

## Making Data Science Pay

### Course Summary

#### Description

Data Science is a big deal. But if you were to ask a hundred people what Data Science is – and more importantly, to state its value – you'd probably get a hundred different answers. Data Science is too important to be so elusive. This course remedies that by defining the value and explaining the technology behind it. The purpose is to cut through the market buzz surrounding data science and boil it down to its practical concepts and applications.

Participants will learn the real-world usage and ROI of data science including why projects typically succeed or fail. The course simplifies the technology and the essential tasks of the data scientist. It peels away the complexities surrounding data science, boiling it down to its essence, presented in a style that all can understand.

This course is a non-biased, coherent, and often entertaining integration of facts and figures, explanations and real-world usage of data science — translating its technology into value, and its value into strategic competitive advantage.

Data Science is purported to have substantial organizational value. But the reality is that most people don't know how to realize that value. This course illuminates and clarifies data science's strategic potential.

Even companies that are early adopters of data science and have successfully shown isolated value with a project or two are challenged by issues related to a) integrating it into organizational processes and culture, and b) scaling initial successes into enterprise-wide strategic advantage.

This course gives a high-level, yet comprehensive overview of data science and associated analytics, and methodically addresses each of these issues from a strategic, value-focused perspective.

#### Objectives

After taking this course, students will be able to understand:

- A delineation of what's real and what's not – rhetoric vs. reality – of data science
- Real-world case studies – successes and failures
- A comprehensive understanding of organizational challenges and strategic rewards of data science initiatives
- A working understanding of Data Science tools and technology
- A firm grasp of the current reality and likely future of data science, advanced analytics and predictive modeling

#### Topics

- What is Data Science?
- What is the Organizational Value of Data Science?
- How is Data Science Different from Data Analytics
- What are the Risks of Data Science?
- What are Data Science Technologies? A Layman's View
- What are the Skills Needed for Data Science?
- How Do You Organize Data Science in Your Organization?
- The Future of Data Science and Advanced Analytics
- Picking through the Rhetoric to Define Your Organization's Data Science Reality

## Making Data Science Pay

### Course Summary (cont'd)

#### Audience

This course is designed for:

- Executives, directors and managers struggling to understand the reality, measure the value, overcome the challenges, and realize the rewards of data science.
- Business Intelligence leaders seeking the rationalization for data science initiatives
- Analytic professionals trying to understand the differences in data analysis and data science
- Data analysts, statisticians, engineers, and computer scientists who aspire to become data scientists
- The curious who are tired of being bombarded by the Data Science market buzz and frustrated at not understanding it sufficiently to make reasoned decisions about its use

#### Prerequisites

There are no prerequisites for this course.

#### Duration

One day  
9 PDUs

## Making Data Science Pay

### Course Outline

- I. What is Data Science?**
  - A. The Official Definition
  - B. The Unofficial Definition
  - C. Some Executives' Definitions
  - D. The "Real" Definition
  - E. A Strategic Definition
  - F. My Working Definition
- II. What is the Organizational Value of Data Science?**
  - A. Two High-Value Use Cases
  - B. Deriving Value from Analytics
  - C. Analytic Stages and ROI
  - D. The Relationship Between Data Science and High ROI Analytics
  - E. Top Three Sources of High ROI
- III. How is Data Science Different from Data Analytics**
  - A. A Short History of Analytics
  - B. Three Types of Analytics
    - 1. Descriptive Analytics
    - 2. Predictive Analytics
    - 3. Discovery
  - C. Data Science Analytic Methods, the Same but Different
    - 1. Statistics
    - 2. Data Mining
    - 3. Machine Learning
  - D. Comparison and Cautions of Data Science Analytics vs. Regular Analytics
- IV. What are the Risks of Data Science?**
  - A. Data Issues
  - B. The Truth about Social Media Data
  - C. People Issues
  - D. Technology Issues
  - E. The Top 5 Risks of Data Science
- V. What are Data Science Technologies? A Layman's View**
  - A. Data and Analytics Technology – Old Rules
  - B. Data and Analytics Technology – New Rules
  - C. Hadoop and Big Data Realities
  - D. Data Science Tools Realities
  - E. Total Cost of Ownership of Data Science
  - F. How to Decide: The Data Part
  - G. How to Decide: The Science Part
- VI. What are the Skills Needed for Data Science?**
  - A. Data Science Professionals
    - 1. Data Architect
    - 2. Data Engineer
    - 3. Data Scientist
    - 4. Subject Matter Expert
  - B. What Does a Data Scientist Do All Day?
    - 1. Data Scientist Fundamental Skills
    - 2. Characteristics of Data Scientists
- VII. How Do You Organize Data Science in Your Organization?**
  - A. Historic Data and Analytics Organization
  - B. Data Science Organizational Paradox
  - C. Five Types of Organizational Structures
- VIII. The Future of Data Science and Advanced Analytics**
  - A. From Rhetoric to Reality
  - B. Market Facts and Figures – Reality
  - C. Biggest Driver of Analytic Innovation
    - 1. Continually Improving Productivity and Profitability
    - 2. Predicting Problems Before They Happen Becomes the New Norm
    - 3. Changing Ever More Operational Models
  - D. What's Next in Data Science?
- IX. Picking Through the Rhetoric to Define Your Organization's Data Science Reality**
  - A. A High Level Data Science Plan
- X. Prologue**
  - A. My Top Rhetorics (and Associated Realities) Summarized