



# ***Analytics Fundamentals***

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### **Module 0. About the Course (6 min)**

### **Module 1. The Analytics Landscape (29 min)**

- Overview
- *Analytics Defined*
  - What is Analytics?
  - What isn't Analytics?
- *Two Kinds of Analytics*
  - Data Analytics
  - Business Analytics
  - From Data Analytics to Business Analytics
- *The Language of Analytics*
  - Abundance of Analytics Terminology
  - Measures and Metrics
  - Analysts and Scientists Part 1 & 2
  - Big Data Analytics
  - Data Management
  - Streams and Events
  - Analytic Modeling
  - Applied Analytics
  - Advanced Analytics
- Summary

### **Module 2. Introduction to Business Analytics (49 mins)**

- Overview
- *What is Business Analytics*
- *Why Business Analytics Part 1 & 2*
- *Example: Business Analytics Value*
- *Strategic Positioning of Business Analytics Part 1-5*
- *Industry Use Cases*
  - Retail
  - Manufacturing
  - Healthcare
  - Financial Services
  - Energy
  - Insurance
- *Business Function Use Cases*
  - Marketing
  - Sales
  - Inventory
  - Workforce
  - Risk
  - Customer Care
- Summary

### **Module 3a. Introduction to Data Analytics, Part 1 (73 mins)**

- Overview
- *What and Why*
  - What is Data Analytics?



## BA-01: Analytics Fundamentals

- What Approaches are Used?
- Why Data Analytics is Important
- Understanding Data
- Business Impact of Data
- *Definitions and Context*
  - Data, Information, Knowledge
  - Business Uses
  - Categories of Data
  - Data Structure
  - Data Sources
  - Organizational Perspectives
  - Processes
  - Data Platforms
- *Data Sources*
  - Landscape of Sources
  - Characteristics of Data
  - Challenges and Opportunities
- *Data Management*
  - Defining Data as an Asset
  - Measuring and Managing Key Properties of Data
  - Research, Locate & Acquire Data
  - Cleanse and Integrate
  - Provision and Protect
  - Prepare and Utilize
  - Maintain and Retain

### **Module 3b. Introduction to Data Analytics, Part 2 (57 mins)**

- *Data Discovery*
  - Relationships and Patterns
  - Metadata
  - Framing a Statistical Problem
  - Basic Statistics
  - Basic Probability
  - From Statistics to Probabilities
  - Statistics Vs. Probabilities
  - Random Variables
  - Common Distributions
  - Impact of Distribution Shape
  - Drawing Inference
  - Testing a Hypothesis
  - Statistical Testing
- *Data Analysis*
  - Analytics Models
  - Model Categories Part 1-3
  - Purpose of Models Part 1-4
- *Summary*

### **Module 4. Analytics Capabilities – Doing the Work (33 mins)**

- *Overview*
- *Describing Capabilities*



## BA-01: Analytics Fundamentals

- Defining a Capability
- Anatomy of a Capability
- Capability Framework
- Analytics Layer
- *The Analytics Layer*
  - Analytics Layer
  - Discovery Capabilities
  - Descriptive Capabilities
  - Diagnostic Capabilities
  - Predictive Capabilities
  - Prescriptive Capabilities
- *Summary*

### **Module 5. Analytic Techniques (58 mins)**

- *Overview*
- *Techniques*
  - Used for Discovery
  - Used for Descriptive
  - Used for Diagnostic
  - Used for Predictive
  - Used for Prescriptive
  - Word of Caution
- *Examples Overview*
- *Linear Regression Example*
  - Description
  - The Data Set
  - Developing a Model
  - Implementing the Model
- *Logistic Regression Example*
  - Description
  - The Data Set
  - Developing a Model
  - Implementing the Model
- *Decision Tree Example*
  - Description
  - The Data Set
  - Developing a Model
  - Implementing the Model
- *Summary*

### **Module 6. Analytics Processes (42 mins)**

- *Overview*
- *Oversight Process*
  - Architecture
  - Architecture -Analytics Environment
  - Architecture -Data Management
  - Architecture -Data Pipelines
  - Architecture -Data Services
  - Architecture -Analysis and Action
  - Architecture -Infrastructure and Technology



## BA-01: Analytics Fundamentals

- Road Mapping -Business Needs
- Road Mapping -Analytics and Data
- Road Mapping -Projects and People
- Road Mapping -Technology
- Road Mapping -Planning and Execution
- Governance -Why Govern?
- Governance -Today's Challenges
- Governance -Planning and Execution
- Governance -The Right Balance
- *Development Process*
  - Exploratory Analytics
  - Problem-Driven Analytics
  - Analytics Projects and Teams
- *Delivery Process*
  - Reporting
  - Scorecards
  - Dashboards
  - Data Visualization
  - Data Storytelling
- *Organizations and Processes*
  - Roles and Responsibilities
  - Organizational Structures
- *Summary*
- *Course Summary*