

APPROVAL FORM

Rev: 5/82

(C)

Proposal Title: TOPICS IN COMPUTER ARCHITECTURE

Sponsor(s): Seth Bergmann Dept.: Mathematics & Computer Science

Check one: Course Specialization Concentration Achievement Certificate

Minor Change Major Program
(please name: deletion or credit/title/catalog change)

Certification Program Undergraduate Graduate 3 Credit Hours

Step 1 (Department)

Approved 12/1/84
date
 Not Approved
Seth Bergmann
Dept. CC Chairperson
 Reviewed 10/1/84
date

Seth Bergmann
Chairperson, Dept.

Step 2 (Receipt)

SCC# 84-55-14
Proposal Received 12/2/84
date

Ronald A. Foley
Chairperson, SCC

Step 3 (Division CC)

Reviewed Jan 19/85
date
 Approved
 Not Approved

Comments:
[Signature]
Chairperson, Div. Curr. Comm.

Step 4 (Academic Dean)

Comments:

Reviewed 1/15/85
date

[Signature]
Signature, Dean of Division

Step 5 (SCC)

Open Hearing Date: 2/1/85 Approved by Senate Curriculum Committee 2/1/85 (date)

Returned to sponsor(s) for the following reasons:

change in topic #

Step 6 (Faculty Senate)

Presented to Faculty Senate (date): 1/1/85

Approved
 Not Approved

Notification to Vice-President Academic Affairs (date): 1/1/85

Signature: SCC Chairperson

Step 7 (Vice-President for Academic Affairs)

Course received 3/6/89 (date)

Course approved Yes No

If no, reasons are as follows:

Student credit hours 3

Faculty load hours 3

Equalized credit hours 3

Official copy and approval sheet filed _____ (date)

Signature [Signature]
(Vice-President for Academic Affairs)

Registrar

Approved course description received _____ (date)

Hegis Taxonomy and Course Number assigned _____

Signature _____ (Registrar) _____ (Date)

Notification forwarded: Senate Curriculum Committee Chairperson, Department Chairperson(s), Academic Dean(s), Registrar, Sponsor(s)

Change in course description with 3/14 notes to R. ...
July 3/14 transition ...

COURSE PROPOSAL

TOPICS IN COMPUTER ARCHITECTURE

10-15-85

1. Details

- a. Course Title: Topics in Computer Architecture
- b. Sponsor: Seth Bergmann, Department of Mathematics and Computer Science
- c. Course level: Senior
- d. Curricular effect: This course will be a restricted elective for the Computer Science major. Other majors will be unaffected.
- e. Prerequisites: Assembly Language Programming (0704.204) and Digital Computer Design (0704.370)
- f. We expect to offer one section of this course each year beginning with the Spring 1985 semester.
- g. Existing facilities and resources are adequate. There are currently five faculty members in the department well prepared to teach this course. Library holdings are adequate; the acquisition of IEEE Computer, would be helpful.

2. Rationale

This is an advanced course in computer architecture. It is a logical consequent course to our assembly language course (0704.204). It is primarily intended to prepare our students for graduate school in computer science and for the computer science GRE. Having examined a copy of a recent computer science GRE, we feel this course will be essential for students planning to take this exam.

3. Essence

- a. The objectives of the course specifically indicate the course content. Students who complete this course will have learned:
 - i. Digital logic circuits and gates, memory devices, and chip organization
 - ii. Microprogramming
 - iii. Machine language architecture of popular microcomputers, minicomputers, and mainframes (such as Motorola 68000, DEC Vax 11, and IBM 370)

iv. The relationship of architecture to operating systems such as Unix, CP/M, and OS

v. Advanced assembly language topics such as macro instructions, conditional assembly, and how an assembler works

vi. Computer communications, including error-detecting codes, error-correcting codes, communications protocols, and network fundamentals, time permitting.

b. Students will be graded on the basis of homework assignments, at least one major project, and at least two exams.

c. The department's curriculum committee will evaluate this course after two years by examining student exams and evaluations and by conferring with the course instructor(s) and students.

4. Consultations

a. Ollie Winn, Business Administration

b. Lee Dinsmore, Physical Sciences

c. Leigh Weiss, Industrial Education and Technology

5. Recommended Text Books

Hamacher, V. Carl; Zvonko, G. Vranesic; Safwat, G. Zaky; Computer Organization, 2nd edition, McGraw-Hill, 1984.

Tanenbaum, Andrew S.; Structured Computer Organization, 2nd edition, Prentice-Hall, 1984.

Catalog Description

0704.404 Topics in Computer Architecture
(prerequisites: 0704.204 and 0704.370)

This is an advanced course in computer architecture designed to prepare students for graduate school in computer science. The topics include microprogramming, machine language instruction sets and formats of microcomputers, minicomputers, and mainframes, assembly language, operating systems, and computer communications.

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- e. Prerequisites: Assembly Language Programming (0704.204) and Digital Computer Design (~~0704.201~~)
Prerequisite of Digital Design (0704.379)
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Catalog Description

0704.404 Topics in Computer Architecture
(prerequisites: 0704.204 and ~~0704.301~~)

0704.376

This is an advanced course in computer architecture designed to prepare students for graduate school in computer science. The topics include microprogramming, machine language instruction sets and formats of microcomputers, minicomputers, and mainframes, assembly language, operating systems, and computer communications.

TO: SETH BERGMANN
FROM: OLIVER H. WINN
SUBJECT: COURSE PROPOSAL: TOPICS IN COMPUTER ARCHITECTURE
DATE: SEPTEMBER 14, 1984

I have reviewed the proposed course "Topics in Computer Architecture. I believe this course will be a good addition to the Computer Science program. It is probable that only a small percentage of our MIS students will choose this course as a free elective, so we should not add significantly to your department teaching load.