

ISQS 3349

Introduction to Data Communication Systems

Course Syllabus

Spring, 2015

March 9 - May 4

Instructor: Dr. Terri D. Giddens
Office: Rawls College of Business room E317
Office Hours: In the office on MWF 1:00- 2:00 and by appointment
In class from 9:00-1:00 on MWF
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CATALOG DESCRIPTION

3349. Introduction to Data Communication Systems (3:3:0). Prerequisite: ISQS 2340 with a grade of C or better. Hands-on course introducing students to computer-to-computer communications technologies and the Linux operating systems.

TEXTS AND MATERIALS

No required book.

Laptop in Class

COURSE CONTENT

- Operating system installation / setup / CMOS / Virtual Machines / Boot managers, file systems, partitioning, swap space
 - Basic Unix/Windows commands: making directories, moving/copying/removing files, setting permissions and ownership, editors, changing shells, using secure shell (ssh and sftp).
 - User administration: Creating users/groups, home directories, system and user login scripts, admin/ sudo users and groups, aliases
 - System administration: Installing software, shell scripting, scheduling cron and at jobs, archiving / zipping files and directories, environment variables including \$PATH, run level startup processes, installing secure shell and web servers, monitoring logs, killing processes, running background processes.
 - Home network setup/security: Public/ private IP addresses, router configuration, router security (WEP/WPA, MAC filtering, SSID broadcasting), port forwarding, Remote desktop, gateway, subnet mask, DNS , DHCP.
 - Intro to Data Communications: OSI Model, IPV4, IPV6, Windows Workgroups, Protocols (TCP, IP, ICMP, UDP, ARP, RARP, MAC, NETBEUI, NETBIOS, NAT), DNS/hosts, WINS/lmhosts, TPC/IP utilites (ping, traceroute, nslookup, whois), cabling, ISP comparisons, port scanning.
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COURSE OBJECTIVES

ISQS 3349 - Introduction to Data Communications

Upon completion of the course, the student will:

- Understand data communications as it relates to Local Area Networks, Wide Area Networks, Virtual Private Networks, Wireless LANs
- Understand key technologies associated data communications
- Understand TCP-IP and subnets.
- Understand and implement strict network security at both the system and user levels.
- Understand SSH Server, Mail Server, FTP Server, Web Server, DHCP.
- Understand Installation of Operating Systems, disk partitioning, X Windows, GNOME, Redhat Package Manager (RPM / YUM), vi and nano editors, various shells, shell scripting, user administration, system administration, backups.
- Understand how to set up SSH, Apache, MySQL..

COURSE HANDOUTS

A	Fedora Support Links
B	Account Information Assignment 1 / Unix Tutorial Assignment 2 / Basic Unix Commands Answers Assignment 3 Answers Assignment 4 Answers Assignment 5 Answers Assignment 6 / Shell Scripting / Using Cron / Using Tar / System Cron Jobs / Assignment 6 - #3
C	Quick Comparison of DOS and UNIX Commands Unix Commands
D	Telecommunications Handouts My Network Diagram Layer 3 addressing: IP V4 IP V6 OSI Layers (Word Document) Transcontinental cables: http://en.wikipedia.org/wiki/Submarine_communications_cable
E	Misc Unix Handouts Directory Structures Shell Scripting User Administration Scripts Scheduling Jobs Additional Scheduling Topics Secure Shell Apache Configuration

[LAMP Setup](#)

[Fedora Wireless / Flash Drive](#)

COURSE DATES

Final Exam: - Monday, May 4 - normal class time

No class days: Martin Luther King Day - Jan 19
Spring Break March 14-22
No Classes April 6

METHODOLOGY

Course will be a combination of lecture and presentation. Students will have hands on access to network.

GRADING POLICY

1. All assignments are due at the start of class on the due date.
2. Late assignments will not be accepted.
3. Exams will be multiple choice, true/false, programming.
4. Final exam will be comprehensive.
5. Makeup exams will be given only when the instructor has approved the request for either illness, death in the family, etc, **prior to the exam.**
6. Grades will be assigned as follows:

There will be 2 major exams (including the final) - each worth 35% of your grade.

Lab Assignments - worth 20%.

Subjective evaluation from the instructor of student participation of lab exercises - 10%

A - 90 or better average
B - 80 - 89 average
C - 70 - 79 average
D - 60 - 69 average
F - average less than 60

CLASS ATTENDANCE

Each student is responsible for attending classes. Only the instructor has the authority to excuse a student's absence.

DISABILITY STATEMENT

Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office in 335 West Hall or 806-742-2405