

CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

COURSE MODIFICATION PROPOSAL

Courses must be submitted by October 15, 2010, and finalized by the end of the fall semester to make the next catalog (2011-12) production

DATE (CHANGE DATE EACH TIME REVISED): 6/15/11; REV 2.2.12

PROGRAM AREA(S): COMPUTER SCIENCE

Directions: All of sections of this form must be completed for course modifications. Use **YELLOWED** areas to enter data. All documents are stand alone sources of course information.

1. Course Information.

[Follow accepted catalog format.] (Add additional prefixes if cross-listed)

OLD

Prefix COMP Course# 262 Title Computer Organization and Architecture Units (3)

3 hours lecture per week

hours blank per week

X Prerequisites: Comp 151 and Comp 162

Consent of Instructor Required for Enrollment

Corequisites:

Catalog Description (Do not use any symbols):

Extension of basic addressing concepts to more advanced addressability such as base register and self relative addressing. Topics include: comparative computer architecture focusing on such organizations as multiple register processors and stack machines; basics of virtual memory, input/output; introduction to the concept of microprogrammable systems.; low-level language translation process associated with assemblers.; system functions such as relocatable loading and memory management; application of data structure and hashing techniques to the above.

General Education

Categories

Lab Fee Requested

Graded

CR/NC

X A - F

Repeatable for up to units

Total Completions

Multiple Enrollment in same semester

Course Level:

X Undergraduate

Post-bac/Credential

Graduate

Optional (Student's choice)

NEW

Prefix COMP Course# 262 Title Computer Organization and Architecture Units (3)

2 hours lecture per week

3 hour laboratory per week

X Prerequisites: Comp 151 and Comp 162

Consent of Instructor Required for Enrollment

Corequisites:

Catalog Description (Do not use any symbols):

Extension of basic addressing concepts to more advanced addressability such as base register and self relative addressing. Topics include: comparative computer architecture focusing on such organizations as multiple register processors and stack machines; basics of virtual memory, input/output; introduction to the concept of microprogrammable systems.; low-level language translation process associated with assemblers.; system functions such as relocatable loading and memory management; application of data structure and hashing techniques to the above.

General Education

Categories

Lab Fee Requested

Graded

CR/NC

X A - F

Repeatable for up to units

Total Completions

Multiple Enrollment in same semester

Optional (Student's choice)

Course Level:

X Undergraduate

Post-bac/Credential

Graduate

2. Mode of Instruction (Hours per Unit are defaulted)

Hegis Code(s)

(Provided by the Dean)

Existing

Proposed

	Units	Hours Per Unit	Benchmark Enrollment	Graded		Units	Hours Per Unit	Benchmark Enrollment	Graded	CS No. (filled out by Dean)
Lecture	3	1	24	y	Lecture	2	1	24	y	
Seminar		1			Seminar		1			
Lab		3			Lab	1	3	24	y	
Activity		2			Activity		2			
Field Studies					Field Studies					
Indep Study					Indep Study					
Other blank					Other blank					

3. Course Attributes:

General Education Categories: All courses with GE category notations (including deletions) must be submitted to the GE website: <http://summit.csuci.edu/geapproval>. Upon completion, the GE Committee will forward your documents to the Curriculum Committee for further processing.

A (English Language, Communication, Critical Thinking)

- A-1 Oral Communication
- A-2 English Writing
- A-3 Critical Thinking

B (Mathematics, Sciences & Technology)

- B-1 Physical Sciences
- B-2 Life Sciences – Biology
- B-3 Mathematics – Mathematics and Applications
- B-4 Computers and Information Technology

C (Fine Arts, Literature, Languages & Cultures)

- C-1 Art
- C-2 Literature Courses
- C-3a Language
- C-3b Multicultural

D (Social Perspectives)

E (Human Psychological and Physiological Perspectives)

UDIGE/INTD Interdisciplinary

Meets University Writing Requirement

Meets University Language Requirement

American Institutions, Title V Section 40404: Government US Constitution US History
Refer to website, Exec Order 405, for more information: <http://senate.csuci.edu/comm/curriculum/resources.htm>

Service Learning Course (Approval from the Center for Community Engagement must be received before you can request this course attribute).

4. Justification and Requirements for the Course. *[Make a brief statement to justify the need for the course]*

OLD

The course is a required course for Computer Science majors according to accreditation guidelines.

- X Requirement for the Major/Minor
- Elective for the Major/Minor
- Free Elective

NEW

The course is a required course for Computer Science majors according to accreditation guidelines.

- X Requirement for the Major/Minor
- Elective for the Major/Minor
- Free Elective

Submit Program Modification if this course changes your program.

5. Student Learning Outcomes. (List in numerical order. You may wish to visit resource information at the following website: <http://senate.csuci.edu/comm/curriculum/resources.htm>)

Upon completion of the course, the student will be able to:

OLD

- Evaluate the architecture of a computer system
- Compare and contrast computer architectures
- Design circuits at the gate-level using and/or/not/multiplexors/decoders/encoders
- Design microcode sequences to implement machine level instructions
- Organize and express ideas clearly and convincingly in oral and written forms.

Upon completion of the course, the student will be able to:

NEW

- Evaluate the architecture of a computer system
- Compare and contrast computer architectures
- Design circuits at the gate-level using and/or/not/multiplexors/decoders/encoders
- Design microcode sequences to implement machine level instructions
- Organize and express ideas clearly and convincingly in oral and written forms.

6. Course Content in Outline Form. (Be as brief as possible, but use as much space as necessary)

OLD

Multi-level machines, interpretation vs translation
 Processor overview, RISC/CISC
 Pipelining and other parallelism.
 Memory: byte-ordering, error
 detection/correction, cache, secondary memory.
 Gates and Boolean algebra
 Microarchitecture, microinstructions, implementation of
 macroarchitecture
 Instruction level architecture
 Virtual memory and I/O: Paging, segmentation, virtual
 I/O, files
 Assembly language level : macros, linking and loading

NEW

Multi-level machines, interpretation vs translation
 Processor overview, RISC/CISC
 Pipelining and other parallelism.
 Memory: byte-ordering, error
 detection/correction, cache, secondary memory.
 Gates and Boolean algebra
 Microarchitecture, microinstructions, implementation of
 macroarchitecture
 Instruction level architecture
 Virtual memory and I/O: Paging, segmentation, virtual
 I/O, files
 Assembly language level : macros, linking and loading

Does this course content overlap with a course offered in your academic program? Yes ☐ No ☒ X

If YES, what course(s) and provide a justification of the overlap.

Does this course content overlap a course offered in another academic area? Yes ☐ No ☒ X

If YES, what course(s) and provide a justification of the overlap.

Overlapping courses require Chairs' signatures.

7. Cross-listed Courses (Please note each prefix in item No. 1)

- A. List cross-listed courses (Signature of Academic Chair(s) of the other academic area(s) is required).
- B. List each cross-listed prefix for the course:
- C. Program responsible for staffing:

8. References. [Provide 3-5 references]

OLD Tanenbaum, *Structured Computer Organization*, Prentice-Hall 4th edition, 1999 ISBN 0130959901
 Stallings, *Computer Organization and Architecture*, MacMillan, 6th edition, 2002 ISBN 0130351199
 Huering and Jordan *Computer Systems Design and Architecture*, Addison-Wesley, 1995 ISBN 080534330X

NEW Tanenbaum, *Structured Computer Organization*, Prentice-Hall 5th edition, 2005 ISBN 0131485210
 Stallings, *Computer Organization and Architecture*, Prentice-Hall, 8th edition, 2009 ISBN 0136073735
 Patterson and Hennessy, *Computer Organization and Design: The hardware/software interface*, Morgan Kaufmann, 4th edition, 2008 ISBN 0123744938

9. Tenure Track Faculty qualified to teach this course.

All Computer Science faculty

10. Requested Effective Date or First Semester offered: Fall 2012

11. New Resource Requested: Yes ☐ No ☒ X

If YES, list the resources needed.

A. Computer Needs (data processing, audio visual, broadcasting, other equipment, etc.)

B. Library Needs (streaming media, video hosting, databases, exhibit space, etc.)

C. Facility/Space/Transportation Needs:

D. Lab Fee Requested: Yes ☐ No ☐ (Refer to the Dean's Office for additional processing)

E. Other.

12. Indicate Changes and Justification for Each. [Check all that apply and follow with justification. Be as brief as possible but, use as much space as necessary.]

☐ Course title	☐ Course Content
☐ Prefix/suffix	☐ Course Learning Outcomes
☐ Course number	☒ References
☐ Units	☐ GE
☐ Staffing formula and enrollment limits	☐ Other ☐
☐ Prerequisites/Corequisites	☐ Reactivate Course
☐ Catalog description	
☒ Mode of Instruction	

Justification: 1 Significant programming projects are an important focus of the course. In order for students to succeed in the course there needs to be significant instructor assistance in orienting students to the problem domains in a hands-on manner. A scheduled laboratory provides the time for this.

2. References updated

13. Will this course modification alter any degree, credential, certificate, or minor in your program? Yes ☐ No ☒

If, YES attach a program update or program modification form for all programs affected.

Priority deadline for New Minors and Programs: **October 4, 2010** of preceding year.

Priority deadline for Course Proposals and Modifications: **October 15, 2010**.

Last day to submit forms to be considered during the current academic year: **April 15th**.

Peter Smith

6/15/11

Proposer(s) of Course Modification

Date

Type in name. Signatures will be collected after Curriculum approval.

Approval Sheet

Course: COMP 262

If your course has a General Education Component or involves Center affiliation, the Center will also sign off during the approval process.

Multiple Chair fields are available for cross-listed courses.

Program Chair		
	Signature	Date
Program Chair		
	Signature	Date
Program Chair		
	Signature	Date
General Education Chair		
	Signature	Date
Center for Intl Affairs Director		
	Signature	Date
Center for Integrative Studies Director		
	Signature	Date
Center for Multicultural Engagement Director		
	Signature	Date
Center for Civic Engagement and Service Learning Director		
	Signature	Date
Curriculum Chair		
	Signature	Date
Dean of Faculty		
	Signature	Date