CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

COURSE MODIFICATION PROPOSAL

Courses must be submitted by November 2, 2009, to make the next catalog (2010--2011) production

DATE (CHANGE DATE EACH TIME REVISED): SEP 29, 2009; REV 12.7.09

PROGRAM AREA(S) : COMP

Directions: All of sections of this form must be completed for course modifications. All documents are stand alone sources of course information.

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1. Course Information.

[Follow accepted catalog format.] ***(Add additional prefixes i f cross-listed)***

OLD

Prefix COMP Course# 362 Title Operating Systems Units (3)
3 hours lecture per week
hours blank per week

x Prerequisites: Comp 262
Consent of Instructor Required for Enrollment
Corequisites:

Catalog Description (Do not use any symbols): Examination of the principal types of systems including batch, multi-programming, and time-sharing. Networked systems are also discussed. The salient problems associated with implementing systems are considered including interrupt or event driven systems, multi-tasking, storage and data base management, and input-output. Emphasis will be placed on some of the simple algorithms used to solve common problems encountered such as deadlocks, queue service, and multiple accesses to data. Projects will be implemented to reinforce the lectures

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# 362 Title Operating Systems Units (4)
3 hours lecture per week
3 hours laboratory per week

x Prerequisites: Comp 262
Consent of Instructor Required for Enrollment
Corequisites:

Catalog Description (Do not use any symbols)**:** Examination of the principal types of systems including batch, multi-programming, and time-sharing. Networked systems are also discussed. The salient problems associated with implementing systems are considered including interrupt or event driven systems, multi-tasking, storage and data base management, and input-output. Emphasis will be placed on some of the simple algorithms used to solve common problems encountered such as deadlocks, queue service, and multiple accesses to data. Projects will be implemented to reinforce the lectures.

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)

2. Mode of Instruction (Hours per Unit are defaulted) **Hegis Code(s)**_____
(Provided by the Dean)

Existing

	Units	Hours Per Unit	Benchmark Enrollment	Graded
Lecture	3	1	24	y
Seminar		1		
Lab		3		
Activity		2		
Field Studies				
Indep Study				

Proposed

	Units	Hours Per Unit	Benchmark Enrollment	Graded	CS No. (filled out by Dean)
Lecture	3	1	20	y	
Seminar		1			
Lab	1	3	20	y	
Activity		2			
Field Studies					
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	**NEW**
This course is a required course for Computer Science majors according to accreditation guidelines	This course is a required course for Computer Science majors according to accreditation guidelines
x Requirement for the Major/Minor	x Requirement for the Major/Minor
Elective for the Major/Minor	Elective for the Major/Minor
Free Elective	Free Elective

Submit Program Modification if this course changes your program.

5. Learning Objectives. (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:	Upon completion of the course, the student will be able to:
OLD	**NEW**
Through this course, students will be able to • Discuss the role of modern operating systems • Design co-operating sequential processes • Explain the interaction between hardware and software • Organize and express ideas clearly and convincingly in oral and written forms. This course is not designed to satisfy the University Writing or Language requirements.	Through this course, students will be able to • Discuss the role of modern operating systems • Design co-operating sequential processes • Explain the interaction between hardware and software • 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	**NEW**
Introduction to Operating Systems	Introduction to Operating Systems
Processes and Threads	Processes and Threads
Critical sections	Critical sections
Deadlock	Deadlock
CPU scheduling	CPU scheduling
Memory management	Memory management
File systems	File systems
Networks	Networks
Protection and Security	Protection and Security

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 Siberschatz, Galvin and Gagne, Applied Operating System Concepts, Wiley, 2000. ISBN 0471365084
Haviland, Gray and Salama, UNIX System Programming Second Edition, Addison Wesley, 1998. ISBN 0201877589
Bovet and Cesati, Understanding the Linux kernel, 2nd edition (2002) O'Reilly ISBN 0596002130

NEW Siberschatz, Galvin and Gagne, Operating System Concepts, Wiley, 2008. ISBN 0470128725
Bovet and Cesati, Understanding the Linux kernel, 2nd edition (2002) O'Reilly ISBN 0596002130
Robbins and Robbins Unix System Programming, Prentice-Hall, 2003, ISBN 0130424110
Stevns, Rago Advanced Programming in the Unix Environment, Pearson Education 2005, ISBN 021433079
Rehkind, Advanced Unix Programming, Pearson Education 2004, ISBN 0131411543
Molay, Understanding Unix/Linux Programming, Pearson Education 2003, ISBN 0130083968

9. Tenure Track Faculty qualified to teach this course.
All Computer Science faculty.

10. Requested Effective Date or First Semester offered: Fall 2010

11. New Resource Requested: Yes _____ **No** x
If YES, list the resources needed.

A. Computer Needs (data processing, audio visual, broadcasting, other equipment, etc.)
Use of existing Computer Lab
B. Library Needs (streaming media, video hosting, databases, exhibit space, etc.)
_____
C. Facility/Space/Transportation Needs:
_____
D. Lab Fee Requested: Yes _____ **No** x **(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
- Prefix/suffix
- Course number
- x Units
- Staffing formula and enrollment limits
- Prerequisites/Corequisites
- Catalog description
- x Mode of Instruction
- Course Content
- Course Learning Objectives
- References
- GE
- Other
- Reactivate Course

Justification: The Operating Systems (COMP 362) class is a core requirement for Computer Science Majors. It constitutes a critical piece of the students overall development as a computer science professional. To meet the standards of the profession this course needs a 1 unit lab to supplement the lecture portion. Students need supervised time in the laboratory in order to carry out assignments based on the theory presented in the lectures. Operating Systems is a complex subject, one that requires both theory and practice. Currently, we are teaching the course without a lab. This is a major weakness of our CS curriculum. To gain the basic knowledge of operating systems, the students must experiment with laboratory systems that emulate a variety of computer system problems, scenarios, and issues. Our accrediting agency requires the following (Ref: 2009-2010 ABET Program Criteria for Computer Science):

"… students to achieve … modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices"

"… development of principles in the construction of software systems of varying complexity."

"… coverage of the fundamentals of …. computer organization and architecture."

"… advanced course work that builds on the fundamental course work."

Other CS Programs that we are familiar with (e.g.: CSUN) have a 1 unit lab associated with their Operatings Systems course to ensure meeting the ABET standards. We need to bring our program into compliance by adding a 1 unit lab to the 3 unit lecture class.

We are also submitting a Computer Science Program Modification to integrate this course modifcation into the program.

13. Will this course modification alter any degree, credential, certificate, or minor in your program? Yes x **No**
If, YES attach a program update or program modification form for all programs affected.
Priority deadline for New Minors and Programs: October 5, 2009 of preceding year.
Priority deadline for Course Proposals and Modifications: November 2, 2009.
Last day to submit forms to be considered during the current academic year: April 15th.

William J. Wolfe, Peter Smith, AJ Bieszczad — 10/22/2009

Proposer(s) of Course Modification — Date
Type in name. Signatures will be collected after Curriculum approval.

Approval Sheet

Course: COMP 362

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