Course Objectives

- To impart the basic concepts and constructs of Python programming.
- To understand Lists, tuples, Dictionaries, and Regular Expressions in Python.
- To Apply the concepts of file I/O in Python.
- To Implement the object-oriented programming concepts in Python.
- To do Explanatory data analysis-using Python packages.

Course Outcomes

COs No	Course Outcomes (CO)
On completion of the course, the students shall be able to	
CO1	Understand the basic concepts and constructs of Python programming.
CO2	Apply python programming concept on collection of frame work such as: Lists, tuples, Dictionaries, and Regular Expressions.
CO3	Implement the file handling concepts of file I/O in Python.
CO4	Develop the object-oriented programming concepts in Python.
CO5	Create real life applications using python

CO No.	Bloom's Taxonomy Level (BTL)					
	Remember (L1)	Understand (L2)	Apply (L3)	Analyze (L4)	Evaluate (L5)	Create (L6)
CO1		K2				
CO2			K3			
CO3				K4		
CO4			K3			
CO5						K6

Program Outcomes:

PO1	**Computing Science Knowledge:** Apply the knowledge of mathematics, statistics, computing science and information science fundamentals to the solution of complex computer application problems.
PO2	**Problem analysis:** Identify, formulate, review research literature, and analyze complex computing science problems reaching substantiated conclusionsusing first principles of mathematics, natural sciences, and computer sciences.
PO3	**Design/development of solutions:** Design solutions for complex computing problems and design system components or processes that meet the specifiedneeds with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	**Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysisand interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	**Modern tool usage:** Create, select, and apply appropriate techniques,resources, and modern computing science and IT tools including prediction and modeling to complex computing activities with an understanding of the limitations.
PO6	**IT specialist and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional computing science and information science practice.
PO7	**Environment and sustainability:** Understand the impact of the professional computing science solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the computing science practice.
PO9	**Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	**Communication:** Communicate effectively on complex engineering activities with the IT analyst community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	**Project management and finance:** Demonstrate knowledge and understanding of the computing science and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	**Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

CO-PO Mapping:

CO/PO Mapping (1 / 2 / 3 indicates strength of correlation) 3 - Strong, 2 - Medium, 1 – Low														
COs	**Programme Outcomes (POs)**													
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	2		3						1			1		
CO2	2	2	3	2	2				1		1		1	1
CO3	2	2	3	2	2				1			1	1	
CO4	1	2	1						3		3	2		2
CO5							1		2			3		

Course Assessment:

AssessmentTools	**CIE**							**TOTAL CIE Marks**	**SEE**
	QUIZ1 / AAT 1	**CAT 1**	**QUIZ2 /AAT2**	**CAT 2**	**LAB**	**LAB Exam**	**Course Based Project**		
Comprehensive		A1		A2	A3	A4			
	0	30	0	30	20	0	20	100	100

Course Based Project Rubric:

AssessmentTools	**CIE**					
	PPP	**TS1**	**TS2**	**VIVA**	**Total**	
Course Based Project		A1		A2	A3	
	5	5	5	5	20	