Lecture 1: Introduction
Outline

1 Information
2 Broad Overview
3 Course Information
4 Topics Covered
5 Research Project
Outline

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Administrivia

- **Hours and Location**
  Lectures  MWF  11:00-11:50AM  Leigh Hall 107

- **Course Webpage**
  http://gozips.uakron.edu/~hnt/courses/Computer_Networks/

- **Instructor Information**
  Name:  Dr. Nghi Tran  
  Office:  ASEC 352  
  Phone:  x7168  
  Email:  nghi.tran@uakron.edu  
  Webpage:  http://blogs.uakron.edu/tran/  
  Office Hours  MWF 9:45-10:45AM  and (or) by appointment.

- **Teaching Assistant Name:** Sai Krishna Gullapalli
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Broad Overview

What is this Course About?

- i) Fundamental principles of communication/computer network design; ii) Familiar with mechanisms and protocols of computer networks

- Three main categories
  - Network architectures
  - Protocols
  - Applications

- Some implementations: In the project
Broad Overview

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  - Protocols
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Why Need to Learn Networking?

So many reasons

- Essential part of our society:
  - Communication, social, commercial
  - In every aspect of engineering
- Many challenges remain to be addressed
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Logistics

- Required textbook:
  

- Other references: Though not required, the following references are highly recommended
  


- Lecture slides: Based on the textbook slides provided by the publisher at:
  
## Grading Scheme

<table>
<thead>
<tr>
<th></th>
<th>427</th>
<th>527</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Homework</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>Project</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>Midterm</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>Final</td>
<td>30%</td>
<td>30%</td>
</tr>
</tbody>
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- Class participation and attendance: Important part
- Homework: Submitted on time
- Project
- Exams: Closed-book
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Topics Covered


- Design principles for different layers:
  - Link Layer: Error Detection/Correction
  - Media Access Control Protocols
  - Networking Layer: IP, Routing Architecture, Routing Algorithms
  - Transport Layer Design Principles: TCP, UDP; Congestion Control and TCP
  - Application Layer: HTTP, DNS; Socket Programming

- Introduction to Wireless and Mobile Networks

- Network Security/Multimedia Networking
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Research Project

- **Group of 3 for 400 level and Solo for 500 level.** Main goal:
  - To learn some interesting applications not covered in the class
  - To teach the class.

- It is your choice to select the topic. You can also pick up from the list of suggested topics
  - 400 level: Implementation involving C/Java programming is required
  - 500 level: The project can either be your original research, or a high quality survey of a relevant topic, or a thorough review of some papers
Research Project

- **Group of 3 for 400 level** and **Solo for 500 level**. Main goal:
  - To learn some interesting applications not covered in the class
  - To teach the class.

- It is your choice to select the topic. You can also pick up from the list of suggested topics
  - **400 level**: Implementation involving C/Java programming is required
  - **500 level**: The project can either be your original research, or a high quality survey of a relevant topic, or a thorough review of some papers
Research Project - Time Line

- List of members in group: Within 3 weeks
- 1-page proposal: Due Friday, Feb. 24
- Project report: Due May 5 (last day of class)
- Project presentation in the last week of the semester
Thank you!