

CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

COURSE MODIFICATION PROPOSAL

**Courses must be submitted by October 15, 2013, and finalized by the end of the fall semester to make the next catalog (2014-15) production**

DATE (CHANGE DATE EACH TIME REVISED): 6/28/13

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. Indicate Changes and Justification for Each.** [Mark an X by all change areas that apply and follow-up your justification. Be as brief as possible but, use as much space as necessary.]

- |                                                                 |                                                         |
|-----------------------------------------------------------------|---------------------------------------------------------|
| <input type="checkbox"/> Course title                           | <input type="checkbox"/> Course Content                 |
| X Prefix/suffix                                                 | <input type="checkbox"/> Course Learning Outcomes       |
| <input type="checkbox"/> Course number                          | <input type="checkbox"/> References                     |
| <input type="checkbox"/> Units                                  | <input type="checkbox"/> GE                             |
| <input type="checkbox"/> Staffing formula and enrollment limits | <input type="checkbox"/> Other <input type="checkbox"/> |
| <input type="checkbox"/> Prerequisites/Corequisites             | <input type="checkbox"/> Reactivate Course              |
| X Catalog description                                           |                                                         |
| <input type="checkbox"/> Mode of Instruction                    |                                                         |

**Justification:** For Computer Science majors there is too great an overlap with COMP 362. A program modification for the BSCS will be submitted removing it as an elective.

**2. Course Information.**

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

**OLD**

Prefix COMP/IT Course# 421  
 Title Unix System Programming II Units (3)  
 2 hours lecture per week  
 3 hours laboratory per week

X Prerequisites: COMP/IT 221  
☐ Consent of Instructor Required for Enrollment  
☐ Corequisites: ☐

**Catalog Description** (Do not use any symbols):  
 The use of the Unix operating environment including command line Unix utilities, vi and emacs editors, regular expressions, text processors and Unix shells, fundamental Perl and its application in programming CGI. Writing in C utilities that control the operating environment through the use of system calls. Developing programs using Unix facilities.

General Education Categories: ☐  
 Grading Scheme (Select one below):  
 X A – F  
☐ Credit/No Credit  
☐ Optional (Student's Choice)

Repeatable for up to ☐ units  
 Total Completions ☐  
 Multiple Enrollment in Same Semester Y/N ☐

Course Level:  
 X Undergraduate  
☐ Post-Baccalaureate  
☐ Graduate

**NEW**

Prefix IT Course# 421  
 Title Unix System Programming II Units (3)  
 2 hours lecture per week  
 3 hours laboratory per week

X Prerequisites: COMP/IT 221  
☐ Consent of Instructor Required for Enrollment  
☐ Corequisites: ☐

**Catalog Description** (Do not use any symbols):  
 The use of the Unix operating environment including command line Unix utilities, vi and emacs editors, regular expressions, text processors and Unix shells, fundamental Perl and its application in programming CGI. Writing in C utilities that control the operating environment through the use of system calls. Developing programs using Unix facilities. Not open to Computer Science majors.

General Education Categories: ☐  
 Grading Scheme (Select one below):  
 X A – F  
☐ Credit/No Credit  
☐ Optional (Student's Choice)

Repeatable for up to ☐ units  
 Total Completions ☐  
 Multiple Enrollment in Same Semester Y/N ☐

Course Level:  
 X Undergraduate  
☐ Post-Baccalaureate  
☐ Graduate

### 3. 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	2	1	24	y	Lecture	2	1	24	y	
Seminar		1			Seminar		1			
Lab	1	3	24	y	Lab	1	3	24	y	
Activity		2			Activity		2			
Field Studies					Field Studies					
Indep Study					Indep Study					
Other blank					Other blank					
Online					Online					

### 4. Course Attributes:

☐ **General Education Categories:** All courses with GE category notations (including deletions) must be submitted to the GE website: <http://summit.csuci.edu/ge>  
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 (Graduation Writing Assessment Requirement)

☐ Meets University Language Requirement

☐ **American Institutions, Title V Section 40404:** ☐ Government ☐ US Constitution ☐ US History  
Regarding 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).

☐ **Online Course** (Answer YES if the course is ALWAYS delivered online).

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


#### **OLD**

In the age of Graphical User Interfaces one may ask a question why should we bother with studying Unix with its enigmatic command line interface and hacker culture. Shouldn't we do



#### **NEW**

In the age of Graphical User Interfaces one may ask a question why should we bother with studying Unix with its enigmatic command line interface and hacker culture. Shouldn't we do

everything using windows, menus, mice and clicking? In spite of prevalence of these high level paradigms, a lot of computer science work is done at a low, grass root level. Very often computer scientists - especially those working in the Information Technology industry - end up with nothing else but a terminal to work with. No menus, no mouse control, no graphics. In this course, the students will learn how to deal with such and many other problems. Many backend systems use Unix or Linux as the operating system for their servers. Many embedded systems are also built around derivatives of Linux. While there are more or less sophisticated and comprehensive tools to develop and operate these systems, the most secure jobs are reserved for those who understand how the heart of the system beats. That does not come through a Windows GUI or Web browser application. When it comes to solving many problems, the only way is to pull up the sleeves and get hands dirty using a command line, text-based interface and a multitude of available tools.

X Requirement for the IT Major/Minor  
 X Elective for the CS Major/Minor  
 Free Elective

everything using windows, menus, mice and clicking? In spite of prevalence of these high level paradigms, a lot of computer science work is done at a low, grass root level. Very often computer scientists - especially those working in the Information Technology industry - end up with nothing else but a terminal to work with. No menus, no mouse control, no graphics. In this course, the students will learn how to deal with such and many other problems. Many backend systems use Unix or Linux as the operating system for their servers. Many embedded systems are also built around derivatives of Linux. While there are more or less sophisticated and comprehensive tools to develop and operate these systems, the most secure jobs are reserved for those who understand how the heart of the system beats. That does not come through a Windows GUI or Web browser application. When it comes to solving many problems, the only way is to pull up the sleeves and get hands dirty using a command line, text-based interface and a multitude of available tools.

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

**Submit Program Modification if this course changes your program.**

**6. Student Learning Outcomes.** (List in numerical order. Please refer to the Curriculum Committee's "Learning Outcomes" guideline for measurable outcomes that reflect elements of Bloom's Taxonomy: <http://senate.csuci.edu/comm/curriculum/resources.htm>. The committee recommends 4 to 8 student learning outcomes, unless governed by an external agency (e.g., Nursing).

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

**OLD**

1. Describe the philosophy of Unix Operating System
2. Control Unix using command line interface
3. Use regular expressions
4. Edit streams with sed and awk
5. Edit files with vi and emacs
6. Program scripts in Bourne Shell
7. Program in Perl
8. Develop applications using Unix development tools
9. Develop applications in C that control Unix-based systems through the use of system calls

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

**NEW**

1. Describe the philosophy of Unix Operating System
2. Control Unix using command line interface
3. Use regular expressions
4. Edit streams with sed and awk
5. Edit files with vi and emacs
6. Program scripts in Bourne Shell
7. Program in Perl
8. Develop applications using Unix development tools
9. Develop applications in C that control Unix-based systems through the use of system calls

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

**OLD**

What is Unix?  
 Unix utilities for non-programmers  
 Editing files with emacs and vi  
 Unix utilities for power users  
 regex: regular expressions  
 awk  
 sed  
 perl  
 Introduction to Unix Shells  
 bash: the Bourne Again Shell  
 C programming Tools  
 make: Unix file dependency system  
 ANT: Java file dependency system  
 Command line clients for CVS, Subversion

**NEW**

What is Unix?  
 Unix utilities for non-programmers  
 Editing files with emacs and vi  
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 regex: regular expressions  
 awk  
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 bash: the Bourne Again Shell  
 C programming Tools  
 make: Unix file dependency system  
 ANT: Java file dependency system  
 Command line clients for CVS, Subversion

ar: nix archiver  
gdb: Gnu debugger  
jdb: Java command line debugger  
System Programming

ar: nix archiver  
gdb: Gnu debugger  
jdb: Java command line debugger  
System Programming

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. Overlap with COMP 362 but no student takes both

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.

**8. 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: ☐

**9. References.** *[Provide 3-5 references]*

**OLD** Unix for Programmers and Users 3/e Graham Glass, King Ables, Pearson Prentice-Hall, 2003  
Unix in a nutshell, Arnold Robbins, 3/E O'Reilly, 1999  
Programming Perl, Larry Wall, Tom Christiansen, Randal L. Schwartz, 3/E O'Reilly, 2000  
sed & awk, Dale Dougherty, Arnold Robbins, 2/E, O'Reilly, 1997  
Learning the bash Shell, Cameron Newham, 3/E, O'Reilly, 2005  
Mastering Regular Expressions, Jeffrey E. F. Friedl, 2/E, O'Reilly, 2002

**NEW** Unix for Programmers and Users 3/e Graham Glass, King Ables, Pearson Prentice-Hall, 2003  
Unix in a nutshell, Arnold Robbins, 3/E O'Reilly, 1999  
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sed & awk, Dale Dougherty, Arnold Robbins, 2/E, O'Reilly, 1997  
Learning the bash Shell, Cameron Newham, 3/E, O'Reilly, 2005  
Mastering Regular Expressions, Jeffrey E. F. Friedl, 2/E, O'Reilly, 2002

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

**11. Requested Effective Date or First Semester offered: Fall 2014**

**12. New Resource Requested: Yes ☐ No ☒**  
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. ☐

**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 1, 2013** of preceding year.  
Priority deadline for Course Proposals and Modifications: **October 15, 2013**.  
Last day to submit forms to be considered during the current academic year: **April 15<sup>th</sup>**.

Peter Smith

6/28/13

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Proposer(s) of Course Modification

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Date

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

# Approval Sheet

**Course:** COMP/IT 421

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.

The CI program review process includes a report from the respective department/program on its progress toward accessibility requirement compliance. By signing below, I acknowledge the importance of incorporating accessibility in course design.

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
AVP		
Signature		Date