Title: Network Administration
Abbreviation and Number: CISB435
AB Paper No.: 13-128
School: Business
Department: Computer Information Systems
Credits: 3
Course Sequence: ( ) Fall ( X ) Spring ( ) Fall and Spring
Hours Per Week: ( 3 ) Lecture ( ) Seminar ( ) Laboratory ( ) Studio ( ) Kitchen ( ) Other (Specify)
Pre-requisite(s): CISB329
Co-requisite(s): None

COURSE DESCRIPTION
Students learn to monitor the day-to-day operations, back up security, user accounts and groups, configuring and maintaining servers such as email and web servers, troubleshooting network problems, analyse data traffic to avoid bottle necks and optimise network performance.

SPECIFIC OBJECTIVES
Upon successful completion of this course, students will be able to
1) configure and administer network servers;
2) analyse and optimise network’s data traffic;
3) evaluate and implement organizational needs relating to user/group accounts;
4) design a network disaster-recovery;
5) prepare back-up and routine operations involving day-to-day network needs; and
6) demonstrate knowledge of ethical issues concerning systems administration such as privacy, integrity, and potential misuse of information.

COURSE CONTENT
I. Installing Servers
   A. Planning
   B. Installation
   C. Activating
   D. Troubleshooting
   E. Configuring servers
      i. Hardware
      ii. Operating systems (OS)
      iii. Registry

II. Web Server
   A. Fundamentals
   B. Client/Server Basics
   C. Functionality
   D. Browsers

III. Hypertext Transfer Protocol (HTTP)
   A. Components
   B. Request Methods
C. Headers and Server Responses  
D. Authorization  
E. Negotiated Content  

IV. Other Web-Related Servers  
A. Proxy  
B. Databases  
C. Secure Socket Layer (SSL)  
D. Streaming audio and video  
E. File Transfer Protocol (FTP)  
F. Other  

V. Server Configuration  
A. Planning  
B. Hosting  
   i. Internet Addresses  
   ii. Domain Name System (DNS)  
C. Software  
D. Directories  
E. Users and Documents  
F. Security  

VI. Account Management  
A. Install and manage user accounts  
B. Configure user groups  
C. Implement active directory  

VII. Troubleshooting  
A. Permission conflicts  
B. File sharing and permissions  

VIII. Managing Data Storage  
A. Options  
B. Disk management  
C. Enhancements  
D. Back up  

IX. Configuring and Securing Remote Access Services  
A. Understanding  
B. Implement Virtual Private Network (VPN) and configure server(s)  
C. Troubleshoot Virtual Internet Protocol (VIP)  

X. Network Performance  
A. Monitoring and problem-solving  
B. Tools for monitoring performance  
C. Collecting data for diagnostic information
D. Reliability

XI. Models of Network Administration
   A. Information models and directory services
   B. System infrastructure organization
   C. Network management technologies
   D. Creating infrastructure
   E. System maintenance models
   F. Competition, immunity and convergence
   G. Policy and configuration automation
   H. Integrating multiple OS
   I. A model checklist

XII. Diagnostics
   A. General problem-solving strategies
   B. Resolving boot problems
   C. Troubleshooting connectivity problems
   D. Remote server administration tools

XIII. Analytical Network Administration
   A. Science versus Technology
   B. Studying complex systems
   C. Evaluating methods and problems
   D. Evaluating a hierarchical system
   E. Deterministic and stochastic behaviour
   F. Observation errors
   G. Strategic analysis

XIV. Web Security
   A. Attacks and vulnerabilities
   B. Security resources
   C. Security basics
   D. Network security
      i. Packet sniffing
      ii. Network vulnerabilities
      iii. Firewalls and proxies
   E. Hosts/OS Hardening-Ports
   F. Risks
   G. Permissions and ownership
   H. Ethical issues
      i. Privacy
      ii. Integrity
      iii. Misuse of information
ASSESSMENT
Assignments and Projects  50%
Tests  30%
Final Exam  20%
Total ...................................................... 100%

REQUIRED TEXT

SUPPLEMENTARY READINGS/MATERIALS

JOURNALS
IT Discover
LINUX Journal

WEBSITES
http://itdiscover.com/links/tools4ever_windows_nt_and_2000_network_administration_solutions
http://www.linuxjournal.com