

CSC358 - Introduction to Computer Networks

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Introduction to Computer Networks

- Overview
- Scope of the Course
- Important Issues
- Course Organization

Overview

- **Computer Networks**
 - Different Network Architectures
 - Different Applications
 - Applications Share Resources (Transmission Capacity)
 - New Network Architectures/Applications
- **Implications**
 - Computer Networks are Hard to Understand/Design
 - Computer Networks keep Evolving

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Scope

- How to Use Computer Networks?
 - Applications
 - CSC 309 Programming on the Web
- How do Today's Computer Networks Work?
 - Existing Protocols
- Why do Computer Networks Work the Way they Work?
 - Fundamental Concepts

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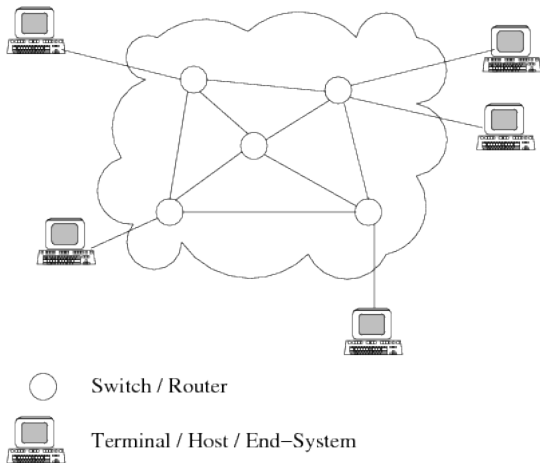
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A Computer Network



Important Question

- Routing
- Addressing
- Reliable Data Transfer
- Congestion Control

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How to Address these Questions?

- **Not only One Solution**
- Cook-book Knowledge isn't Very Useful
- Conceptual Understanding is Important
 - Mathematical Modeling

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“Language” for Asking Questions About Computer Networks

Probability Theory

- Industry (New Products/Technology)
- Graduate Studies (Research)

Outline

- Introduction
 - Layered Network Architecture
- Reliable Data Transfer
 - TCP
- Queueing Theory
 - Case study: Internet Telephony
- Multiple-Access Protocols
 - Ethernet, Wave LAN
- Routing
 - IP
- Congestion Control
 - TCP

Organization

- Lectures
 - Concepts
- Tutorials
 - Examples
- Assignments
 - Study and Practice

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How to be Successful

Do and Understand

- Assignments
- Tutorials

Course Material

- Text Book:
 - "Computer Networking: A Top-Down Approach Featuring the Internet", J. F. Kurose and K. W. Ross.
- Lecture Notes

Assignments

- 5 Assignments
- 2 weeks to complete
- Due Tuesdays 10AM in Tutorial (NO EXCEPTIONS!)
- Your own work

BE ORGANIZED !

Grade

- Assignments: 25%
- Midterm: 25%
- Final: 50%

Course Web Page

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- Tutorials
 - First Tutorial on Tuesday!
- Assignments
- Lecture Slides
- Lecture Notes
- Reading Assignments
- News
 - Course Organization