



**S. Y. B. Tech (Department of Information Technology)**

**Academic Year – 2024-2025 Semester -IV**

**[IT2212L]: Programming Lab II: Advanced Python**

<b>Teaching Scheme:</b> Lab : 02 Hours/Week	<b>Credits:</b> Lab:01	<b>Examination Scheme:</b> ISCE: 30 Marks ESE: 20 Marks
<b>Course Prerequisites:</b> Problem solving skills, Python Programming		
<b>Laboratory Objectives:</b> <ul style="list-style-type: none"> <li>• To understand different built in functions available in libraries like numpy, pandas, sklearn, scikit learn, seaborn, Sci-py.</li> <li>• To learn different components of Django framework.</li> </ul>		
<b>Laboratory Outcomes:</b> <b>LO1:</b> Demonstrate the use of built-in functions available in libraries like Numpy, Pandas, Seaborn, SciPy. <b>LO2:</b> Implement functions of Scikit and TensorFlow library. <b>LO3:</b> Design and implement mini projects by using Django framework.		
<b>Lab Contents</b>		
<b>Guidelines for Assessment</b>		
Continuous assessment of laboratory work is to be done based on overall performance and lab practicals /assignments performance of student. Each lab practical/assignment assessment will assign grade/marks based on parameters with appropriate weightage. Suggested parameters for overall assessment as well as each lab assignment assessment include- timely completion, performance, innovation, efficient codes, punctuality and neatness.		
<b>PART-A Python Libraries</b>		
1	Study and implement functions of Python NumPy library.	
2	Study and implement functions of Python Pandas library.	
3	Study and implement functions of Python SciPy library.	
4	Study and implement functions of Python Matplotlib library	
5	Study and implement functions of the Python Seaborn library.	

**Dr. N. M. Ranjan**  
BoS Chairman

**Dr. Ram Joshi**  
Dean of Academics



**Dr. Rakesh K. Jain**  
Director

6	Study and implement functions of Scikit learn library.
7	Study and implement functions of the TensorFlow library.
<b>Part B-Django Framework</b>	
9	Blog Application: Create a basic blog application using Django. Include features such as creating, editing, and deleting blog posts.
10	To-Do List: Develop a simple to-do list application where users can add tasks, mark them as completed, and delete them.
11	Mini Project/E-commerce Site: Build a small e-commerce website using Django. Include features such as product listings, user authentication, and a shopping cart.

**Text Books:**

**T1.** Charles Severance, "Python for Everybody: Exploring Data in Python 3", 2nd Edition, Elliott Hauser, Sue Blumenberg, ISBN 9781530051120, 1530051126.

**T2.** Allen Downey, "Think Python How to Think Like a Computer Scientist", 2nd Edition, ISBN 9781491939420, 1491939427

**T3.** José Unpingco, "Python for Probability, Statistics, and Machine Learning", Springer International Publishing Switzerland, ISBN 978-3-319-30715-2, DOI 10.1007/978-3-319-30717-6, ISBN 978-3-319-30717-6 (eBook)

**Reference Books:**

**R1.** Wes McKinney —Python for Data Analysis, ISBN: 9781449319793, 1449319793. O'Reilly Media

**R2.** Mark Lutz, Programming Python, O'Reilly, 4th Edition, 2010.

**R3.** Beginning Django: Web Application Development and Deployment with Python, Daniel Rubio, First Edition, APress publication.



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