

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

учебна година: 2010/2011

семестър: зимен

<b>наименование на дисциплината:</b> Администриране на SQL сървър за бази данни (Administrating and maintaining SQL server 2008 database)		
<b>хорариум:</b> 2 + 0 + 2 <b>Общо:</b> 60 часа (30 + 0 + 30)		
<b>вид на дисциплината:</b> избираема		
<b>специалност:</b> Разпределени системи и мобилни технологии	<b>курс:</b> I	<b>поток:</b>
<b>лектор:</b> Николай Чорбанов, MCITP SQL 2008		

**1. Кратка анотация на дисциплината**

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

Курсът дава специализирани знания и умения за поддръжката и управлението на Microsoft SQL Server 2008 бази данни и е насочен към студенти с интерес в администрирането на бази данни.

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

Студентите е необходимо да имат начални познания по Windows операционна система и Transact-SQL.

**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**

**Module 1:** Installing and Configuring SQL Server

- Preparing to Install SQL Server
- Installing SQL Server
- Configuring a SQL Server Installation

**Lab:** Installing and Configuring SQL Server

- Installing SQL Server
- Configuring SQL Server

**Module 2:** Managing Databases and Files

- Planning Databases
- Creating Databases
- Using Policy-Based Management

**Lab: Managing Databases and Files**

- Creating a Database
- Monitoring and Managing Filegroup Usage
- Creating a Policy

**Module 3: Creating Data Types and Tables**

- Creating Data Types
- Creating Tables
- Creating Partitioned Tables

**Lab: Creating Data Types and Tables**

- Creating Data Types
- Using New Date and Time Data Types
- Creating Tables
- Creating Partitioned Tables

**Module 4: Creating and Tuning Indexes**

- Planning Indexes
- Creating Indexes
- Optimizing Indexes

**Lab: Creating and Tuning Indexes**

- Creating Indexes
- Tuning Indexes

**Module 5: Implementing constraints, triggers, views, stored procedures, functions**

- Views
- Constraints
- Triggers
- Stored procedures
- Functions

**Module 6: Disaster Recovery**

- Planning a Backup Strategy
- Backing Up User Databases
- Restoring User Databases
- Performing Online Restore Operations
- Recovering Data from Database Snapshots
- System Databases and Disaster Recovery

**Lab: Disaster Recovery**

- Designing a Backup Strategy
- Implementing a Backup Strategy
- Restoring and Recovering a Database
- Performing Piecemeal Backup and Restore Operations
- Restoring the master Database

**Module 7: Managing Security**

- Overview of SQL Server Security
- Protecting the Server Scope
- Protecting the Database Scope

- Protecting the Server Scope
- Auditing Security

**Lab:** Managing Security

- Creating Logins and Assigning Server-Scope Permissions
- Creating and Managing Users
- Using a Certificate to Protect Data
- Implementing SQL Server Audit

**Module 8:** Transferring Data

- Overview of Data Transfer
- Introduction to SQL Server Integration Services

**Lab:** Transferring Data

- Using the Import/Export Wizard
- Performing a Bulk Load
- Creating an SSIS Solution

**Module 9:** Automating Administrative Tasks

- Automating Administrative Tasks in SQL Server
- Using SQL Server Agent
- Creating Maintenance Plans
- Implementing Alerts
- Managing Multiple Servers
- Managing SQL Server Agent security

**Lab:** Automating Administrative Tasks

- Configuring SQL Server Agent
- Creating Operators and Jobs
- Creating Alerts

**Module 10:** Implementing Replication

- Overview of Replication
- Managing Publications and Subscriptions
- Configuring Replication in Some Common Scenarios

**Lab:** Implementing Replication

- Implementing Snapshot Replication
- Implementing Peer-to-Peer Transactional Replication
- Implementing HTTP Merge Replication

**Module 11:** Maintaining High Availability

- Introduction to High Availability
- Implementing Log Shipping
- Implementing Database Mirroring
- Implementing Server Clustering
- Using Distributed High Availability Solutions

**Lab:** Maintaining High Availability

- Configuring Log Shipping
- Configuring Database Mirroring
- Implementing SQL Server Clustering

**Module 12: Monitoring SQL Server**

- Viewing Current Activity
- Using SQL Server Profiler
- Monitoring with DDL Triggers
- Using Event Notifications

**Lab: Monitoring SQL Server**

- Monitoring SQL Server Activity
- Tracing SQL Server Activity
- Using DDL Triggers
- Using Event Notifications

**Module 13: Troubleshooting and Performance Tuning**

- Troubleshooting SQL Server
- Performance Tuning in SQL Server
- Using Resource Governor
- Using Data Collector

**Lab: Troubleshooting and Performance Tuning**

- Troubleshooting Connectivity Problems
- Troubleshooting Concurrency Problems
- Using the Database Engine Tuning Advisor
- Implementing Resource Governor
- Implementing Data Collector

**5. Литература**

MOC #6231A: Maintaining a Microsoft SQL Server 2008 Database. *Student book*

MOC #6232A: Implementing a Microsoft SQL Server 2008 Database. *Student book*