

TDWI Data Visualization Fundamentals

Course Outline

Module 1 - Data Visualization Concepts

- Data Visualization Today
 - Data Visualization Roles
 - Data Visualization Uses
 - Communicating with Visuals
 - Visualization and Stories
- Data and Visualization
 - Finding the Right Data
 - Data Content
 - Categorical and Aggregate Data
- Data Visualization Components
 - The Parts of Data Visuals
- Visual Cues
 - Placement
 - Lines
 - Shapes
 - Color
 - Human Perception
- Coordinate Systems
 - Cartesian Coordinates
 - Polar Coordinates
 - Geographic Coordinates
- Measurement Scales
 - Linear and Logarithmic Scales
 - Ratio and Interval Scales
 - Ordinal and Nominal Scales
 - Percent Scales
 - Time Scales
- Visual Context
 - Explicit and Implicit Context

Module 2 - Fundamentals of Visualization

- Data Visualization Methods
 - How We Visualize
 - Tables
 - Plots
 - Maps
 - Infographics
 - Specialty Graphs
- Data Visualization Standards
 - Good Design
 - Chart Anatomy
 - Chart Junk
 - Color

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- Size and Scale
- Integrity
- Two-Dimensional Versus Three-Dimensional
- Data-Ink Ratio
- Data Richness
- Encoding and Cues
- Legibility
- Visualization with Purpose
 - What Do You Want to Show?
 - Comparisons
 - Proportions
 - Relationships
 - Patterns
- Data Visualization Development
 - Purpose
 - Message
 - People
 - Data Properties
 - Questions and Iteration
 - Visual Method Choice
 - Test

Module 3 – Data Visualization Techniques

- Visualization Techniques
 - What We Visualize
- Visualizing Comparisons
 - Comparison Data
 - Dimensions
 - Outliers
 - Visual Data Methods for Comparison
 - Examples
- Visualizing Proportions
 - Proportion Data
 - Parts to a Whole
 - Proportions over Time
 - Visual Methods for Proportions
 - Examples
- Visualizing Relationships
 - Relationship Data
 - Correlation
 - Distribution
 - Spatial Relationships
 - Visual Methods for Relationships
 - Examples
- Visualizing Patterns

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- Pattern Data
- Points in Time
- Continuous Data
- Visual Methods for Patterns
- Examples

Module 4 - Visualization and Business Intelligence

- Visualization and BI
 - Supporting BI
- Analytics
 - From Exploration to Models
 - From Questions to Answers
- Visual Reporting
 - Dashboards, Scorecards, and Reports
 - Promoting Interaction
 - Animation
- Infographics
 - Visual Design plus Graphic Design
 - Simple Graphs Versus Infographics
 - Design
 - Team and Process
- Data Storytelling
 - Statistics Versus Stories
 - Visual with Narrative

Module 5 - Tools and Resources

- Data Visualization Tools
 - A Technology Overview
- Best Practices in Visualization
 - Advice from the Master