



COURSE SYLLABUS

COURSE TITLE:	55108BC Discovering the Power of Excel 2010-2013 PowerPivot Data Analytic Expressions (DAX)
FORMAT:	Instructor-Led
CERTIFICATION EXAMS:	None

This course syllabus should be used to determine whether the course is appropriate for the students, based on their current skills and technical training needs. Course content, prices, and availability are subject to change without notice.

ELEMENTS OF THIS SYLLABUS ARE SUBJECT TO CHANGE.

ABOUT THE COURSE

This course is intended to expose you to PowerPivot Data Analytic Expressions (DAX) concepts such as the Data Model and evaluation context, DAX functions, operators, and constants. This release adds a module on the Data Model, an introduction to patterns, and has lab versions for both Excel 2010 and 2013.

AUDIENCE

This course is intended for Power Users, Business Intelligence Developers, and IT Professionals that will be involved with the development of Excel PowerPivot queries and tabular modeling.

AT COURSE COMPLETION

After completing this course, students will be able to:

- ▶ Understand the differences between Excel 2010 & 2013.
- ▶ Understand and activate the PowerPivot for Excel Add-in.
- ▶ Understand the PowerPivot Data Model.
- ▶ Understand VLOOKUP vs relationships.
- ▶ Understand relationships.
- ▶ Explain and utilize DAX syntax.
- ▶ Explain and utilize DAX data types and operator overloading.
- ▶ Explain and utilize DAX operators.
- ▶ Explain and utilize DAX values.
- ▶ Explain error handling.
- ▶ Explain and utilize mathematical functions.
- ▶ Explain statistical functions.
- ▶ Explain and utilize logical functions.
- ▶ Explain information functions.
- ▶ Explain text functions.
- ▶ Explain and utilize conversion functions.
- ▶ Explain and utilize aggregation functions.
- ▶ Explain and utilize relational functions.
- ▶ Explain and utilize the CALCULATE function.
- ▶ Explain and utilize filter functions.
- ▶ Explain and utilize single table evaluation context.
- ▶ Explain and utilize multiple table evaluation context.
- ▶ Create and configure calculated fields.
- ▶ Create and configure calculated columns.



- ▶ Explain and utilize date functions.
- ▶ Explain working with calendars.
- ▶ Explain using multiple calendars.
- ▶ Create and configure date calculations.
- ▶ Explain many-to-many relationships.
- ▶ Explain banding.
- ▶ Explain EVALUATE.
- ▶ Explain and utilize advanced DAX capabilities.
- ▶ Explain the benefits of DAX Studio.
- ▶ Explain and utilize patterns.

PREREQUISITES

Before attending this course, students must have:

- ▶ Experience with Excel and Microsoft SQL query writing is helpful.

ADDITIONAL READING

To help you prepare for this class, review the following resources:

- ▶ None

MODULE 1: COURSE OVERVIEW

This module explains how the class will be structured and introduces course materials and additional administrative information.

Lessons

- ▶ Introduction
- ▶ Course Materials
- ▶ Facilities
- ▶ Prerequisites
- ▶ What We'll Be Discussing

Lab 1: COURSE OVERVIEW

- ▶ None

After completing this module, students will be able to:

- ▶ Successfully log into their virtual machine.
- ▶ Have a full understanding of what the course intends to cover.

MODULE 2: EXPLORING DATA MODELING

In this module, we will explore the differences between versions of Excel, examine how to activate the PowerPivot for Excel Add-in, explain the PowerPivot Data Model, and cover relationships.

Lessons

- ▶ Differences Between Excel 2010 & 2013
- ▶ PowerPivot for Excel Add-in
- ▶ PowerPivot Data Model
- ▶ VLOOKUP vs Relationships
- ▶ Relationships

Lab 1: EXPLORING DATA MODELING

- ▶ None

After completing this module, students will be able to:

- ▶ Understand the differences between Excel 2010 & 2013.
- ▶ Understand and activate the PowerPivot for Excel Add-in.
- ▶ Understand the PowerPivot Data Model.
- ▶ Understand VLOOKUP vs relationships.



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- ▶ Understand relationships.

MODULE 3: INTRODUCTION TO DAX

In this module we will introduce DAX and explain the syntax. We will then explore the different parts that make up a DAX formula, demonstrate how they work, and cover errors that you may encounter along the way. This module aims to get you started with the basics.

Lessons

- ▶ Introduction to DAX
- ▶ Explaining Syntax
- ▶ Exploring Data Types
- ▶ Utilizing Operators
- ▶ Understanding Values
- ▶ Handling Errors

Lab 1: INTRODUCTION TO DAX

- ▶ DAX Syntax
- ▶ DAX Data Types and Operator Overloading
- ▶ DAX Operators
- ▶ DAX Values

After completing this module, students will be able to:

- ▶ Explain and utilize DAX syntax.
- ▶ Explain and utilize DAX data types and operator overloading.
- ▶ Explain and utilize DAX operators.
- ▶ Explain and utilize DAX values.
- ▶ Explain error handling.

MODULE 4: USING DAX FUNCTIONS

In this module we will cover DAX functions and their abilities. We will demonstrate their capabilities as well as show you how to utilize them.

Lessons

- ▶ Mathematical Functions
- ▶ Statistical Functions
- ▶ Logical Functions
- ▶ Information Functions
- ▶ Text Functions
- ▶ Conversion Functions
- ▶ Aggregation Functions
- ▶ Relational Functions

Lab 1: USING DAX FUNCTIONS

- ▶ Mathematical Functions
- ▶ Logical Functions
- ▶ Conversion Functions
- ▶ Aggregation Functions
- ▶ Relational Functions

After completing this module, students will be able to:

- ▶ Explain and utilize mathematical functions.
- ▶ Explain statistical functions.
- ▶ Explain and utilize logical functions.
- ▶ Explain information functions.
- ▶ Explain text functions.
- ▶ Explain and utilize conversion functions.



- ▶ Explain and utilize aggregation functions.
- ▶ Explain and utilize relational functions.

MODULE 5: UNDERSTANDING EVALUATION CONTEXTS

This module aims to clarify more advanced DAX concepts, which require an understanding of evaluation contexts.

Lessons

- ▶ The CALCULATE Function
- ▶ Filter Functions
- ▶ Single Table Evaluation Context
- ▶ Multiple Table Evaluation Context

Lab 1: UNDERSTANDING EVALUATION CONTEXTS

- ▶ Calculated Fields
- ▶ Calculated Columns
- ▶ Evaluation Contexts

After completing this module, students will be able to:

- ▶ Explain and utilize the CALCULATE function.
- ▶ Explain and utilize filter functions.
- ▶ Explain and utilize single table evaluation context.
- ▶ Explain and utilize multiple table evaluation context.
- ▶ Create and configure calculated fields.
- ▶ Create and configure calculated columns.

MODULE 6: WORKING WITH DATES

In this module we will explore how to work with dates and utilize Time Intelligence.

Lessons

- ▶ Date Functions
- ▶ Working with Calendars
- ▶ Using Multiple Calendars

Lab 1: WORKING WITH DATES

- ▶ Date Calculations

After completing this module, students will be able to:

- ▶ Explain and utilize date functions.
- ▶ Explain working with calendars.
- ▶ Explain using multiple calendars.
- ▶ Create and configure date calculations.

MODULE 7: UTILIZING ADVANCED DAX FUNCTIONALITY

In this module we will cover many-to-many relationships and demonstrate their use along with exploring banding and DAX query capabilities.

Lessons

- ▶ Many-to-Many Relationships
- ▶ Banding
- ▶ EVALUATE
- ▶ Simplifying Your Life with DAX Studio

Lab 1: UTILIZING ADVANCED DAX FUNCTIONALITY

- ▶ Advanced DAX

After completing this module, students will be able to:

- ▶ Explain many-to-many relationships.
- ▶ Explain banding.



- ▶ Explain EVALUATE.
- ▶ Explain and utilize advanced DAX capabilities.
- ▶ Explain the benefits of DAX Studio.

MODULE 8: EXAMINING PATTERNS

In this module, we have attempted to go into a more in-depth explanation of how the code works.

Lessons

- ▶ Walkthrough a Basic Pattern

Lab 1: EXAMINING PATTERNS

- ▶ Explore the workbook New and Returning Customers Basic Pattern – Modified for 55108

After completing this module, students will be able to:

- ▶ Explain and utilize patterns.

