21/06 SEP meeting -- **APPROVED**

DEFERRED ITEMS:

No deferred items

NEW ITEMS

II. VITERBI SCHOOL OF ENGINEERING: COMPUTER SCIENCE

Req. by Gerard Medioni

Add a new degree program:

B.S., Computer Science (Game Development), or, alternatively, B.S., Computer Science and Game Development. [128 units]

- **DEFERRED TO PANEL CHAIR.** The department requested that this program be named **B.S., Computer Science (Games)**; SEP members favor **B.S., Computer Science and Game Development** for the program's name. The panel was concerned about the large number of units required in the second and third years (17-18 units per semester) in the sample student program; year 3, Fall semester, shows 7 required courses. It was noted that this program will not require ENGR 102 and that the College has agreed to waive the foreign language requirement.

NOTE: The following 6 new and 4 revised courses are being proposed in support of a new B.S., Computer Science (Game Development) program, but the precise name of the program is currently under discussion. It is possible that the program proposal will be sent to you under separate cover or as an email attachment before this month's meeting.

A. Add 6 new courses:

Eff. Fall 2006

1. CSCI 180 SURVEY OF DIGITAL GAMES AND THEIR TECHNOLOGIES (3, Fa)
Historical, technical, and critical approach to the evolution of computer and video game architectures and game design, from its beginnings to the present day.
 - **DEFERRED TO PANEL CHAIR.** CSCI 180 appears to be somewhat duplicative of ITP 280. Would it be possible to combine them into a single course?
2. CSCI 281 PIPELINES FOR GAMES AND INTERACTIVES (3, Fa)
Explores the aesthetic development/technical implementation necessary to achieve unique, compelling, intuitive visual design in games. Students will develop group visual game design portfolios.
 - **DEFERRED TO PANEL CHAIR.** The #301 form gives the term offered as Fall, but the sample schedule has it as Spring.

3. CSCI 486 SERIOUS GAMES DEVELOPMENT (3, Sp)
Develop applications of interactive technology that extend beyond the traditional videogame market: education, health, training, policy exploration, analytics, visualization, simulation, the arts and therapy. Corequisite: ITP 485x or CTIN 484.
 - **DEFERRED TO PANEL CHAIR.** There was a question whether CTIN 484 should be a prerequisite, but it was confirmed that it is to be a corequisite. The first page of the syllabus includes information about students with various backgrounds who may have the prerequisite waived; this information should be deleted.

4. CSCI 491abL FINAL GAME PROJECT (4-2, FaSp)
a: Design, iterative prototyping, and development of a 1st playable level. Prerequisite: ITP 485 or CTIN 484. *b:* Design, iterative stage 2 prototyping and development of a refined game.
 - **DEFERRED TO PANEL CHAIR.** The prerequisite for CSCI 491aL will be CSCI 486. The syllabus provided with the #301 doesn't indicate what takes place in the laboratory; a new syllabus with that information should be provided.

5. EE 352L COMPUTER ORGANIZATION AND ARCHITECTURE (3, Sp)
Computer organization and architecture. Concepts include: computer evolution and performance, system busses, cache memory, internal and external memory, input/output, operating system support, computer arithmetic. Prerequisite: CSCI 102.

ALSO: CSCI 352L COMPUTER ORGANIZATION AND ARCHITECTURE (3, Sp)
(Enroll in EE 352L)
 - **DEFERRED TO PANEL CHAIR.** The syllabus provided with the #301 doesn't indicate what takes place in the laboratory; a new syllabus with that information should be provided.

6. EE 452L GAME HARDWARE ARCHITECTURES (3, Fa)
Architectural principles underlying modern game console hardware design; introduction to the programming techniques, optimization strategies, and hardware insights to create powerful games. Prerequisite: EE 352L.

ALSO: CSCI 452L GAME HARDWARE ARCHITECTURES (3, Fa)
(Enroll in EE 452L)
 - **DEFERRED TO PANEL CHAIR.** The #301 form indicates that the term offered is Fall, but the sample schedule has it as Spring.

B. Revise 4 courses:

Eff. Fall 2007

1. CSCI 402x OPERATING SYSTEMS (3, FaSp)

Basic issues in concurrency, deadlock control, synchronization scheduling, memory management, protection and access control, inter-process communication, and structured design. Laboratory experiences with Unix-like operating system. Not available for graduate credit for computer science majors.

NEW PREREQUISITE: CSCI 201L or CSCI 455x; EE 357 or EE 352L

OLD PREREQUISITE: CSCI 201L or CSCI 455x; EE 357

➤ **APPROVED.**

2. NEW: ITP 280 VIDEO GAME PRODUCTION (4, FaSpSm)

History of video games; overview of game genres; phases of video game development (concept, preproduction, production, post-production); roles of artists, programmers, designers, and producers.

ALSO: CSCI 280 VIDEO GAME PRODUCTION (4, FaSpSm)
(Enroll in ITP 280)

OLD: ITP 280x VIDEO GAME PRODUCTION (4, FaSpSm)
[Description same as above but with no crosslist]

➤ **APPROVED.**

3. NEW: ITP 380 VIDEO GAME PROGRAMMING (4, FaSpSm)

Underlying concepts and principles required for programming video games (topics include vectors, transformations, 3-D math, geometric primitives, matrices). Prerequisite: CSCI 102L or ITP 165x.

ALSO: CSCI 380 VIDEO GAME PROGRAMMING (4, FaSpSm)
(Enroll in ITP 380)

OLD: ITP 380x VIDEO GAME PROGRAMMING (4, FaSpSm)
[Description and prerequisite same as above but with no crosslist]

➤ **APPROVED.**

4. NEW: ITP 485 PROGRAMMING GAME ENGINES (4, FaSp)

Techniques for building the core components of a game engine; 2-D/3-D graphics, collision detection, artificial intelligence algorithms, shading, programming input devices. Prerequisite: CSCI 102L or ITP 165x.

ALSO: CSCI 487 PROGRAMMING GAME ENGINES (4, FaSp)
(Enroll in ITP 485)

OLD: ITP 485x PROGRAMMING GAME ENGINES (4, FaSp)
[Description and prerequisite same as above but with no crosslist]

➤ **APPROVED.**

III. VITERBI SCHOOL OF ENGINEERING: ELECTRICAL ENGINEERING

Req. by Alexander A. Sawchuk

- A. Terminate an area of emphasis in a degree program: Eff. Fall 2007

B.S., Electrical Engineering (Integrated Media Systems) [131 unit program]

➤ **APPROVED.**

- B. Terminate a minor: Eff. Fall 2007

Minor in Multimedia and Creative Technologies [19 unit minor; 38-49 units including prerequisite courses]

➤ **APPROVED.**

Includes a dropped course:

EE 321 INTRODUCTION TO INTEGRATED MEDIA SYSTEMS (3)

Fundamental principles of multimedia signal processing; application to digital audio and video processing; human computer interface considerations; immersive audio and video system design considerations. (Duplicates credit in EE 320.) Corequisite: ITP 411x.

➤ **APPROVED.**

IV. VITERBI SCHOOL OF ENGINEERING: INFORMATION TECHNOLOGY PROGRAM

Req. by Ashish Soni

- Add a new course: Eff. Fall 2006

ITP 304x TECHNOLOGIES FOR BUILDING ONLINE POLITICAL CAMPAIGNS (3, FaSp)

Key technology components necessary in building a successful online political campaign. Fundamentals of implementing, marketing and managing an online political campaign.

➤ **APPROVED, noting that** given the work as outlined in the syllabus, this should be a 3 unit course.

V. LAS: BIOLOGICAL SCIENCES

Req. by Lou Byerly

- A. Add 2 new courses: Eff. Fall 2006

1. BISC 431L AQUATIC MICROBIOLOGY – CATALINA SEMESTER (4, Fa)

Introduction to the habitat, phylogenetic, physiological and metabolic diversity of microbial life in aquatic environments. (Duplicates credit in BISC 419.) Prerequisite: BISC 330L.

➤ **APPROVED.**

2. BISC 455L MOLECULAR APPROACHES TO MICROBIAL DIVERSITY – CATALINA SEMESTER (4, Fa)

Overview and practical application of genetic and immunological techniques for examining diversity and community structure of natural microbial assemblages in aquatic ecosystems. Prerequisite: BISC 320L; corequisite: BISC 431L.

➤ **APPROVED.**

B. Revise a course:

Eff. Fall 2007

NEW: BISC 456L CONSERVATION BIOLOGY (4, Sp)

Biological principles underlying conservation including ecology, evolution, genetics and biogeography. Covers both marine and terrestrial environments, with special emphasis on island biology. Catalina semester only. Prerequisite: BISC 120L or BISC 121L; BISC 220L or BISC 221L; recommended preparation: BISC 320L; BISC 313 or BISC 325. (Duplicates credit in former BISC 373L.)

ALSO: ENST 456L CONSERVATION BIOLOGY (4, Sp)
(Enroll in BISC 456L)

OLD: BISC 373L CONSERVATION BIOLOGY (4, Sp)
[Description and preparation same as above]

ALSO: ENST 373L CONSERVATION BIOLOGY (4, Sp)
(Enroll in BISC 373L)

➤ **DEFERRED TO PANEL CHAIR.** A reason justifying the renumbering of this course is requested. Is this truly a 400-level course?

VI. LAS: MULTIDISCIPLINARY ACTIVITIES

Req. by Richard Fliegel

Add a new course:

Eff. Fall 2006

MDA 101x HEALTH PROFESSIONS: PROSPECTS AND PREPARATION (2, Sp)

Presentations by health professionals, introduced by faculty members from relevant academic units and followed by discussion with the speakers. Not available for major credit. Graded CR/NC. Recommended preparation: BISC 120L or BISC 220L; CHEM 105aL.

➤ **APPROVED** as a 1 unit course and noting that it is not available for **degree** credit.

Members present

Gary Adolphson (support staff)
Kelvin J.A. Davies
Christopher M. Gould (chair)
Douglas Hammond
Brian Lickel
Frank Potenza

Members absent

Mihram Agbabian
Gene Bickers (*ex-officio*)
Elizabeth Garrett (*ex-officio*)
David Glasgow (*ex-officio*)
Veronica Ann Greene
Edward Maby
Kenneth Servis (*ex-officio*)
Jennifer Smith (student)
Peter Starr (*ex-officio*)

Guests

Ellis Horowitz (CSCI)