CSCI-440
Computer Networks
Department of Computer Science
College of Charleston

Instructor: Brent C. Munsell
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Email: munsellb@cofc.edu

Office Hours: MWF 10-11 AM
Class/Lab Location: J.C. Long Room 219
Class Time: MWF 2:00 - 2:50 PM
URL: munsellb.students.cofc.edu

Course Description

An introduction to networking theory and practice. Topics include transmission media and modulation; error detection; protocols – particularly TCP/IP; packet switching and circuit switching; physical, data link, network, transport, and application layers; LANs and WANs; network topologies; internetworking and the Internet; queuing theory and mathematical analysis of networks.

Prerequisite: CSCI 340, MATH 250, and MATH 307.

Required Textbook: Computer Networking: A Top-Down Approach
James Kurose and Keith Ross
ISBN-10: 0132856204
Publisher: Addison-Wesley

Course Outcomes

Upon completion of this course students shall be able to demonstrate expertise in the following:

1. Describe and compare the basic technologies used in communication systems.
2. Describe the organization of computer networks and evaluate alternative organizations.
3. Evaluate the protocols used in computer networks.
4. Communicate technical information in written reports.

Where appropriate real world problems will be used. Homework/Lab assignments will be carefully chosen to teach the concepts in an understandable and practicable manner, and are designed to provide hands-on experience.

Topics Covered

- Layered network architectures
- Network programming interfaces (e.g., sockets)
- Transport and data link protocols
- Physical media
- Local area networks
- Network routing protocols
- Reviews and Exams

**Tentative Class Schedule**

Please see [http://munsellb.students.cofc.edu/csci440Cal.html](http://munsellb.students.cofc.edu/csci440Cal.html)

**Final Project**

The final project will be team-based, meaning at least two, or more, students will be assigned one particular project. The instructor will decide the students that will be assigned to each team. In general, this is done to promote fairness and a competitive atmosphere.

The instructor will choose the topic of the project. The given topic will require the students to work as a team to design and develop a software networking application. The project deliverables will be due one week prior to the final exam, and will include the following items:

1. Design document (I will provide a MS Word template to be used by your team)
2. Source code
3. Presentation slides (in MS PPT format)

On the final exam day each group will present their team project. Specifically, each group will be required to complete the 3 items listed below.

1. Prepare a 15 to 20 minute PPT presentation that describes their team project. This presentation will highlight the design details in the design document. Each team member must contribute to the presentation.
2. Perform a 10 to 15 minute live project demonstration. In the live demonstration, team members will demonstrate the functionality of the developed software that meets the design.
3. Perform a 5-minute Question & Answer period. The instructor, and the other team members not presenting will conduct Q&A. The team members should be prepared to answer questions related to functionality, limitations, and design details.

The preliminary schedule for the team project is outlined below.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
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<tbody>
<tr>
<td>Form Teams</td>
<td>September</td>
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<tr>
<td>Project Topic</td>
<td>October</td>
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<tr>
<td>Review of Design Document Template</td>
<td>October</td>
</tr>
<tr>
<td>Project Deliverables</td>
<td>November</td>
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<tr>
<td>Demo and Presentation</td>
<td>Final Exam Schedule</td>
</tr>
</tbody>
</table>

**Method of Evaluation, Grading, Weighting, and Attendance**

- Tests (2) 25%
- Homework 20%
- Quizzes 10%
- Final Project 40%
- Attendance 5%
NO MAKEUP EXAMS without approval by the instructor.

Everyone makes mistakes, and if a grading error is made on an assigned homework or an exam, please let me know and I'll take a second look. Please hand the exam or homework problems to me with a coversheet describing what error you believe I've made. However, if you submit an exam or assignment to be graded again, I reserve the right to grade all problems, not just the ones you've indicated. Additionally, all grade requests must be received within one week of the date in which the homework is returned, and grade requests for exams must be received within one week of the date in which the exam is returned.

<table>
<thead>
<tr>
<th>Grading Scale</th>
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<tbody>
<tr>
<td>A  93-100</td>
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<tr>
<td>A- 90-92</td>
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<tr>
<td>B+ 88-89</td>
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<tr>
<td>B  83-87</td>
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<tr>
<td>B- 80-82</td>
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<tr>
<td>C+ 78-79</td>
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<tr>
<td>C  73-77</td>
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<td>C- 70-72</td>
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<tr>
<td>D  60-69</td>
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<tr>
<td>F  &lt; 60%</td>
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**Disability Statement**

Any student who feels he or she may need an accommodation based on the impact of a disability should contact me individually to discuss your specific needs. Also, please contact the College of Charleston, Center for Disability Services [http://www.cofc.edu/~cds](http://www.cofc.edu/~cds) for additional help.