

Day	Section	Topic	Objective
1	Analytic Essential	Statistics Refresher Overview	<ul style="list-style-type: none"> • Statistics For Data Science • Introduction to statistics • Central Tendency of Data (Mean/ Median/ Mode) • Understanding the various variable types • Spread of the data (Variance/ Standard Deviation) • Frequency Tables and Histograms
2	Analytic Essential	Statistics Refresher Overview	<ul style="list-style-type: none"> • Bernoulli Trials and Probability Mass Function • Introduction to Probability • Probabilities for Continuous Random Variables • Standardization and Normalization • Properties of the Normal Distribution • ANOVA • Using the Normal Curve for Calculations
3	Analytic Essential	Statistics Refresher Overview	<ul style="list-style-type: none"> • Confidence Interval and Margin of Error • Introduction to Hypothesis Testing • Understanding T tests, Chi Squared Tests • Correlation • Time Series
4	Machine Learning/Python	Basic Concepts	<ul style="list-style-type: none"> • Introduction to Machine Learning • Overview of Machine Learning/ Data Science • Common Terminology used in AI/ ML • Descriptive Analysis • Applications of Machine Learning • Introduction of Python • Python Operators •
5	Machine Learning/Python	Python ML libraries and basic steps in M/L	<ul style="list-style-type: none"> • Python Lists • Python Comprehensions • Python Tuples • Decision Making in Python • Understanding Conditional and Iterative Statements • Python Functions • Implementing Functions in Python
6	Machine Learning	Supervised Learning	<ul style="list-style-type: none"> • Introduction of classes • Understanding the concept of Standard Libraries • Pandas • Numpy • Matplotlib

7	Machine Learning	Regression	<ul style="list-style-type: none"> • Understanding dataframes and basic operations • Introduction to Predictive Modeling • Different type of variables • Pre-Processing of data • Types of Predictive Models • Stages of Predictive Modeling • Different between classification and regression • Variance and Bias
8	Machine Learning	Supervised Learning	<ul style="list-style-type: none"> • Linear Regression • Error Rate • Logistic Regression • Confusion Matrix • Accuracy • Precision and Recall •
9	Machine Learning	Supervised Learning	<ul style="list-style-type: none"> • Introduction to k-Nearest Neighbours • Building a kNN model • Determining value of k • k-Nearest Neighbours Implementation • Underfitting and Overfitting
10	Machine Learning	Supervised Learning	<ul style="list-style-type: none"> • Understanding Validation • Cross Validation • Hold-out Validation • k-fold Validation • Naïve Baiyes • Evaluation
11	Machine Learning	Supervised Learning	<ul style="list-style-type: none"> • Support Vector Machine • Evaluation • Decision Tree • Evaluation • Introduction to Neural Network
12	Machine Learning	Unsupervised	<ul style="list-style-type: none"> • K-Mean Clustering • Hierarchical Clustering • Principal Component Analysis • Feature extraction • Feature Reduction
13	Machine Learning	Ensembler	<ul style="list-style-type: none"> • Introduction to Ensemble Models • Basic Ensemble Models (Average, Median, Mode, Weighted Average and Rank Average) • Stacking and Blending • Bootstrap aggregating (bagging) • Bagging Meta Estimator • Random Forest

14	Machine Learning	Evaluation	<ul style="list-style-type: none">• Hyperparameter Tuning for random forest• Introduction to Boosting• P-Values• Evaluation of model• Interpretation of results• ROC curves• Market analysis
15	Machine Learning	Advanced Topics	<ul style="list-style-type: none">• Deep Learning• NLP• Keras libraries
16	Machine Learning	Project	<ul style="list-style-type: none">• Capstone Project