

**Module One: Concepts of Analytics**

Analytics Defined

- From Data to Insight

Data Analytics and Business Analytics

- Variations of Purpose
- Variations of Skills

Why Analytics?

- Cause and Effect
- Strategy and Analytics
- Tactics and Analytics
- Operations and Analytics
- Systemic Analytics

Analytics Processes

- Problem Framing
- Problem Modeling
- Solution Modeling
- Visualization and Presentation
- Understanding and Action

Analytics Foundations

- Data
- Statistics
- Visualization
- Business Impact

**Module Two: The Analytics Environment**

Analytics Stakeholders

- The Participants

Analytic Culture

- Values, Beliefs, and Competencies

Analytics Organizations

- Organization Models
- Analytics and Governance

Analytics Capabilities

- Business Capabilities
- Analysis Capabilities
- Data Capabilities
- A Capability-Based Framework

**Module Three: Analytics Architecture**

The Big Picture

- Architecture Overview

Data Architecture

- Data Sources and Types
- Acquiring and Storing Data

- Managing Data
- Making Data Useful
- Using Data

#### Process Architecture

- Next Generation BI
- Data Analysis
- Discovery and Prediction
- Text and Language Analysis
- People and Behaviors
- Real-Time Analytics
- Events and Data Streams
- Smart Machines

#### Technology Architecture

- Connectivity
- Data Stores
- Processing
- Management
- Platforms

### **Module Four: Analytic Modeling**

#### The Roles of Models

- Why Model?

#### Kinds of Models

- Framing Models
- Cause-Effect Models
- Data Models
- Language Models
- Solution Models

#### Problem Modeling

- Framing the Problem
- Influence Diagramming
- Causal Modeling

#### Solution Modeling

- Formula Based Modeling
- Algorithm Based Modeling

### **Module Five: Applied Analytics**

#### Five Kinds of Analytics

- What We Do
- Analytics Purpose

#### Descriptive Analytics

- Definition and Description
- Use Cases

#### Diagnostic Analytics

- Definition and Description
- Use Cases

#### Discovery Analytics

- Definition and Description

- Use Cases

#### Predictive Analytics

- Definition and Description
- Use Cases

#### Prescriptive Analytics

- Definition and Description
- Use Cases

### **Module Six: Summary and Conclusion**

#### Summary of Key Points

- A Quick Review

#### References and Resources

- To Learn More

### **Appendix A**

#### Bibliography and References

- Books
- Other Resources

### **Appendix B**

#### Exercises