LABORATORY HANDOUT

PYTHON PROGRAMMING LAB (ESC-212)

ECE-2ND SEMESTER

ACADEMIC YEAR (2023-24)

Dr Surbhi Sharma

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Department of Electronics & Communication Engineering

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Course Code	Course Name	Course Type	Cd	L	T	P	Marks		
							Sessional	Final Exam	Total
ESC-212	Python Programming Lab	ESC	2	0	0	4	50	-	50

COURSE OUTCOMES

	At the end of the course the student will be able to:
CO1	Apply the knowledge to create applications using the Python Programming Language.
CO2	Classify various data structures available in Python programming language
CO3	Implement testing and debugging of code written in Python
CO4	Apply the different functions to show various kinds of plots
CO5	Create solution for practical applications working in a team

LIST OF EXPERIMENTS

S.No.	Title
1	Installing Python; basic syntax, interactive shell, editing, saving, and running a script
2	Develop a simple program to understand operators and input/output operations
3	Develop programs to understand the control structures of python
4	Develop programs to learn different types of structures (list, dictionary, tuples) in python
5	Develop programs to learn concepts of functions scoping, recursion and list mutability.
6	Develop programs to understand working of exception handling and assertions.
7	Develop programs for data structure algorithms using python – searching, sorting and hash tables.
8	Develop programs to learn regular expressions using python.
9	Learn to plot different types of graphs using PyPlot.
10	Write a program with a function called rate_score() that rates a player"s score. The function should have one parameter that receives a score , and should return a string based on the score, as follows: If the score is <100, the function should return "Nothing to be proud of." If the score is < 500 and >100, the function should return "Not Bad." If the score is > 500, the function should return "Great !"
11	Develop the Tic-Tac-Toe game where two players are playing. The program will check for the winning condition. If the whole board gets filled and no one wins, the result should be declared as "Tie" and the user can restart the game or quit the game.
12	Develop a basic python project – Alarm clock
13	Develop a python based project for number system conversion using Tkinter library
14	Create a simple Hangman game in python

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ADDITIONAL WEB RESOURCES

1.	VLAB LINK: Python Programming Lab by IIT Kanpur which gives hands-on experience to the students. https://python-iitk.vlabs.ac.in/List%20of%20experiments.html

LAB REPORT INSTRUCTIONS

- Provide specific title of the lab experiment.

- Theory: Provide a concise abstract (typically 100-200 words) that summarizes the purpose, methods, key findings, and significance of the experiment.

- Materials/ Equipment: List all materials, components, and equipment used in the experiment. Include specifications when applicable.

- Software/Simulation Tools:

- Experimental Procedure: Describe the step-by-step procedure for conducting the experiment. Be detailed and clear in your instructions. Include diagrams or schematics to illustrate the setup, connections, and component placement. Explain any variations or adjustments made to the standard procedure.

- Observation & Calculations/Analysis: Detail the data you collected during the experiment. Include descriptions of measurements and any calculations made. Use tables, charts, or graphs to present data clearly. Discuss any trends, patterns, or significant observations. Interpret the data in the context of the experiment's objectives. Ensure that all figures, tables, and equations are correctly labeled.

- Results: Summarize the key findings of the experiment. Present results in a clear and organized manner using tables and graphs. Include units of measurement and labels for data points.

- Conclusion: Provide a concise summary of the experiment's key points and outcomes.

GRADING AND ASSESSMENT

- **Continuous Evaluation**: 30 marks
- **Final Demo & Viva**: 10 marks
- **Attendance**: 10 marks
- **Lab Overall Marks**: 50 marks

COURSE POLICIES

- **Attendance**: Minimum 75% attendance is mandatory to appear in the final examination of the course.
- **Late Submissions**: Manuals and projects must be submitted by the specified timelines.

FACULTY INFORMATION

- **Office Hours**
  Monday (12:05 PM - 01:45 PM)
- **Contact Information**
  surbhi.ece@mietjammu.in

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RUBRICS FOR LAB CONTINUOUS EVALUATION

Parameters	Performance			Marks
	Low	**Medium**	**High**	
Execution of the Experiment	Student was not able to setup and conduct the Experiment completely	Student was able to setup and conduct the experiment but measurement/results/observations were not correct	Students was able to set and conduct the experiment and the measurement/results/observations were not correct	10
	0-2 Marks	3-6 Marks	7-10 Marks	
Record	Student was not able to describe the detailed procedure and could not record the measurement.	Student was able to describe the detailed procedure partially or with some inaccuracy.	Student was able to describe the detailed procedure accurately and record all measurements correctly.	10
	0-2 Marks	3-6 Marks	7-10 Marks	
Viva Voice	Students could not demonstrate sufficient knowledge of foundation, functional or applied aspects related to the experiment during viva.	Students demonstrated sufficient knowledge of foundation, functional or applied aspects related to the experiment during viva.	Students demonstrate strong knowledge of foundation, functional or applied aspects related to the experiment during viva	10
	0-2 Marks	**3-6 Marks**	**7-10 Marks**	
Total Marks				**30**

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