

<b>Program: B.Com Economics and Analytics</b>				<b>Semester: I</b>	
<b>Course: Python Programming for problem Solving</b> <b>AY:2024-25</b>				<b>Course Code:</b>	
<b>Teaching Scheme</b>				<b>Evaluation Scheme</b>	
<b>Lecture (Hours per week)</b>	<b>Practical (Hours per week)</b>	<b>Tutorial (Hours per week)</b>	<b>Credit</b>	<b>Continuous Assessment (CA)  (Marks - 10)</b>	<b>Semester End Examinations (SEE)  Marks - 30 in Question Paper)</b>
<b>2 LABS</b>	-	-	<b>3</b>		
<b>Learning Objectives:</b>					
<ol style="list-style-type: none"> <li>1. Develop a solid foundation in python syntax and other fundamental concepts</li> <li>2. Demonstrate the ability to apply python for basic data manipulation and preparation</li> <li>3. Cultivate analytical problem-solving abilities and break complex tasks into smaller ones</li> </ol>					
<b>Course Outcomes:</b>					
After completion of the course, learners would be able to:					
CO1: Write clear, concise, and efficient python programs for any task					
CO2: Apply python fundamentals to manipulate, preprocess, and analyze data for practical data analytics tasks					
CO3: Analyze problems and solve them through critical thinking and python's powerful data constructs					
<b>Pedagogy:</b>					
Hands-on practical, Computer laboratory-based learning					
<b>Outline of Syllabus: (per session plan)</b>					
<b>Module</b>	<b>Description</b>				<b>No of Hours</b>
1	Introduction to Python Programming				8
2	Working with Conditional Statements, Iterative Control, and Functions				10
3	Exploring Strings, Basic Data Structures, File and Exception Handling				12
<b>Total</b>					<b>30</b>
<b>Practicals</b>					-

Unit	Topic	No. of Hours
<b>Module 1</b>	<p><b>Overview of Python</b> Introduction to Python, Significance in Problem Solving, Overview of Python for Analytics</p> <p><b>Python Basics</b> Comments, Variables and Their Scope, Standard Data Types, Python Identifiers, Reserved Words, Operators, Statements and Expressions, Basic Input and Output, Keyboard Input</p>	08
<b>Module 2</b>	<p><b>Conditional, Iterative and Control Flow Statements</b> If Statement, If-Else Statement, If-Elif-Else Statement, Nested Conditional Statement, For Loop, While Loop, Break Statement, Continue Statement, Return Statement</p> <p><b>Functions</b> Role of Functions, Function Definition, Parameters, and Arguments, Built-In Functions, User Defined Functions, Recursive Functions</p>	10
<b>Module 3</b>	<p><b>Strings</b> Introduction of Strings, String Operations, String Indexing and Slicing, String Methods</p> <p><b>Lists, Tuples, and Dictionaries</b> Introduction to Lists, Mutability of Lists, Accessing List Elements, List Operations, List Methods, Nested Lists, Introduction to Tuples, Immutability of Tuples, Accessing Tuple Elements, List and Tuple Operations, Tuple Methods, Characteristics of Dictionaries, Creating Dictionaries and Understanding their Syntax, Accessing Dictionary, Dictionary Operations and Methods</p> <p><b>File Handling and Exception Handling</b> Opening and Closing a File, File Object Attributes, Reading to and Writing from a File, Deleting a File, What are Exceptions, Built-In Exceptions, Handling Exceptions, User-Defined Exceptions</p>	12

### Reference Books:

- [1] E. Balaguruswamy, "Introduction to Computing and Problem Solving with Python", McGraw Hill Education, 2018
- [2] Martin, "Python : The Complete Reference", McGraw Hill Education, 2018

## **EXAM PATTERN FOR THE COURSE**

### **1. Internal Class Test 10 Marks Paper Pattern (Pen Paper Based)**

Question 1 Fill in the Blanks 4 Marks

Question 2 Descriptive Question 3 Marks

Question 3 Descriptive Question 3 Marks

### **2. 10 Marks Internal Assignments / Practical Study / Case Study / Mini Project**

### **3. 30 Marks Final Exam Paper Pattern**

- a. Examination shall be conducted in machine test form in Batches (Max. Batch Size – 30 Students) in the computer laboratory
- b. One external examiner must be present along with the internal examiner (subject faculty in-charge) for the conduct of examination
- c. Question paper should have maximum number of distinct sets, kept faced down on table, from which student will pick up one question paper
- d. Duration of the examination is 1.5 Hrs
- e. Marks distribution is as follows:

1	Practical Question (One question for 20 marks Or Two questions each for 10 marks)	20 Marks
2	Viva Voce	05 Marks
3	Coursework Journal	05 Marks

Evaluation shall be done by the examiners both internal and external on machine in the computer laboratory

Students must prepare answer book during the examination with the code and output in it, which further must be printed