

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

Value Added Course on Python Foundations for Data Analytics, Machine Learning, Deep Learning, and Data Science

Start Date: 26-09-2026

Mode: Hybrid

Duration: 30 Hours | Sessions: 8

S.No	Session Title	Topics Covered	Date	Resource Person
1	Session 1: Python Fundamentals	Introduction, features/applications, installation/IDE/Jupyter, syntax, variables, identifiers, keywords, literals, data types, type conversion, input/output, operators, expressions, comments, indentation	26.09.2026	Name: S. Bharath Kumar Designation: Sr. Data Scientist Experience: 7+ yrs Company: Accenture, India
2	Session 2: Python Data Structures and Control Flow	Strings, indexing, slicing, string methods; Lists, Tuples, Sets, Dictionaries; nested structures; comprehensions; if, elif, else, nested conditions	27.09.2026 (9am to 12pm)	Name: Shashi Varun Kalimera Designation: Software Engineer at Microsoft. Atlanta, Georgia, United States ·
3	Session 3: Python Control Flow and Functions	for, while, nested loops, break, continue, pass; basic problem-solving programs; function definition/call, parameters, arguments, default/keyword arguments, *args, **kwargs, return, scope, lambda, recursion, built-in functions, documentation	28.09.2026 (7pm-9pm)	Name: Shashi Varun Kalimera Designation: Software Engineer at Microsoft. Atlanta, Georgia, United States ·
4	Session 4: Modules, Libraries and Object-Oriented Programming	Modules, importing, user-defined modules, packages, standard library, math, random, datetime, os, sys; introduction to external libraries; Classes, objects, __init__, instance/class variables, instance/class/static methods, encapsulation, inheritance, polymorphism, abstraction, composition	29.09.2026 (7pm-9pm)	Name: Soumya Daruru Designation: Software Engineer, Company: Amazon, California, USA Experience: 3+ years
5	Session 5: File Handling, Exception Handling and Advanced Python	Text/CSV/JSON files, read/write/append, file paths, with; errors vs exceptions, try, except, else, finally, raise, custom exceptions, assertions; iterators, generators, yield, map, filter, reduce, zip, enumerate, sorting with key, collections, regular expressions, virtual environments, package installation, debugging	30.09.2026 (7pm-9pm)	Abishek Vanam Designation: Machine Learning Engineer SDE 2 - at Meta Platforms Inc California, USA Experience: 6 + years
6	Session 6: Introduction to Machine Learning	Introduction to Machine Learning, AI vs ML vs Deep Learning, types of Machine Learning, supervised and unsupervised learning, datasets, features, labels, training and testing, basic ML workflow	01.10.2026 (7pm-9pm)	Name: Soumya Daruru Designation: Software Engineer, Company: Amazon, California, USA

S.No	Session Title	Topics Covered	Date	Resource Person
				Experience: 3+ years
7	Session 7: Machine Learning with Python	NumPy, Pandas, data preprocessing, exploratory data analysis, train-test split, regression, classification, KNN, decision trees, model evaluation	02.10.2026 (7pm-9pm)	Name: Sai Rachana Yerram Designation: Software Development Engineer Company: Amazon, Seattle, USA Experience: 4+ yrs
8	Session 8: Introduction to Deep Learning	Introduction to Deep Learning, neural networks, perceptron, activation functions, layers, forward propagation, loss functions, backpropagation, gradient descent, CNN and RNN fundamentals	03.10.2026	Name: S. Bharath Kumar Designation: Sr. Data Scientist Experience: 7+ yrs Company: Accenture, India
9	Capstone Project	Capstone Project – Implementation (Part 1)		Prof. M. Venu Gopalachari
		Capstone Project – Implementation (Part 2)		Prof. Ramakrishna Kolikipogu
		Capstone Project – Implementation (Part 3)		Mr. Geedikanti Srikanth
		Capstone Project – Testing & Debugging		Mr. Rudroju Sai Venkat
		Capstone Project – Documentation		
		Capstone Project – Presentation Preparation		
		Final Submission & Review		

Total: 30 Hours

Overall Summary

Mode / Day	Content Covered	Hours
Saturday (Offline Session)	8 Topics	6 Hours
Monday–Friday	12 Topics (7 sessions)	24 Hours
Total	20 Topics	30 Hours

Faculty Coordinator:
Prof. M. Venu Gopalachari
Prof. Ramakrishna Kolikipogu

Course Co-Coordinator,
Mr. Geedikanti Srikanth
Mr. Rudroju Sai Venkat