Bright Star Institute

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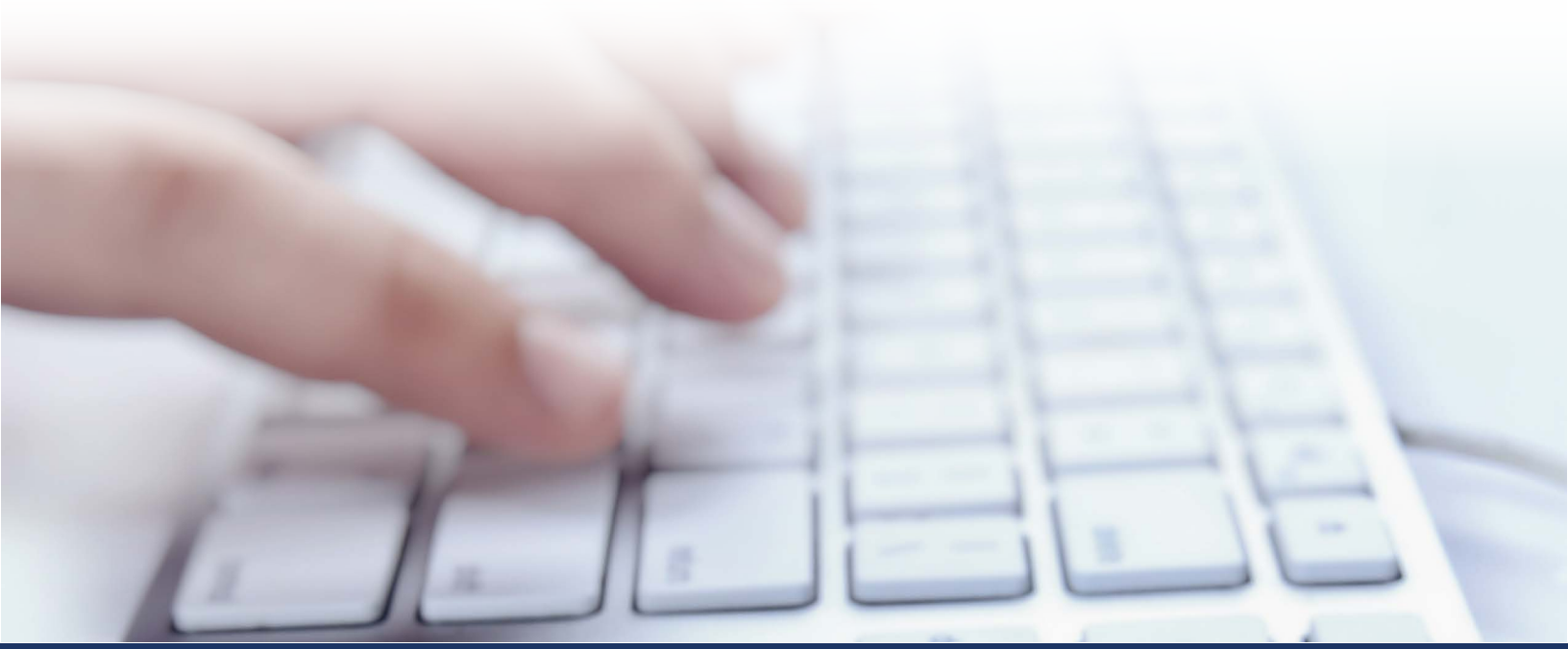
Data Analyst / SQL Server Business Intelligence Certificate

Online, self-paced training that is focused on giving you the skills needed to stand out.

Online learning gives you the flexibility to plan study time around the rest of your day. Our programs combine video, hands-on lab exercises and one-on-one facilitation to enable you to learn as your schedule allows.

Labs are performed via remote access to a dedicated lab machine (unless a student requests to utilize their own equipment). Our unique commitment to student success includes a personal instructor to assure that your courses are completed on time and with full understanding of both the lecture content and the lab exercises.

Course Advisors are available at 302.335.8868 to answer any questions you may have.



Data Analyst / SQL Server Business Intelligence Certificate Overview

4-course program: $4,500

The Data Analyst / SQL Server Business Intelligence Certificate Program includes coverage of relational database fundamentals, SQL programming, Reporting Services (SSRS), Integration Services (SSIS), Analysis Services (SSAS), and Power BI.

The Data Analyst / SQL Server Business Intelligence Certificate Program provides a solid understanding of relational database design concepts, coding and utilizing SQL queries and database management tools. It includes comprehensive coverage of SQL syntax including complex queries, as well as creating and using stored procedures, functions, views and triggers. In the SQL Business Intelligence courses, you will learn how to deploy and manage Reporting Services, create and customize reports including Table, Matrix, Parameterized and Linked reports. You'll be introduced to the design and use of data warehouses and the use of SSIS to import/export data. The thorough introduction to SSAS includes creation of data cubes to support business analytics, and syntax for extracting information including the use of MDX to develop Multidimensional models. Students will learn to use Microsoft's Power BI suite of products to import, analyze, and visualize business data, and to share business intelligence.

Program Highlights:

- Designing normalized table structures for relational databases
- Creating databases and tables
- Writing SQL queries
- Using subqueries
- Using triggers and stored procedures
- Programming features of T-SQL
- Creating, deploying and configuring SQL Server Reporting Services
- Rendering reports as Excel, Word or PDF files
- Adding charts and gauges to reports
- Using Report Builder to create reports
- Using SSIS to create import/export routines between SQL Servers and many other data sources
- Designing and building data warehouses
- Creating cubes using SSAS
- Implementing data mining algorithms against cubes to support predictive and trending analysis
- Shaping, transforming, and combining data from diverse sources to create useful reports in Power BI

Required Courses:

Course Name	Duration
Microsoft Transact-SQL Programming	90 Hours
SQL Server 2019 Reporting Services	60 Hours
SQL Server 2019 Business Intelligence: Integration Services and Analysis Services	90 hours
Analyzing and Presenting Data with Power BI	90 hours

Optional Course (No additional charge):

Course Name	Duration
Analyzing Data Using DAX and M Power Query	40 Hours

Required Courses

Microsoft Transact-SQL Programming

Duration: 90 hours

Prerequisites: General Computer Knowledge.

Course Description: This Transact-SQL programming course teaches students relational database fundamentals and SQL programming skills in the Microsoft SQL Server environment. Topics covered include relational database architecture, database design techniques, and simple and complex query skills. The course also covers Microsoft-specific T-SQL programming constructs, creation and use of stored procedures and user-defined functions, use of cursors and updateable views.

This class is intended for analysts, developers, designers, administrators, and managers new to the SQL programming language. Upon completion, participants will understand SQL functions, join techniques, database objects and constraints, and will be able to write useful stored procedures and views as well as complex queries and updates. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Students Will Learn:

- Introduction to Relational Databases and SQL
- Designing Relational Databases
- Creating Databases and Tables
- Working with Records
- JOIN Statements
- Advanced SELECT Statements
- Understanding Subqueries
- SQL Procedural Programming
- Views and Triggers
- Database Security and Transactions
- Introduction to Transact-SQL Programming
- Working with Data Types and Functions
- SQL Server System Settings and Functions
- More with DML Statements
- More about Stored Procedures and Views
- Introduction to Cursors
- User-defined Functions
- Manipulating XML

SQL Server 2019 Reporting Services

Duration: 60 hours

Prerequisites: Familiarity with database concepts, Windows desktop navigation and software installation techniques. Prior attendance of the **SQL Programming** course or **Microsoft Transact-SQL Programming** course is highly recommended although not required.

Course Description: This course introduces Microsoft's SQL Server Reporting Services 2019 (SSRS) utility. All reports are developed utilizing SQL Server Data Tools (SSDT), however Report Designer will also be introduced. Students will complete hands-on exercises creating a number of reports including table-based, cross tabular and forms based designs. Reports utilizing charts, gauges, KPIs, data bars, spark lines and tree maps will be built. Exercises will incorporate the use of report parameters and features such as drill down, interactive sorting, hyperlinks, book marks and report maps.

Data from relational, multi-dimensional and tabular data sources will be incorporated into report designs. Students will become familiar with report deployment to the Reporting Service Web Portal and learn how to use the portal management tools to configure report caches, snapshots and subscriptions. Instruction and practice in designing report security to ensure protection of enterprise data will be provided.

Students will gain experience with the new Report Services Web portal, which enables publishing content other than paginated reports, such as Excel and Power BI visualizations. Students will also learn how to include KPIs (Key Performance Indicators) directly from shared data sets.

Students Will Learn:

- Installing and configuring SSRS
- Designing reports using SQL Server Data Tools (SSDT)
- Creating multi-dimensional, two-dimensional and tabular data sources and sets
- Using the Tablix object to display information in Tables, Matrix (pivot tables) and free form Lists
- Using visualization objects to create Charts, Spark Lines, Data Bars and Tree Maps
- Adding images, page headers and footers and report metadata
- Including report parameterization enabling filtering by users
- Configuring report interactivity, including drill-downs, report maps and book marks
- Linking to parameterized child reports via hyperlinks or sub-reports
- Creating calculated fields and custom report formatting

SQL Server 2019 Business Intelligence: Integration Services and Analysis Services

Duration: 90 hours

Prerequisites: Familiarity with database concepts, Windows desktop navigation and software installation techniques. Prior attendance of the **SQL Programming** course or **Microsoft Transact-SQL Programming** course is highly recommended although not required.

Course Description: SQL Server 2019 provides a rich environment for business intelligence development. The focus of this course is to familiarize developers with the SQL Server Engine and the use of SQL Server Integration Services (SSIS) and SQL Server Analysis Services (SSAS) for Business Intelligence purposes. Students will create and populate data warehouses through ETL processing, and will build Multidimensional and Tabular models which will be used as data sources for reports.

Students will learn how to design and build data warehouses and marts using SQL Server Management Studio. In a series of exercises, students develop SSIS packages designed to maintain a data warehouse using the Data Flow control flow task. Also demonstrated are other control flow tasks that can interact with an NTFS file system, FTP server, execute Win32 processes, send emails, and run .NET scripts.

Based on the populated data warehouse they have created, students will then learn how to develop both Multidimensional and Tabular SSAS models using the languages Multidimensional Expressions (MDX) and Data Analysis Expressions (DAX). Cubes will be customized to include Key Performance Indicators (KPIs), Calculated Members, Named Sets, Navigational Hierarchies, and Perspectives.

Students Will Learn:

- Structure and function of a data warehouse or data mart
- Data warehouse design to support enterprise reporting
- The role of SSIS within the business intelligence framework
- Developing SSIS Extract Transform Load (ETL) processes to populate data warehouses
- Functionality of all SSIS Control Flow tasks
- Deploying SSIS projects to SSIS Catalogs
- Configuring SSIS environments, runtime variables and parameters
- BI Semantic Model
- Multidimensional Expressions (MDX) syntax
- Developing SSAS Multidimensional models
- Data Analysis Expressions (DAX)
- Developing SSAS Tabular models
- Deploying and securing Multidimensional and Tabular models
- Implementing SSAS Data Mining models for predictive analysis

Analyzing and Presenting Data with Power BI

Duration: 90 hours

Prerequisites: Familiarity with database concepts and experience with spreadsheet software such as Microsoft Excel. Basic familiarity with relational databases as well as data warehousing is helpful but not required.

Course Description: This course provides a robust and in-depth introduction to Microsoft's Power BI suite of products. Students will learn to use the Power BI Desktop and Power BI online service to import, analyze, and visualize business data, and to share business intelligence.

The course starts with an exploration of the evolution of relational databases, data warehouse and business intelligence. Afterwards, students learn to do tasks such as importing and combining data from diverse data sources, shaping and transforming data, modeling data, developing useful and insightful visualizations, creating and sharing reports and dashboards in the Power BI service, and collaborating in the Power BI service. As the course nears its end, there is also an introduction to Data Analysis Expressions (DAX).

Students Will Learn:

- The fundamentals and evolution of business analysis processes and tools
- The roles, tasks and tools involved in self-service business analysis
- How to connect to and import data from numerous diverse sources into the Power BI Desktop and service
- When to directly query data sources and when to import data
- How to shape, transform, and combine data from diverse sources to create useful reports
- Using the Power Query Editor
- Which visualizations are best suited for various types of analysis
- How to create, organize and format visualizations that evoke insight and deliver optimal impact
- How to use and develop data models and related tools to combine datasets for analysis
- How to modify relationships, cardinality, and cross filter direction to maximize the efficacy of analysis
- Publishing to the Power BI service
- Create and manipulating dashboards, reports and apps in the Power BI service
- Refreshing datasets, reports and dashboards in the Power BI Desktop and service
- Sharing reports, dashboards, workbooks and datasets in the Power BI service
- Creating hierarchical drilldown reports
- Collaborating in the Power BI service

Optional Course

Analyzing Data using DAX and M Power Query

Duration: 40 hours

Prerequisites: Familiarity with database concepts, and prior completion of the **Analyzing and Presenting Data with Power BI** course.

Course Description: This course is an extension of the **Analyzing and Presenting Data with Power BI** course, and focuses on using DAX and M Power Query to increase the flexibility and data analytics capababilities of Power BI reports.

Students will learn beginner and intermediate techniques for adding calculations to their Power BI Data models using DAX. Our hands-on labs provide practical exercises that cover some of the common data modelling problems that users face, and how DAX can be used to solve those. Students will experience the flattening out of an OLTP database into a star schema by using DAX, will learn how to resolve common granularity issues with data models, and will also study how Measures can be used to solve advanced calculation problems that languages like SQL are unable to tackle.
Students will later learn about the M language that Power Query uses behind its graphical user interface, and how writing M directly can enable advanced queries against the data-sources that populate a model with its data.

Students Will Learn:

- Using DAX to add new Calculations to an existing data model
- Simulating a Star data Schema from an OLTP source with DAX
- Fixing Data Granularity issues with DAX Calculations
- Providing Row Level security using Row Filters in DAX
- Performing Transformations while loading data with Power Query and M
- Using M language to write more powerful queries than the standard Power Query user interface allows