

## **Course Outline**

### **Module 1 – Big Data Basics**

- What Is Big Data?
  - Definitions
  - Characteristics (3 V's plus 2)
  - Types of Big Data
- Why Big Data Analytics – Extending Advanced Analytics Capabilities
- Big Data Use Cases
  - Customer Understanding and Targeting
  - Business Process Optimization
  - Healthcare Advances
  - Law Enforcement and Public Safety
  - Sports Performance Improvement
  - Public Transportation and Infrastructure Advances
- Why Big Data Now? – The Driving Forces
- Kinds of Big Data – Data Variety
- Sources of Big Data
  - Web and Social Media
  - Machine to Machine
  - Other Sources (Big Transaction Data, Biometrics, Human Generated Data, Publicly Available Data, Legacy Documents)
- Working with Big Data – The Big Picture

### **Module 2 – Big Data Processes**

- Business Case
  - Business Needs and Opportunities
  - Areas of Insight
  - Expected Outcomes
  - Business Value Projection
- Technical Case – Big Data Rationale
- Data Sourcing – Getting Big Data
- Data Preparation and Storage
  - Data Selection
  - Data Cleansing
  - Data Integration
  - Data Reduction
- Big Data Analytics
  - Problem Framing
  - Analytic Purpose
  - Analytic Modeling
  - Data Visualization
  - Consumption and Application

### **Module 3 – Big Data Architecture**

- The Role of Architecture
  - What and why
- Data Architecture
  - Data Storage
  - Data Access
  - Data Analysis
  - Data Consumption
- Process Architecture
  - Data Governance Processes
  - Data Integration and Quality
- Analytics Architecture
  - Machine Learning
  - Predictive Analytics
  - Prescriptive Analytics
  - Descriptive Analytics
  - Reporting
- Technology Architecture
  - Search and Visualization
  - Data Management and Data Access
  - Hadoop and NoSQL
- Big Data ... Big Architecture – Summary

#### **Module 4 – Big Data Technology**

- The Technology Landscape – Overview
- Infrastructure
  - Databases
  - Development and Deployment Environment
- Analytics – Data Analysis
- Data Sources – Big Data Providers
- The Core Technologies
  - MapReduce
  - Hadoop

#### **Module 5 – Getting Started with Big Data**

- Readiness Assessment – Check Your Position
- Planning and Preparation – Charting the Course
- Execution – Navigating the Course
- Post-Project Activities – At the Destination
- Best Practices – Lessons Learned
- Mistakes to Avoid – More Lessons Learned

#### **Module 6 – Summary and Conclusion**

- Summary of Key Points – A Quick Review
- References and Resources – To Learn More

