ECE 471: DATA COMMUNICATIONS AND COMPUTER NETWORKS  
Fall 04

Professor: Paul Richardson  
Office: 210 ELB, (313) 593 5560  
Email: richarpc@engin.umich.edu  
Website: http://www.engin.umich.edu/~richarpc

Class Hours:  
Tues(9:20 am - 11:10 pm)  
Thur (9:20 am - 11:10 pm)

Office Hours  
Tue & Thur 8:10am – 9:10am and by appointment

Textbook: Halsall, “Data Communications, Computer Networks, and Open Systems”  

References  

Coordinator  
Prof. P. Richardson, Dept. of Elec. & Comp. Eng.

Prerequisites by Topic:  
1) Knowledge of a high level programming language (preferably C).  
2) Logic design.

Topics:
1) Introduction to ISO/OSI standard models (3 hours)  
2) Data transmission media and signal format (6 hours)  
3) Modulation and demodulation (6 hours)  
4) Computer Communication Protocols (6 hours)  
5) Error control and error analysis (6 hours)  
6) Data compression techniques (4 hours)  
7) Local area network, topology, hardware and MAC (8 hours)  
8) Exams (3 hours)  
9) Project Supervision (14 hours)

Computer Usage: Micro computers and electronic equipment are used for design projects

Laboratory Projects: Computer network design projects are assigned

Term Reading: Course Notes and Chapters 1-6, 9, 11 of the Halsall text
ECE 471: Computer Networks and Data Communications  
Fall 2004

<table>
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<th>Category</th>
<th>Comments</th>
<th>Dates</th>
<th>Points</th>
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<tbody>
<tr>
<td>Design Assignments</td>
<td>3 @ 50 each</td>
<td>TBA</td>
<td>150</td>
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<tr>
<td>Quizzes</td>
<td>4 @ 25 each</td>
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<td>Test 2</td>
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1999-2000 Catalog Data:

ECE 471: Computer Networks and Data Communications, 3 credits.
Prerequisites: ECE 372

Hardware and software techniques used in interfacing between computers and other computers or devices. Data transmission techniques and protocols. Introduction to popular local area network protocols. Forward Error Control Techniques and Data Compression. Introduction to wireless communications with focus on major challenges and obstacles and the cellular phone infrastructure. Term projects involve developing a data link layer protocol for interfacing and communication with microprocessors.

Covers fundamentals of computer networks and data communications. Layered architectures are introduced and studies. Physical layer issues are examined, to include transmission media, transmission impairments, characteristics of modulated signals and baseband signals, and principals of transceiver design. Flow control and error control are studied within the context of local area networks (LAN) protocols are described and some design issues are studied. TCP/IP protocol stack is examined and principals and concepts of wireless communications are introduced.

Estimated ABET Category Credit
Engineering Science: 1 Credit or 33%
Engineering Design: 2 Credits or 67%
Prepared By: Paul Richardson, Oct 2001
Modified By: