

**CS 455/555**

# **Intro to Networks and Communications**

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## **First Day Administivia**

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<http://www.cs.odu.edu/~mweigle/CS455-F08/>

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# **Intro to Networks and Communications**

## **First Things First...**

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- ◆ Weigle

- » pronounced “Why-gull”

- ◆ CS 455/555 - split undergrad/grad course

- » grad students will have more homework problems, harder exam questions, and a different final assignment
  - » \_\_\_\_ grad students
  - » \_\_\_\_ undergrad students

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# Intro to Networks and Communications

## First Things First...

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- ◆ Course website
  - » announcements, clarifications, FAQs posted
    - ❖ check website before emailing me or TA a question
  - » lecture notes and assignments will be posted on the schedule page before class
    - ❖ read lecture notes *before* class
    - ❖ bring lecture notes to class and take additional notes
      - ◆ *save a tree - print duplex!*
    - ❖ lecture notes contain questions and problems that we'll work in class
- ◆ Blackboard
  - » posting grades
  - » possibly used for submitting assignments (instructions will come with first assignment)
- ◆ Email
  - » check your ODU email every day!

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# Intro to Networks and Communications

## So, what things will we learn?

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- ◆ How does the web work?
  - » How does a client find a random web server?
  - » How does a request make its way from a web browser to a web server and how does the reply makes it back?
  - » How is it that all data transmitted arrives intact and in order?
  - » How insecure is the connection and how secure is a secure connection?
- ◆ Why do we get the level of performance that we do?
  - » How do the millions of web requests and responses that transit the ODU campus network every second share the capacity of the network?
  - » Can one control or even improve the performance of their network connections?

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# What is this course about?

## The Internet food chain of technology

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- ◆ Application-level protocols
  - » HTTP, FTP, SMTP (e-mail), and the Domain Name System (DNS)
- ◆ Socket programming and client/server computing
- ◆ Transport protocols TCP and UDP
- ◆ Congestion control principles and algorithms
- ◆ The Internet Protocol IP and Internet routing architecture and algorithms

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## Administrivia

### Prerequisites

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- ◆ CS 270 - Computer Architecture
- ◆ STAT 330U - Intro to Probability and Stats
- ◆ Good knowledge of Java
- ◆ Program function/operation will be described using UNIX terminology
  - » You should be comfortable with the UNIX file system, file I/O, I/O redirection, basic UNIX program development
  - » Example:

```
% java prog1 < testScripts/foo > ../bar &
```

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# Administrivia

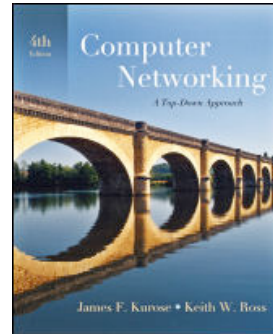
## Textbook

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### ◆ Required

- » *Computer Networking: A Top-Down Approach Featuring the Internet*

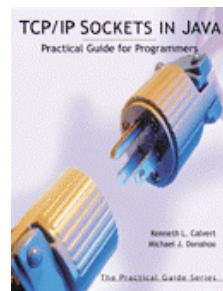
❖ 4<sup>th</sup> edition, by James F. Kurose and Keith W. Ross, Addison Wesley, 2007



### ◆ Potentially Useful

- » *TCP/IP Sockets in Java*

❖ by Donahoo and Calvert



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## Honor Code

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- ◆ All assignments, unless explicitly specified, are to be completed on your own
- ◆ ODU Honor Council <http://orgs.odu.edu/hc/>
  - » cheating, plagiarism, unauthorized collaboration
  - » *all students are responsible for knowing the rules*
- ◆ Evidence of cheating, plagiarism, or unauthorized collaboration will result in a grade of 0 for the assignment/exam and will be submitted to the CS department for further review

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# Administrivia

## Honor Code

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- ◆ No sharing of code is allowed. This includes discussion about the design of a programming assignment solution.
- ◆ Tips to avoid cheating (even inadvertently)
  - » Don't start at the last minute
  - » Don't sit next to each other in the lab and talk about the assignment while you're working on it
  - » Ask the TA or instructor if you're stuck
    - ❖ which means that you can't start at the last minute...
  - » Remember the late policy: 5% per day
    - ❖ I'd rather you turn in something late than cheat

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# Administrivia

## Grading

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|--|-----|
| ◆ Programming Assignments                      | 15% |
| ◆ Written Homework Assignments                 | 25% |
| ◆ Mid-Term Exam                                | 20% |
| ◆ Final Exam                                   | 25% |
| » Saturday, Dec 8 at 3:45 pm                   |     |
| ◆ Undergrad Paper / Grad Presentation          | 10% |
| » more details will come later in the semester |     |
| ◆ Participation / Quizzes                      | 5%  |
| » some quizzes may be unannounced              |     |

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## Assignments

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- ◆ Written homework (anything where a hard copy is submitted) is due at the *start* of class on the due date
  - » Anything handed in after I start lecturing is considered late (*don't be late for class!*)
- ◆ Electronically submitted projects are due *before* the start of class
  - » Programs submitted after 2:59:59 pm EDT/EST on the due date are late!
- ◆ Penalty of 5% of the total points for each day late
  - » day = any part of the 24-hour period after the deadline
  - » weekends count

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## Where to go for help?

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- ◆ Ask questions in class!
- ◆ Attend office hours
  - » TBA, or by appointment (send me an email)
  - » E&CS 3214
- ◆ Send questions via e-mail, but...
  - » Think about what you are asking before you ask!
  - » Know the difference between an “office hour question” and an “e-mail question”
  - » Don't depend on an immediate answer
  - » Include the phrase “CS 455:” or “CS 555:” in your subject line
- ◆ E-mail v. Office Hours: Your *primary* avenue for resolving questions is office hours

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## How to do well in this course

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- ◆ Attend class regularly
  - » Ask questions!
  - » *Exercise your understanding of course material on a daily basis*
- ◆ Rigorously test your programs before submitting them
  - » Think of pathological test cases – I certainly will
- ◆ Read over lecture notes *before* class
  - » Take more notes *during* class
- ◆ Study the homework and in-class “thought” problems
  - » Don’t just “do” the homework
- ◆ Take (and *study* your) notes!
  - » Beware the “But I understand this” syndrome

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# How To Do Well

## Last Things

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- ◆ Coding on Unix machines
  - » easiest to use XWin (displays Unix windows on your PC) and an editor like emacs
- ◆ Note the “Useful Links” listed on the course webpage
  - » especially Unix, Java, emacs tutorials
  - » don’t ask me questions that you can find the answers to yourself
    - ❖ what are the parameters to the indexOf method in the String class?
- ◆ Get started early - Program 1 will be assigned on Thursday
  - » To be written in Java
  - » Read an argument from the command line
    - ❖ ex: java MyProg CS455
  - » String processing (look at the String class reference)

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# CS 455/555

## Introductions

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### ◆ About Me

- » I'm from Louisiana
  - ❖ so, I'm a *huge* LSU and college football fan
- » I got my PhD from UNC-Chapel Hill
  - ❖ I'm a pretty big Tarheel fan, too
- » My research area is networking



### ◆ Your Turn!