**Department of Computer and Information Sciences**

**TOWSON UNIVERSITY**

# COSC 350.002 Data Communications and Computer Networks Fall 2019

**Instructor:** Dr. Fan. Liang

**Office:** YR 309

**Office Hours:** T, Th 2-3 pm.

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**Course Description:** This course covers the basic principles of data communications and computer networking. Topics include networking basics: protocols and layers, clients and servers; data communications: signals, media, errors, modulation, multiplexing, access technologies; packet switching: packets and frames, MAC protocols, Ethernet, wireless technologies including 802.11 and LTE, LAN extensions, WANs and routing; internetworking: IP, ARP/ICMP/DHCP/NAT, UDP, TCP.

**Course Objectives:** To introduce the fundamentals of computer networks and internets; and to provide experience with implementing network applications, packet analysis, and using network utilities.

**Prerequisites:** COSC 336 (corequisite) and 290.

**Textbook:** D. E. Comer,Computer Networks and Internets, 6th Ed., Prentice Hall, 2015.

**Paper:** Students will form groups consisting of 3-4 students. Each group will study an assigned topic in networks, write a short (conference style) paper, and make a short presentation to show their understanding of the topic. Details will be given later.

**Computer Assignments:** There will be 4 computer assignments. Students will work on the assignments in groups (same groups as for the paper). Some assignments will involve programming. Details of the assignments will be given later.

**Exams:** Two exams will be given during the semester. The date for Exam 1 will be announced in class (approximately two weeks prior to the date). Exam 2 will be given as assigned according to the Towson University Final Exam Schedule: Tuesday Dec. 17, 3:00 pm, YR 205.

**Grade:** The overall percentage will be determined by

* Exams: 25% each
* Assignments: 25%
* Paper/Presentation: 25%

Course grades will then be assigned (with appropriate +/- modifications) as follows:

A=90-100%, B=80-89%, C=70-79%, D=60-69%, F=0-59%.

**Cheating and Plagiarism:** Please refer to the policy on academic integrity stated in the Towson University Undergraduate Catalog.

**Repeat Policy:** Please refer to the TU repeat policy in the TU catalog.

**Tentative Class Schedule (This schedule is approximate and subject to change)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Date** | **Subject** | **Reading** |
| 1 | 8/27,8/29 | Overview/  Introduction Client/Server Model | Ch1,  Ch3 |
| 2 | 9/3,9/5 | Traditional Internet Applications  Data Communications | Ch4 |
| 3 | 9/10,9/12 | Information Sources and Signals  Transmission Media | Ch6 |
| 4 | 9/17,9/19 | Transmission Modes | Ch7 |
| 5 | 9/24,9/26 | Modulation and Modems | Ch9 |
| 6 | 10/1,10/3 | Access and Interconnection Technologies | Ch10 |
| 7 | 10/8,10/10 | Local Area Networks | Ch13 |
|  | 10/15 | **Exam 1** |  |
| 8 | 10/17,10/22 | Wireless Networking Technologies | Ch16 |
| 9 | 10/24,10/29 | Repeaters, Bridges, And Switches  Internetworking | Ch17, Ch20 |
| 10 | 10/31,11/5 | Internet Addressing  Datagram Forwarding | Ch21,  Ch22 |
| 11 | 11/7,11/12 | Support Protocols and Technologies | Ch23 |
| 12 | 11/14,11/19 | UDP/TCP | Ch24,  Ch25 |
| 13 | 11/21,11/26 | Network Performance | Ch27, |
|  |  | **Thanksgiving Holiday** |  |
| 14 | 12/3 | VoIP, Network Security | Ch28,  Ch29 |
| 15 | 12/5 | Presentation |  |
|  | DECEMBER 17 (TUESDAY) | **Exam 2: 3:00 p.m.** |  |