PROPOSAL NUMBER: 99-722

CURRICULUM PROPOSAL FORM

*DEADLINES:

PROPOSAL TITLE: Computer Networks
SPONSOR/S: G. Kebic
DEPARTMENT: Computer Science

CHECK ALL THAT APPLY:
___ UNDERGRADUATE  X GRADUATE

COLLEGE: ___ 4 8
If LAS:  ___ History/Humanities
___ Math/Sciences
___ Social/Behavioral Sciences

******

TY'99 PROPOSAL  (Check ALL that Apply)

General Education
___ New Course in _________ Bank
___ Existing course, Add To _________ Bank
___ Multicultural/Global Designation
___ Writing Intensive Designation

New Minor/Concentration/Specialization
New Major/Degree Program
Short Term Course Proposal

X New Course (NOT Gen. Ed.)
___ Name Change (Dept., School, Major)
___ Changes in Degree Requirements
___ Changes Involve Gen. Ed. requirements
___ Minor Changes to Existing Courses
___ Course is NOT General Education
___ Course IS General Education

DEPARTMENT
(SIGNATURE INDICATES APPROVAL)

DEPT. CURRICULUM CHAIR / DATE        DEPT. CHAIRPERSON / DATE

COLLEGE CURRICULUM COMMITTEE
DATE OF OPEN HEARING (if necessary) 2-25-99

APPROVED
NOT APPROVED

SIGNATURE DATE

ACADEMIC DEAN (& GRADUATE DEAN, for New Graduate Programs Only)

APPROVED

SIGNATURE (Academic Dean) DATE
SIGNATURE (Graduate Dean) DATE
UNIVERSITY CURRICULUM COMMITTEE

— APPROVED
— NOT APPROVED
COMMENTS:

Signature: [Signature]   Date: 6/10/99

SENATE

Date announced at Senate: 3-2-99

Voted upon at Senate: Approved Not Approved Date:

EXECUTIVE VICE PRESIDENT/PROVOST

— APPROVED
— NOT APPROVED If no, reasons are as follows:

STUDENT CREDIT HOURS 3  FACULTY LOAD HOURS 3  EQUALIZED CREDIT HOURS

OFFICIAL COPY & APPROVAL SHEET FILED (DATE):

DATE/SIGNATURE EXECUTIVE VICE PRESIDENT/PROVOST

REGISTRAR

DATE APPROVED COURSE DESCRIPTION RECEIVED

HEGIS TAXONOMY & COURSE NUMBER ASSIGNED 0766.51C

DATE/SIGNATURE OF REGISTRAR

NOTIFICATION FORWARD:

SENATE CURRICULUM COMMITTEE CHAIRPERSON

DEPARTMENT CHAIRPERSONS

ACADEMIC DEAN(S)

REGISTRAR

SPONSOR(S)
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Rowan University
Department of Computer Science

Course Proposal

Computer Networks

1. Details
   a. Course Title: Computer Networks
   b. Sponsor: Andrea Lobo, Computer Science Department
   c. Credit Hours: 3
   d. Course Level: Graduate
   e. Curricular effect: Restricted elective for Computer Science majors
   f. Prerequisites: Design and Analysis of Algorithms (0707.340) and Introduction to Probability and Statistics I (1702.360), or permission from the instructor
   g. Suggested time, Implementation: One section every two years, or more often as demand dictates
   h. Resources: Faculty, equipment, and library resources are adequate

2. Rationale

   Computer networks are present in most aspects of human life. Networks allow us to make telephone calls, withdraw cash from an automated bank teller, share documents with colleagues down the hall or across the world, browse the web, and much more. Students in this course study how computer networks work and why they have been designed as we know them. The course covers descriptive material on network architectures and protocols, as well as network performance evaluation. The course studies important examples of several types of networks: Local, metropolitan and wide area networks; telephone, cellular and wireless networks; and the Internet.

   This course proposal is consistent with the Computer Science Department’s goal to offer restricted electives for our majors, and courses of interest to graduate computer science professionals in the region.

3. Essence of the course

   a. Objectives in relation to student outcomes

      Students will be able to:
      • Explain the importance of reference models and protocol stacks;
      • Describe the details of several important protocols and evaluate their performance;
      • Understand design tradeoffs in network systems and their implementations.
b. Topic outline

Need for computer networks
Protocol stack and reference models
Functionalities required in computer networks
Fundamentals of network performance evaluation
Quality of Service
Data Link Layer
Network Layer
Transport Layer
Local area networks
Metropolitan area networks
Wide area networks
Telephone networks
Cellular networks
Wireless networks
The internet
Network security
Protocol implementation

c. Evaluation and grading procedure of students
Students will be evaluated based on one of more in-term examinations, one or more projects, and a final examination.

d. Course evaluation
This course will be evaluated by the Department’s curriculum committee.

e. Text

4. Results of consultation

I have consulted with the Computer Science Department and John Schmalzel, Chair of Electrical Engineering.

5. Catalog Description

0706.5##
3 s.h.

Computer Networks
(Prerequisites: 0707.340 and 1702.360, or permission from the instructor)
Students in this course study how computer networks work and why they have been designed as we know them. The course covers descriptive material on network architectures and protocols, as well as network performance evaluation and protocol implementation. The course topics include important examples of local, metropolitan and wide area networks; telephone, cellular and wireless networks; the Internet; network security; and design tradeoffs in network systems and their implementations.