

**CS 455/555**

**Intro to Networks and Communications**

**First Day Administivia**

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**Intro to Networks and Communications**

**First Things First...**

◆ 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

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# Intro to Networks and Communications

## First Things First...

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### ◆ Course website

- » syllabus
  - ❖ you are responsible for knowing all policies in the syllabus
- » announcements, clarifications, FAQs posted
  - ❖ check website before emailing me 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 double-sided!*
  - ❖ lecture notes contain questions and problems that we'll work in class

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# Intro to Networks and Communications

## First Things First...

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### ◆ Blackboard

- » posting grades
- » possibly used for submitting assignments (instructions will come with first assignment)

### ◆ Email

- » sign up for the class mailing list
  - ❖ <http://list.odu.edu/mailman/listinfo/cs455-mcw>
- » check your ODU email every day!
  - ❖ or forward it to some account you do check every day

### ◆ Unix Computer Account

- » you must have a CS department Unix account
- » see me *today* if you don't have one

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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
  - » or enough confidence in your programming skills to be able to learn Java
    - ❖ very much like C++ (but networking code is much easier)
    - ❖ we'll mainly be using simple constructs
- ◆ 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 &
```

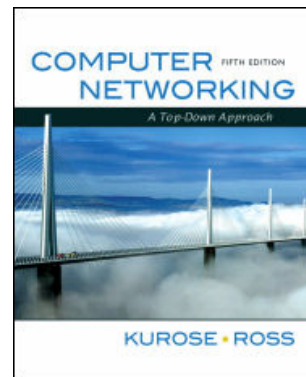
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# Administrivia

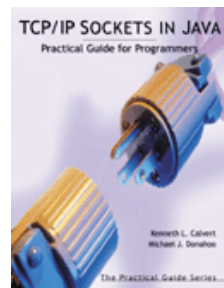
## Textbook

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- ◆ Required
  - » *Computer Networking: A Top-Down Approach Featuring the Internet*
    - ❖ 5<sup>th</sup> edition, by James F. Kurose and Keith W. Ross, Addison Wesley, 2009
    - ❖ 3<sup>rd</sup> or 4<sup>th</sup> editions also acceptable



- ◆ Potentially Useful
  - » *TCP/IP Sockets in Java*
    - ❖ by Donahoo and Calvert



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## Administrivia

### 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 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 (~5) 20%
- ◆ Written Homework Assignments (~4-5) 20%
- ◆ Mid-Term Exam 20%
- ◆ Final Exam 25%
- ◆ 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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# Administrivia

## 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 midnight* on the due date
  - » Unexcused absences on a project due date will count against your participation grade
    - ❖ *Don't skip class to finish your assignment!*
- ◆ Penalty:
  - » 0-24 hours late: -5%
  - » 25-48 hours late: -10%
  - » over 48 hours late: not accepted, grade = 0
  - » *weekends count*

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# Administrivia

## Where to go for help?

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- ◆ Ask questions in class!
- ◆ Attend office hours
  - » MWR 2-3pm, 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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# Administrivia

## 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 “Links” listed on the course webpage
  - » especially Unix, Java, emacs tutorials
  - » don’t ask me questions that you can quickly find the answers to yourself (*i.e.*, don't ask me to be Google for you)
    - ❖ example: How do I use the indexOf method in the String class?
- ◆ Get started early!

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## Program 1

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- ◆ Assigned: today
- ◆ Due: next Tuesday
  - » *start early!*
  - » if you have trouble completing this, or it takes you more than 2 hours, please see me during office hours this week (so, start early!)
- ◆ Write a Java program to handle command-line arguments and do some simple String processing
- ◆ Details on course webpage
  - » [Schedule](#) > [Today's date](#) > [Assignment](#)

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# CS 455/555

## Introductions

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### ◆ About Me

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



### ◆ Your Turn!

- » Name
- » Major / Year
- » Hometown
- » Something interesting about yourself

