



Python Course Module (4 months)

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Graphics Design Course (3 months - 36 classes)

Class	Topic	Exercise
Class 1	Overview of Graphic Design	• What is Python? • Installing Python & IDE (VS Code/Jupyter) • Writing first Python program • Print, Input, Comments
Class 2	Variables & Data Types	• Numbers, Strings, Booleans • Type conversion • Simple calculations
Class 3	Operators	• Arithmetic, Comparison, Logical • Assignment operators • Practice expressions
Class 4	Control Flow – If/Else	• Simple decision making • Nested if • Mini tasks (odd/even, grade calculator)
Class 5	Loops – For & While	• Looping through numbers & strings • Break, Continue, Pass
Class 6	Strings	- Indexing, slicing • String methods (upper, lower, replace) • f-strings
Class 7	Lists	• List creation, indexing • List methods (append, sort, reverse)
Class 8	Tuples	• Tuple basics • Difference between list & tuple
Class 9	Dictionaries	• Key-value pairs • Adding, updating, deleting items

Class 10	Sets	• Creating sets • Set operations (union, intersection)
Class 11	Functions	• Defining functions • Parameters & return values
Class 12	Functions – Advanced	• Default arguments • Recursion • Practice problems
Class 13	Mini Project 1	Simple Calculator / Quiz App
Class 14	File Handling Basics	• Open, Read, Write text files
Class 15	File Handling Advanced	• CSV & JSON files
Class 16	Error Handling	• Try/Except • Custom error messages
Class 17	Modules & Packages	• Import math, random, os • Create custom module
Class 18	OOP – Basics	• Class & Objects • Attributes & Methods
Class 19	OOP – Advanced	• Inheritance • Polymorphism
Class 20	Iterators & Generators	• <code>__iter__</code>, <code>__next__</code> • yield keyword
Class 21	Decorators & Lambdas	• Lambda functions • Decorators • *args, **kwargs
Class 22	Regular Expressions	• Search, Match, Replace patterns
Class 23	Working with APIs	• Requests module • JSON from API
Class 24	Mini Project 2	To-Do List / Contact Book (File Storage)

Class 25	Database with Python	• SQLite connection • CRUD operations
Class 26	Web Scraping	• Requests + BeautifulSoup • Extract table data
Class 27	Automation Basics	• File handling automation • Renaming files
Class 28	Automation Advanced	• Sending emails with Python
Class 29	Web Development Basics	• Flask setup • Simple route & template
Class 30	Flask Project	• Build small web app (notes app)
Class 31	NumPy Basics	• Arrays, indexing, reshaping
Class 32	Pandas Basics	• Series, DataFrames • Reading CSV
Class 33	Pandas Advanced	• Data cleaning • Simple analysis
Class 34	Data Visualization	• Matplotlib basics • Plot graphs
Class 35	Seaborn	• Bar, Line, Scatter plots
Class 36	Mini Project 3	Weather App using API
Class 37	DSA Basics – Lists & Stacks	• Implement stack with list
Class 38	DSA Basics – Queues & Searching	• Implement queue • Linear & Binary Search
Class 39	Sorting Algorithms	• Bubble, Selection, Insertion Sort

Class 40	Advanced Collections	• Counter, deque, defaultdict
Class 41	Itertools	• Combinations, permutations, product
Class 42	Intro to Machine Learning	• What is ML? • Scikit-learn basics
Class 43	Linear Regression	• Build first ML model
Class 44	Classification Basics	• Train/Test split • Simple classifier
Class 45	Project Work Session	• Students select field (Web/Data/ML/Automation)
Class 46	Capstone Project Development	• Guidance + coding
Class 47	Capstone Project Completion	• Final fixes & presentation prep
Class 48	Final Project Presentation	Capstone Project Showcase