CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

NEW COURSE PROPOSAL

PROGRAM AREAS _____BIOLOGICAL AND PHYSICAL SCIENCES, MATH AND COMPUTER SCIENCE

1. Catalog Description of the Course. [Include the course prefix, number, full title, and units. Provide a course narrative including prerequisites and corequisites. If any of the following apply, include in the description: Repeatability (May be repeated to a maximum of ___ units); time distribution (Lecture ___ hours, laboratory ___ hours); non-traditional grading system (Graded CR/NC, ABC/NC). Follow accepted catalog format.]

COMP 429. COMPUTER NETWORKS (3)
Three hours of lecture in the lab per week.
Prerequisites: COMP 362, COMP 444 and MATH 344
Basic software design and analysis considerations in networking computers into coherent, cooperating systems capable of processing computational tasks in a distributed manner. Network topology, routing procedures, message multiplexing and process scheduling techniques will be discussed.

2. Mode of Instruction.

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<tr>
<th>Units</th>
<th>Hours per Unit</th>
<th>Benchmark Enrollment</th>
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<tbody>
<tr>
<td>Lecture</td>
<td>3</td>
<td>1</td>
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<tr>
<td>Seminar</td>
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<td>Laboratory</td>
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<td>Activity</td>
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3. Justification and Learning Objectives for the Course. (Indicate whether required or elective, and whether it meets University Writing, and/or Language requirements) [Use as much space as necessary]

The course is an elective course for Computer Science majors.

Through this course, students will be able to

- Explain the role of each layer in a multi-layer network model
- Determine the advantages and disadvantages of various network topologies
- Discuss Internet protocols at high and low levels of detail
- 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.

4. Is this a General Education Course  YES  NO
If Yes, indicate GE category:

<table>
<thead>
<tr>
<th>A (English Language, Communication, Critical Thinking)</th>
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<tr>
<td>B (Mathematics &amp; Sciences)</td>
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<tr>
<td>C (Fine Arts, Literature, Languages &amp; Cultures)</td>
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<td>D (Social Perspectives)</td>
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<td>E (Human Psychological and Physiological Perspectives)</td>
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5. Course Content in Outline Form. [Be as brief as possible, but use as much space as necessary]

Introduction -- switching schemes, OSI 7 layer architecture
Physical Layer -- transmission media, digital/analog transmission, multiplexing schemes

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Data Link Layer -- error detection/correction, stop-and-wait protocol, sliding window protocol
Network Layer -- virtual circuit service, datagram service, routing, congestion control
LAN/WAN -- multiple access algorithms, ethernet, token ring, NSFNET, X.25
Internet protocols -- IP ARP RARP ICMP UDP TCP GGP EGP IGP EGMP DNS
UNIX Network Programming -- client/server model, UNIX systems programming services, BSD socket interface (local/remote interprocess communication mechanisms)

6. References. [Provide 3 - 5 references on which this course is based and/or support it.]


7. List Faculty Qualified to Teach This Course.

All Computer Science faculty.

8. Frequency.
   a. Projected semesters to be offered: Fall ___X__   Spring ___X__   Summer ___X__

9. New Resources Required.
   a. Computer (data processing), audio visual, broadcasting needs, other equipment

      Use of existing computer lab.

   b. Library needs

      none

   c. Facility/space needs

      none

10. Consultation.
    Attach consultation sheet from all program areas, Library, and others (if necessary)

11. If this new course will alter any degree, credential, certificate, or minor in your program, attach a program modification.

________________________________________________________________________

Proposer of Course    Date