STUDY PLAN

Week	Module	Date		Delivery Type	Session Type	Session Title	Duration	Sub topics	Self - Paced Available	Assignment / Task	Mini Project	Graded	PWC Project - Timeline AI-Driven Customer Segmentation	PWC Project - Timeline Customer Sentiment & Response Automation
		9-May-2026	Saturday			Founder's Session								
		10-May-2026	Sunday			Orientation Session								
1	Python Fundamentals			Self-Paced		Syntax, Variables & Data Types Type Casting	3	What is Data Science?, The Data Science Lifecycle Prerequisites for Data Science, Examples of data science AI vs ML vs DL vs DS (Part 1), AI vs ML vs DL vs DS (Part 2) Data Types, Variables, Mathematical operators and Expressions	Yes					
1	Python Fundamentals			Self-Paced		Built-in Functions Control Structures – If & Loops	1	Built-in Functions, Flow Control Part 1 to 4, Loop Part 1 to 4						
1	Python Fundamentals	16-May-2026	Saturday	Live Class		Control Structures – If Else - Loops - UDF	2	if, elif, else statements Nested conditions for loops with range() while loops and loop control: break, continue, pass else clause with loops **User-Defined Functions**	Yes					
1	Python Fundamentals	19-May-2026	Tuesday		DC + Focus		3							
	Aptitude			Self-Paced		Number System	5	**Types of Numbers, Divisibility Rule, Unit Digit, LCM, HCF, Remainders, Percentages** Aptitude Basics - 00:39 Number System & Divisibility Theory - 00:32 Number System Practise Questions 1 - 00:52 LCM & HCF Theory - 00:31 LCM & HCF Practise Questions 1 - 00:29 Remainders Theory - 00:23 Remainders Practise Questions 1 - 00:23 Percentages Theory - 00:39 Percentages Practise Questions 1 - 00:24						

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2	Python Fundamentals			Self-Paced		Strings, Lists	1	List and Slicing Part 1 to 4, Tuple						
2	Python Fundamentals	17-May-2026	Sunday	Live Class		Strings, Lists, Tuples	2	String objects. Creating, accessing, slicing lists List comprehension Tuples: declaration, immutability, use cases Tuple unpacking and zip() basics	Yes					
2	Python Fundamentals			Self-Paced		POWER	1	Sets, Dictionaries Part 1, 2						
2	Python Fundamentals	23-May-2026	Saturday	Live Class		Sets & Dictionaries	2	Creating sets, uniqueness Set operations: union(), intersection(), difference(), symmetric_difference() in keyword and set membership Creating and accessing key-value pairs get(), items(), keys(), values() Updating and deleting entries in operator, nested dictionaries	Use cases in de duplication					
2	Python Fundamentals	26-May-2026	Tuesday		DC + Focus		3							
	Aptitude			Self-Paced		Averages	3	**Averages, Mixture and Alligations, Profit & Loss** Averages Theory - 00:17 Averages Practise Questions 1 - 00:30 Allegations and Mixtures Theory - 00:35 Practise Questions Video 1 - 00:22 Profit and Loss Theory - 00:45 Profit & Loss Practise Questions 1 - 00:24						
3	Python Fundamentals			Self-Paced		File Handling & Functions & Exception Handling	3	File Functions Implementation part 1 File Functions Implementation part 2 Runtime Errors try and except block File path : Absolute vs Relative Paths raise statement	Yes					
3	Python Fundamentals			Self-Paced		Built-in Modules Overview	3	Using math, random, datetime, os, sys Practical examples: random number generation, file management, command-line args dir() and help() for introspection	Yes		9			

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3	Python Fundamentals	2-Jun-2026	Tuesday		DC + Focus		3							
	Aptitude			Self-Paced		TSD	2	**Time Speed Distance, Trains, Boats & Stream** Speed Time & Distance Theory - 00:73 Speed Time & Distance Practise Questions 1 - 00:27 Boats and Streams Theory - 00:18 Practise Questions - 00:20						
4	Python Fundamentals			Self-Paced		NumPy Arrays		Numpy Part 1 to 3						
4	Python Fundamentals	24-May-2026	Sunday	Live Class		NumPy Arrays	3	Need for efficient numeric computation Python lists vs NumPy arrays (memory, speed) Creating Arrays Basic Array Properties Simple Indexing and Slicing Simple Array Operations Advanced Array Creation Deep Dive into Indexing						
4	Python Fundamentals			Self-Paced		Vectorized Operations Intro to Pandas Series Object		Pandas Part 1 to 4						
4	Python Fundamentals	30-May-2026	Saturday	Live Class		Vectorized Operations Intro to Pandas Series Object	3	Vectorized Operations Mathematical and Statistical Functions Reshaping and Flattening What is Pandas and why use it? Pandas Series Object Creating a Series Accessing elements in a Series Operations on Series						
4	Python Fundamentals	9-Jun-2026	Tuesday		DC + Focus		3							
	Aptitude			Self-Paced		Ratios	1.5	**Ratio, Proportion, Partnership Problems on Ages** Ratio and Proportions Theory - 00:23 Ratio & Proportions Practise Questions 1 - 00:15 Partnerships Theory - 00:12 Problems on Ages Theory - 00:22 Ages Practise Questions - 00:29						

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5	Python Fundamentals	31-May-2026	Sunday	Live Class		Creating and Exploring DataFrames, Data Selection, Filtering	3	What is a DataFrame Creating DataFrames Exploring DataFrames - .head(), .tail(), .shape, .info(), .describe() Exploring Dataframes - .columns, .index, .dtypes Accessing Columns and Rows Basic Attributes Column Selection Row Selection Filtering Data (Boolean Masking)						
5	Python Fundamentals	6-Jun-2026	Saturday	Live Class		Sorting, Data Cleaning and Handling Missing Values	3	Sorting Data Setting and Resetting Index Handling Duplicates Renaming Columns Adding New Columns Deleting Columns Reordering Columns Cleaning Column Names Handling Missing values						
5	Python Fundamentals	16-Jun-2026	Tuesday		DC + Focus		3							
	Aptitude			Self-Paced		Interest	3	**Time & Work, Pipes & Cistern Statements & Conclusion** Time and Work Theory - 00:73 Time & Work Practise Questions 1 - 00:38 Pipes & Cistern Theory - 00:16 Pipes & Cistern Practise Questions - 00:27 Statement and Conclusion Theory - 00:11 Statement and Conclusions Practice Questions 1 - 00:12						
6	Python Fundamentals	7-Jun-2026	Sunday	Live Class		Aggregation & Grouping in Pandas Advaned DataFrame Operations	3	groupby() with mean(), sum(), count() Using agg() for multi-aggregation Multi-index results Pivot tables with pivot_table() Merging/joining DataFrames Reshaping Data Date and Time Handling Exporting Data			Mini Project	Yes		
6	Python Fundamentals	13-Jun-2026	Saturday	Live Class		Data Visualization with Matplotlib & Seaborn	3	Line plot, bar chart, histogram, pie chart using Pandas .plot() Customizing plots: labels, titles, colors Plotting directly from groupby results Intro to matplotlib.pyplot: plot(), bar(), scatter() Styling and subplot basics						

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6	Python Fundamentals	23-Jun-2026	Tuesday		DC		2							
	Aptitude			Self-Paced		Probability	2.5	**Permutation, Combination (Linear & Circular) & Probability** Permutation and Combination Theory - 00:53 Practise Questions Video 1 - 00:21 Probability Theory - 00:39 Practise Questions 1 - 00:26						
	Gen AI				GenAI Session	GenAI for Code Enhancement	3	GitHub Copilot integration, AI code generation, automated documentation, code optimisation, debugging assistance						
1	Understanding SQL			Self-Paced		Understanding SQL, Creating Tables	2	SQL Intro - 0:47 secs, Introduction to Databases - 10:53 mins, Why SQL? - 3:00 mins Introduction SQlite - 7:12 mins , Working with SQLite - 8:11 mins SQLite Functions - 11:11 mins Python MySQL connector Part 1 to 4 (9:23 , 13:58 , 11:53 , 8:17) Install SQLite - 11:17 mins , Load Databases - 7:36 mins Use show and describe - 10:31, DDL Create - 8:05 mins CRUD Operations - 15:13 mins						
1	Understanding SQL	14-Jun-2026	Sunday	Live Class		Understanding SQL, Creating Tables	1	Creating tables using SQL CREATE TABLE statements	Yes					
1	Understanding SQL			Self-Paced		Populating Tables , Querying Data with SELECT	0.5	Order by - 7:49 mins Limit and Off set - 7:32 mins DML insert - 12:36 mins Select - 6:49 mins						
1	Understanding SQL	20-Jun-2026	Saturday	Live Class		Populating Tables, Querying Data with SELECT	2	Understanding constraints like PRIMARY KEY, NOT NULL, DEFAULT Inserting single and multiple rows using INSERT INTO Verifying table structure and inserted data Combining conditions using AND, OR, and NOT Sorting results using ORDER BY Limiting output using LIMIT Using column aliases with AS for readability	Yes					

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1	Understanding SQL	30-Jun-2026	Tuesday		DC + Focus		3							
	Aptitude			Self-Paced		Time & Work	2	**Simple Interest, Compound Interest, Clocks, Calendar** Simple and Compound Interest Theory - 00:48 Practise Questions 1 - 00:26 Clocks Theory - 00:19 Calendar Theory - 00:16 Practise Questions 1 - 00:21						
2	Understanding SQL			Self-Paced		Updating, Deleting, and Altering Data Aggregations and Grouping	1.5	DML update, DML delete, DDL Alter - (6:58 , 4:41 , 9:24) DDL Drop & Truncate - 9:40 mins Group By and Having Clause - 23:04 mins Aggregate Function - 14:21 mins Comparison: Delete, Drop & truncate - 9:40 mins						
2	Understanding SQL	21-Jun-2026	Sunday	Live Class		Updating, Deleting, and Altering Data Aggregations and Grouping	2	Adding and removing columns from an existing table Understanding the risks and best practices in modifying data Using aggregate functions such as COUNT, SUM, AVG, MIN, and MAX Grouping data using GROUP BY to summarize results Filtering grouped results using HAVING Combining GROUP BY with ORDER BY to sort aggregated output Applying aggregation in real-world analysis scenarios	Yes					
2	Understanding SQL			Self-Paced		Joins and Subqueries	1	Joins and Inner Join - 11:06 mins, Natural Join - 6:07 mins , Left Outer Join - 7:07 mins Right outer Join - 4:21 mins, Full Outer Join - 6:03 mins, Subqueries - 16:05 mins						
2	Understanding SQL	27-Jun-2026	Saturday	Live Class		Joins and Subqueries	1.5	Writing subqueries in SELECT, WHERE, and FROM clauses Combining joins and subqueries for complex data retrieval Practical examples involving multiple-table queries	Yes		Module Level Mini Project	Yes		

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2	Understanding SQL	7-Jul-2026	Tuesday		DC + Focus		3							
	Reasoning			Self-Paced		Arrangements	3	**Data Arrangement** **Blood Relations** **Syllogism** Data Arrangements Theory - 00:16 Data Arrangements Practice Questions 1 - 00:36 Blood Relations Theory - 00:31 Blood Relation Practice Questions 1 - 00:25 Syllogism theory - 00:70 Syllogism Practice Question 1 - 00:11						
	Gen AI				GenAI Session	GenAI for SQL Enhancement	3	Natural language to SQL conversion, query optimisation, automated schema generation, AI data exploration, performance tuning						
	Soft Skills				Soft Skill Session	Workplace Communication + English Confidence	2	What are soft skills & why they matter for data professionals Speaking data insights simply & clearly Building confidence through posture, voice, and expression Ground rules of workplace communication (clarity, tone, brevity)		Find atleast 5 real everyday examples of data. Figure out how to explain that with structure of insights,impact and recommendation. Rephrase a technical data insight in layman's terms. AND FInd 2 apps which you use the most and figure out some data that can reflect insights, impact and recommendation..				

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1	Statistics & Mathematics			Self-Paced		Descriptive Statistics & Probability	1.5	Mean, Median, Mode - (6:54 , 4:46 , 4:00) , Measures of Location - 4:47 mins Percentiles & Quartiles - 5:38 mins , Measures of Variability - 3:51 mins, Range - 5:10 mins Inter Quartile Range - 5:27 mins, Variance - 6:50 mins Standard Deviation - 7:19 mins, Mean & SD Vs Median & IQR - 8:12 mins Univariate analysis Implementation - 21:57 mins Basic Bivariate analysis - 7:04 mins						
1	Statistics & Mathematics	28-Jun-2026	Sunday	Live Class		Descriptive Statistics & Probability	2	Using Python to compute statistical summaries Visualizing data distributions using histograms and boxplots with libraries like Matplotlib and Seaborn Fundamental probability concepts and rules Independent and dependent events Conditional probability and Bayes' theorem (conceptual) Addition and multiplication rules	Yes					
1	Statistics & Mathematics			Self-Paced		Probability & Probability Distributions	0.5	Random Variable & Probability Distribution - 5:33 mins, Binomial Distribution - 8:00 mins Normal Distribution - 9:36 mins, Gamma Distribution - 7:08 mins Poisson Distribution - 6:06 mins						
1	Statistics & Mathematics	4-Jul-2026	Saturday	Live Class		Probability & Probability Distributions	2	Calculating probabilities from frequency tables and simulations Difference between discrete and continuous distributions Binomial distribution and its applications Normal distribution and the bell curve Properties of the normal distribution: symmetry, standard deviation, z-scores Using Python (NumPy, SciPy) to generate and visualize distributions Plotting probability distribution curves using Seaborn and Matplotlib						

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	Soft Skills				Soft Skill Session	Workplace Communication + English Confidence	2	Synonyms and antonyms for professional vocabulary Understanding articles, subject-verb agreement Grammar tips for clarity in reports and emails Confidence-building through spoken drills and mini debates		Record 2 minute Self intro and check voice, accent and tone. AND Fill-in-the-blank grammar quiz (with subject-verb agreement, articles) Replace 5 common phrases in your email with more professional synonyms Write a short email to a senior leader summarizing project progress				
1	Statistics & Mathematics	14-Jul-2026	Tuesday		DC + Focus		3							
	Reasoning			Self-Paced	Live Class	Series	2.5	**Number Series, Letter Series, Coding & Decoding, Odd Man Out** Number Series Theory - 00:23 Number Series Practice Questions- 1 - 00:15 Letter Series Theory - 00:26 Letter Series Practice Questions 1 - 00:15 Coding Decoding Theory - 00:21 Coding Decoding Practice Questions 1 - 00:17 Odd Man Out Theory - 00:23 Odd Man Out Practice Questions 1 - 00:15						
9	Assessment				ET1	Employability Test 1								

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2	Statistics & Mathematics			Self-Paced		Inferential Statistics & Intro to Hypothesis Testing	1.5	Introduction to Population and Sample - 6:53 mins, Need of Sampling - 4:59 mins Probability Sampling Part 1, Part 2 (8:36 , 5:45) Non-Probability Sampling Part 1, Part 2 (6:14 , 5:35) Central Limit Theorem - 5:00 mins Estimation & Hypothesis Testing - 3:31 mins Properties of Estimator - 3:15 mins Types of Estimates - 5:02 mins Hypothesis Testing - 7:48 mins Degrees of Freedom - 4:38 mins Null & Alternate Hypothesis - 5:15 mins DIfferent of types of errors - 6:52 mins Significance of P-value - 6:50 mins						
2	Statistics & Mathematics	5-Jul-2026	Sunday	Live Class		Inferential Statistics & Intro to Hypothesis Testing	2	Using Python (NumPy, SciPy, statsmodels) to simulate sampling and compute confidence intervals Concept of statistical hypothesis: null and alternative hypotheses Understanding Type I and Type II errors Significance level (alpha) and interpretation of p-values Steps in conducting a hypothesis test	Yes					
2	Statistics & Mathematics			Self-Paced		Hypothesis Testing Contd..	1	One Tailed Vs Tow Tailed - 7:35 mins Z tests - 7:58 mins T tests - 5:01 mins Paired test - 9:03 mins Two sample - text vs paired t-test - 3:50 mins Analysis of Variance (ANOVA) - 7:45 mins Chi-square text - 7:14 mins Parametric vs non - parametric tests - 4:00 mins						
2	Statistics & Mathematics	11-Jul-2026	Saturday	Live Class		Hypothesis Testing Contd..	3	Introduction to one-sample z-test and t-test Performing basic hypothesis tests using Python (SciPy, statsmodels) Conducting two-sample hypothesis tests (independent and paired) Choosing between z-test and t-test based on sample conditions Interpreting test						

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								results in the context of real-world problems Performing two-sample t-tests using Python (SciPy, statsmodels) Visualizing group differences and test outcomes using Seaborn and Matplotlib						
	Soft Skills				Soft Skill Session	Written Communication + Online Presence	2	Writing effective emails in a professional setting Writing clear data summaries and reports Formatting dashboards/comments for clarity Tone, grammar, structure, and data language best practices		20 minute quiz on Synonyms and Antonyms, Articles and SVA where learner will get score and answer post quiz. Create 2 minute presentation based on data slides. (Topic can be picked from your dream company data analysis) Rewrite an informal email into a professional one Write a 3-line summary of a dataset insight				
2	Statistics & Mathematics	21-Jul-2026	Tuesday		DC + Focus		3							
	Aptitude			Self-Paced		DI	2.5	Data Interpretation - Session 01 - 2:04 Data Sufficiency Theory - 00:21 Data Sufficiency Practice Questions 1 - 00:17						
3	Statistics & Mathematics	12-Jul-2026	Sunday	Live Class		Linear Algebra Basics & Calculus Essentials	3	Understanding scalars, vectors, and matrices Matrix operations: addition, subtraction, multiplication Dot product and its interpretation Transpose and identity matrices Using NumPy for linear algebra computations Applications of linear algebra in machine learning contexts (conceptual) Understanding functions, limits, and derivatives (conceptual overview) Concept of gradients and their role in optimization Introduction to partial derivatives			Mini Project - Customer Insights Statistical Investigation	Yes		

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3	Statistics & Mathematics			Self-Paced			0.07	Correlation and Causation - 3:45 mins						
3	Statistics & Mathematics	18-Jul-2026	Saturday	Live Class		Calculus Contd.. & Correlation & Covariance	3	Visualizing functions and slopes using Python (Matplotlib, NumPy) Understanding the role of calculus in training machine learning models (gradient descent) Understanding covariance and how it measures joint variability Difference between covariance and correlation Pearson correlation coefficient and its interpretation Visualizing relationships using scatter plots and heatmaps Using Python (Pandas, NumPy, Seaborn) to compute and visualize correlations Identifying spurious correlations and understanding limitations						
3	Statistics & Mathematics	28-Jul-2026	Tuesday		DC		2							
	Gen AI				GenAI Session	GenAI for Statistical Analysis	3	Automated statistical reporting, AI data interpretation, hypothesis generation, statistical storytelling, A/B test analysis						
	Soft Skills				Soft Skill Session	Written Communication + Online Presence	2	Optimizing LinkedIn for data analytics careers Creating a GitHub portfolio for projects Showcasing work via Tableau Public, Medium, or Notion Building your "data story" online – what do you stand for?		Assignment on parajumbles ; Make your LinkedIn profile; Draft your LinkedIn summary in 3 paragraphs Post a mock LinkedIn update announcing a new data project Peer review: Give feedback on a partner's online portfolio or post				

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1	Supervised Learning			Self-Paced		Linear Regression	0.5	Intro to simple linear regression Pt 1 - 6:09 mins Intro to simple linear regression Pt 2 - 2:18 mins Simple linear regression, implementation Pt 1 - 6:27 mins Simple linear regression, implementation Pt 2 - 8:00 mins Multiple linear regression Introduction pt 1 - 2:30 mins Multiple linear regression Introduction pt 2 - 4:30 mins Multiple linear regression Introduction pt 3 - 2:57 mins						
1	Supervised Learning	19-Jul-2026	Sunday	Live Class		Linear Regression	2	Assumptions of linear regression Loss function and least squares method Implementing simple linear regression using scikit-learn Multiple predictors and the idea of feature contribution Multicollinearity and correlation among predictors Implementing multiple linear regression in Python	Yes					
1	Supervised Learning			Self-paced		Linear Regression	0.5	Model evaluation: MAE, MSE, RMSE, R^2	No					
1	Supervised Learning			Self-paced		Linear Regression	1	Implementation pt1 - 8:27 mins Implementation pt2 - 9:42 mins Polynomial linear regression intro - 3:57 mins Polynomial linear regression pt 1 - 3:25 mins Polynomial linear regression pt 2 - 7:35 mins Polynomial linear regression pt 3 - 5:47 mins R Squared Introduction - 7:02 mins Random Forest Regression Intro - 4:13 mins Random Forest Regression Implementation Pt 1 - 4:15 mins Model Selection for Regression Implementation - 5:03 mins						

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1	Supervised Learning	25-Jul-2026	Saturday	Live Class		Linear Regression	2.5	Interpreting coefficients and residuals Exploring feature importance in linear models Dataset walkthrough: features, target variable, and objectives Data preprocessing: handling missing values, encoding, scaling Model building and evaluation on the dataset Interpreting outputs and drawing business insights Discussing limitations and possible model improvements	No		Mini Project - Property Price Prediction	Yes		
	Soft Skills				Soft Skill Session	Data Storytelling + LR + Stakeholder Knowledge	2	What is Data Storytelling? The narrative arc: setting, conflict, resolution Logical reasoning in analytics Structuring insights like a story Common fallacies in data interpretation		Identify 2 insights from a sample dataset and write a 5-sentence story explaining them Spot 3 logical fallacies in a given business case				
1	Supervised Learning	4-Aug-2026	Tuesday		DC + Focus		3							
2	Supervised Learning			Self-paced		Logistic Regression	0.5	Understanding classification vs regression	No					
2	Supervised Learning			Self-paced		Logistic Regression	0.5	Logistic regression introduction - 10:19 mins Logistic Regression implementation - 16:57 mins						
2	Supervised Learning	26-Jul-2026	Sunday	Live Class		Logistic Regression	2.5	Sigmoid function and probability output Decision boundary and thresholding Implementing binary logistic regression using scikit-learn Evaluating classification performance: accuracy, confusion matrix, precision, recall, F1-score Introduction to Customer Churn dataset and target variable Data exploration and preprocessing for classification	No					

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2	Supervised Learning			Self-paced		Logistic Regression Contd., K-Nearest Neighbour	0.05	Accuracy Paradox - 2:54 mins						
2	Supervised Learning	1-Aug-2026	Saturday	Live Class		Logistic Regression Contd., K-Nearest Neighbour	3	(2H) Fitting logistic regression to predict churn Interpreting coefficients and model predictions Comparing predictions against actual churn outcomes Insights and business implications of churn predictions Discussion on model limitations and threshold adjustment (1H) Concept of instance-based learning and non-parametric models Distance metrics: Euclidean, Manhattan How KNN works: selecting 'k', voting mechanism Bias-variance tradeoff and impact of different values of 'k'						
	Soft Skills				Soft Skill Session	Data Storytelling + LR + Stakeholder Knowledge	2	Stakeholder personas in a data project Adapting messages for technical vs non-technical audiences Writing executive summaries Communicating uncertainty and limitations Listening and questioning techniques for stakeholder needs		Rewrite a highly technical insight for an HR leader and a CFO Stakeholder matching quiz: Who cares about what metrics?				
2	Supervised Learning	11-Aug-2026	Tuesday		DC + Focus		3							
3	Supervised Learning			Self-paced		K-Nearest Neighbour	0.5	KNN Intro Pt 1 - 5:00 mins KNN implementation - 10:05 mins False Positives and negatives - 4:41 mins Confusion Matrix - 2:59 mins Cap Curve - 7:48 mins Cap Curve Analysis - 3:33 mins						
3	Supervised Learning	2-Aug-2026	Sunday	Live Class		K-Nearest Neighbour	3	Implementing KNN using scikit-learn Evaluating model performance with accuracy and confusion matrix Data preparation for KNN (scaling importance) Model training and prediction on a prepared dataset Effect of distance metric and k-value on accuracy Comparison with logistic						

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								regression results (optional) Visualizing decision boundaries (if dataset is suitable) Key considerations for using KNN in production						
3	Supervised Learning			Self-paced		Naïve Bayes Classification	2	Understanding Bayes' Theorem and conditional probability The "naïve" assumption of feature independence Types of Naïve Bayes: Gaussian, Multinomial, Bernoulli (with focus on text) Strengths and limitations of Naïve Bayes Implementing Naïve Bayes	No					
3	Supervised Learning			Self-paced		Naïve Bayes Classification	0.18	Naïve bayes introduction - 7:30 mins Naïve bayes implementation - 3:48 mins						
3	Supervised Learning	8-Aug-2026	Saturday	Live Class		Naïve Bayes Classification	1	using scikit-learn Evaluating predictions using accuracy, precision, recall, F1-score	No					
3	Supervised Learning	18-Aug-2026	Tuesday		DC + Focus		3							
	Gen AI				GenAI Session	GenAI for Model Building	3	Automated feature engineering, AI model architectures, hyperparameter optimisation, model interpretation, automated documentation						
	Soft Skills			Self-paced	Soft Skill Session	Teamwork, Collaboration & Professional Behavior	2	Time Management Techniques Stress Management and Resilience Building Self-Organization and Productivity Tools Goal Setting and Personal Productivity						
4	Supervised Learning			Self-paced		Decision Tree	0.07	Decision tree classifier introduction - 4:37 mins						
4	Supervised Learning	9-Aug-2026	Sunday	Live Class		Naïve Bayes Classification Intro to Decision Tree	2	Preparing textual data using CountVectorizer or TfidfVectorizer Training a Naïve Bayes classifier on text (e.g., spam detection or sentiment analysis) Model performance interpretation and common pitfalls Why Naïve Bayes performs well on text data Real-world considerations for deploying NB-based text classifiers	Yes				Project Briefing Milestone & Context Setting	Project Briefing Milestone & Context Setting

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4	Supervised Learning			Self-paced		Decision Tree	0.22	Decision tree classifier implementation - 6:36 mins Classification Model Selection - 6:48 mins						
4	Supervised Learning	15-Aug-2026	Saturday	Live Class		Decision Tree	3	Building a basic decision tree using scikit-learn Visualizing the decision tree structure Controlling tree complexity with max_depth, min_samples_split, etc. Pruning techniques and early stopping Evaluating model performance on unseen data Feature importance and model interpretability Comparing with previous classifiers (logistic, KNN) Preparing the Credit Risk dataset for modeling						
4	Supervised Learning	25-Aug-2026	Tuesday		DC + Focus		3							
	Gen AI				GenAI Session	GenAI for Classification	3	Automated model selection, performance optimisation, ensemble creation, bias detection, model explanations						
	Soft Skills				Soft Skill Session	Teamwork, Collaboration & Professional Behavior	2	Accountability & ownership in projects Email, meeting, and messaging etiquette Navigating conflict respectfully Managing up and reporting status clearly Time management and responsiveness.The role of data analysts in cross-functional teams Collaboration tools and norms (Slack, Jira, Confluence, Git) Giving and receiving constructive feedback Managing roles and responsibilities in team projects Communication in remote/hybrid teams		1) Draft a professional message to report a missed deadline Peer-review task: Evaluate two Slack messages for tone and clarity. 2) Take a "Collaboration Style" quiz Reflective task: Write 100 words on a time when collaboration helped or hindered a data project				

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5	Supervised Learning	16-Aug-2026	Sunday	Live Class		Decision Tree (Case Study) Random Forests	3	2H Exploratory analysis of credit risk dataset Data preprocessing: encoding, handling missing values Fitting decision tree classifier and evaluating results Visualizing and interpreting feature splits Drawing business insights and decision rules from the model Discussion on model limitations and edge cases 1H Concept of ensemble learning and bagging How Random Forest improves over a single decision tree Key hyperparameters: n_estimators, max_features, max_depth Out-of-bag error and model stability						
5	Supervised Learning	22-Aug-2026	Saturday	Live Class		Random Forests	3	Building and evaluating a Random Forest model using scikit-learn Understanding feature importance Revisiting the Credit Risk dataset Modeling with Random Forest and comparing with Decision Tree Using feature importance to support credit scoring decisions Evaluating performance and explaining results Discussion on model reliability, interpretability, and real-world usage						
5	Supervised Learning	1-Sep-2026	Tuesday		DC		2							
	Gen AI				GenAI Session	GenAI for Ensemble Methods	3	Automated ensemble design, hyperparameter tuning, model combination strategies, performance benchmarking, ensemble pruning						
	Soft Skills				Soft Skill Session	Time Management, Work Ethics & Data Responsibility	2	Prioritizing tasks in data workflows Managing competing deadlines and ad hoc requests Setting realistic timelines for analysis/reporting Proactive vs reactive work behavior Ethics of productivity (honesty in effort, transparency)		Prioritize a list of 10 typical analyst tasks using Eisenhower matrix Reflect: What habits are currently blocking your productivity?				

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6	Supervised Learning			Self-paced		Case Study	0.5	Confusion matrix vs ROC-AUC vs accuracy vs F1 When to use which model and why Interpreting model outputs in business context	No					
6	Supervised Learning	23-Aug-2026	Sunday	Live Class		Case Study	2.5	Cross-Validation & Hyperparameter Tuning: Understanding overfitting and the need for validation K-Fold cross-validation and Stratified K-Fold GridSearchCV and RandomizedSearchCV with scikit-learn Using cross-validation to tune Logistic Regression, KNN, and Decision Trees Model Comparison & Selection: Review of evaluation metrics across models (classification & regression)	No					
6	Supervised Learning	29-Aug-2026	Saturday	Live Class		Case Study	3	"Contd from previous session if requried Case Study Wrap-Up: Integrated case study using a new or blended dataset Students apply all models (or select best fit), tune them, and justify decisions Peer discussion or guided walk-through Reflection on business insights, model effectiveness, deployment readiness"						
	Soft Skills				Soft Skill Session	Time Management, Work Ethics & Data Responsibility	2	Professional integrity and reliability Data confidentiality and ethical use Avoiding manipulation or misrepresentation of data Bias and fairness in data interpretation Handling mistakes or data errors responsibly		Correct a misleading chart to reflect ethical storytelling Write a response email acknowledging a mistake in a shared dashboard				
6	Supervised Learning	8-Sep-2026	Tuesday		DC		2							

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1	Unsupervised Learning	30-Aug-2026	Sunday	Live Class		Dimensionality Reduction with PCA	3	Understanding high-dimensional data and the curse of dimensionality Concept of feature extraction vs feature selection What is PCA and when to use it Understanding variance and covariance matrix Explained variance ratio and selecting number of components Hands-on PCA with scikit-learn using synthetic datasets Visualizing data in 2D/3D using PCA Analyzing principal components and feature loadings Integrating PCA with preprocessing pipelines Impact of standardization on PCA Applying PCA before clustering Using PCA to prepare features for Customer Segmentation						
1	Unsupervised Learning			Self-paced		Recap/Pending of PCA(Optional) K-Means Clustering	0.3	K means clustering intro part 1 - 7:54 mins K means random initialization trap - 3:56 mins K means selecting best cluster numbers - 5:68 mins						
1	Unsupervised Learning	5-Sep-2026	Saturday	Live Class		Recap/Pending of PCA(Optional) K-Means Clustering	3	Recap of PCA if required or pending. What is clustering and how K-Means works Concept of centroids and iterative updates Distance metrics: Euclidean distance Choosing the optimal number of clusters using Elbow Method Limitations of K-Means: initialization sensitivity, non-convex clusters Implementing K-Means in scikit-learn with synthetic data Data preprocessing for clustering: scaling and feature selection						
1	Unsupervised Learning	15-Sep-2026	Tuesday		DC + Focus		3							
	Gen AI				GenAI Session	GenAI for Unsupervised Learning	3	Automated clustering selection, pattern discovery, dimensionality reduction, anomaly detection, cluster interpretations						

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	Soft Skills				Soft Skill Session	Placement Prep — Resume, Personal Branding	2	Anatomy of an impactful resume for analytics roles Tailoring resumes for different data job profiles (DA, BI, DS) Showcasing projects, internships, and certifications Keywords, ATS optimization, and clean formatting		Write 3 STAR-format bullet points for your most recent project Analyze 2 sample resumes: what works, what doesn't?				
2	Unsupervised Learning			Self-paced		K-Means Case study Contd(Optional) Intro to Hierarchical Clustering	0.67	K-means clustering implementation video 1 - 5:03 mins K-means clustering implementation video 2 - 5:33 mins K-means clustering implementation video 3 - 10:53 mins Hierarchical Clustering Intro Part 1 (Agglomerative) - 5:17 mins Hierarchial Clustering Intro Part 2 - 2:28 mins Hierarchial Clustering Intro Part 3 - 10:53 mins			Mini Project	Yes		
2	Unsupervised Learning	6-Sep-2026	Sunday	Live Class		K-Means Case study Contd(Optional) Intro to Hierarchical Clustering	3	Applying K-Means to a customer dataset Interpreting cluster outputs and labeling segments Visualizing clusters using PCA-reduced data Evaluating clustering results using Silhouette Score Drawing business insights from segmented customer groups Understanding the concept of hierarchy in clustering Agglomerative vs divisive clustering approaches Linkage criteria: single, complete, average Distance matrix and dendrogram construction					Mentoring Session 1	Mentoring Session 1
2	Unsupervised Learning			Self-paced		Hierarchical Clustering	0.17	Hierarchial Clustering Implementation - 9:22 mins						

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2	Unsupervised Learning	12-Sep-2026	Saturday	Live Class		Hierarchical Clustering	3	Hands-on implementation using scipy.cluster.hierarchy Visual interpretation of dendrograms and how to choose cluster cut-off Applying hierarchical clustering to the Customer Segmentation dataset Visual comparison of K-Means vs hierarchical clustering outputs Advantages and limitations of each technique When to prefer hierarchical methods in business scenarios Wrap-up of unsupervised learning strategies and evaluation techniques						
2	Unsupervised Learning	22-Sep-2026	Tuesday		DC		2							
	Soft Skills				Soft Skill Session	Placement Prep — Resume & Personal Branding	2	What is personal branding in analytics? Communicating your "data story" (background, strengths, value) Building visibility: content, networking, GitHub, Kaggle, blogs Mock interviews: technical + behavioral Confidence, etiquette, and first impressions		Write your elevator pitch (3 versions: 30, 60, 90 seconds) Create or review your GitHub / Tableau Public profile				
1	Neural Networks			Self-paced		Introduction to Artificial Neurons & Network Architecture Forward Propagation, Loss Functions, and Cost Minimization	0.5	How Neuron Works ? - 4:01 mins Activation Function - 3:40 mins How neural network Works - 10:54 mins How neural network Learns - 12:18 mins						
1	Neural Networks	13-Sep-2026	Sunday	Live Class		Introduction to Artificial Neurons & Network Architecture Forward Propagation, Loss Functions, and Cost Minimization	1.5	Hands-on: building simple forward pass in TensorFlow/Keras	Yes				Mentoring Sesison 2	
1	Neural Networks			Self-paced		Backpropagation, Hyperparameters, and Overfitting	0.7	Gradient Descend - 19:15 mins Stochastic Gradient Descent - 2:50 mins BackPropagation - 1:38 mins ANN Implementation Part 1 - 14:57 mins ANN Implementation Part 2 - 2:38 mins						
1	Neural Networks	19-Sep-2026	Saturday	Live Class		Backpropagation, Hyperparameters, and Overfitting	2.5	Gradient descent and backpropagation algorithm Hyperparameters: learning rate, batch size, epochs Overfitting and regularization: dropout, L2 penalty Hands-on: tuning ANN hyperparameters in code						

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1	Neural Networks	29-Sep-2026	Tuesday		DC + Focus		3							
	Gen AI				GenAI Session	GenAI for Deep Learning	3	Automated architecture search, transfer learning selection, hyperparameter tuning, model debugging, training optimisation						
	Soft Skills				Soft Skill Session	Mock Interviews & Final Presentation	2	Understanding the types of interviews (Technical, HR, Case-Based, Behavioral) STAR method for answering behavioral questions Common data analytics interview questions What interviewers assess beyond skills: communication, confidence, logic Handling tricky/stress questions with grace		Write answers to 3 behavioral questions using STAR Record a 1-minute self-introduction video Peer quiz: Identify strong vs. weak responses from a script				
2	Neural Networks			Self-paced		Deep Learning vs Traditional ML, and Mathematical Foundations Optimization Algorithms and Training Strategies	0.22	What is Deep Learning? - 12:14 mins What we're going to learn about Deep Learning -1:01						
2	Neural Networks	20-Sep-2026	Sunday	Live Class		Deep Learning vs Traditional ML, and Mathematical Foundations Optimization Algorithms and Training Strategies	3	Deep learning vs traditional ML: when and why Vectors, matrices, tensors – review and importance in DL Computational graphs and matrix-based operations Hands-on: working with tensors in TensorFlow Gradient descent variants: SGD, Adam, RMSProp Cost function intuition: MSE and cross-entropy					Mentoring Session 3	
2	Neural Networks	26-Sep-2026	Saturday	Live Class		Optimization Algorithms and Training Strategies(Contd) Deep Learning Challenges & Model Tuning with MNIST	3	Training strategies: epochs, mini-batch gradient descent Learning rate tuning and scheduling techniques Vanishing and exploding gradients – the curse of depth Solutions: ReLU, batch normalization, careful initialization Regularization: dropout, L2 regularization Advanced strategies: early stopping, batch normalization						
2	Neural Networks	6-Oct-2026	Tuesday		DC		2							

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3	Neural Networks			Self-paced		Introduction to Image Data & Convolutions CNN Architecture	0.2	What we are going to learn in CNN - 2:59 mins CNN Introduction Part 1 - 9:20 mins			Mini project	Yes		
3	Neural Networks	27-Sep-2026	Sunday	Live Class		Introduction to Image Data & Convolutions CNN Architecture	2	Understanding image data: pixels, channels, resolution Image representation as tensors in NumPy and TensorFlow Preprocessing image data: resizing, normalization, color conversion Concept of convolution operation and feature extraction Understanding filters/kernels, stride, and padding (conceptually and visually) Visualizing feature maps using simple filters (edge detection)	Yes				Conclusion & Summary Session	Mentoring Session 3
3	Neural Networks			Self-paced		CNN on Image Classification	0.5	CNN Relu Layer - 3:03 mins CNN Max Pooling - 6:55 mins CNN Flattening - 1:40 mins CNN Full collection - 10:51 mins CNN Compiling our learning - 2:36 mins Soft max and cross entropy - 2:21 mins						
3	Neural Networks	3-Oct-2026	Saturday	Live Class		CNN on Image Classification	3	Building a simple CNN using TensorFlow/Keras Training and validation process for image classification Understanding model.summary() and layer shapes Recap of CNN pipeline and key hyperparameters Dataset walkthrough: CIFAR-10 or MNIST, Model training with evaluation metrics: accuracy, confusion matrix Tuning epochs, batch size, and dropout rate, Visualizing learning curves and prediction outputs Interpreting misclassifications and refining model						

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1	Neural Networks	13-Oct-2026	Tuesday		DC		3							
	Soft Skills				Soft Skill Session	Mock Interviews & Final Presentation	2	Structuring a compelling data project presentation Visual communication: dashboard walk-through, storytelling with charts Anticipating stakeholder questions and defending choices Clarity, confidence, and time management during a live pitch		Submit a draft presentation outline for peer review Prepare a 3-slide "Insight Summary" using your dashboard or case project Practice Q&A: 5 questions you're likely to be asked on your final project				
0	NLP			Self-paced		Introduction to NLP and Real-World Applications Text Preprocessing	3	Definition and scope of Natural Language Processing Real-world applications: chatbots, sentiment analysis, spam detection, summarization Challenges in understanding human language The structure of an NLP pipeline (preprocessing to prediction) Introduction to text formats: raw, tokenized, structured Use cases across industries (healthcare, finance, marketing) Tokenization: word-level and sentence-level Lowercasing, punctuation removal, stopword removal Stemming vs Lemmatization: concept and comparison	No					
1	NLP			Self-Paced		Introduction to NLP and Real-World Applications Text Preprocessing	0.12	Examples of NLP DNLP and Deep Learning - 5:11 mins Difference Between NLP DNLP and Deep Learning - 1:39 mins	No					
1	NLP			Self-Paced			0.72	Bag Of Words Model - 12:48 mins NLP Implementation Part 1 - 7:04 mins NLP Implementation Part 2 - 6:58 mins NLP Implementation Part 3 - 7:33 mins NLP Implementation Part 4 - 5:16 mins NLP Implementation Part 5 - 3:49 mins						

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1	NLP	4-Oct-2026	Sunday	Live Class		Normalization, Vectorization using Bag-of-Words and TF-IDF	3	Text normalization pipeline design Hands-on using NLTK and SpaCy for preprocessing Impact of preprocessing choices on model performance Need for numerical representation of text Bag-of-Words model: concept, advantages, limitations TF-IDF: intuition behind term frequency and inverse document frequency Vectorizer tools in Python: CountVectorizer, TfidfVectorizer (from scikit-learn) Building and visualizing sparse matrices						
	Soft Skills				Soft Skill Session	LinkedIn Profile Optimization	2	Profile audit using LinkedIn SSI scoring + AI optimization prompts Domain-specific headlines, summaries, and experience positioning Project showcase strategies (GitHub integration for FSD, dashboard highlights for DA, model metrics for DS) Content creation framework for technical thought leadership						
1	NLP	20-Oct-2026	Tuesday		DC + Sprint		3							
2	NLP	10-Oct-2026	Saturday	Live Class		POS Tagging, NER, and Text Classification Introduction to Word Embeddings	3	Part-of-Speech (POS) tagging and syntactic roles Named Entity Recognition (NER): types of entities and use cases Hands-on with SpaCy for POS tagging and NER Text classification workflow using labeled data Model evaluation: accuracy, confusion matrix, precision/recall Limitations of BoW and TF-IDF (sparsity, lack of semantic meaning) Introduction to dense word vectors and distributed representations Word2Vec: CBOW vs Skip-gram (conceptual)						

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2	NLP	11-Oct-2026	Sunday	Live Class		Word Embeddings (Word2Vec, GloVe) Language Models and Embeddings Evolution	3	GloVe: global co-occurrence matrix-based embeddings Hands-on using pre-trained Word2Vec/GloVe embeddings with Gensim Visualizing embeddings with t-SNE or PCA Comparison of embeddings with sparse methods on simple tasks What is a language model and how it predicts sequences Evolution from count-based models to neural language models Contextual embeddings vs static embeddings Overview of ELMo and BERT as contextual models Use case: contextual word usage in different sentences						
2	NLP	27-Oct-2026	Tuesday		DC + Sprint		3							
	Gen AI				GenAI Session	GenAI for NLP Applications	3	Advanced prompt engineering, custom LLM fine-tuning, text generation, document processing, content workflows						
	Soft Skills				Soft Skill Session	Resume Building & Job Search Intelligence	2	ATS-optimized resume creation using AI content generation Company research automation via Perplexity + salary benchmarking Cold outreach templates and application tracking systems Domain-specific job targeting strategies		Submit resume in ATS friendly format.				
3	NLP			Self-Paced		Transformers and Self-Attention BERT, GPT & Fine-Tuning	1	Limitations of RNNs and LSTMs for NLP Core idea behind the Transformer architecture Self-attention mechanism: how it works and why it matters	No					
3	NLP			Self-paced		Transformers and Self-Attention BERT, GPT & Fine-Tuning	1	Bidirectional RNN - Introduction to transformers - Architecture of transformers -						

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3	NLP	17-Oct-2026	Saturday	Live Class		Transformers and Self-Attention BERT, GPT & Fine-Tuning	2	Positional encoding and its role in sequence modeling Visualizing attention weights (tools or conceptual diagrams) Key differences between BERT and GPT architectures (encoder vs decoder) Pretraining vs fine-tuning paradigm in LLMs Common downstream tasks: sentiment analysis, question answering Hands-on: using Hugging Face pipeline for zero-shot or fine-tuned inference	No					Mentoring Session 2
3	NLP			Self-Paced		Fine-Tuning Contd.. Applications and Ethics in LLMs	1.5	Overview of Trainer class and dataset preparation (conceptual) When to use prebuilt pipelines vs custom fine-tuning Real-world applications of LLMs: chatbots, summarization, translation, code generation Prompt engineering basics and few-shot learning	No					
3	NLP	18-Oct-2026	Sunday	Live Class		Fine-Tuning Contd.. Applications and Ethics in LLMs	0.5	Bias and fairness concerns in LLMs Risks: hallucination, misinformation, toxic outputs Mitigation techniques: instruction tuning, safety filters Hands-on: testing edge cases using prompts with GPT models Discussion on responsible deployment of generative NLP models	No					
3	NLP	3-Nov-2026	Tuesday		DC		2							
25	Assessment				ET2	Employability Test 2								

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	Gen AI				GenAI Session	GenAI for Computer Vision	3	Automated vision pipelines, AI image generation, object detection, annotation assistance, visual quality assessment						
	Gen AI				GenAI Session	Foundation & Infrastructure	3	Azure AI setup and configuration, Data pipeline implementation, Vector database setup Basic RAG system, MLOps infrastructure						
	Gen AI				GenAI Session	Intelligence & Customization	3	Model fine-tuning on domain data, Advanced RAG features Multi-modal processing, Performance optimization, Automated analytics						
	Gen AI				GenAI Session	Integration & Scale	3	Complete system integration, Monitoring dashboards, Auto-scaling setup User management, Production optimization						
	Gen AI				GenAI Session	Presentation & Demo	3	Executive presentation prep, Live demo scenarios ROI calculations, Adoption strategy, Interactive demonstrations						
	Capstone Project			Live Class		1) Inventory Optimization for an E-Commerce Warehouse through Demand Forecast 2) Fraud Detection in Online Transactions 3) Churn Prediction and Retention Strategy for a Telecom Provider 4)Resume Screening and Role Matching Using NLP		**1)Inventory Optimization for an E-Commerce Warehouse (Demand Forecasting)** Sales & demand data analysis Demand forecasting & seasonality SKU volatility analysis Reorder point & safety stock logic Inventory optimization recommendations **2)Fraud Detection in Online Transactions** Transaction data exploration Class imbalance handling Fraud feature engineering Classification model building Precision–recall based evaluation Threshold tuning & risk trade-offs						

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								3)Churn Prediction and Retention Strategy (Telecom) Customer data analysis Churn driver identification Churn prediction modeling High-risk customer segmentation Retention strategy recommendations **4)Resume Screening and Role Matching Using NLP** Resume & JD text preprocessing Feature extraction (BoW / TF-IDF / embeddings) Resume–JD similarity matching Role-fit scoring & ranking Bias & ethical considerations						