| Week/Lecture | Topic | Required Reading and Assignment |
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| 1 | Data Pipeline and Python Language Basics | Required Readings Python for Everybody, Chapters 1, 2, 3, 5, and 8. |
| 2 | Booleans and Dictionaries | Required Readings Python for Everybody, Chapters 6, 7 and 10.  [Data Exploration: A Kaggle Walk-through](http://brettromero.com/wordpress/data-science-a-kaggle-walkthrough-understanding-the-data/) Understanding the data. |
| 3 | Exploring and Transforming Data for Structured Data | Required Readings Python for Everybody, Chapters 3, 4, and 9.  **Assignment**  Lab 1\*  **Quiz 1 will open** |
| 4 | Arrays, Functions, and Categorical Summarization | Required Readings Python for Everybody, Chapter 4.  [Cleaning the Data: A Kaggle Walk-through](http://brettromero.com/data-science-kaggle-walkthrough-cleaning-data/).  [Python NumPy Tutorial](http://cs231n.github.io/python-numpy-tutorial/) (Scroll down in the tutorial to see the part for NumPy.)  **Assignment**  Lab 2\* |
| 5 | Stacking and Unstacking Data | Required Readings [Wide and Narrow Data](https://en.wikipedia.org/wiki/Wide_and_narrow_data)  [The Wide and Long Data Format for Repeated Measures Data](http://www.theanalysisfactor.com/wide-and-long-data/)  [Data Science: A Kaggle Walkthrough – Transforming the Data](http://brettromero.com/data-science-kaggle-walkthrough-data-transformation-feature-extraction/)  **Assignment**  Homework 1\* |
| 6 | Semi-structured Data | Required Readings Python for Everybody: Chapter 12 and 13  [MDN Web Docs: HTML](https://developer.mozilla.org/en-US/docs/Web/HTML)  [W3Schools HTML Element Reference](https://www.w3schools.com/tags/)  [Dominos: Data-Driven Decision Making at the World’s Largest Pizza Delivery Chain](https://www.bernardmarr.com/default.asp?contentID=1264)  **Assignment**  Project Proposal\* |
| 7 | Mongo Database, JSON From RSS | Required Readings [NoSQL Databases: An Overview](https://www.thoughtworks.com/insights/blog/nosql-databases-overview)  [Pymongo—API Documentation](http://api.mongodb.com/python/current/api/)  [PyMongo Tutorial](http://api.mongodb.com/python/current/tutorial.html)  [JSON Encoder and Decoder](https://docs.python.org/3.4/library/json.html)  [XML vs. JSON.](https://www.cs.tufts.edu/comp/150IDS/final_papers/tstras01.1/FinalReport/FinalReport.html)​  **Assignment**  Lab 3\*  **Quiz 2 will open** |
| 8 | Processing Twitter and Facebook | Required Readings [Twitter Developer Documentation](https://developer.twitter.com/en/docs)  [Tweepy Python Tutorial](http://docs.tweepy.org/en/v3.5.0/getting_started.html)  [Tweepy Search API](http://docs.tweepy.org/en/v3.5.0/api.html)  [Mining Twitter Data With Python (Part 1: Collecting Data)](https://marcobonzanini.com/2015/03/02/mining-twitter-data-with-python-part-1/)  [Data Science: A Kaggle Walkthrough - Adding New Data](http://brettromero.com/data-science-kaggle-walkthrough-adding-new-data/)  **Assignment**  Homework 2\* |
| 9 | Unstructured Data | Required Readings Python for Everybody, Chapter 11.  [Regular Expression Documentation](https://docs.python.org/2/library/re.html)  [Data Science: A Kaggle Walkthrough – Creating a Model](http://brettromero.com/data-science-kaggle-walkthrough-creating-model/) |
| 10 | Network Structures | Required Readings [8 Ways to Help Your Tweets Go Viral](https://articles.bplans.com/8-ways-to-help-your-tweets-go-viral/)  [Python NetworkX Package Tutorial](https://networkx.github.io/documentation/stable/tutorial.html)  **Assignment**  Final Project Report\*  Final Project Presentations |
| 11 | Presentations | Final Project Presentations |