

Paper Code: BCADSC 4.5

Paper Title: Python Programming

Teaching Hours: 5 Hrs / Week

Total Teaching Hours: 60Hrs

Marks: Th-80+IA-20

Credits: 3

UNIT I

Introduction to Python: Working with python, Variables, expressions, and statements, accepting user input, Conditional execution, Alternative execution, Chained conditionals, Nested conditionals, Iteration, Function Basics- Built-in Functions, Declaring and calling user defined functions, Parameters and default arguments, Fruitful functions and void functions, Recursion, Scope :Global, Local variables. Modules : Creating and importing modules- importing all or specific classes from module.

12 Hrs

UNIT II

Lambda -- functions as objects, map() function, Strings, indexing, Slicing, Built-in String methods, Lists, Dictionaries and Tuples, Files: Opening the file – modes : read, write, append. Reading from and writing to a file, closing, deleting a file.

12 Hrs

UNIT III

Exception: Exceptions in Python, Handling Exceptions: try block, except block, else block, finally block, Raising an exception, User defined exception, Assertions.Object-Oriented Programming: Classes : defining classes with __init__() and methods, creating objects, class variables and instance variables, Inheritance _super() function.

12 Hrs

UNIT IV

Regular Expressions: Concept of regular expression, meta characters, using match() function, search(), findall(), sub() and split() functions. GUI Programming in Python (using Tkinter): Introduction to GUI library. Layout management with pack, grid and place, Widgets with their attributes: Frame, Label, Button, Checkbutton, Radiobutton, Entry, Listbox, Text. Events and bindings, Drawing on canvas (line, oval, rectangle, arc.).

12 Hrs

UNIT V

Database connectivity in Python: Installing mysql connector, Accessing connector module, Using connect, cursor, execute & close functions, Reading single & multiple results of query execution, Executing different types of SQL statements, Executing transactions, Handling exceptions in database connectivity.

12 Hrs

References:

1. Charles R. Severance, "Python for Everybody: Exploring Data Using Python 3", 1st Edition, Create Space Independent Publishing Platform, 2016.
2. John V Guttag. "Introduction to Computation and Programming Using Python", Prentice Hall of India
3. Paul Gries , Jennifer Campbell, Jason Montojo, Practical Programming: An Introduction to Computer Science Using Python 3, Pragmatic Bookshelf,2/E
4. Lukaszewski, MySQL for Python: Database Access Made Easy, PactPublisher
5. Allen B. Downey, "Think Python: How to Think Like a Computer Scientist", 2nd Edition, Green Tea Press, 2015
6. Magnus Lie Hetland, Beginning Python: From Novice to Professional, Apress

Additional Reading:

1. James Payne , Beginning Python: Using Python 2.6 and Python 3, WileyIndia,
2. Python Programming,http://en.wikibooks.org/wiki/Python_Programming
3. The Python Tutorial,<http://docs.python.org/release/3.0.1/tutorial/>
4. Learn Python the Hard way,<http://learnpythonthehardway.org/>
5. Swaroop C H. A Byte of Python,<http://www.swaroopch.com/notes/python>
6. <https://www.tutorialspoint.com/python3>