Data Science Course Syllabus 2027

What 16 courses in India actually teach. Read from official course pages on 26 November 2026.

The common syllabus

Subject	What it covers	Syllabi (of 16)
Python	Core Python, NumPy, pandas, Matplotlib, Seaborn, EDA	16
Machine learning	Regression, classification, trees, boosting, clustering, PCA, evaluation	16
SQL	Joins, subqueries, window functions, CTEs	15
Statistics	Probability, distributions, hypothesis tests, A/B tests	13 (+2 partial)
Generative AI	LLM APIs, prompting, embeddings, RAG, agents	12 (+2 partial)
Deep learning	Neural networks, CNNs, RNNs, transformers (TensorFlow or PyTorch)	10 (+4 partial)
Power BI or Tableau	Dashboards, data modelling, DAX	9 (+1 partial)
Maths for ML	Linear algebra, calculus, gradient descent	7
MLOps and deployment	Git, Docker, FastAPI or Flask, MLflow, CI/CD, cloud	7 (+4 partial)
Excel	Formulas, lookups, pivot tables	6
NLP	Text preprocessing, embeddings, transformers	6 (+3 partial)
Big data	Apache Spark, Databricks	4 (+1 partial)

Six-month study order (12 to 15 hours a week)

Month	Subjects	Finish with
1	**Python, NumPy, pandas, Git**	A cleaned dataset and an EDA notebook
2	**SQL and statistics**	Window-function queries and an A/B test write-up
3	**Maths for ML, supervised learning**	A validated regression and classification model
4	**Unsupervised learning, ensembles, time series**	A segmentation or forecasting project
5	**Deep learning and generative AI**	A small RAG app or a fine-tuned model
6	**Deployment and capstone**	A model served through an API, plus 2 or 3 projects

Before you pay, check

- Python, SQL, statistics and machine learning all covered?
- Maths beyond statistics (linear algebra, calculus)?
- Deep learning as a full module, not one overview?
- Generative AI that builds things (RAG, agents), not just prompting?
- Do you deploy a model (Git, Docker, API, cloud)?
- Do the course name and the module list match?
- Which modules are live, and which are self-paced add-ons?

16 courses side by side

Course	Python	SQL	Excel	BI tool	Stats	Maths	ML	Deep learning	NLP	GenAI	MLOps	Spark
IBM Data Science (Coursera)	✓	✓			part		✓			✓		
NPTEL Python for Data Science	✓						✓					
PW Skills	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
Scaler	✓	✓	✓	✓	✓	✓	✓	✓	part	✓	✓	
AlmaBetter, IIT Patna	✓	✓			✓		✓	part		✓	✓	✓
AccioJob	✓	✓	✓	✓	part		✓	part		✓		
ExcelR	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
DataMites	✓	✓		✓	✓	✓	✓	part		part	part	✓
AnalytixLabs	✓	✓		✓	✓		✓	✓		✓	part	
Newton School	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	part
GeeksforGeeks Data Science 360	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	part	
Codebasics	✓	✓			✓		✓	✓	✓	✓	✓	
Intellipaat, IITM Pravartak	✓	✓		part	✓	✓	✓	✓				
upGrad, IIIT Bangalore	✓	✓			✓	✓	✓	✓	✓	part		✓
Great Learning, UT Austin	✓	✓		✓	✓		✓	part	part	✓	part	
Imarticus Learning	✓	✓	✓	✓	✓		✓	✓	part	✓	✓	

✓ = a module in the published syllabus. part = elective, overview or self-paced add-on. Blank = not listed on the page. Syllabi change between batches, so check the current one before paying.

GATE 2027 Data Science and AI (DA): 7 sections

Section	Main topics
Probability and Statistics	Bayes, distributions, CLT, confidence intervals, z/t/chi-squared tests
Linear Algebra	Vector spaces, eigenvalues, rank, LU, SVD
Calculus and Optimization	Single-variable calculus, Taylor series, maxima and minima
Programming, DSA	Python, data structures, sorting, searching, graphs
DBMS and Warehousing	ER model, relational algebra, SQL, normal forms, warehousing
Machine Learning	Regression, k-NN, naive Bayes, SVM, trees, MLP, clustering, PCA
AI	Search, logic, reasoning under uncertainty

General aptitude 15 marks, subject 85 marks (GATE 2027 information brochure, IIT Madras).
Full comparison, degree syllabi and sources: www.bootcampguide.com/blog/data-science-course-syllabus
By Prince Dewani, for BootcampGuide.