

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

**Certificate Course on
Advanced Networking Applications with Python & Cisco Tools**

Scope

Python the best fit for Networking Fields, Using Python We can Automate the Work , In This Program we will cover in depth basic of python programming to networking applications along with concept of database , GUI programming etc. One single program providing basic python installation to networking applications (include more than 6+ project implementation).

Course Duration: 30 hrs

Eligibility: Concept of Basic C Programming

Class Duration: Theory 2 hr / class

Lab 2 hr / class

Program Details

Sl. No	Topic in Details	Theory	Practical	Total Class	No of Day
1	Basic Installation Steps for Windows/ Linux & Mac	0	1	1	Day 1
2	Basic of Python Programming A. Comments B. Variable C. Variable Types D. Lists E. Tuple F. Dictionaries G. Data Type Conversions	1	1	1	Day 2
3	Basic Python Part-II A. Arithmetic Operations B. Comparison Operators C. Assignment Operators D. Bitwise Operators E. Logical Operators F. Membership Operators G. Identity Operators H. Decision Operators I. Loops J. Loops Control Statement K. Numbers L. Strings M. Tuple in Depth N. Lists in Depth O. Input & Out put P. Handling Exceptions	1	1	1	Day 3

4	Classes/ Objects A. Simple Example B. Creating Instance Object C. Accessing Attributes D. Constructor New * init Method E. Destroying Objects F. Class Inheritance G. Overriding Method H. Overloading Method I. Overloading Operators J. Data Hiding	1	1	1	Day 4
5	Regular Expressions A. Match Function B. Search Function C. Advanced Expressions D. Search & Replace	1	1	1	Day 5
6	CGI Programming A. Basic CGI Programming B. GET Method C. POST Method D. Cookies	1	1	1	Day 6
7	Concept of Database (Specially For Database Application Using Python Students) A. Set up Database B. Connect to Database C. Create Table D. INSERT Operations E. READ Operations F. UPDATE Operations G. DELETE Operations H. Simple Network Example I. Simple Client	1	1	1	Day 7
8	Multithreading A. Initiate a New Thread B. Create Thread C. Synchronize Threads D. Multithread Priority Queue	1	1	1	Day 8
9	XML Parse an XML File	1	1	1	Day 8
10	GUI A. Introduction B. Button C. Canvas D. Checkbutton E. Entry F. Frame G. Label H. Listbox	1	1	1	Day 9

	I. Menubutton J. Menu K. Message L. Radio Button M. Top Level N. Spin box O. Message Box P. Label Frame				
11	Networking Lab Set Up	1	1	1	Day 10
12	Netmiko Use of SSH for Network Automation 100% Practical Project Based Learning (Enable SSH on Switch , Script)	1	1	1	Day 11
14	NAPLAM 1. Installation for Python 2.7 & 2. Install NAPLAM 2. JSON and More Command	1	1	1	Day 12
15	NAPALAM & BGP A. Use of NAPALAM to Retrieve BGP neighbor B. Multiple BGP C. Bigger BGP	1	1	1	Day 13
16	Netmiko Scalling Encrypted File , Sequential , Multithreading	1	1	1	Day 14
17	Python Based Applications A. Functions - Netmiko & Router B. Named Keyword Arguments(Netmiko)	1	1	1	Day 15

Doubt Clearing Session: One Session for 1 hr at the end of program

Final Project Submission: One Day Demonstration of Project Work

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