

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; REV 9.18.13

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 checked="" type="checkbox"/> Course title                | <input checked="" type="checkbox"/> Course Content           |
| <input type="checkbox"/> Prefix/suffix                          | <input checked="" 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                   |
| <input checked="" type="checkbox"/> Catalog description         |                                                              |
| <input type="checkbox"/> Mode of Instruction                    |                                                              |

**Justification:** Cloud replaced “network” in this evolving field, so the title is modified to reflect that change. Prescribing Java as the programming language is too strict for this evolving field, so the new description drops the reference to Java. Also, Java-based tools and facilities are replaced with generic terms.

**2. Course Information.**

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

**OLD**

Prefix COMP Course# 529  
Title Network Computing Units (3)  
3 hours lecture per week  
☐ hours blank per week

X Prerequisites: Admission to the Computer Science or Mathematics graduate program and consent of the instructor  
X Consent of Instructor Required for Enrollment

☐ Corequisites: ☐

**Catalog Description** (Do not use any symbols):

Design and programming in Java of distributed systems that use telecommunication networks as their computing platform.

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:

☐ Undergraduate

☐ Post-Baccalaureate

X Graduate

**NEW**

Prefix COMP Course# 529  
Title Cloud Computing Units (3)  
3 hours lecture per week  
☐ hours blank per week

x Prerequisites: Admission to the Computer Science or Mathematics graduate program and consent of the instructor  
x Consent of Instructor Required for Enrollment

☐ Corequisites: ☐

**Catalog Description** (Do not use any symbols):

Design and programming of distributed systems that use telecommunication networks as their computing platform.

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:

☐ Undergraduate

☐ Post-Baccalaureate

x 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       | <u>3</u> | <u>1</u>       | <u>24</u>            | Y      | Lecture       | <u>3</u> | <u>1</u>       | <u>24</u>            | y      |                             |
| Seminar       |          | <u>1</u>       |                      |        | Seminar       |          | <u>1</u>       |                      |        |                             |
| Lab           |          | <u>3</u>       |                      |        | Lab           |          | <u>3</u>       |                      |        |                             |
| Activity      |          | <u>2</u>       |                      |        | Activity      |          | <u>2</u>       |                      |        |                             |
| 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**

This course is an elective for graduate students in MS in Mathematics and MS in Computer Science programs.

Over the last few years, telecommunication networks have been gradually becoming new computing platforms. This trend is very strongly supported by all major players in the telecommunication and software industry. There is an evident shortfall of specialists in the area that is currently critical to virtually every company including many local firms. There is a spectrum of programming courses that teach basic and advanced programming techniques, but none of them takes a unified approach to the issues that are important to effectively use networks as computing platforms. Various learning institutes offer plenty of expensive courses that usually have very narrow scope, assume lots of prior knowledge and are blurred with excess of details. The objective of the Network Computing course is to produce specialists that are capable of solving problems in innovative ways using a network as a computing medium. The process will utilize the skills acquired in other basic and advanced programming courses.

☐ Requirement for the Major/Minor  
☒ Elective for the Major/Minor  
☐ Free Elective

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

**NEW**

This course is an elective for graduate students in MS in Mathematics and MS in Computer Science programs.

Over the last few years, telecommunication networks have been gradually becoming new computing platforms. This trend is very strongly supported by all major players in the telecommunication and software industry. There is an evident shortfall of specialists in the area that is currently critical to virtually every company including many local firms. There is a spectrum of programming courses that teach basic and advanced programming techniques, but none of them takes a unified approach to the issues that are important to effectively use networks as computing platforms. Various learning institutes offer plenty of expensive courses that usually have very narrow scope, assume lots of prior knowledge and are blurred with excess of details. The objective of the Network Computing course is to produce specialists that are capable of solving problems in innovative ways using a network as a computing medium. The process will utilize the skills acquired in other basic and advanced programming courses.

☐ Requirement for the Major/Minor  
☒ Elective for the Major/Minor  
☐ Free Elective

**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**

- Understand a network as a computing vehicle
- Understand the nature of distributed computing
- Learn Java libraries that facilitate network computing
- Explore standards that govern network-based computing

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

**NEW**

- Demonstrate an understanding of a network as a computing vehicle
- Describe and explain the nature of distributed computing
- Demonstrate the ability to write code for network/cloud computing
- Describe and explain standards that govern network computing

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

**OLD**

1. Fundamentals of networking: protocols, OSI model, IP, TCP, UDP, HTTP.
2. Java facilities for networking and code mobility
3. Introduction to open distributed processing: RPC, CORBA, RMI.
4. Componentware: JavaBeans and Enterprise JavaBeans
5. Web Services: XML, SOAP, UDDI, WSMIL
6. Security issues; Java security model
7. Mobile code (agents).

**NEW**

1. Fundamentals of networking.
2. Facilities for network programming.
3. Distributed processing middleware.
4. Componentware.
5. Application servers.
6. Web Services.
7. Distributed agents.
8. Security issues.

8. Application servers: Servlets, JSPs and Database Connectors

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.

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

- Reilly and Reilly, Java™ Network Programming and Distributed Computing, Addison Wesley, 2002, ISBN 0-201-71037-4
- Kurose, Ross, Computer Networking: A Top-Down Approach Featuring the Internet, Addison Wesley, 2003 ISBN 0-201-97699-4

NEW

- Reilly and Reilly, Java™ Network Programming and Distributed Computing, Addison Wesley, 2002, ISBN 0-201-71037-4
- Kurose, Ross, Computer Networking: A Top-Down Approach Featuring the Internet, Addison Wesley, 2003 ISBN 0-201-97699-4

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 ☒ 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.

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 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, A.J. Bieszczad

8/26/13

Proposer(s) of Course Modification

Date

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

# Approval Sheet

## Course: COMP 529

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

|     |  |  |
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| AVP |  |  |
|-----|--|--|

Signature

Date