1) Python for Data Science: Fundamentals

- Programming in Python
- Variables and Data Types
- Lists and For Loops
- Conditional Statements
- Dictionaries and Frequency Tables
- Functions: Fundamentals
- Functions: Intermediate
- Project: Learn and Install Jupyter Notebook
- Guided Project: Profitable App Profiles for the App Store and Google Play Markets

2) Python for Data Science: Intermediate

- Cleaning and Preparing Data in Python
- Python Data Analysis Basics
- Object-Oriented Python
- Working with Dates and Times in Python
- Guided Project: Exploring Hacker News Posts

3) Pandas & NumPy Fundamentals

- Introduction to NumPy
- Boolean Indexing with NumPy
- Introduction to pandas
- Exploring Data with pandas: Fundamentals
- Exploring Data with pandas: Intermediate
- Data Cleaning Basics
- Guided Project: Exploring Ebay Car Sales Data

4) Exploratory Data Visualization

- Line Charts
- Multiple plots
- Bar Plots And Scatter Plots
- Histograms And Box Plots
- Guided Project: Visualizing Earnings Based On College Majors

5) Storytelling Through Data Visualization

- Improving Plot Aesthetics
- Color, Layout, and Annotations
- Guided Project: Visualizing The Gender Gap In College Degrees
- Conditional Plots

6) Data Cleaning and Analysis

- Data Aggregation
- Combining Data With Pandas
- Transforming Data With Pandas
- Working With Strings In Pandas
- Working With Missing And Duplicate Data

- Guided Project: Clean And Analyze Employee Exit Surveys

7) Data Cleaning in Python: Advanced

- Regular Expression Basics
- Advanced Regular Expressions
- List Comprehensions and Lambda Functions
- Working with Missing Data

8) Data Cleaning Project Walkthrough

- Data Cleaning Walkthrough
- Data Cleaning Walkthrough: Combining the Data
- Data Cleaning Walkthrough: Analyzing and Visualizing the Data
- Guided Project: Analyzing NYC High School Data
- Challenge: Cleaning Data
- Guided Project: Star Wars Survey

9) Elements of the Command Line

- Introduction to the Command Line
- The Filesystem
- Modifying the Filesystem
- Glob Patterns and Wildcards
- Users and Permissions

10) Text Processing in the Command Line

- Getting Help and Reading Documentation
- File Inspection
- Text Processing
- Redirection and Pipelines
- Standard Streams and File Descriptors

11) SQL Fundamentals

- Introduction to SQL
- Summary Statistics
- Group Summary Statistics
- Subqueries
- Guided Project: Analyzing CIA Factbook Data Using SQL

12) Intermediate SQL for Data Analysis

- Joining Data in SQL
- Intermediate Joins in SQL
- Building and Organizing Complex Queries
- Guided Project: Answering Business Questions using SQL
- Table Relations and Normalization
- Querying SQLite from Python

13) APIs and Web Scraping in Python

- Working with APIs
- Intermediate APIs
- Challenge: Working with the reddit API
- Web Scraping

14) Data Analysis in Business

- Fuzzy Language in Data Science
- Communicating Results
- Business Metrics
- Guided Project: Popular Data Science Questions

15) Statistics: Fundamentals

- Sampling
- Variables in Statistics
- Frequency Distributions
- Visualizing Frequency Distributions
- Comparing Frequency Distributions
- Guided Project: Investigating Fandango Movie Ratings

16) Statistics Intermediate: Averages & Variability

- The Mean
- The Weighted Mean and the Median
- The Mode
- Measures of Variability
- Z-scores
- Guided Project: Finding the Best Markets to Advertise In

17) Probability Fundamentals

- Estimating Probabilities
- Probability Rules
- Solving Complex Probability Problems
- Permutations and Combinations
- Guided Project: Mobile App for Lottery Addiction

18) Conditional Probability

- Conditional Probability: Fundamentals
- Conditional Probability: Intermediate
- Bayes Theorem
- The Naive Bayes Algorithm
- Guided Project: Building a Spam Filter with Naive Bayes

19) Hypothesis Testing: Fundamentals

- Significance Testing
- Chi-squared tests
- Multi category chi-squared tests
- Guided Project: Winning Jeopardy

20) Machine Learning Fundamentals

- Introduction to K-Nearest Neighbors
- Evaluating Model Performance
- Multivariate K-Nearest Neighbors
- Hyperparameter Optimization
- Cross Validation
- Guided Project: Predicting Car Prices

21) Calculus for Machine Learning

- Understanding Linear and Nonlinear Functions
- Understanding Limits
- Finding Extreme Points

22) Linear Algebra for Machine Learning

- Linear Systems
- Vectors
- Matrix Algebra
- Solution Sets

23) Linear Regression for Machine Learning

- The Linear Regression Model
- Feature Selection
- Gradient Descent
- Ordinary Least Squares
- Processing And Transforming Features
- Guided Project: Predicting House Sale Prices

24) Machine Learning in Python: Intermediate

- Logistic regression
- Introduction to evaluating binary classifiers
- Multiclass classification
- Overfitting
- Clustering basics
- K-means clustering
- Guided Project: Predicting the stock market

25) Decision Trees

- Introduction to Decision Trees
- Building a Decision Tree
- Applying Decision Trees
- Introduction to Random Forests
- Guided Project: Predicting Bike Rentals

26) Deep Learning: Fundamentals

- Representing Neural Networks
- Nonlinear Activation Functions

- Hidden Layers
- Guided Project: Building A Handwritten Digits Classifier

27) Machine Learning Project

- Machine Learning Project Walkthrough: Data Cleaning
- Machine Learning Project Walkthrough: Preparing the features
- Machine Learning Project Walkthrough: Making Predictions

28) Kaggle Fundamentals

- Getting Started with Kaggle
- Feature Preparation, Selection and Engineering
- Model Selection and Tuning
- Guided Project: Creating a Kaggle Workflow

29) Functions: Advanced

- Best Practices for Writing Functions
- Context Managers
- Introduction to Decorators
- Decorators: Advanced

30) Command Line: Intermediate

- Working with Programs
- Command Line Python Scripting
- Challenge: Working with the Command Line
- Working with Jupyter console
- Piping and redirecting output
- Challenge: Data Munging Using The Command Line
- Data Cleaning and Exploration Using Csvkit

31) Git & Version Control

- Introduction to Git
- Git Remotes
- Git Branches
- Merge Conflicts
- Project: Git Installation and GitHub Integration

32) Spark & Map-Reduce

- Introduction to Spark
- Project: Spark Installation and Jupyter Notebook Integration
- Transformations and Actions
- Challenge: Transforming Hamlet into a Data Set
- Spark DataFrames
- Spark SQL