# Core Curriculum

This section consists of all the lessons and projects you need to complete in order to receive your certificate.

- **7 PARTS**
- **9 PROJECTS**

### PART 1

## Problem Solving with Analytics

Learn a structured framework for solving problems with advanced analytics. Learn to select the most appropriate analytical methodology. Learn linear regression.

- Project: Predicting Diamond Prices
- Project: Predicting Catalog Demand

**Estimated time: 17 days**

### PART 2

## Data Wrangling

Understand the most common data types. Understand the various sources of data. Make adjustments to dirty data to prepare a dataset. Identify and adjust for outliers. Learn to write queries to extract and analyze data from a relational database.

- Project: Create an Analytical Dataset
- Project: Create Reports from a Database

**Estimated time: 27 days**

### PART 3

## Data Visualization

- Project: Visualize Movie Data

**Estimated time: 15 days**

## PART 4

## Classification Models

You will use classification models, such as logistic regression, decision tree, forest, and boosted, to make predictions of binary and non-binary outcomes.

- Project: Predicting Default Risk

**Estimated time: 13 days**

## PART 5

## A/B Testing

Understand the fundamentals of A/B testing, including experimental design, variable selection, and analyzing and interpreting results.

- Project: A/B Test a New Menu Launch

**Estimated time: 17 days**

## PART 6

## Time Series Forecasting

Understand trend, seasonal, and cyclical behavior of time series data. Use time series decomposition plots. Build ETS and ARIMA models.

- Project: Forecast Video Game Demand

**Estimated time: 16 days**

## PART 7

## Segmentation and Clustering

Understand the difference between localization, standardization, and segmentation. Scale data to prepare a dataset for cluster modeling. Use principal components analysis (PCA) to reduce the number of variables for cluster model. Build and apply a k-centroid cluster model. Visualize and communicate the results of a cluster model.

Then complete a capstone project combining techniques learned throughout the program.

- Project: Combining Predictive Techniques

**Estimated time: 20 days**