

СОФИЙСКИ УНИВЕРСИТЕТ "СВ. КЛИМЕНТ ОХРИДСКИ"  
ФАКУЛТЕТ ПО МАТЕМАТИКА И ИНФОРМАТИКА

учебна година: 2012/2013

семестър: зимен

|                                                                           |                     |               |
|---------------------------------------------------------------------------|---------------------|---------------|
| <b>наименование на дисциплината:</b> Администриране на Майкрософт сървъри |                     |               |
| <b>хорариум:</b> 3 + 0 + 3 <b>Общо:</b> 90 часа (45 + 0 + 45)             |                     |               |
| <b>вид на дисциплината:</b> избираема                                     |                     |               |
| <b>специалност:</b><br>Разпределени системи и мобилни технологии          | <b>курс:</b> I ÷ II | <b>поток:</b> |
| <b>лектор:</b> гл. ас. Георги Георгиев                                    |                     |               |

**1. Кратка анотация на дисциплината**

Курсът е избираем за студентите от I и II курс в магистърската програма "Разпределени системи и мобилни технологии" на направление „Информатика“.

Курсът дава основни познания по инсталиране, конфигуриране, управление и текуща поддръжка на сървъри с инсталирана операционна система Windows Server 2012.

Курсът е по учебните програми на Microsoft: MOC # 20410: Installing and Configuring Windows Server 2012 и 20411A: Administering Windows Server 2012. Тези два курса са подготвителни за сертификационни изпити за степен Microsoft Certified Solutions Associate (MCSA): Windows Server 2012 – Exam 70-410: Installing and Configuring Windows Server 2012 и Exam 70-411: Administering Windows Server 2012.

**2. Предварителни изисквания към студентите (отнася се само за избираемите дисциплини)**

Студентите следва да имат общи познания по TCP/IP протокола, както и за компютърни мрежи и мрежови услуги.

**3. Форма на проверка на знанията и уменията и начин на формиране на оценката по дисциплината**

|                                                |                         |
|------------------------------------------------|-------------------------|
| <i>Междинни тестове по време на занятията:</i> | 33 % от крайната оценка |
| <i>Финален тест:</i>                           | 67 % от крайната оценка |

**4. Тематичен план (конспект) на дисциплината**

**Part I. Installing and Configuring Windows Server 2012**

**Module 1: Deploying and Managing Windows Server 2012**  
Lessons

- Windows Server 2012 Overview
- Overview of Windows Server 2012 Management
- Installing Windows Server 2012
- Post-Installation Configuration of Windows Server 2012
- Introduction to Windows PowerShell

#### Lab: Deploying and Managing Windows Server 2012

- Deploying Windows Server 2012
- Configuring Windows Server 2012 Server Core
- Managing Servers
- Using Windows PowerShell to Manage Servers

### **Module 2: Introduction to Active Directory Domain Services**

#### Lessons

- Overview of AD DS
- Overview of Domain Controllers
- Installing a Domain Controller

#### Lab: Installing Domain Controllers

- Installing a Domain Controller
- Installing a Domain Controller by Using IFM

### **Module 3: Managing Active Directory Domain Services Objects**

#### Lessons

- Managing User Accounts
- Managing Group Accounts
- Managing Computer Accounts
- Delegating Administration

#### Lab: Managing Active Directory Domain Services Objects

- Delegating Administration for a Branch Office
- Creating and Configuring User Accounts in AD DS
- Managing Computer Objects in AD DS

### **Module 4: Automating Active Directory Domain Services Administration**

#### Lessons

- Using Command-line Tools for Administration
- Using Windows PowerShell for Administration
- Performing Bulk Operations with Windows PowerShell

#### Lab: Automating AD DS Administration by Using Windows PowerShell

- Creating User Accounts and Groups by Using Windows PowerShell
- Using Windows PowerShell to Create User Accounts in Bulk
- Using Windows PowerShell to Modify User Accounts in Bulk

### **Module 5: Implementing IPv4**

#### Lessons

- Overview of TCP/IP
- Understanding IPv4 Addressing
- Subnetting and Supernetting
- Configuring and Troubleshooting IPv4

#### Lab: Implementing IPv4

- Identifying Appropriate Subnets
- Troubleshooting IPv4

### **Module 6: Implementing DHCP**

#### Lessons

- Installing a DHCP Server Role
- Configuring DHCP Scopes
- Managing a DHCP Database
- Securing and Monitoring DHCP

#### Lab: Implementing DHCP

- Implementing DHCP
- Implementing a DHCP Relay (Optional Exercise)

### **Module 7: Implementing DNS**

#### Lessons

- Name Resolution for Windows Client and Servers
- Installing and Managing a DNS Server
- Managing DNS Zones

#### Lab: Implementing DNS

- Installing and Configuring DNS
- Creating Host Records in DNS
- Managing the DNS Server Cache

### **Module 8: Implementing IPv6**

#### Lessons

- Overview of IPv6
- IPv6 Addressing
- Coexistence with IPv6
- IPv6 Transition Technologies

#### Lab: Implementing IPv6

- Configuring an IPv6 Network
- Configuring an ISATAP Router

### **Module 9: Implementing Local Storage**

#### Lessons

- Overview of Storage
- Managing Disks and Volumes
- Implementing Storage Spaces

#### Lab: Implementing Local Storage

- Installing and Configuring a New Disk
- Resizing Volumes
- Configuring a Redundant Storage Space

### **Module 10: Implementing File and Print Services**

#### Lessons

- Securing Files and Folders
- Protecting Shared Files and Folders Using Shadow Copies
- Configuring Network Printing

#### Lab: Implementing File and Print Services

- Creating and Configuring a File Share
- Configuring Shadow Copies
- Creating and Configure a Printer Pool

### **Module 11: Implementing Group Policy**

#### Lessons

- Overview of Group Policy
- Group Policy Processing
- Implementing a Central Store for Administrative Templates

Lab: Implementing Group Policy

- Configuring a Central Store
- Creating GPOs

**Module 12: Securing Windows Servers Using Group Policy Objects**

Lessons

- Windows Security Overview
- Configuring Security Settings
- Restricting Software
- Configuring Windows Firewall with Advanced Security

Lab: Lab A: Increasing Security for Server Resources

- Using Group Policy to Secure Member Servers
- Auditing File System Access
- Auditing Domain Logons

Lab: Lab B: Configuring AppLocker and Windows Firewall

- Configuring AppLocker Policies
- Configuring Windows Firewall

**Module 13: Implementing Server Virtualization with Hyper-V**

Lessons

- Overview of Virtualization Technologies
- Implementing Hyper-V
- Managing Virtual Machine Storage
- Managing Virtual Networks

Lab: Implementing Server Virtualization with Hyper-V

- Installing the Hyper-V Server Role
- Configuring Virtual Networking
- Creating and Configuring a Virtual Machine
- Using Virtual Machine Snapshots

**Part II. Administering Windows Server 2012**

**Module 1: Implementing a Group Policy Infrastructure**

Lessons

- Introducing Group Policy
- Implementing and Administering GPOs
- Managing Group Policy Scope
- Group Policy Processing
- Troubleshooting the Application of GPOs

Lab: Implementing a Group Policy Infrastructure

- Creating and Configuring Group Policy Objects
- Managing Group Policy Scope
- Verifying Group Policy Application
- Managing Group Policy Objects

**Module 2: Managing User Desktops with Group Policy**

Lessons

- Implementing Administrative Templates
- Configuring Folder Redirection and Scripts
- Configuring Group Policy Preferences
- Managing Software with Group Policy

Lab: Managing User Desktops with Group Policy

- Implementing Settings by Using Group Policy Preferences
- Configuring Folder Redirection

**Module 3: Managing User and Service Accounts**

Lessons

- Automating User Account Creation
- Configuring Password Policy and Account Lockout Settings
- Creating and Administering User Accounts
- Configuring User Object Attributes
- Configuring Managed Service Accounts

Lab: Managing User and Service Accounts

- Configuring Password Policy and Account Lockout Settings
- Creating and Associating a Managed Service Account

**Module 4: Maintaining Active Directory Domain Services**

Lessons

- Implementing Virtualized Domain Controllers
- Implementing Read Only Domain Controllers
- Administering AD DS
- Managing the AD DS Database

Lab: Maintaining Active Directory Domain Services

- Installing and Configuring a Read Only Domain Controller
- Configuring AD DS Snapshots
- Configuring the Active Directory Recycle Bin

**Module 5: Configuring and Troubleshooting DNS**

Lessons

- Installing the DNS Server Role
- Configuring the DNS Server Role
- Configuring DNS Zones
- Configuring DNS Zone Transfers
- Managing and Troubleshooting DNS

Lab: Configuring and Troubleshooting DNS

- Configuring DNS Resource Records
- Configuring DNS Conditional Forwarding
- Installing and Configuring DNS Zones
- Managing and Troubleshooting DNS

**Module 6: Configuring and Troubleshooting Remote Access**

Lessons

- Configuring Network Access
- Configuring VPN Access
- Overview of Network Policies
- Troubleshooting Routing and Remote Access
- Configuring DirectAccess

Lab: Configuring and Troubleshooting Remote Access

- Configuring Remote Access
- Configuring the DirectAccess Infrastructure
- Configuring Direct Access Clients
- Verifying the DirectAccess Configuration

## **Module 7: Installing, Configuring, and Troubleshooting the Network Policy Server Role**

### **Lessons**

- Installing and Configuring a Network Policy Server
- Configuring RADIUS Clients and Servers
- NPS Authentication Methods
- Monitoring and Troubleshooting a Network Policy Server

### **Lab: Installing and Configuring a Network Policy Server**

- Installing and Configuring NPS to Support RADIUS
- Configuring a RADIUS Client

## **Module 8: Implementing Network Access Protection**

### **Lessons**

- Overview of Network Access Protection
- Overview of NAP Enforcement Processes
- Configuring NAP
- Monitoring and Troubleshooting NAP

### **Lab: Implementing Network Access Protection**

- Configuring NAP Components
- Configuring the Client Settings to Support NAP

## **Module 9: Optimizing File Services**

### **Lessons**

- Overview of FSRM
- Using FSRM to Manage Quotas, File Screens, and Storage Reports
- Implementing Classification Management and File Management Tasks
- DFS Overview
- Configuring DFS Namespaces
- Configuring and Troubleshooting DFS Replication

### **Lab: Lab A: Configuring Quotas and File Screening by Using FSRM**

- Configuring FSRM Quotas
- Configuring File Screening

### **Lab: Lab B: Configuring DFS Namespaces and Replication**

- Installing the DFS Namespaces Server Role
- Configuring the DFS Role Service
- Configuring DFS Namespace
- Configuring DFS-R

## **Module 10: Configuring Encryption and Advanced Auditing**

### **Lessons**

- Encrypting Network Files with EFS
- Configuring Advanced Auditing

### **Lab: Lab A: Configuring Encryption and Advanced Auditing**

- Encrypting and Recovering Files
- Configuring Advanced Auditing

## **Module 11: Deploying and Maintaining Server Images**

### **Lessons**

- Overview of Windows Deployment Services
- Implementing Deployment with WDS
- Administering WDS

Lab: Deploying and Maintaining Server Images Using Windows Deployment Services

- Installing and Configuring Windows Deployment Services
- Creating Operating System Images with WDS
- Configuring Custom Computer Naming
- Deploying Images with WDS

**Module 12:** Deploying and Maintaining Server Images

Lessons

- Overview of WSUS
- Deploying Updates with WSUS

Lab: Implementing Update Management

- Implementing the WSUS Server Role
- Configuring Update Settings
- Approving and Deploying an Update by Using WSUS

**Module 13:** Monitoring Windows Server 2012

Lessons

- Monitoring Tools
- Using Performance Monitor
- Monitoring Event Logs

Lab: Monitoring Windows Server 2012

- Establishing a Performance Baseline
- Identifying the Source of a Performance Problem
- Viewing and Configuring Centralized Event Logs

## **5. Литература**

МOC # 20410: Installing and Configuring Windows Server 2012 – Students book

МOC # 20411: Administering Windows Server 2012 – Students book