

***CDA6530: Performance Models of  
Computers and Networks***

***Cliff Zou  
Fall 2010***

# Course Information

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- ❑ **Teacher: Cliff Zou**
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  - ❑ Email: [czou@eecs.ucf.edu](mailto:czou@eecs.ucf.edu)
  - ❑ Office hour: TuTh 3pm – 5pm
- ❑ **Course Webpage:**
  - ❑ <http://www.cs.ucf.edu/~czou/CDA5530/index.html>
- ❑ **UCF Tegrity for online lecture video streaming**
  - ❑ <http://tegrity.ucf.edu/TegrityUtils/Welcome.asp>
  - ❑ Posted several hours after each class
- ❑ **Use Webcourse@UCF for homework assignment and grading**
  - ❑ Keep grade private
  - ❑ Homework submission
  - ❑ Also have a simple BBS channel

# Objectives

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- ❑ **What you need for performance analysis:**
  - ❑ Review practical probability theory
  - ❑ Review several useful random processes
  - ❑ Basic queuing theory
  - ❑ Practical analysis techniques
  - ❑ Useful tools (Matlab, probably include NS2)
  - ❑ Basic simulation techniques
    - ❑ Discrete-time simulation
    - ❑ Discrete event simulation
  - ❑ Example cases/papers on performance modeling
    - ❑ Prepare for your own research

# Course Materials

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- ❑ **Reference textbook:**
  - ❑ [Introduction to Probability Models, Ninth Edition](#) by Sheldon M. Ross.
  - ❑ [Simulation, fourth edition](#) by Sheldon M. Ross.
- ❑ **Reference courses:**
  - ❑ [CMPSCI673 - Performance Evaluation](#), by Don Towsley, UMass.
  - ❑ Course: [COMS6180 - Modeling and Performance Evaluation](#), by Visal Misra, Columbia Univ.
- ❑ **Other references that we can find online**

# Course Introduction

- | <u>Coursework</u>      | <u>times</u> | <u>approx %</u> |
|------------------------|--------------|-----------------|
| □ Written homework     | 2-3          | 20%             |
| □ Programming projects | 5            | 50%             |
| □ Midterm exam         | 1            | 30%             |
- **Written homework**
    - Mainly for the first half course on probability, random process, queuing theory
  - **Programming projects**
    - Emphasis for the second half of the course
    - Example:
      - Basic usage of Matlab, NS2
      - Internet worm propagation simulation
      - BitTorrent networking simulation
      - Internet routing simulation

# Course Introduction

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- ❑ **Midterm exam**
  - ❑ Focus on the first half content on probability, random process, queuing theory
- ❑ **Programming projects**
  - ❑ Simple project: each student individual work
  - ❑ Complex project: Two students as a group
  - ❑ No final exam (to reduce workload)

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□ Questions?