

Data Analysis i & Advanced Business Intelligence with Automation, AI, and Intelligent Assistants

Module 1: Introduction to Data Analysis and Intelligent Automation

- **Understanding the “Power Excel” Workflow and Automation Integration**
- **Introduction to Power Query and Power Pivot**
- **When to Use Power Query & Power Pivot for Automation**
- **Leveraging AI Features in Excel for Data Insights**

Module 2: Connecting, Transforming, and Automating Data with Power Query

- **Introduction**
- **Getting to Know Power Query**
- **Exploring Excel's Power Query Editor and Automation Tools**
- **Power Query Data Loading Options and Automation Scripts**
- **IMPORTANT: Updating Locale Settings for Consistent Automation**
- **Applying Basic Table Transformations with Power Query**
- **Power Query Demo: Text Tools**
- **Power Query Demo: Number & Value Tools**
- **Power Query Demo: Date & Time Tools**
- **PRO TIP: Creating a Rolling Calendar with Power Query and Automation**
- **Power Query Demo: Generating Index & Conditional Columns**
- **Power Query Demo: Grouping & Aggregating Records**
- **Power Query Demo: Pivoting & Unpivoting Data**
- **Modifying Excel Workbook Queries for Automation**
- **Merging Queries with Power Query**
- **Appending Queries with Power Query**
- **Power Query Demo: Connecting to a Folder of Files**
- **Excel Power Query Best Practices and Automation Tips**

Module 3: Building Table Relationships with Excel Data Model and AI Integration

- **Introduction**
- **Meet "Data Model"**
- **The Data Model Data vs. Diagram View**
- **Principles of Database Normalization**
- **Understanding Data Tables vs. Lookup Tables**
- **Benefits of Relationships vs. Merged Tables**
- **Creating Table Relationships in Excel's Data Model with AI Insights**
- **Modifying Data Model Table Relationships**
- **Managing Active vs. Inactive Table Relationships**
- **Understanding Relationship Cardinality**
- **Connecting Multiple Data Tables in the Data Model**
- **Understanding Filter Flow with AI-Driven Recommendations**
- **Hiding Fields from Excel Client Tools**
- **Defining Hierarchies in a Data Model**
- **Excel Data Model Best Practices and AI Integration**

Module 4: Creating Dynamic Dashboards with Power Pivot and AI-Enhanced Visualization

- **Creating Dashboards with Power Pivot**
- **Designing Dashboards for Automated Reporting**
- **Using Relational Data for Intelligent Dashboards**
- **Incorporating AI-Driven Insights in Dashboard Design**
- **Slicers and Timelines**
- **Conditional Timelines and Automation Features**
- **Filter & Sorting with AI Recommendations**
- **Data Validation with AI Tools**

- **Designing Dashboard Layouts for Automation and User Engagement**

Module 5: Capstone Project - Automating Insights and AI Integration

- **Capstone Project Based on Dataset**
- **Applying Automation Techniques and AI Insights to Your Project**

Module 6: Enhancing Productivity with AI Assistants: ChatGPT and Copilot

- **Introduction to AI Assistants: ChatGPT and Microsoft Copilot**
- **Using ChatGPT for Data Analysis and Insights**
 - **Example:** How ChatGPT can assist in generating summaries and explanations for complex data sets.
- **Integrating Microsoft Copilot with Excel**
 - **Example:** Using Copilot to automate repetitive tasks and enhance Excel functionalities.
- **Leveraging AI Assistants for Enhanced Data Visualizations**
 - **Example:** How AI tools can suggest and create advanced charts and graphs based on data trends.
- **Improving Efficiency with AI-Driven Automation**
 - **Example:** Streamlining data processing tasks using ChatGPT and Copilot integration.
- **Best Practices for Working with AI Assistants in Excel**
 - **Example:** Tips for effectively combining AI tools with Excel's built-in features for maximum productivity.