CIS 277   Network Services Administration

I. **CIS 277 Network Services Administration – 3 Semester Hours**

II. **Course Description**
This course provides an introduction to the administration of fundamental networking services and protocols. Topics included in this course are implementing, managing, and maintaining essential network operating system services such as those for client address management, name resolution, security, routing, and remote access. Students gain hands-on experience performing common network infrastructure administrative tasks.

III. **Prerequisite**
CIS 276 or equivalent experience

IV. **Textbook**
Textbook: 70-642: Windows Server 2008 Network Infrastructure Configuration with Virtual Lab, Package
Publisher: Microsoft Press

V. **Course Objectives**
1. Configure and manage a DHCP server.
2. Configure and manage a DNS server.
3. Configure network security services.
4. Configure remote access and routing services.

VI. **Course Outline of Topics**
1. Configure and manage a DHCP server.
    a. DHCP (Dynamic Host Configuration Protocol) fundamentals
        i. DHCP clients and servers
        ii. DHCP leases
        iii. DHCP messages
        iv. Automatic client configuration
    b. Installing and configuring a DHCP server
        i. Installing the DHCP service
        ii. Configuring a scope
        iii. Configuring a reservation
        iv. Configuring server and scope options
        v. Configuring a relay agent
    c. Managing and monitoring a DHCP server
        i. Configuring DNS dynamic update settings on a DHCP server
        ii. Managing a DHCP database
            1. Backing up and restoring the DHCP server configuration
            2. Reconciling a DHCP database
        iii. Monitoring a DHCP database
            1. Monitoring DHCP performance statistics
            2. Monitoring DHCP logs
2. Configure and manage a DNS server.
    a. Name resolution fundamentals

      i. Overview of name resolution process

      ii. DNS overview

           1. Domain namespace

           2. Top-level domains

           3. Fully qualified domain name (FQDN)

           4. Name server

b. DNS name server configuration

      i. Installing the DNS service

      ii. Configuring DNS zones

           1. Forward lookup zones

           2. Reverse lookup zones

      iii. DNS server types

           1. Primary

           2. Secondary

           3. Caching-only

      iv. Resource record types

           1. Start of Authority

           2. Host

           3. Name Server

           4. CNAME

           5. PTR

      v. Zone transfers

c. Managing and Monitoring DNS

      i. DNS management tools

           1. DNS console

           2. DNS utilities

      ii. Managing resource records

      iii. Monitoring DNS

           1. Monitoring tools

           2. Logs

3. Configure network security services.

a. Tools for configuring and monitoring security

b. Security policies

      i. Managing user rights

      ii. Managing security settings

c. Encryption

      i. Managing file encryption

      ii. Securing network traffic

4. Configure remote access and routing services.

a. Overview of routing and remote access

      i. Routing

      ii. Remote access methods

b. Configuring remote access servers

      i. Configuring Dial-up access

      ii. Configuring VPN access

c. Configuring routing

      i. Selecting a routing protocol

      ii. Managing routing tables

      iii. Packet filtering

      iv. Remote access policies

           1. Policy conditions

           2. RADIUS authentication

VII. **Evaluation and Assessment**

Evaluation and assessment will be determined by the instructor and specified on the instructor's class syllabus. Grades will be based upon following scale: A = 90 – 100%, B = 80 – 89%, C = 70 – 79%, D = 60 – 69%, and F = below 60%.

VIII. **Attendance**
Students are expected to attend all classes for which they are registered. Students who are unable to attend class regularly, regardless of the reason or circumstance, should withdraw from that class before poor attendance interferes with the student's ability to achieve the objectives required in the course. Withdrawal from class can affect eligibility for federal financial aid.

IX. **Statement on Discrimination/Harassment**
The College and the Alabama State Board of Education are committed to providing both employment and educational environments free of harassment or discrimination related to an individual's race, color, gender, religion, national origin, age, or disability. Such harassment is a violation of State Board of Education policy. Any practice or behavior that constitutes harassment or discrimination will not be tolerated.

X. **Americans with Disabilities**
The Rehabilitation Act of 1973 (Section 504) and the Americans with Disabilities Act of 1990 state that qualified students with disabilities who meet the essential functions and academic requirements are entitled to reasonable accommodations. It is the student's responsibility to provide appropriate disability documentation to the College. The ADA Accommodations Office is in FSC 305 (205-856-7731).