

# TDWI Predictive Analytics Fundamentals

## Course Outline

### Module 1 - Predictive Analytics Concepts

- What and Why of Predictive Analytics
  - Predictive Analytics Defined
  - Business Value of Predictive Analytics
- The Foundation for Predictive Analytics
  - Statistical Foundation
  - Data Mining Foundation
  - Machine Learning Foundation
  - Data Science Foundation
  - Describing Data Science
  - The Changing Landscape of Data Sources
- Predictive Analytics in BI Programs
  - Predictive Analytics in the BI Stack
  - Predictive Analytics in the BI Roadmap
  - Business, Technical, and Data Dependencies
- Becoming Analytics Driven
  - Business Driven
  - Grass Roots Driven
- Common Applications for Predictive Analytics
  - What Business Needs to Predict
- The Language of Predictive Analytics
  - Making Sense of the Terminology

### Module 2 - Models and Statistics

- Predictive Models
  - What Are Models?
  - Using Models
  - Categories of Models
  - Model Development
  - Contributing Communities
- Descriptive Statistics
  - Variables
  - Frequencies and Summaries
  - Distribution and Skew
  - Relationships
  - Dependent and Independent Variables
- Inferential Statistics
  - Modeling the Population
- Probability
  - Estimating Likelihood
  - Calculating Probability
  - Calculating Odds

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- Logit Transformation
- Probability Distribution Models
- Probability Distribution Examples

### Module 3 - Regression Model Examples

- Regression Models
  - Overview
- Linear Regression Models
  - Overview
  - Example Business Case
  - Example Model
- Logistic Regression Models
  - Overview
  - Example Business Case
  - Steps for Creating the Model
  - Example Model
  - Predictors and Classifiers
  - Classifier Example

### Module 4 - Building Predictive Models

- Model Building Processes
  - Data Mining Projects
  - CRISP-DM
  - SEMMA
  - CRISP-DM and SEMMA Compared
- Implementation and Operations Teams
  - A Team Effort
  - Roles and Responsibilities
- Predictive Techniques
  - Probability Values
  - Classification and Clustering
  - Segmentation
  - Association
  - Sequencing
  - Forecasting
- Technology
  - Features and Functions Overview
  - The Tools Landscape
- Model Building Algorithms
  - What and Why
  - Some Examples

### Module 5 - Implementing Predictive Capabilities

- Introductory Concepts

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- Distribution View
- Model Types View
- Process View
- Process Overview
- Business Understanding
  - Activities and Deliverables
  - Pragmatics
- Data Understanding
  - Activities and Deliverables
  - Pragmatics
- Data Preparation
  - Activities and Deliverables
  - Pragmatics
- Modeling
  - Activities and Deliverables
  - Pragmatics
- Evaluation
  - Activities and Deliverables
  - Pragmatics
- Deployment
  - Activities and Deliverables
  - Pragmatics

### Module 6 - Human Factors in Predictive Analytics

- Analytics Culture
  - Executive Buy-In
  - Strategic Positioning
  - Enterprise Range and Reach
  - Decision Processes
- People and Predictive Analytics
  - The Team
  - The Range of People
  - The Range of Knowledge
  - Readiness
  - Trust and Motivation
  - Expectations and Intent
  - Getting from Analytics to Impact
- Ethics and Predictive Analytics
  - Why Ethics Matters
  - Data and Ethics

### Module 7 - Getting Started with Predictive Analytics

- Predictive Analytics Readiness
  - Readiness Checklist
  - Executive Commitment

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- Organizational Buy-In
- Data Assets
- Human Assets
- Technology Assets
- Predictive Analytics Roadmap
  - A Plan to Evolve
  - An Evolving Plan