

Year & Sem: P2S1	Course Code: I216	Course Name: Information Technology	Credits: 3	L-T-P: 2-1-0
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Syllabus

Unit-1

Getting Started: Introduction to Python - an integrated high level language, interactive mode and script mode.

Data types: Number (Integer - boolean, decimal, octal, hexadecimal; Floating point; Complex), none, Sequence (String, Tuples, List) Sets, Mapping.

Mutable and Immutable Variables: Variables - Expressions and Statements – Values - Variables and keywords

Unit-2

Operators and Operands in Python: (Arithmetic, relational and logical operators) - operator precedence - Expressions and Statements (Assignment statement) - Membership operators

Input and Output: Taking input (using raw_input() and input()) and displaying output (print statement); Putting Comments.

Types of Errors – Syntax error, Runtime error, Semantic Error

Unit-3

Functions: Importing Modules (entire module or selected objects), invoking built in functions, functions from math module (for example, ceil, floor, fabs, exp, log, log10, pow, sqrt, cos, sin, tan, degrees, radians), using random() and randint() functions of random module to generate random numbers, composition.

User defined functions: Defining functions, invoking functions, passing parameters (default parameter values, keyword arguments), scope of variables, void functions and functions returning values, flow of execution

Unit-4

Conditional constructs: if, if-else, Nested if elif else - If Statement - If...else Statement - The elif Statement - Single Statement Suites - Compound Boolean Expressions - Nested Conditionals - Multi-way Decision Statements - Conditional Expressions

Unit-5

Loops: While, do-while, for, continue and break, Nested loops - The Infinite Loop - Using else Statement with Loops - Single Statement Suites - For Loop Iterating by Sequence Index - Using else Statement with Loops - Nested Loops

Loop Control Statements: Break Statement - Continue Statement - Pass Statement

Unit-6

Strings: Creating, initialising and accessing the elements; string operators: +, *, in, not in, range slice [n:m]; comparing strings using relational operators; String functions & methods: len, capitalize, find, isalnum, isalpha, isdigit, lower, islower, isupper, upper, lstrip, rstrip,

isspace, istitle, partition, replace, join, split, count, decode, encode, swapcase, String constants, Regular Expressions and Pattern Matching

References:

Books:

1. Introduction to Python Programming by Rheema Tharaja
2. Beginning Python Using Python 2.6 and Python 3.1 by James Payne
3. Python for Informatics Version 2.7.1 by Charles Severance

URLs:

1. <https://www.tutorialspoint.com/python/>
2. <https://docs.python.org/3/tutorial/>
3. <https://www.learnpython.org/>
4. <https://www.cbsesyllabus.in>