CIS 4685: Network Planning, Design, and Security  
Spring 2010

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Office Hours: 8:30 A.M. – 10:30 A.M. M, W; 8:30-11:30 Tu  
other times by appointment

Text:  
Designing for Cisco Internetwork Solutions (DESGN) by Diane Teare  
Second Edition  
Cisco Press  

A Practical Guide to Fedora and Red Hat Enterprise Linux by Mark G. Sobell  
2nd/3rd/College Edition  
Prentice Hall

Course Description:

This course will cover the theoretical and practical aspects of network planning, design administration and security. This includes designing remote connectivity, designing IP addressing schemes, selection of routing protocols, designing and implementing voice and wireless networks, and security solutions, and managing and maintaining Linux based networks. Laboratory work will be done primarily in a Linux-Cisco environment.

Course Objectives:

Designing Remote Connectivity  
Designing IP Addressing  
Selecting Routing Protocols  
Voice Network Design  
Wireless Network Design  
Designing Security Solutions  
Installation and Configuration of Linux  
Linux Systems Administration  
Understanding Shells and Scripting with Linux  
Setting up Samba and a Windows-Linux network  
Setting up security with Linux  
Setting up a Web Server  
Learn the fundamentals of wireless LAN  
Learn various standards related to wireless LANs  
Learn about the security aspects of wireless LANs.
Course Outcomes:

After successful completion of this course, the student should be able to:

- Design a complex network
- Design IP addressing for complex networks
- Be able to select and implement routing protocols
- Design and implement VOIP solutions
- Design and implement wireless networking solutions
- Design and implement security solutions
- Install and configure Linux
- Write Linux scripts
- Manage a Linux-Cisco based network

Outcome measurement

All outcomes will be measured by tests and successful completion of laboratory exercises.

Teaching methods:

Lectures and class discussions.

Attendance policy:

Students are expected to attend classes on a regular basis and participate in class discussions. If more than two classes are missed without the instructor’s permission, 10 points will be deducted for each class missed beyond the two. We may be visiting different companies to see their network architecture and you are expected to make necessary arrangements for those visits.

Honesty policy:

Students are expected to follow the university regulations and policies. Consult the student handbook for further information.

Tests and assignments policy:

There will be regularly scheduled tests once a topic is completed. All tests will be short-answer and cover the chapters announced in class as well as the labs completed. The last test will be the final exam. If you are absent on test day, you can make up a test provided you show adequate proof of a family or medical emergency. Otherwise, you will be given a zero on the test.
**Grading:**

Tests and final exam: 300 points  
Group Lab/Lab Presentations: 100 points  
Total: 400 points.

Grading: A: >90, B: 80-89%, C: 70-79%, D: 60-69%, F <60%

The instructor reserves the right to curve the grades, if necessary.

**Schedule of Topics:**

Most lectures will be from the “Designing for Cisco Internetwork Solutions” text, and will follow the chapters in the book, starting with Chapter 5. You will follow the Linux text for the Linux based labs. There will be some lectures on the more difficult concepts in the Linux text.

Final exam will be held as per schedule

This class has a prerequisite of CIS 3665, 4665.

**Assessment Matrix:**

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