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

Module 4 – Big Data Technology

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