

EEN424 - Unix Systems and Servers

3 credits

B.S.E.E.			B.S.Cp.E.	B.S.I.S.E.	
EEN	EAN	WCN	ECN	IT	SE
elect	elect	elect	REQ	REQ	REQ

2007-8 Catalog Data: Practical hands-on experience with UNIX systems programming and administration. Programming using shell scripting languages. File systems features, multiprocessing, inter-process communication, and systems programming fundamentals are discussed.

Prerequisites: EEN218

Texts:

1. Advanced Programming in the UNIX Environment, 2nd Edition
W. Richard Stevens and Stephen A. Rago, Addison Wesley, ISBN 0-201-43307-9, 2005

References:

1. Introduction to UNIX and Linux
John Muster, McGraw Hill, ISBN 0-072-22796-6, 2003
2. UNIX for Programmers and Users, 3rd Edition
Graham Glass and King Ables, Prentice Hall, ISBN 0-130-46553-4, 2003
3. Mastering UNIX Shell Scripting
Randal K. Michael, John Wiley, ISBN 0-471-21821-9, 2003

Objectives:

1. Introduce the basic concepts of scripting languages and shell programming.
2. Establish the fundamental concepts of systems programming, file systems, and inter-process communication.
3. Provide practical hands-on experience with systems programming in UNIX environments.

Topics:

1. Enterprise Operating Systems
2. UNIX Basics
3. System Architecture
4. Security/Permissions
5. Shell Scripting
6. File System Internals
7. Unix File System (UFS)
8. Files, Links, Directories
9. Network File System (NFS)
10. Systems Programming
11. File Management
12. Process Management
13. Inter-process Communications

Schedule: 150mins (3x50mins OR 2x75mins) per week

Professional Component: Engineering topics: 3 credits, design 1½ credits
Students are required to design and develop several software components to fulfill the programming assignments during the semester. In addition, the class project involves the design, development, and testing of a software system that utilizes the key concepts of multiprocessing, file management, and inter-process communication.