

**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: 11 Weeks**

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

**Eligibility: 12th passed out, or Higher**

<b>Class No.</b>	<b>Type</b>	<b>Topic</b>
1	Theory	Installation, Environment set up, The Interactive Shell, Executing a Script, IDEs
2	Theory	Python Language Basics - Data Types and Variables, Operators, and Binding.
3	Lab	
4	Theory	Console Input/Output, Control statements- Conditionals, loops
5	Lab	
6	Theory	Console Input/Output, Control statements- Conditionals, loops
7	Lab	
8	Theory	List, tuple.
9	Lab	
10	Theory	Strings
11	Lab	
12	Theory	Set and Dictionaries
13	Theory	List comprehension, Deep copy and shallow copy
14	Lab	
15	Theory	Function with different types of parameters, Lambda function
16	Theory	Concepts of global, and local, Modules and Packages
17	Lab	
18	Theory	Higher-order functions - Filter, Reduce and Map
19	Lab	
20	Theory	Iterators, Generators
21	Lab	
22	Theory	Exceptional handling
23	Theory	OOP - Class, objects
24	Lab	
25	Theory	Inheritance, Polymorphism
26	Lab	

27	Theory	Abstract class, magic methods
28	Lab	
29	Theory	File handling-Reading, writing, and other operations
30	Lab	
Theory Exam		
Lab Exam		

Certificate: Completion certificate will be provided at the end of the course.