Bachelor of Business Administration (BBA)
Semester: IV
Paper: Elective
Subject: Programming with Python

Course Outcomes

CO. No.	Course Outcomes	Cognitive Level
CO 1	Understand Python's fundamentals and development environments, including installation, data types, variables, operators, and input/output operations.	U, R
CO 2	Master Python's control structures, data collections, and functions, including conditional and loop statements, strings, lists, tuples, sets, dictionaries, and higher-order functions.	U, R, Ap
CO 3	Understand the importance of modular programming, creating and using predefined and user-defined modules and packages, and file and directory handling in Python.	U, Ap, C

Credit and Marking Scheme

	Credits	Marks		Total Marks
		Internal	External	
Theory	3	40	60	**100**
Practical	1	40	60	**100**
Total	**4**	**200**		

Evaluation Scheme

	Marks	
	Internal	External
Theory	3 Internal Exams of 20 Marks (During the Semester) (Best 2 will be taken)	1 External Exams (At the End of the Semester)
Practical	3 Internal Exams (During the Semester) (Best 2 will be taken)	1 External Exams (At the End of the Semester)

Content of the Course
Theory
No. of Lectures (in hours per week): 2 Hrs. per week

Total No. of Lectures: 60 Hrs.   **Maximum Marks:** 60

Units	Topics	No. of Lectures
I	Concept of Computer programming, types of programming language, translators and its types. Introduction to python, Features of python, Python IDEs like Spyder, Jupyter Notebook, PyCharm., and their comparison, Data Types and Variables, Numbers, Operators Comments in Python. Input-output operation in Python,	10
II	Control Statements: Conditional control statements - if, If-else, lf-elseif-else, Loop control statements- for, while, Data Structure & Collection: - String, List, Tuple, Set, Dictionary, List comprehension, tuple comprehension, slicing and modify strings, Python arrays	10
III	Data analysis using Python- importing and reading a CSV sheet, basic exploration of data, converting a python data structure todata frame, numerical description of a data frame, data frames(concatenating, merging, join), Function in Python, types of function in Python predefined and built in functions	10
IV	Beginning with Pandas, NumPy- indexing, reshape, generating random values, mathematical operations, merging and joining, Concatenation, Data Visualization Introduction to scikit, regression and correlation, basics of predictive modelling.	15

References

Text Books:
- Mark Lutz, Learning Python
- Tony Gaddis, Starting Out With Python
- Kenneth A. Lambert, Fundamentals of Python
- James Payne, Beginning Python using Python 2.6 and Python

Reference Books:
- Python Crash Course: A Hands-On, Project-Based Introduction to Programming Edition Eric Matthes.
- The Python Language Reference Manual (version 3.2), Guido van Rossum, Drake, Jr. (Editor), ISBN: 1906966141, Network Theory Ltd, 120 pages

Suggestive digital platforms/ web links:
- www.javatpoint.com
- www.w3school.com
- www.python.org
- https://www.tutorialspoint.com/Python/index.htm

List of Practical

1. Write a program to demonstrate different number data types in Python.
2. Write a program to perform different arithmetic Operations on numbers in Python.
3. Write a program to create, concatenate print a string and access a sub-string from a given string.
4. Write a program to create, append, and remove lists in Python.
5. Write a program demonstrating working with tuples in Python.
6. Write a program demonstrating working with dictionaries in Python.
7. Write a Python program to find the largest of three numbers.
8. Write a Python program to construct the following pattern, using a nested for loop
   *
   *
   * *
   * * *
9. Write a Python script that prints prime numbers.
10. Write a Python program to define a module to find Fibonacci Numbers and import the module to another program.
11. Write a Python program to define a module and import a specific function in that module to another program.