**Practical Data Science**

This course covers a wide range of lectures, concepts and practical coding sessions to grasp and have a solid understanding of Data Science.

**Week 1** - 6 hours

Lecture 1: **Introduction** - **Course Overview**

Lecture 2: **Python’s libraries for Data Science tasks, Git, GitHub**

**Week 2** - 6 hours

Practice: **Pandas**

Lecture 1: **Web Scraping, Regular Expressions, Data Reshaping, Data Cleanup, Pandas**

Lecture 2: **Exploratory Data Analysis (EDA)**

**Week 3** - 6 hours

Practice: **Scraping, Pandas, Python, and viz**

Lecture1: **Pandas, SQL**

Lecture 2: **Statistical Models**

**Week 4** - 6 hours

Practice: **Probability, Distribution, and Frequentist Statistics**

Lecture 1: **Story Telling and Effective Communication**

Lecture 2: **Bias and Regression**

**Week 5** - 6 hours

Practice: **Regression, Logistic Regression: in sklearn and statistical models**

Lecture 1: **More Regression**

Lecture 2: **Classification, k-Nearest Neighbors (k-NN), Cross-Validation (CV), Dimensionality Reduction, Principal Component Analysis (PCA), Multi Dimension Scaling**

**Week 6** - 6 hours

Practice: **Machine Learning 1**

Lecture 1: **Support Vector Machine (SVM), Evaluation**

Lecture 2: **Decision Trees (DT) and Random Forests (RF)**

**Week 7** - 6 hours

Practice: **Machine Learning 2 – first part**

Practice: **Machine Learning 2** – **second part**

Lecture 2: **Best Practices**

**Week 8** - 6 hours

Lecture 1: **Clustering**

Practice: **Text and Clustering**

Lecture 2: **Effective Presentations**

**Week 9** - 6 hours

Lecture 1: **Ensemble Methods**

Practice: **Ensemble Methods**

Lecture 2: **Best Practices, Recommendations and MapReduce**

Lecture 3: **MapReduce Combiners and Spark**

**Week 10** - 6 hours

Practice: **Vagrant and VirtualBox, AWS and Spark**

Lecture 1: **Bayes theorem and Bayesian Methods**

Lecture 2: **Bayesian Methods (Continued)**

**Week 11** - 6 hours

Practice: **Bayes**

Lecture 1: **Bayesian Methods (Continued), Text Data**

Lecture 2: **Interactive Visualisation (Tableau Public)**

**Week 12** - 6 hours

Lecture 1: **Experimental Design**

Lecture 2: **Deep Networks**

Lecture 3**: Final Projects**