Computer Networks (EENG 4810) Spring 2015

Instructor: Parthasarathy (Partha) Guturu
Faculty Office: DP B-235
Phone: 940-891-6877
Email: guturu@unt.edu
Teaching Assistant: TBD
Class Hours: M/W/F 12:30 PM - 1:20 PM
Class Room: DP B-242.
Office Hours: M/W 4:00 PM-5:00 PM (in my office at B-235). Students unable to see me during this time may request an appointment.
Prerequisites: EENG 3810

Text Book:

A power-point presentation is used to provide some information to support and supplement a student-centric problem/project-oriented learning methodology.

Attendance Policy: In view of the continuous evaluation strategy adopted by the instructor, perfect attendance is recommended for those aspiring to get good grades.

Grading Policy: Regular quizzes/class assignments and tests: 50, Project: 30 and Final Exam: 20.

Academic Dishonesty: Honesty is the best policy. Cheating will not be tolerated. Anyone found guilty of cheating on a test or assignment will be awarded an F grade for the course. Discussions of problems and assignment with your classmates is welcome and encouraged, however, sharing of solutions is not. If you need help, you should ask the instructor. Cheating includes, but is not limited to, all forms of plagiarism and misrepresentation. For your rights and responsibilities please refer to http://www.unt.edu/csrr

Statement regarding Disabled Students: The Faculty of Electrical Engineering including this instructor cooperates with the Office of Disability Accommodation (ODA) to make reasonable accommodations for students with certified disabilities (cf. Americans with Disabilities Act and Section 504, Rehabilitation Act). If you have not registered with ODA, we encourage you to do so immediately and present a written accommodation request along with an appropriate documentation from the Dean of Students Office http://www.unt.edu/oda/, on or before the 2nd week of class.

Final Exam Date and Time: TBD.

Course Outline and Delivery Plan
1. History and Overview of Computer Networks (2 classes)
2. Protocols and Network Layers (2 classes)
3. Application Layer (6 classes)
4. Socket Programming (4 classes)
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Class</th>
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<tbody>
<tr>
<td>5. Overview of Transport Layer Protocols</td>
<td>(2 classes)</td>
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<td>6. TCP</td>
<td>(3 classes)</td>
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<tr>
<td>7. Overview of Network Layer Protocols</td>
<td>(2 classes)</td>
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<td>8. Network Layer Routing Algorithms</td>
<td>(3 classes)</td>
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<td>9. IP and the Internet</td>
<td>(3 classes)</td>
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<td>10. Data Link Layer</td>
<td>(4 Classes)</td>
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<td>11. Physical Layer</td>
<td>(4 Classes)</td>
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<tr>
<td>12. Network Security</td>
<td>(4 Classes)</td>
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**Note:** Class here implies a one-hour time slot.

### Reading Requirements

The students are required to come prepared to every class with the material discussed in the previous class.

### Course Learning Outcomes (CLOs)

- [CLO-1] Networks Layers/Protocol Suites (TCP/IP and ISO)
- [CLO-2] Application Layer Protocols e.g. http, SMTP (email).
- [CLO-3] Transport Layer, TCP and Socket Programming
- [CLO-4] Network Layer, IP, and Network Routing Algorithms
- [CLO-5] Additional TCP/IP protocols e.g. ARP, RARP, BGP.
- [CLO-6] Multimedia protocols such as ATM, H.323, SIP, etc.
- [CLO-7] IP packet tunneling in the Internet.
- [CLO-8] Data link layer protocols
- [CLO-9] Physical layer and basics of mobile wireless networks
- [CLO-10] Network Security
- [CLO-11] Project Design, Development, Implementation and Reporting with an understanding of Ethical and Professional Issues related to networking

### Our EE Program Student Outcomes (SOs)

Upon completion of our BSEE program, the students will be able to:

- **[SO-1]** Apply knowledge of mathematics, engineering and science.
- **[SO-2]** Design and develop projects, and conduct experiments to verify and validate them, as well as analyze and interpret data.
- **[SO-3]** Develop project-based learning skills through design and implementation of a system, component, or process that meets the needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.
- **[SO-4]** Function on multidisciplinary teams.
- **[SO-5]** Identify, formulate, and solve engineering problems.
- **[SO-6]** Have an understanding of professional and ethical responsibility.
- **[SO-7]** Communicate effectively.
- **[SO-8]** Achieve broad education necessary to understand the impact of electrical engineering solutions in a global and societal context.
- **[SO-9]** Understand learning processes, concepts of learning to learn, and engage in lifelong learning.
- **[SO-10]** Achieve knowledge of contemporary issues.
[SO-11] Use techniques, skills, and computer-based tools for conducting experiments and carrying out designs.

**ABET Outcomes**

3a- ability to apply knowledge of mathematics, science, and engineering
3b- ability to design and conduct experiments, as well as to analyze and interpret data
3c- ability to design a system, component, or process to meet desired needs such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.
3d- ability to function on multi-disciplinary teams
3e- ability to identify, formulate, and solve engineering problems
3f- understanding of professional and ethical responsibility
3g- ability to communicate effectively
3h- the broad education necessary to understand the impact of engineering solutions in a global and societal context
3i- recognition of the need for, and an ability to engage in life-long learning
3j- knowledge of contemporary issues
3k- ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

**Relationship between Our BSEE Program Student Outcomes and Course Learning Outcomes**

The course learning outcomes map onto our program’s student outcomes and ABET outcomes as depicted in the table below:

<table>
<thead>
<tr>
<th>CLO</th>
<th>SO-1/3(a)</th>
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