TO: The Engineering Faculty
FROM: The Faculty of the School of Electrical and Computer Engineering
RE: New Undergraduate-Level Course

The faculty of the School of Electrical and Computer Engineering has approved the following new course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

ECE 463 Introduction to Computer Communication Networks
Sem. 1. Class 3, cr. 3.
Prerequisite: ECE 264 and 302

An introduction to the design and implementation of computer communication networks. The focus is on the concepts and the fundamental design principles that have contributed to the global Internet's success. Topics include: digital transmission, switching and multiplexing, protocols, LAN, congestion/flow/error control, routing, addressing, performance evaluation, internetworking (Internet) including TCP/IP, HTTP, FTP, SMTP, DNS, etc. This course will include several lab projects.

Reason: The School of ECE was lacking an undergraduate course in this domain. All other high ranked ECE schools or departments have had an undergraduate course on networking for years (indeed several have more than one undergraduate courses in that domain). This course is an introduction on the underlying principles of the Internet.

Leah H. Jamieson
Professor and Interim Head

Supporting Documentation:

1. Level: Undergraduate Level

2 Course Instructor: Catherine Rosenberg

3. Course Outline:

	Topics	*Lectures*
1.	Introduction: history, evolution of networks, standardization	3
2.	Digital transmission principles and technologies	3
3.	Switching and multiplexing technologies	3
4.	Design of network: the layered approach, its advantages and shortcomings, protocols	3
5.	Performance evaluation and Quality of Service	3
6.	Data link layer: retransmission protocols (go-back n, selective repeat) and their performances, TEST	4
7.	LAN: Ethernet, FDDI, wireless (802.11)….	3
8.	Internetworking: introduction, naming, addressing, IP: fragmentation, error handling	5
9.	Routing: fundamentals, Intra-domain routing (RIP, OSPF), Inter-domain routing (BGP)	5
10.	TCP/IP and UDP	5
11.	Applications: The World Wide Web: HTTP, mail, FTP, DNS …	4
12.	Exams	3
	Total	44

4. Text: Computer Networks, A System Approach, 2nd Edition, Larry Peterson and Bruce Davie, Morgan Kaufmann, ISBN 1-55860-577-0.