# Data Science for Beginners

## Chapter 1: Introduction to Data Science and Statistical

1.1 Data Science Basics
1.2 Statistical Inference
1.3 Exploratory Data Analysis (EDA)
1.4 Random Variables and Distributions
1.5 Statistical Learning
1.6 Assessing Model Accuracy

## Chapter 2: Data Manipulation and IPython

2.1 IPython: Beyond Normal Python
2.2 Introduction to NumPy
2.3 Data Manipulation with Pandas
2.4 Hierarchical Indexing in Pandas
2.5 Combining Datasets in Pandas
2.6 Working with Time Series in Pandas

## Chapter 3: Model Building and Evaluation

3.1 Scikit-Learn Introduction
3.2 Hyperparameters and Model Validation
3.3 Feature Engineering
3.4 Naïve Bayes Classification
3.5 Linear Regression
3.6 Logistic Regression

## Chapter 4: Advanced Machine Learning Algorithms

4.1 Support Vector Machines (SVM)
4.2 Decision Trees and Random Forests
4.3 Principal Component Analysis (PCA)
4.4 Manifold Learning
4.5 k-Means Clustering

## Chapter 5: Data Visualization with Matplotlib

5.1 Introduction to Matplotlib
5.2 Visualizing Errors

5.3 Density and Contour Plots
5.4 Histograms and Binnings