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.

	Units	Hours per Unit	Benchmark Enrollment
Lecture	3	1	24
Seminar			
Laboratory			
Activity			

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
- Disucss 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	<u>NO</u>
	If Yes, indicate GE category:		
	A (English Language, Communication,	Critical Thinking)	
	B (Mathematics & Sciences)		
	C (Fine Arts, Literature, Languages &	Cultures)	
	D (Social Perspectives)		
	E (Human Psychological and Physiologi	ical Perspectives)	

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 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.]

Tannenbaum, *Computer Networks*, 4th ed., Prentice Hall (2002) ISBN 0130661023 Comer, *Internetworking with TCP/IP*, Vol 1, 4th ed., Prentice Hall (2000) ISBN 0130183806 Stevens, *Unix Network Programming*, 2nd edition, Prentice Hall (1998) ISBN 013490012X

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