DSCE
Dept. of Information Science & Engg

DAYANANDA SAGAR COLLEGE OF ENGINEERING

(An Autonomous Institute Affiliated to VTU, Belagavi) Approved by AICTE & ISO 9001:2008 Certified)
Accredited by National Assessment & Accreditation Council (NAAC) with 'A' grade
Shavige Malleshwara Hills, Kumaraswamy Layout, Bengaluru-560078

DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

SCHEME 2018

PYTHON PROGRAMMING

Course code: 18IS5DEPYP | **Credits: 03**
L: P: T: S: 3:0:0: 0 | **CIE Marks: 50**
Exam Hours: 03 | **SEE Marks: 50**
Total Hours: 40

Course objectives:

1. Develop a basic Understanding of the Python Programming language.
2. Introduction the python language its most important Data types, libraries, and its recommended programming styles and idioms.
3. Methods to solve logical programming problems in python style. It also describes the some of the python programming environments that are available.
4. Describing python programming environments that are available.

Course Outcomes: At the end of the course, student will be able to:

CO1	Acquire knowledge of - Various types of data types, identifiers and keywords, Floating Point numbers, String operator and Methods.
CO2	Analyze collections of data types, tuples, sets, mapping Types and Dictionary
CO3	Apply various Looping and control structures Concept, custom Modules
CO4	Analyze the Regular Expression, object oriented programming and Debugging and Profiling.
CO5	Implement all the applications of Data base programming and Networking.
CO6	Design and apply appropriate Python Programming for solving computing problems.

Mapping of Course outcomes to Program outcomes:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
CO1	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-
CO2	3	2	1	-	-	-	-	-	-	-	-	-	-	-	-

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CO3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	3	3	-	-	-	-	-	-	-	-	-	-	1	1	-
CO5	3	2	1	-	-	-	-	-	-	-	-	3	3	3	2
CO6	3	3	1	-	-	-	-	-	-	-	-	3	3	3	2

Unit	Contents of the Unit	Hours	COs
1.	**DATA TYPES:** Identifiers and keywords, Integral Types: integers, Booleans, Floating-point Types: Floating-point Number, Complex Numbers, Decimal Numbers, Strings:Comparing Stings, Slicing and Striding Strings, String operators and Methods, Examples.	**08**	**CO1 & CO2**
2.	**COLLECTION DATA TYPES:** Sequence Types: Tuples, Named Tuples,Lists, Set Types:Sets,Frozen Sets, Mapping Types: Dictionaries, Default Dictionaries, Ordered Dictionaries, Iterating and Copying collections: Iterators and Iterable operations and Functions, Examples. **CONTROL STRUCTURES AND FUNCTIONS:** Control Structures: Conditional Branching, Looping,	**08**	**CO3& CO4**
3.	**EXCEPTION HANDLING**: Catching and Raising Exceptions, Custom Functions: Names and Docstrings, Argument and Parameter Unpacking, Accessing Variables in the global Scope. **MODULES:** Modules and Packages: Packages, Custom Modules. **OBJECT ORIENTED PROGRAMMING**: The object Approach, The Object Oriented Concepts and Terminology, Custom classes: Attribute and Methods, Inheritance and Polymorphism.	**08**	**CO3 & CO4**
4.	**DEBUGGING, TESTING AND PROFILING:** Debugging: Dealing with Syntax Errors, Dealing with Runtime Errors, Unit Testing, Profiling. **REGULAR EXPRESSIONS:** Python's Regular Expression Language: Characters and Characters Classes, Quantifies, Grouping and Capturing, Assertions and flags, The Regular Expression Module.	**08**	**CO4& CO6**

5.	**DATABASE PROGRAMMING**: Database Programming: DBM Databases, SQL Databases. **NETWORKING:** Creating a TCP Client, Creating a TCP Server. .	**08**	**CO5 & CO6**

Self-study component:

Note: 1. Questions for CIE and SEE not to be set from self-study component.

2. Assignment Questions should be from self-study component programming examples from each unit.

UNIT 1: Creating and running python programming and programs**.**

UNIT 2: string formatting and programming examples

UNIT 3: Lambda functions and programming examples

UNIT 4: Debugging and unit testing and programming examples

UNIT 5: Using database connectivity design a miniproject

TEXT BOOK:

1. Mark Summerfield, Programming in Python 3, A complete introduction to the Python Language, Second Edition (Chapter 2, Chapter 3, Chapter 4,Chapter 9,Chapter 11, Chapter 12, Chapter 13)

REFERENCE BOOKS:

1. Paul Gries, Jennifer Campbell, Jason Montojo, Practical Programming: An Introduction to Computer Science Using Python 3, Pragmatic Bookshelf, 2/E 2014
2. James Payne, Beginning Python: Using Python 2.6 and PYHTON 3, Wiley India 2010

Assessment Pattern:

CIE –Continuous Internal Evaluation Theory (50 Marks)

Bloom's Category	**Tests**	**Assignments**	**AAT1**	**AAT2**
Marks (Out of 50)	**30**	**10**	**05**	**05**
Remember	10			01

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Understand	10	05	01	01
Apply	10	05	02	01
Analyze			02	
Evaluate				
Create				02

***AAT 1– Alternate Assessment Tool 1: Quiz**

AAT 2 - Alternate Assessment Tool 2: Surprise Test

SEE –Semester End Examination Theory (50 Marks)

Bloom's Category	**Marks Theory(50)**
Remember	05
Understand	10
Apply	10
Analyze	10
Evaluate	10
Create	05