Lecture 1

Techniques
- Overview
- The Data Science Workflow
- Best Practices

Data Science Practice
- Introduction to Data Science
- Causal Analysis in Display Advertising

Homework
- Reading

Lecture 2

Techniques
- Machine Learning Primer

Data Science Practice
- Elements of a Time Series
- Time Series Forecasting 1/2

Homework
- Reading

Lecture 3

Techniques
- Decision Trees
- Random Forests

Data Science Practice
- Introduction to Weka

Homework
- Time Series Forecasting
- Install Weka

Lecture 4

Techniques
- Ensembles, Random Forests
- Clustering

Data Science Practice
- Evaluating Model Performance, Part I

Homework
- Reading

Lecture 5

Techniques
- Clustering review
- Hands on clustering
- Evaluating clusters

Data Science Practice
- Evaluating Model Performance, Part II
- Dealing with class imbalance

Homework
- Clustering

Lecture 6

Techniques
- Data Wrangling
- Support Vector Machines (SVMs)

Data Science Practice
- Kaggle

Homework
- Data Preparation

Lecture 7

Techniques
- Support Vector Machines, reviewed
- Data Wrangling, continued
- Feature selection

Data Science Practice
- How they won it

Homework
- Introduce course project
- How they won it…

Lecture 8

Techniques
- Attribute selection, creation – deep dive

Data Science Practice
- Ensemble Learning

Homework
- Feature selection

Lecture 9

Techniques
- A/B Testing, experiment culture, dealing with the HIPO
- Open topic, selection based on input in Lecture 8

Data Science Practice
- Creating Gold Data Sets

Homework
- Running experiments

Lecture 10

Techniques
- Neural Networks
- Deep Learning

Data Science Practice
- Hands on Ensembling