Business Analytics

Course outline

1. Basics of R and Statistics : 4 Hours
2. Linear Regression with 1 case study : 5 Hours
3. Logistic Regression with 1 case study : 5 Hours
4. Clustering with 1 case study : 4 Hours
5. Decision Tree with one case study : 4 Hours
6. Basics of python : 6 Hours
7. Basics of Tableau : 4 Hours

Course Value add & benefits

1. Live teaching as oppose to pre-recorded videos
2. Trainer support post class via email
3. Internships post completion to atleast 10 students
4. Certificates issued by Delhi University

Basics of Artificial Intelligence and Machine Learning for Beginners

Learning Outcomes:

After successful completion of the course, the students will learn

1. How Data Science can Solve Many Common Business Problems
2. How to code in Python and the popular Python Libraries - Pandas, Scikit-learn, Seaborn, Matplotlib & Plotly (Manipulate Data and Create Information Captivating Visualizations and Plots)
3. Statistics for Data Science – Descriptive and Inferential Business Statistics
4. Concepts and tools of Machine Learning
5. Solving problems using Predictive Modeling and Classification
6. Applying Data Science in Marketing, Retail, Finance and HR domains

Course Outline:

Unit1

Introduction to Python Programming Language: Installing Python and Jupyter, Variables and Datatypes, Basic Python Syntax, Conditional Statements, Python Functions, Python Sequences, Python Iterations

Lab Practice with Jupyter Notebook and Google Colab

Unit2

Introduction to Statistics with Python: Measures of Central Tendency and Dispersion, Introduction to Probability, Probability Distributions, Central Limit Theorem, Confidence Interval Estimation, Hypothesis testing (Z test, T test, Chi Sq Test), Types of Errors, Introduction to ANOVA, One way ANOVA, Two way ANOVA, Linear Regression, Multiple Regression, Logistic Regression

Unit 3

Introduction to Machine Learning: Introduction, Types of Machine Learning: Supervised, Unsupervised and Reinforcement learning, Applications, Classification vs Prediction Problems, Linear Regression Algorithm (Prediction Problem), KNN Algorithm (K- Nearest Neighbor) (Classification Problem), Decision Trees, Random Forests, SVMs, Model Assessment, Outlier Detection, ROC & AUC and Regularization

Unit 4

Marketing Analytics

Forecasting, Market Basket, RFM, Customer Valuation, Price Bundling

Unit 5

Financial Analytics

Credit Risk Modeling, Fraud Analytics

Unit 6

HR Analytics

Predict job offer drop out, Calculating Employee Satisfaction

Session Plan for 15 sessions of 2 Hours each

Unit No.	Session No.	Topics to be covered
Unit 1	1	Python Variables
		Number and Boolean Values
		Strings
		Arithmetic Operators
		The Double Equality Sign
		Reassign Values
		Add Comments
		Line Continuation
		Indentation
		Indexing
		Comparison Operators
		Logical and Identity Operators
		IF Statement
		Else Statement
		Elif Statement
		Boolean Values
	2	Defining a function
		More on Functions
		Function within function
		Conditonal Statements in Functions
		Functions with arguments
		Built in Functions
		Lists
		Methods
		Slicing
		Tuples
		Dictionaries
		For Loops
		While Loops
		Range
		Conditional Statements and Loops
		Iterating over Dictionaries
	3	Pandas Dataframe
		Exploratory Data Analysis
		Dealing with Missing Values
		Data visualisations
Unit 2	4	Measures of Central Tendency and Dispersion

		Introduction to Probability
		Probability Distributions
	5	Central Limit Theorem
		Confidence Interval Estimation
		Hypothesis testing (Z test, T test, Chisquare Test)
	6	ANOVA
		Types of Errors
		Dealing with Categorical Variables
	7	Linear Regression
		Multiple Regression
		Logistic Regression
Unit 3	8	Introduction to Machine Learning
		Types of Machine Learning: Supervised and Unsupervised Learning
		Classification vs Prediction Problems
		Linear Regression Algorithm (Prediction Problem)
	9	KNN Algorithm (K- Nearest Neighbor) (Classification Problem)
		Decision Trees, Random Forests, KNN, SVMs, Model Assessment, Outlier Detection,
Unit 4	10	Marketing and Retail Analytics - Forecasting, Market Basket, RFM, Customer Valuation, Price Bundling
	11	Marketing and Retail Analytics (contd..)
Unit 5	12	Financial Analytics - Predicting Insurance Premiums, Credit Risk Modeling, Fraud Analytics
	13	Financial Analytics (contd..)
Unit 6	14	HR Analytics - Predict job offer drop out, Calculating Employee Satisfaction
	15	HR Analytics (contd..)