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.

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

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

   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 [ ] CR/NC [ ] Repeatable for up to [ ] units Total Completions [ ]
   [ ] Lab Fee Requested
   Course Level: [ ] Undergraduate [ ] Optional (Student’s choice)
   [ ] Multiple Enrollment in same semester
   [ ] Post-bac/Credential Graduate

   Graded [ ] A - F Total Completions [ ]

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

   Existing

<table>
<thead>
<tr>
<th>Units</th>
<th>Hours Per Unit</th>
<th>Benchmark Enrollment</th>
<th>Graded</th>
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<tbody>
<tr>
<td>Lecture</td>
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<td>24</td>
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<tr>
<td>Seminar</td>
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<tr>
<td>Lab</td>
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<tr>
<td>Activity</td>
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<tr>
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<tr>
<td>Indep Study</td>
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</table>

   Proposed

<table>
<thead>
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<th>Units</th>
<th>Hours Per Unit</th>
<th>Benchmark Enrollment</th>
<th>Graded</th>
</tr>
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<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Seminar</td>
<td>1</td>
<td></td>
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</tr>
<tr>
<td>Lab</td>
<td>1</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Activity</td>
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<tr>
<td>Field Studies</td>
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<tr>
<td>Indep Study</td>
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</tbody>
</table>

   Hegis Code(s) (Provided by the Dean)

   CS No. (filled out by Dean)

9.15.08 km2
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](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](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]**

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
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</thead>
<tbody>
<tr>
<td>This course is a required course for Computer Science majors according to accreditation guidelines</td>
<td>This course is a required course for Computer Science majors according to accreditation guidelines</td>
</tr>
<tr>
<td>x Requirement for the Major/Minor</td>
<td>x Requirement for the Major/Minor</td>
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<tr>
<td>Elective for the Major/Minor</td>
<td>Elective for the Major/Minor</td>
</tr>
<tr>
<td>Free Elective</td>
<td>Free Elective</td>
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</tbody>
</table>

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](http://senate.csuci.edu/comm/curriculum/resources.htm))**

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

**OLD**
- 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.

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

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

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
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<tbody>
<tr>
<td>Introduction to Operating Systems</td>
<td>Introduction to Operating Systems</td>
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<tr>
<td>Processes and Threads</td>
<td>Processes and Threads</td>
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<tr>
<td>Critical sections</td>
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<tr>
<td>Deadlock</td>
<td>Deadlock</td>
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<tr>
<td>CPU scheduling</td>
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<tr>
<td>Memory management</td>
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<td>File systems</td>
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<tr>
<td>Networks</td>
<td>Networks</td>
</tr>
<tr>
<td>Protection and Security</td>
<td>Protection and Security</td>
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</tbody>
</table>

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


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 ☒
    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 ☒ (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.]

<table>
<thead>
<tr>
<th>Unit</th>
<th>Course Content</th>
<th>Course Learning Objectives</th>
<th>References</th>
<th>GE</th>
<th>Other</th>
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<tr>
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<td>x Units</td>
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<td>Catalog description</td>
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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 Operating 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 modification 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 Type in name. Signatures will be collected after Curriculum approval.

Date
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.

<table>
<thead>
<tr>
<th>Chair Name</th>
<th>Signature</th>
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<tbody>
<tr>
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<td>Center for Integrative Studies Director</td>
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<td>Center for Multicultural Engagement Director</td>
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<tr>
<td>Center for Civic Engagement and Service Learning Director</td>
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<td>Curriculum Chair</td>
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<tr>
<td>Dean of Faculty</td>
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