Course Description
CTS1437 | Microsoft SQL Administration | 4.00 credits
This is an introductory database administration course for students majoring in Internet Services, Database Technology Microsoft Database Administrator (DBA), Computer Programming and Analysis, and for students preparing for Microsoft DBA certification exams. Students will learn to install, administer, and optimize an enterprise-level database system, and how to use SQL to define databases, tables, stored procedures, and constraints. Recommended Preparation: CGS1540 or CGS1541.

Course Competencies:
Competency 1: The student will demonstrate an understanding of Installing and Configuring SQL Server 2008 by:
1. Install SQL Server 2008 and related services
2. Configure SQL Server instances
3. Configure SQL Server services
4. Configure additional SQL Server components
5. Implement database mail
6. Configure full-text indexing

Competency 2: The student will demonstrate an understanding of maintaining SQL Server Instances by:
1. Manage SQL Server Agent jobs
2. Manage SQL Server Agent alerts
3. Manage SQL Server Agent operators
4. Implement the declarative management framework (DMF)
5. Back up a SQL Server environment

Competency 3: The student will demonstrate an understanding of Managing SQL Server Security by:
1. Manage logins and server roles
2. Manage users and database roles
3. Manage SQL Server instance permissions
4. Manage database permissions
5. Manage schema permissions and object permissions
6. Audit SQL Server instances
7. Manage transparent data encryption
8. Configure surface area

Competency 4: The student will demonstrate an understanding of Maintaining a SQL Server Database by:
1. Back up databases
2. Restore databases
3. Manage and configure databases
4. Manage database snapshots
5. Maintain database integrity
6. Maintain a database by using maintenance plans

Competency 5: The student will demonstrate an understanding of Performing Data Management Tasks by:
1. Import and export data
2. Manage data partitions
3. Implement data compression
4. Maintain indexes
5. Manage collations

Competency 6: The student will demonstrate an understanding of Monitoring and Troubleshooting SQL Server by:

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1. Identifying SQL Server service problems
2. Identifying concurrency problems
3. Identifying SQL Agent job execution problems
4. Locate error information

Competency 7: The student will demonstrate an understanding of Optimizing SQL Server Performance by:
1. Implementing Resource Governor
2. Use the Database Engine Tuning Advisor
3. Collecting trace data by using SQL Server Profiler
4. Collecting performance data by using Dynamic Management Views (DMVs)
5. Collecting performance data by using System Monitor
6. Use Performance Studio

Competency 8: The student will implement high availability by:
1. Implement database mirroring
2. Implement a SQL Server clustered instance
3. Implement log shipping
4. Implement replication

Learning Outcomes:
- Solve problems using critical and creative thinking and scientific reasoning
- Formulate strategies to locate, evaluate, and apply information
- Demonstrate an appreciation for aesthetics and creative activities