

# CAP460:FUNDAMENTALS OF PYTHON

L:2 T:0 P:4 Credits:4

**Course Outcomes:** Through this course students should be able to

CO1 :: define the python syntax and semantics of control flow statements

CO2 :: understand the working of strings, functions and files

CO3 :: apply various operations on data structures like lists, tuples, dictionaries and sets for problem solving

CO4 :: analyze the unexpected situations and manage them using appropriate exception handling mechanism

## Unit I

**Introduction to python** : installation, working with python, basic syntax, variables, blocks, applications of python

**Data types and operators** : declaring and using numeric data types: int, float, complex, python basic operators, use of sequence data types

## Unit II

**Program flow control** : conditional blocks using if, else and elif, simple for loops in python, use of while loops in python, loop manipulation using pass, continue, break and else

**String handling** : accessing strings, string length, string traversal, string comparison, find function, for loop using string

## Unit III

**Lists** : accessing lists, operations on list, slices, deletion, for loop using list, functions and methods

**Tuples** : accessing tuples, operations on tuple, working with tuple functions and methods

## Unit IV

**Dictionaries** : accessing values in dictionaries, working with dictionaries, properties, functions, for loop using dictionaries

**Sets** : access set items, add set items, remove set items, looping on sets, join sets, set methods

## Unit V

**Functions** : defining a function, calling a function, types of functions, function arguments

**File handling** : printing on console, reading data from keyboard, text and binary files, opening and closing file, reading and writing files

## Unit VI

**Exception handling** : exception, exception handling, except clause, multiple except with single try, nested of try, try and finally clause, user defined exceptions

### List of Practicals / Experiments:

#### Programs on

- data types and operators
- program flow control
- strings
- lists
- tuples
- dictionaries
- sets
- functions
- file handling
- exception handling

**Text Books:**

1. PROGRAMMING AND PROBLEM SOLVING WITH PYTHON by ASHOK KAMTHANE, AMIT ASHOK KAMTHANE, MC GRAW HILL

**References:**

1. PYTHON: THE COMPLETE REFERENCE by MARTIN C. BROWN, MC GRAW HILL