

# Database

## Certificate Program Overview

### Database Administrator

A Database Administrator designs, builds, and manages effective database systems. This field is projected to be one of the fastest growing occupations over the next six years. This certificate program prepares students to perform maintenance tasks, such as back up and restore a database, integrate data from various sources, troubleshoot problems, implement security, ensure database availability and performance, and coordinate activities with network and Web administrators.

#### REQUIRED COURSES

190 hours total

Structured Query Language: (SQL) Level 1	21 hours
Database Design	9 hours
Beginning SQL Server	18 hours
Structured Query Language: (T-SQL) Level 2	18 hours
T-SQL Programming	33 hours
SQL Server Administration (Advanced)	28 hours
SQL Server Security	20 hours
PowerShell	8 hours
SQL Server Optimization and Performance Tuning	30 hours
Database Administrator Certificate Capstone	5 hours

### Database Business Intelligence Developer

A Database Business Intelligence (BI) Developer organizes a company's operational data into formats that can be queried using BI developer tools. The resulting reports show trends and patterns that can help a company make better business decisions. The Database Business Intelligence Developer Certificate Program prepares students to design and create data warehouses and OLAP cubes, use BI developer tools to query data, use MDX to query OLAP cubes, and create reports based on queries you create.

#### REQUIRED COURSES

208 hours total

Structured Query Language: (SQL) Level 1	21 hours
Database Design	9 hours
Beginning SQL Server	18 hours
Structured Query Language: (T-SQL) Level 2	18 hours
T-SQL Programming	33 hours
SQL Server Analysis Services (SSAS)	40 hours
SQL Server Integration Services (SSIS)	24 hours
SQL Server Reporting Services (SSRS)	36 hours
Database Business Intelligence Developer Certificate Capstone	9 hours

#### FOR MORE INFORMATION:

- Get full course and schedule information at [www.gotobcc.com/ce/database](http://www.gotobcc.com/ce/database)
- Attend a free Database Certificate information session. Call (425) 564-2263 for dates
- Questions about the program? Contact Professional Programs at (425) 564-4005

## CONTINUING EDUCATION

### Database Certificate Programs

Job-ready skills taught by database professionals



[www.gotobcc.com/ce/database](http://www.gotobcc.com/ce/database)

Register by phone at (425) 564-2263  
or online at [www.gotobcc.com](http://www.gotobcc.com)

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## REQUIRED COURSES

### Beginning SQL Server

Perform a core set of job-related tasks, with a focus on the tools of SQL Server Management Studio (SSMS).

Topics: automatically generate queries for most actions that can be accomplished using the tools in SSMS; setup a remote connection; manage security permissions; monitor transactions and transaction locking; create and move a database; control the operation of services in SQL Server; and, create, schedule and monitor jobs. Prerequisite: Structured Query Language: (SQL) Level 1 or equivalent.

### Database Certificate Capstone

The final capstone project for each certificate utilizes all the skills learned throughout each of the classes in the Database Certificate programs. This individualized project will form a central part of your professional portfolio, and will require time outside of class in development. Prerequisites: Completion of all required courses.

### Database Design

Whether you create new databases or redesign existing ones, your familiarity with the principles of database design will help you design to ensure data integrity. Topics: choose the best names for tables and fields, assign primary keys, set up relationships, and implement normalization rules and field key attributes. Classroom exercises will help you to actively master the content, with practice opportunities, discussions, and skill checks, where you design a database from scratch and redesign an existing database. Prerequisite: Basic computer skills and working knowledge of Windows. Recommended: Experience with a database product.

### PowerShell

Windows PowerShell is a utility that greatly extends the scripting capabilities of Windows. Built on the .NET Framework, PowerShell is both a language and an interface for administering Windows. If you manage a Windows system, PowerShell will make it easier to automate much of your work. Topics: create and debug PowerShell scripts and manage files, services, and the registry. Prerequisite: Experience with the Windows environment and Basic Programming Essentials or equivalent.

### SQL Server Administration (Advanced)

The course is designed to quickly provide you with the tools to keep your SQL databases accessible and healthy. Starting with installation tips and guidelines, the class guides you through the recommended best practices for SQL Server maintenance, data management tasks, index strategies, system monitoring, and troubleshooting. Prerequisites: Beginning SQL Server and Structured Query Language: (T-SQL) Level 2 or equivalent.

### SQL Server Analysis Services (SSAS)

Using SSAS and the Business Intelligence (BI) tools, this class covers how to develop multi-dimensional cubes, KPIs, MDX queries, DMX queries, and data mining models. Topics: Star and Snowflake schema designs, dimensional attributes, hierarchies, measures, measure groups, and cube administration, creating a data warehouse, creating ETL processes to load measure and dimensional tables with SSIS, and creating cube driven reports with Excel and SSRS. Prerequisites: Database Design and Structured Query Language: (T-SQL) Level 2 or equivalent.

### SQL Server Integration Services (SSIS)

This course addresses the technical skills required to Extract, Transform, and Load (ETL) data using SQL Server Integration Services. Topics include: how to create, edit, deploy, schedule, and manage Integration Services packages; configuring control flow, data flow, and event handling tasks within an Integration Services package; and implementing logging and error-handling during package execution. Prerequisites: Structured Query Language: (SQL) Level 1 and Beginning SQL Server or equivalent.

### SQL Server Optimization and Performance Tuning

As a database grows, its performance can erode unless it is actively managed. Minimize the risk of performance problems when creating a database, and detect emerging problems before they create an impact for users. Practice effective troubleshooting techniques for resolving chronic performance problems. Topics: how to setup, monitor, tune, and maintain databases to ensure performance. Prerequisites: Beginning SQL Server and Structured Query Language: (T-SQL) Level 2 or equivalent.

### SQL Server Reporting Services (SSRS)

This course is designed to teach the advanced functionality, report server administration, and security issues of SQL Server Reporting Services. Topics: advanced report design, integrating parameters and filters, implementing interactive reporting features, scheduling automated delivery of reports, securing Reporting Services, optimizing report performance, implementing strategies for business and support systems, and rendering reports using .NET code. Prerequisite: T-SQL Programming or equivalent.

### SQL Server Security

Learn how the security system works within SQL Server. Students will apply permissions ranging from individual items up to entire servers. Learn how to combine individual and role based permissions to determine effective permissions to databases and database objects. Topics: logins, users, roles, authentication modes, permissions, securables, and linked servers. Prerequisite: Beginning SQL Server or equivalent.

### Structured Query Language: (SQL) Level 1

Create queries using a standard structured query language (SQL) that is applicable to almost any relational database. Students will get hands-on practice creating queries to retrieve data in various forms including filtered, calculated, grouped and aggregated, sorted, and consolidated from multiple data sources. Students will also get practice writing queries to manipulate data in a table; and create, alter, and drop tables and views. Prerequisite: Familiarity with a relational database product or equivalent.

### Structured Query Language: (T-SQL) Level 2

In this intermediate SQL course, students will create queries using transact structured query language (T-SQL) commands that are used with SQL Server databases. Students will get hands-on practice creating queries to merge data between tables, track data changes on tables, rank data, and compare tables. Students will also join data from subqueries and table-valued functions, perform recursive queries with hierarchical data, use common table expressions in place of complex joins, query Excel data, and transfer XML data between a SQL Server table and an outside file. Prerequisites: Structured Query Language: (SQL) Level 1 or equivalent. Recommended: Beginning SQL Server.

### T-SQL Programming

This course covers Microsoft's SQL Server database programming techniques using Transact-SQL programming constructs, with an emphasis on stored procedures and scripts. This course also involves writing SQL scripts of increasing complexity. Topics: creating and implementing functions using T-SQL and SQL CLR; views, triggers, and transactions; how to protect your data with constraints; and structured error handling. Prerequisites: Structured Query Language: (SQL) Level 1 and Structured Query Language: (T-SQL) Level 2 or equivalent.

## ATTEND A FREE INFORMATION SESSION

Meet with faculty for an overview of the program, the courses that best meet your career goals, and how to get started.

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Find out more at [www.gotobcc.com/ce/database](http://www.gotobcc.com/ce/database)

# Database Certificate Programs

Job-ready skills taught by database professionals



## Real world skills. Experienced instructors. Flexible schedule.

- Curriculum developed and taught by industry professionals
- 30% of class time is hands-on lab work
- Evening and weekend classes are tailored to working professionals

The Database Certificate Programs were designed with the input of industry professionals to target the skills employers value most. Database experts currently working in the field teach the classes. You can start any time you like and complete at your own pace, taking as few as one to two classes a week. Each program can be completed in as few as 18 months or as long as three years.