

## 1 Course Information

All documents related to this course, including this one, will be posted on the Internet. They are available through the following URL:

<http://www.cs.uwf.edu/~ssimmons/advNet>

## 2 Instructor

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## 3 Course Description

The following description is taken directly from the Course Catalog of the University of West Florida.

**CEN 6520 Advanced Computer Networks:** Builds on topics introduced in the undergraduate computer networks course and investigates more advanced concepts. Topics to be addressed includes LANs, Protocols, TCP/IP Suite and Data Networks. Overview of probability and stochastic processes, queuing analysis and self-similar traffic, high speed LANs, link level flow and error control, transport level traffic control, traffic management and congestion, routing and switching. Wireless and mobile communications, network security and gigabit ethernet.

We will program primarily in ANSI C and some in Java. There will be approximately six projects. The focus of each project is network programming. Your work must be done on a Unix or Linux network.

## 4 Prerequisites

Basic Probability Theory and CEN 4516 or equivalent.

## 5 Withdrawals and Incompletes

Late withdrawals are strongly discouraged. A late withdrawal, after the Last Day to Withdraw, will receive a **WF**, which is the same as an **F**, unless the numeric average at midterm is at least 70% and an emergency type of incident occurs.

Incompletes must be approved by the Computer Science Department Chairperson. Incompletes are discouraged and difficult to obtain. In addition to the chair's approval, 70% or more of the course work must be completed to be eligible for an incomplete.

## 6 Unix Accounts

All work will be done in the UNIX environment, so you will need to apply for an account on the CS\_Lab (UNIX Lab) computers on the UWF UNIX network. Account applications are located on the web at the following URL.

<http://www.cs.uwf.edu/~guest>

You must ensure that your program runs successfully under the UNIX environment. I will grade all work in the Unix environment. **If your program does not run in Unix, your grade for that program is a 0!** Please double check what you turn in will compile and run in Unix. Some differences exist between flavors of Unix. Be certain the programs you submit will compile and execute properly in the Computer Science Department UNIX Lab at the main campus.

## 7 Text

### Required:

High-Speed Networks and Internets, 2nd ed.  
William Stallings  
Prentice  
ISBN: 0-13-032221-0  
<http://www.prenhall.com/stallings>

### Recommended texts:

The C Programming Language, ANSI Edition, 2nd ed.  
B. Kernighan, D. Ritchie  
Pearson Education  
ISBN: 0131103628

Learning the UNIX Operating System: A Concise Guide for the New User  
J. Peek, J. Strang, G. Todino-Gonguet  
O'Reilly & Associates, Incorporated  
ISBN: 0596002610  
Designing ATM Switching Networks  
M. Guizani  
McGraw-Hill, 1999

Computer Networks and Internets, 2nd ed.  
D. Comer  
Prentice Hall, 1999

TCP/IP Illustrated, Vol. I  
D. Stevens  
Addison-Wesley, 1994

Internetworking with TCP/IP, Vol. I  
 D. Comer  
 Prentice-Hall, 1991

Data and Computer Communications, 5th ed.  
 W. Stallings  
 Prentice-Hall, 1991

Roughly 75% of my lectures come directly from the text. I expect each student to read the material before class and ask questions after a topic has been covered if the material is still not completely understood. I will not lecture on each page of the text, but will hold you responsible for the assigned reading. Ask questions on any assigned reading you do not understand.

I do suggest that after each lecture you rewrite class notes within 24 hours. During the rewrite record any questions you have and ask me either at the beginning of the next lecture or during office hours

## 8 Grading Scale

This course will be graded on a 4-point, +/- grading scale.

.	B+ ≥ 88	C+ ≥ 78	D+ ≥ 68
A ≥ 92	B ≥ 82	C ≥ 72	D ≥ 58
A- ≥ 90	B- ≥ 80	C- ≥ 70	F ≥ 00

## 9 Grade Calculation

Midterm	30%
Comprehensive Final	25%
5 - 7 Projects	35%
Literature Reviews and Papers	10%

I may make mistakes in the recording process. It is your responsibility to check what is recorded and ensure the accuracy of the record. I will gladly re-grade an assignment when a mistake is brought to my attention. To ensure fairness, I reserve the right to re-grade the entire assignment instead of a single question. Grades will not be changed after two weeks from the date graded assignments are returned to the class.

Grades in this course are based **only** on how well you demonstrate knowledge of the material. There will be no extra credit at the end of the semester even if “*I can’t graduate if I fail this course.*”

## 10 Tests

There will be two tests given in this course, a midterm and a final. Due to the nature of the topic, the final examination will be comprehensive. However, the final will concentrate on the material not tested on in the midterm. For each test, you will be allowed one “*cheat-sheet.*” It must be

standard 8.5x11 paper. The information on the cheat sheet must be handwritten. I will not allow any electronically reproduced sheets. Copies, printouts, etc. will be taken before the test begins.

The first test will be given during normal lecture hours. The majority of the time those who fail the first test do not improve their grade as the semester progresses. The final exam will be given on the date scheduled by the University Registrar and designed for the allotted time.

You will be tested on lecture and reading material, project assignments and homework assignments.

## 11 Programming Projects

The programming projects for this course are not trivial. For that reason, I give a relatively long time to complete each one. That does not imply that you can procrastinate. If you are given two weeks to complete a project, it is because that project will take the average student two weeks to finish. Waiting to start may result in failing grades on programming projects. I **strongly suggest** you aim at completing each project 48 hours before the due date. This will provide time for the unexpected, e.g., the Unix lab going down, sickness, hurricane.

Part of a project may involve literature search findings. This type of literature search is part of the project grade, not the literature review portion of your grade.

Programming projects are to be done individually. You may get assistance from someone other than me if that help is in the form of direction. That is, another faculty member or student may help you get started toward the solution. It is not acceptable to work together on programming projects. Similarly, it is not acceptable to submit as your own a slightly modified version of another's work. It is not acceptable to look at another person's source code. Plagiarism will result in disciplinary action. You are responsible for keeping your work secure and not allowing others to copy it. "*It was stolen from my computer when I wasn't looking.*" is not an excuse. All parties involved will be prosecuted.

## 12 Literature Reviews and Papers

As topics are discussed in class, literature reviews of the subject will be assigned. I will require a paper to be written for each literature review. The specific requirements will be given for each assignment.

## 13 Getting help

I will be available during office hours to help with assignments and lecture material. If you are seeking help with your program, please bring a print-out of your program and, if applicable, error messages. The better prepared you are, the more I will be able to help. When the deadline for an assignment approaches, the length of the queue to see me during office hours increases. If you are not well prepared, I may ask you to gather the needed material and see me later. This is not because I am unconcerned about your work, this is so I can better serve all the students.

Another way to receive help is via e-mail. I will **NOT** examine source code sent in email. I will answer general questions concerning concepts and projects.

I give priority to physical appearances.

## 14 Work Submission

Projects are submitted electronically. In your home directory, create the subdirectory CEN6520

```
> mkdir ~/CEN6520
```

Within the CEN6520 subdirectory, you will create a directory for each project. Each project description will be posted on the course Web page and will include the directory name for your project. For electronic submission, two executables are available.

- The `Handin` executable is used to submit your work.

```
~/ssimmons/public/bin/Handin CEN6520
```

- The `Check` executable is used to check submissions.

```
~/ssimmons/public/bin/Check CEN6520
```

The submission program does not allow project submission after the due date. The grader will receive only the projects that have been successfully submitted. You must turn your projects in on time!

## 15 Attendance

I will not take attendance after the first few weeks. You are adults and will be treated as such. With that thought in mind, if you miss a class, get notes from 2 or 3 of your classmates. Do not ask any of the following (or similar) questions.

- What did we do in class?  
*I lectured on aspects of Networking and answered some very insightful questions from the class.*
- Did we do anything important in class?  
*Yes. We covered material that will be needed to understand the remaining topics of the course.*
- Can I see your notes from class?  
*Please get them from 2 or 3 classmates.*

If you must miss class, please make the appropriate arrangements.

## 16 Consideration

If you must bring a pager or cell phone to class, please be sure it is in “quite” mode. Do not disturb the other students or the professor. If your cell phone rings, step out of the class and down the hall before answering. This policy will change to a “No Communication Devices” policy if interruptions occur.

## 17 Class Environment

I will start each lecture by asking if anyone has questions. Once project assignments begin, the first 15 minutes of lecture becomes valuable for additional project insight. Please make every attempt to arrive on time.

I encourage questions from the class as I am lecturing. If you have a question on the material being presented, please stop me and ask. This is much better than waiting 30 minutes later when I am talking about something different. I will ask leading questions to encourage discussions. If someone has a question that is straying too far away from the material, I will politely request we discuss the material after lecture. If a student is inappropriate (e.g., yelling), I will request the student to leave the classroom so the remaining students' lecture is not interrupted.

## 18 Academic Honesty Policy

Programming assignments and exams should be strictly individual work and any attempt to learn questions in advance, copy others work, etc. will be handled according to the University's procedures for academic dishonesty. It is your responsibility to protect your work and keep others from copying it.