**Module 1: Data Science Overview**

**Topics**

1. Applications of Data Science/ Industries
2. Data Science Disciplines
3. Future Look of Data Science
4. Case Study Uber Offer Loans

**Module 2: Python Programming**

**Topics**

1. Python Overview -
2. Python Environment Setup -
3. Python Basic Syntax -
4. Python Comments -
5. Python Variables -
6. Python Data Types -
7. Python Operators –
8. Python Numbers -
9. Python Strings -
10. Python Lists -
11. Python Tuples -
12. Python Dictionary -
13. Python Decision Making -
14. Python Loops -
15. Python Date Time - &
16. Python Functions -
17. Python Modules -
18. Python Exceptions –

**Module 3: Introduction to Data Science and Machine Learning**

**Topics**

1. Python Libraries pandas NumPy SciPy matplotlib seaborn sklearn nltk beautiful soup Keras TensorFlow etc.
2. Data Science Pipeline
3. Data and Data Types
4. Data Pre-Processing Wrangling Munging
5. Explanatory Data Analysis Descriptive Statistics

**Module 4: Data Visualization**

**Topics**

1. Types of Plots Charts Graphs
2. Uni variate Bi variate Multi Variate Plots
3. Interpreting the plots and Drawing Conclusions
4. Other Libraries

**Module 5: Inferential Statistics Diagnostics Analysis**

**Topics**

1. Test of Hypothesis
2. One Sample Two Sample Paired and Analysis of Variance ANOVA etc
3. Understanding p values confidence levels Decision Making Conclusions

**Module 6: Introduction to Machine Learning**

**Topics**

1. Predictive Statistics Predictive Analysis
2. Machine Learning Use Case Applications
3. ML vs AI

**Module 7: Supervised Learning**

**Topics**

1. Regression Analysis
2. Classification Analysis
3. Model Selection SVM KNN DS RF Bayes etc
4. Cross Validation
5. Model Tuning
6. Model Testing Performance Interpretation Implementation Feedback

**Module 8: Unsupervised Learning**

**Topics**

1. Clustering
2. Recommender Systems

**Module 9: Natural Language Processing**

**Topics**

1. Scraping Acquisition Social Media
2. Tokenization
3. Stop Words
4. Punctuations and Symbols
5. Lemmatization and Stemming
6. Bag of Words and Word Cloud

**Module 10: Deep Learning**

**Topics**

1. Artificial Neural Networks
2. Convolutional Neural Networks
3. TensorFlow and Keras
4. Sequential and Dense
5. Training and Early Stopping
6. Results and Interpretation