

JADAVPUR UNIVERSITY
COMPUTER AIDED DESIGN CENTRE
Faculty Council of Engineering and Technology
Kolkata - 700 032

**Certificate Course on
Computation with Python**

Scope

Python is a general-purpose programming language which can be used for a wide variety of applications. Python has an enormous user community. Python is the primary language used for the massive cloud computing project OpenStack, powering private and public clouds in data centres all over the world. It's also a popular language for machine learning, scientific, statistical, mathematical, and other types of specialized computing.

Course Duration: 42 hours

Class Duration: 2 hours/day, (2-3) days per week

Eligibility: Higher Secondary or Equivalent; Participants must have mobile devices running Android 4.0.3 or above; laptop/desktop computer with Windows; and stable internet connectivity. Google Meet should be preinstalled in the mobile device.

Course Content

Sl. No.	Topic	No. of theory classes
1	Installation of Python including suitable IDEs, Starting with Python: The Interactive Shell, Executing a Script.Data types, variable, operators, expression.	1
2	Input via the keyboard, Output with Print, Formatted output with string modulo and the format method. Program Flow Control- Conditional Operators & boolean expression, if., if...else, elif etc.	1
3	Iterative control statement- while, for, break, continue & pass.	2
4	Working with Python List, List comprehension	1
5	Working with tuple, & set	1
6	Working with Dictionary, String	1
7	String Handling in Python	2
8	Functions, Parameter Passing, Global and Local Variables, Namespaces.	1
9	Modular Programming and Modules – Packages.	1
10	Lambda Operator, Filter, Reduce and Map	1
11	Object Oriented Programming with Python - Class and Instance Attributes, Properties vs. getters and setters, Magic Methods	2
12	Inheritance, abstract class, polymorphism	2
13	Exception handling	1
14	Meta class & Regular expression	1
15	Introduction to Numpy	1
16	Introduction to Panda	1
17	Creating Graphs with Python	1
	Total	21

Certificate: Completion certificate (in printed form) will be provided at the end of the course.