COURSE DESCRIPTION

Dept., Number	CSci 361	Course Title	Introduction to Computer Networks
Semester hours	3	Course Coordinator	P. Tobin Maginnis, Associate Professor

Current Catalog Description

Analysis of loosely coupled computer communication protocols and network services. A generic network model is presented and compared to selected examples of computer networks including the Internet TCP/IP and Internet-based applications.

Textbook

A. S. Tanenbaum, *Computer Networks*, 4th edition, Prentice-Hall, 2003.

References

Class website: http://pix.cs.olemiss.edu/csci361/

Course Outcomes

Upon successful completion of this course, the students are able to:

1. describe a model for computer networks including a description of interfaces, protocols, layers, and layer functionality;
2. contrast broadcast versus point-to-point subnets in terms of topology and software requirements;
3. contrast logical versus physical host addressing as well as protocols which bridge the two concepts;
4. describe routing table components and algorithms which allow navigation through the subnet;
5. contrast the basic program-to-program communication services including datagram, stream, stream control protocols;
6. describe a networking API and how the various services would implement client/server or peer-to-peer networking.

Relationship between Course Outcomes and Program Outcomes

This is a course taken primarily by undergraduate computer science students; it is sometimes taken by MIS students as an elective to enrich their programs.

The course outcomes contribute to the program outcomes as follows: (1) to (a) and (b); (2), (3), (4), (5), and (6) to (a), (b), and (c).

Prerequisites by Topic

A student needs previous "systems" coursework such as CSci 223 (Computer Organization), EL E 335 (Digital Systems I), or TC 201 (Telecommunications).

Major Topics Covered in the Course

1. Introduction and overview of the Internet
2. The physical layer
3. The data link and Media Access Control (MAC) layers
4. The networking layer (host-to-host)
5. The inter-networking layer and routing protocols
6. The transport layer (program-to-program)
7. The session and presentation layers

Assessment Plan for the Course

This is an elective course offered each year primarily to computer science undergraduate students. An offering typically has 4 examinations and a series of optional projects. Outcomes 1 through 6 are assessed by exam questions. Optional projects may be used to replace a low test score. The instructor evaluates the student performance informally and makes changes to the course content, organization, and pedagogy as indicated.

How Data in the Course are Used to Assess Program Outcomes (unless adequately covered already in the assessment discussion under Criterion 4)

Estimate Curriculum Category Content (Semester hours)

Area	Core	Advanced	Area	Core	Advanced
Algorithms			Software design		
Data structures			Concepts of programming languages		