



Course Definition File

1. Basic Information:

Course Name	MS–SQL Server Administration
Course ID	IIS404
Contact Hours (Registered Sessions)	36
Contact Hours (Synchronized Sessions)	18
Mid Term Exam	NO
Exam	1
Registered Sessions Work Load	36
Synchronized Session Work Load	18
Credit Hours	4

2. Pre–Requisites:

Course	ID
Database Architecture and Design	IIS202

3. Course General Objectives:

At the end of this course, the learner should be able to Administer SQL Server 2014 with SQL Server Management Studio and Transact–SQL

4. Intended Learning Outcomes (ILO):

Learning Outcomes codes	Learning Outcomes
LO1	SQL Server Environment and Tools
LO2	SQL Server Administration
LO3	SQL Server Databases
LO4	SQL Server Trasact–SQL
LO5	SQL Server Views, Stored Procedures, Triggers and Functions
LO6	SQL Server Backup Recovery
LO7	SQL Server Security and User Administration
LO8	SQL Server High Availability

5. Course Content :

LO	Course Syllabus	Recorded Sessions	Synchronized Sessions	Type	Additional Notes
LO1	SQL Server Environment and Tools	0	1	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	
LO2	SQL Server Administration	1	1	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	
LO3	SQL Server Databases	1	2	<input type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects	

				<input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	
LO4	SQL Server Transact-SQL	1	1	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	
LO5	SQL Server Views, Stored Procedures, Triggers and Functions	2	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	
LO6	SQL Server Backup Recovery	2	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	
LO7	SQL Server Security and User Administration	2	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	
LO8	SQL Server High Availability	2	2	<input checked="" type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	

6. Assessment Criteria (Related to ILOs):

LO Code	LO	Intended Results	Assessment Type				
			Interactive Synchronized Collaboration	Practice	Exams	Presentations And Face-to-Face Assessments	Reports
LO1	SQL Server Environment and Tools	•		X			
LO2	SQL Server Administration	•	X	X	X		X
LO3	SQL Server Databases	•	X	X	X		X
LO4	SQL Server Trasact-SQL	•	X	X	X		X
LO5	SQL Server Views, Stored Procedures, Triggers and Functions	•	X	X	X		X
LO6	SQL Server Backup Recovery	•	X	X	X		X
LO7	SQL Server Security and User Administration	•	X	X	X		X
LO8	SQL Server High Availability	•	X	X	X		X

7. Course Syllabus (18 hours of total synchronized sessions):

LO	Chapter No	Chapter	Content
LO1	1	SQL Server Environment and Tools	<ul style="list-style-type: none"> <input type="checkbox"/> SQL Server Environment <input type="checkbox"/> SQL Server Tools <ul style="list-style-type: none"> ● SQL Server Engine ● SQL Server Administration and Management Tools <ul style="list-style-type: none"> ■ SQL Server Management Studio (SSMS) ■ SQL Server Configuration Manager ■ SQL Server Agent ■ SQL Server Profiler ● Replication ● Database Mirroring ● Full-Text Search ● SQL Server Integration Services (SSIS) ● SQL Server Analysis Services (SSAS) ● SQL Server Reporting Services (SSRS) ● SQL Server Service Broker
LO2	2	SQL Server Administration	<ul style="list-style-type: none"> <input type="checkbox"/> System Administrator Responsibilities <input type="checkbox"/> System Databases <input type="checkbox"/> System Tables <input type="checkbox"/> System Views <input type="checkbox"/> System Stored Procedures
LO2	3	Installing SQL Server 2014	<ul style="list-style-type: none"> <input type="checkbox"/> Installation Requirements <input type="checkbox"/> Hardware requirements <input type="checkbox"/> Software requirements <input type="checkbox"/> Installation steps
LO3	4	Create Databases and Tables	<ul style="list-style-type: none"> <input type="checkbox"/> Databases <ul style="list-style-type: none"> ● Create new database ● Data files, file groups, Log files and partitions ● Database options

			<ul style="list-style-type: none"> ● Managing databases □ Tables <ul style="list-style-type: none"> ● Create Tables ● Defining columns and Data types ● Define constraints ● Drop tables ● Using Partitioned Tables ● Temp Tables
LO3	5	Indexes and Data integrity	<ul style="list-style-type: none"> □ Indexes <ul style="list-style-type: none"> ● Types of Indexes <ul style="list-style-type: none"> ■ Clustered Indexes ■ Nonclustered Indexes ● Create Indexes ● Manage Indexes ● Drop Indexes ● Indexes on Views ● Columnstore index □ Data Integrity <ul style="list-style-type: none"> ● Types of Data Integrity <ul style="list-style-type: none"> ■ Domain Integrity ■ Entity Integrity ■ Referential Integrity ● Enforcing Data Integrity <ul style="list-style-type: none"> ■ Implementing Declarative Data Integrity ■ Implementing Procedural Data Integrity ● Using Constraints <ul style="list-style-type: none"> ■ The PRIMARY KEY Constraint ■ The UNIQUE Constraint ■ The FOREIGN KEY Referential Integrity Constraint ■ The CHECK Constraint ■ Creating Constraints ■ Managing Constraints

LO4	6	Transact-SQL	<input type="checkbox"/> Introduction <input type="checkbox"/> DML: Select, Insert, Update, Delete <input type="checkbox"/> Functions <input type="checkbox"/> Control-of-Flow Language <input type="checkbox"/> Cursors
LO5	7	Database Objects 1	<input type="checkbox"/> Views <input type="checkbox"/> Stored Procedures <input type="checkbox"/> User Defined Functions
LO5	8	Database Objects 2	<input type="checkbox"/> Triggers <input type="checkbox"/> Sequence Numbers <input type="checkbox"/> Synonyms
LO6	9	Backup and Restore 1	<input type="checkbox"/> Introduction <input type="checkbox"/> Developing a Backup and Restore Strategy <input type="checkbox"/> Recovery Models <input type="checkbox"/> Types of Backups <input type="checkbox"/> Backup Devices <input type="checkbox"/> Backing Up a Database <input type="checkbox"/> Backing Up the Transaction Log
LO6	10	Backup and Restore 2	<input type="checkbox"/> Backup Scenarios <input type="checkbox"/> Restoring Databases and Transaction Logs <input type="checkbox"/> Restore Scenarios <input type="checkbox"/> Additional Backup Considerations
LO7	11	Security 1	<input type="checkbox"/> An Overview of SQL Server Security <input type="checkbox"/> Authentication Methods <input type="checkbox"/> Managing Principals <input type="checkbox"/> Managing Securables <input type="checkbox"/> Managing Permissions
LO7	12	Security 2	<input type="checkbox"/> Managing SQL Server Logins <input type="checkbox"/> Managing SQL Server Users <input type="checkbox"/> Managing Database Roles <input type="checkbox"/> Managing server roles <input type="checkbox"/> Managing SQL Server Permissions

			<input type="checkbox"/> The Execution Context
LO8	13	High Availability	<input type="checkbox"/> Introduction <input type="checkbox"/> SQL Server Failover Cluster <input type="checkbox"/> Database mirroring <input type="checkbox"/> AlwaysOn Availability Groups <input type="checkbox"/> Log shipping <input type="checkbox"/> Replication <input type="checkbox"/> Designing a High Availability Strategy

8. Practice Tools:

Tool Name	Description
Moodle	
Virtual Class	
SQL Server Management Studio	The main administration tool of SQL Server

9. References

1. SQL Server 2014 Unleashed
2. SQL Server Books Online
3. SQL Server Internals