

Data Science Course Modules

Course Overview

A Data Scientist is a professional uses data to solve complex problems, uncover trends, and help businesses make informed decisions. They work at the intersection of statistics, computer science, and domain expertise to extract meaningful insights from large and complex data sets. The learning experience along the way learns valuable skills that keep you one step ahead in your education and professional career. This course is developed to equip you with the most in-demand tools, techniques, and practical skills needed to analyze complex data, build predictive models, and drive data-driven decision-making in any industry.

Our learning journeys strike the ideal balance between academic theory and the hands-on intensity of a industry boot camp. We've blended these elements into a flexible training format that caters to different learning styles. While our courses won't prepare you for a Ph.D., they also won't require a three-month break from work. We provide just the right amount of theory and practical to help you recognize critical concepts and focus heavily on real-world skills you can apply directly on the job.

Prerequisites:

1. Basic proficiency in mathematics and familiarity with spreadsheets.
2. No prior programming experience required.

Course Modules

Module	Title	Topics
1.	Introduction to Data Science	<ul style="list-style-type: none">➤ Overview of data science➤ Applications and workflows➤ Case Studies
2.	Statistic for Data Science	<ul style="list-style-type: none">➤ Linear Algebra➤ Calculus basics➤ Probability and Statistics
3.	Programming language for Data Science	<ul style="list-style-type: none">➤ Python programming➤ Jupyter notebooks➤ Libraries: NumPy, pandas
4.	Preprocessing of information	<ul style="list-style-type: none">➤ Data cleaning➤ Missing values➤ Feature engineering
5.	Data Visualization	<ul style="list-style-type: none">➤ matplotlib, seaborn, yellow bricks Plotly (Python)➤ Dashboarding tools: Tableau, Power BI

6.	Exploratory Data Analysis (EDA)	<ul style="list-style-type: none"> ➤ Descriptive statistics ➤ Visualization for insight
7.	SQL And Databases	<ul style="list-style-type: none"> ➤ Relational databases ➤ Writing queries with SQL ➤ Connecting SQL to Python
8.	Machine Learning (ML)	<ul style="list-style-type: none"> ➤ Supervised learning (regression, classification) ➤ Unsupervised learning ➤ Scikit-learn
9.	Model decision and consideration	<ul style="list-style-type: none"> ➤ Cross-validation ➤ Confusion matrix ➤ AUC ➤ RMS ➤ RUC Curve
10	Deep Learning Models	<ul style="list-style-type: none"> ➤ Neural networks ➤ TensorFlow, Keras ➤ CNN and RNN
11	Natural Language Processing (NLP) using NLTK	<ul style="list-style-type: none"> ➤ Text reprocessing ➤ Sentiment analysis
12	Cloud Computing & Deployment	<ul style="list-style-type: none"> ➤ AWS, Azure ➤ Model deployment (Dash, Flask)
13	Capstone Project	<ul style="list-style-type: none"> ➤ End-to-end data science project ➤ Real-world dataset