



**DEPAUL UNIVERSITY**

**COLLEGE OF COMPUTING AND DIGITAL MEDIA**

*Institute for Professional Development*

## **SQL SERVER DATABASE ADMINISTRATION PROGRAM**

*An eleven-week in-depth program covering database administration using Microsoft SQL Server® 2008*

DePaul University's SQL Server Database Administration Program is designed to provide an intensive and comprehensive introduction to all essential aspects of Microsoft SQL Server technologies. The program focuses on teaching IT professionals the knowledge for implementing and maintaining a database with the tools and utilities available in SQL Server. It will also explore security, database high availability and performance issues, as well as data integration.

Classroom lectures and demonstrations will be complemented by reading, assignments, and hands-on exercises. In addition, students will be provided with a copy of Microsoft SQL Server 2008 for installation on their personal computers.

### **YOU WILL LEARN ABOUT:**

- SQL Server architecture
- Installation and configuration
- Managing databases and files
- Creating and managing database objects
- SQL Server Management Studio
- Security
- Integration services
- Spatial data
- Backup and recovery
- Database high availability
- Performance and tuning

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# SQL SERVER DATABASE ADMINISTRATION PROGRAM

Microsoft's SQL Server is a comprehensive relational database providing enterprise-class data management along with superior tools in analysis, reporting, integration, and notification. The SQL Server 2008 database engine provides secure, reliable storage for both relational and structured data, enabling one to build and manage highly-available, scalable data applications for line-of-business and analytical applications.

SQL Server's close integration with Microsoft Visual Studio, Microsoft Office products, and a suite of new development tools—including the Business Intelligence Development Studio—sets it apart from its competitors. The latest edition of SQL Server provides an end-to-end development environment that includes many new technologies that empower developers and significantly increase their productivity.

Harnessing the data explosion to better understand the past and get direction for the future has turned out to be one of the biggest challenges for enterprise information technology departments in global organizations. SQL Server's Integration Services has the ability to transform corporate data into meaningful and actionable information, one of the single most important competitive advantages in today's business world.

The goal of the SQL Server Database Administration Program is to give the IT professional the knowledge to implement and maintain a SQL Server database and to provide understanding of the capabilities and uses of its services. The ideal participant will have a solid programming background and knowledge of relational database concepts. Students in the program are expected to do a considerable amount of work outside of class. The instructor will be accessible in person and through electronic mail.

## CURRICULUM

The following topics are covered in the program. Each unit involves reading and assignments. All work can be done with the software provided.

## YOUR LEARNING ENVIRONMENT

Program overview. Software provided to students.

## SQL SERVER BASICS AND ARCHITECTURE

SQL Server overview. SQL Server architecture components. SQL Server editions and services. Microsoft SQL Server DBA certification.

## INSTALLING SQL SERVER 2008

Planning, preparation, installation, configuration, and post installation verification.

## MANAGING DATABASES AND FILES

Creating and managing databases. Creating and managing Filegroups. Viewing metadata.

## CREATING DATA TYPES AND TABLES

Creating data types and various database objects, including new features: compression, partition, FILESTREAM.

## CREATING AND TUNING INDEXES

Planning, creating, and optimizing Indexes.

## SQL SERVER INTEGRATION SERVICES (SSIS)

Overview of data transfer and transformation. Describe the main features of SSIS. Using SQL Server Integration Services to create SSIS packages. Deploying and managing SSIS Packages.

## SPATIAL DATA

How spatial data is structured, stored, indexed, retrieved, and displayed in SQL Server.

## AUTOMATING ADMINISTRATIVE TASKS

Configuring the SQL Server Agent. Creating jobs, operators, and alerts. Managing multiple servers.

**SECURITY**

Overview of SQL Server security. Creating and managing users. Granting and revoking privileges. Database encryption and auditing.

**BACKUP AND RECOVERY**

Describe types of failures. Review different recovery models. Planning a backup and recovery strategy. Backing up and restoring user and system databases. Recovering data from database Snapshots. Disaster recovery and business continuity.

**DATABASE HIGH AVAILABILITY**

Introduction to high availability. Cluster, database mirroring, replication, and log shipping implementation. Best practices on each technical solution.

**PERFORMANCE AND TUNING**

Causes for performance problems. Monitor database performance with System Monitor and SQL Server Profiler . Implement Event Notifications. Various tuning techniques.

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**GENERAL INFORMATION****ADMISSION**

Applicants must have a solid programming background (at least two years of professional software development experience is required) as well as knowledge of relational database concepts.

A substantial commitment of time is required for this intensive course of study. Final admission will be determined by the admissions committee on the basis of an applicant's overall qualifications, including work history and educational background.

**FACILITIES**

To promote the learning process, the Institute maintains special-purpose laboratories as well as dedicated classrooms equipped with state-of-the-art audio/visual equipment.

In addition, the college's unique Course OnLine (COL) technology allows students to replay classes over the Internet. COL captures and replays five components of the classroom experience—audio, video, PC screen, whiteboard, and document camera input—and incorporates them into one interface to provide an innovative rebroadcast system.

**SCHEDULE**

The Institute offers one section of the program each quarter. Classes meet on Monday evenings and in the morning on approximately half of the Saturdays in the program.

**FACULTY**

The program will be taught by a faculty member from the College of Computing and Digital Media and experts from industry. Faculty will be available throughout the program both in person and through electronic mail.

## **COLLEGE OF COMPUTING AND DIGITAL MEDIA**

The college, through its School of Computing and its School of Cinema and Interactive Media, offers a variety of programs at the undergraduate and graduate levels. Over 1,000 students are enrolled in the college's bachelor's programs and over 2,000 students are enrolled in the master's and Ph.D. programs making the college's graduate program one of the largest in the country. The college offers more than 200 courses each quarter, many in the evening, in several locations: the Loop Campus, the Lincoln Park Campus, the O'Hare Campus, the Naperville Campus, and the Rolling Meadows Campus. Many of the degree programs are also available exclusively online.

Current offerings at the undergraduate level include:

### *School of Computing*

Computer Games Development  
Computer Graphics and Motion Technology  
Computer Science  
Computing  
Information Assurance and Security Engineering  
Information Systems  
Information Technology  
Interactive Media  
Math and Computer Science  
Network Technology

### *School of Cinema and Interactive Media*

Animation  
Computer Games Development  
Computer Graphics and Motion Technology  
Digital Cinema  
Interactive Media

Current offerings at the graduate level include:

### *School of Computing*

Applied Technology  
Business Information Technology  
Computer Graphics and Motion Technology  
Computational Finance  
JD/MS in Computer Science Technology  
JD/MS in Computer Science Technology  
Computer Information and Network Security  
E-Commerce Technology  
Human-Computer Interaction  
Information Systems  
Information Technology  
Instructional Technology Systems  
IT Project Management  
Software Engineering  
Telecommunications Systems

### *School of Cinema and Interactive Media*

Computer Games Development  
Computer Graphics and Motion Technology  
Digital Cinema – MS  
Digital Cinema – MFA  
Human-Computer Interaction

## **INSTITUTE FOR PROFESSIONAL DEVELOPMENT**

The Institute for Professional Development was formed by the college in 1984 to assist both individuals and businesses in keeping pace with the rapid development of computer technologies. The Institute currently offers a variety of intensive certificate programs in these areas:

- Advanced SQL
- IT Project Management
- Java™ Developer
- Java™ EE Developer (formerly J2EE Developer)
- Java™ Web Services
- Lightweight Java™ Web Development
- .NET Developer
- Ruby on Rails™
- SharePoint® Developer Program
- SQL Server® Business Intelligence
- SQL Server® Database Administration
- Web Development with Python®

## **APPLICATION PROCEDURE:**

Complete the enclosed application and return it with a non-refundable \$40.00 application fee (check or money order made payable to DEPAUL UNIVERSITY) to:

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