

Syllabus: Data Science Methods

By the end of this course, students will be able to:

1. Identify business cases for using data science and Big Data
2. Understand how to apply various powerful data science methods to business problems
3. Understand the requirements and pitfalls of working with each data science method

Assessment:

1. **Concept reviews:** these are comprised of short five question quizzes that cover the most important concepts and ideas in each lesson. They encourage holistic understanding and are multi-faceted question types (i.e. drag and drop, fill-in-the-blanks, matching, etc).

Materials provided:

1. Accompanying PDFs to use as reference materials
2. Printable guidelines that managers can fill out to assess how to apply data science methods in their business

Course Outline

1. **How to segment your data:** 38 min
 - a) What is data science?
 - b) Finding patterns in your data
 - c) Grouping your data
 - d) Targeting your customers

2. **How to find important features:** 39 min
 - a) Making product recommendations
 - b) Identifying important attributes
 - c) Measuring likelihood of events
 - d) Checking your models

3. **How to measure networks:** 30 min
 - a) Networks as a framework
 - b) Measuring networks
 - c) Measuring trust
 - d) Measuring connectedness

4. **How to understand your customers:** 28 min
 - a) Measuring associations
 - b) Turning the qualitative into quantitative
 - c) Measuring sentiment

5. **How to predict demand:** 28 min
 - a) Predicting customer demand
 - b) Using correlation
 - c) Using many variables to explain outcomes

6. **How to work with unusual data:** 32 min
 - a) Understanding non-linear relationships
 - b) Quantifying seasonality
 - c) Detecting outliers
 - d) Putting it all together

Total instructional time:

3 hrs, 15 min