COURSE MODIFICATION PROPOSAL

Courses must be submitted by October 15, 2010,
to make the next catalog (2011-12) production

DATE (CHANGE DATE EACH TIME REVISED): 6/14/10; REV 9.20.10

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 i f cross-listed***)

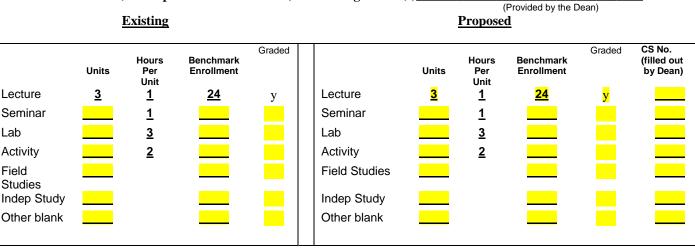| OLD	NEW
Prefix COMP Course# 421 Title Unix for Programmers Units (3)	Prefix COMP Course# 421 Title Unix for Programmers Units (3)
3 hours lecture per week	3 hours lecture per week
_____ hours blank per week	_____ hours blank per week
X Prerequisites: COMP 350 and COMP 362	X Prerequisites: COMP 350 and COMP 362
___ Consent of Instructor Required for Enrollment	___ Consent of Instructor Required for Enrollment
___ Corequisites: ___	___ Corequisites: ___
Catalog Description (Do not use any symbols):	**Catalog Description** (Do not use any symbols):
The use of 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.	The use of 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.

OLD

General Education Categories ___   Graded ___   ___ Repeatable for up to ___ units
___ Lab Fee Requested   CR/NC ___   X A - F   Total Completions ___
Course Level: ___   ___ Multiple Enrollment in same semester
X Undergraduate   Optional (Student's choice)
___ Post-bac/Credential
___ Graduate

NEW

General Education Categories ___   Graded ___   ___ Repeatable for up to ___ units
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Course Level: ___   ___ Multiple Enrollment in same semester
X Undergraduate   Optional (Student's choice)
___ Post-bac/Credential
___ Graduate

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	___		___	___
Other blank	___		___	___

Proposed

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

3. **Course Attributes:**

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

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 top pull up the sleeves and get hands dirty using a command line, text-based interface and a multitude of available tools.

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

NEW

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    Requirement for the Major/Minor
X Elective for the Major/Minor
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Submit Program Modification if this course changes your program.

5. Student Learning Outocmes. (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
1. Discuss 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..

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

OLD	**NEW**
What is Unix?	What is Unix?
Unix utilities for non-programmers	Unix utilities for non-programmers
Editing files with emacs and vi	Editing files with emacs and vi
Unix utilities for power users	Unix utilities for power users
regex: regular expressions	regex: regular expressions
awk	awk
sed	sed
perl	perl
Introduction to Unix Shells	Introduction to Unix Shells
bash: the Bourne Again Shell	bash: the Bourne Again Shell
C programming Tools	C programming Tools
make: Unix file dependency system	make: Unix file dependency system
ANT: Java file dependency system	ANT: Java file dependency system
Command line clients for CVS, Subversion	Command line clients for CVS, Subversion
ar: nix archiver	ar: nix archiver
gdb: Gnu debugger	gdb: Gnu debugger
jdb: Java command line debugger	jdb: Java command line debugger
System Programming	System Programming

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 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
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    Mastering Regular Expressions, Jeffrey E. F. Friedl, 2/E, O'Reilly, 2002

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

10. Requested Effective Date or First Semester offered: Fall 2011

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	X	Course Learning Objectives
	Course number		References
	Units		GE
	Staffing formula and enrollment limits		Other ▮
	Prerequisites/Corequisites		Reactivate Course
	Catalog description		
	Mode of Instruction		

      Justification: Outcome reworded to make it assessable

13. Will this course modification alter any degree, credential, certificate, or minor in your program? Yes ▮   **No X**
      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   6/14/10
_____   _____
Proposer(s) of Course Modification   Date
Type in name. Signatures will be collected after Curriculum approval.

Approval Sheet

Course: COMP 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.

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