PROPOSED (2002) COURSE SYLLABUS

Course Number: COMP 4320
Course Title: Introduction to Computer Networks
Credit Hours: 3 hrs. lecture
Prerequisites: COMP 3500 or COMP 3510 or departmental approval
Corequisite:

I. Course Content/Objectives:

1. Objectives
To introduce the fundamental concepts of computer communication networks, including ISO OSI model, local and wide area networks, data and packet transmission, internetworking with Internet Protocol, World Wide Web and Java technology. The treatment will mainly be quanlitative, emphasizing principles of operations and performance results rather than the mathematical details of performance modeling and analysis. You will also gain some `hands on' experience of Unix
network programming through some design projects.

2. Tentative Schedule and Outline of Course Content.

Introduction
- network applications, services, transport (1 class)
  - -- circuit and packet switching
  - -- multiplexing, multiple-access communications
- layering, layered network architectures (2 classes)
  - -- ISO reference model
  - -- Internet protocol suite
- network programming (2 classes)
  - -- client/server model
  - -- TCP/IP socket programming in C
  - -- include files, system functions, examples
- Packets, frames and error detection (1 classes)
- LAN technologies and network topology (1 class)
- WAN technologies and routing (1 class)

Physical Layer

signal transmission (2 classes)
-- modulation/demodulation schemes
-- synchronization and framing

Data Link Layer

error correction (4 classes)
-- parity check codes
-- Hamming code, CRC

error detection: ARQ protocols (6 classes)
-- Stop and Wait
-- Go Back N
-- Selective Repeat

Multiple Access Schemes (8 classes)

controlled vs. random access
-- ALOHA, slotted ALOHA
-- CSMA/CD, Ethernet
-- token ring, token bus
-- FDDI
-- DQDB

Internet Protocol (6 classes)
-- Addressing and address resolution protocol
-- IP datagram, encapsulation, fragmentation and reassembly
-- Future IP

Routing (6 classes)

routing algorithms
-- Bellman-Ford
-- Dijkstra
-- distributed algorithms

World Wide Web pages and browsing (3 classes)
-- HTML
-- HTTP
-- Browser architecture

Java technology (2 classes)
-- Java programming language
-- Java Run-time environment
-- Jaba interpreter and browser

3. Textbook or assigned readings

Computer Networks, 3rd ed., Andrew S. Tannenbaum
Prentice Hall PTR, 1996
or
Communication Networks: A First Course, Jean Walrand, WCB McGraw Hill, 1998

II. Grading and Evaluation Procedures:

1,2. Courses requirements: papers, quizzes, examinations, participation, etc. Grading system and percentages for course requirements

Homeworks (4)	20% of grade
Design projects (2)	20% of grade
Midterm 1	15% of grade
Midterm 2	15% of grade
Final	30% of grade

Grading scale:
A: >= 90, B: >= 80, C: >= 70, D: >= 60, F: < 60

III. Statement related to policies on unannounced quizzes and class attendance and participation.

There will be no unannounced quizzes. Class attendance and participation do not affect the grade.

IV. Special Accommodations for Students with Disabilities:

Students who need special accommodations should make an appointment to discuss the Accommodation Memo during my office hours as soon as possible. If scheduled office hours conflict with classes, please make an appointment. If you do not have an Accommodation Memo, but need special accommodations, contact The Program for Students with Disabilities in 1244 Haley Center (844-2096 V/TTY).

V. Academic Honesty:

All portions of the Auburn University Honesty Code (Title XXII) found in the Tiger Cub apply in this class.