Devi Ahilya University, Indore, India Institute of Engineering & Technology				**III Year B.E. (Electronics and Instrumentation)**			
Subject Code & Name	**Instructions Hours per Week**			**Credits**			
5EIRL3 SOFTWARE WORKSHOP	**L**	**T**	**P**	**L**	**T**	**P**	**Total**
	-	**-**	**1**	**-**	**-**	**1**	**1**
Duration of Theory Paper: 3 Hours							

Scripting Language Programming Laboratory

Course Objectives:

The course is designed:

1. To learn how to use Java APIs for program development.
2. To learn how to develop Java based program applications.
3. To illustrate how to use various operators in Java.
4. To demonstrate method overloading and method overriding.
5. To illustrate and learn about constructor overloading.
6. To learn how to develop string based programs.
7. To learn how to access data from files in Java

Prerequisite: Programming Concepts.

COURSE CONTENTS

Unit-I
Creating MS- Excel sheet and performing operations on MS- Excel Sheet -Formatting cells, inserting functions (min, max, average, sum, count, countif, etc.)
Examining Data – Exploration and Transformation, data analysis using Pivot charts & graphs(histogram, scatter plot, line chart etc.), sorting, filtering.

Unit-II
Introduction of Sqlite, Database connectivity, Accessing tuples, Executing queries, Transactions ,Operations Working, Handling error Functions and Methods, Printing on screen Reading data from keyboard ,Opening and closing file ,Reading and writing files

Unit-III
Graphics and GUI programming-Drawing using Tkinter and python. Networking and Multithreaded programming –Sockets, Thread and Processes, Chat application.

Unit-IV
Class and object. Attributes, Inheritance ,Overloading ,Overriding ,Data hiding Regular expressions ,Match function ,Search function ,Matching VS Searching ,Modifiers ,Patterns, CGI(Introduction, Architecture ,CGI environment variable, GET and POST methods ,Cookies ,File upload.

Unit-V
Web Frameworks - for developing server-side Web applications in Python, Web Browse Programming - interfacing with existing browsers and browser technologies15

Course Outcome:

Students earned credits will develop ability to

CO No.	CO	PO
CO1	Design and develop Java application programs and writing report.	PO3, PO10
CO2	Implement object-oriented concepts including polymorphism, abstraction, inheritance and encapsulation with Java.	PO1, PO5
CO3	Implement user defined exceptions and writing report.	PO5, PO10
CO4	Develop packages and importing packages in Java programs.	PO3
CO5	Implement exception handling in Java applications.	PO5, PO1
CO6	Design and develop inheritance based Java program	PO3
CO7	Implement interfaces based programs and writing report.	PO5, PO10
CO8	Develop Graphical User Interface (GUI) in Java Swing	PO3, PO9
CO9	Develop user interactive Java Swing based applications	PO3, PO9

CO-PO Relationship

CO	PO-1	PO-2	PO-3		PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12
CO1	1		3										
CO2	2					3							
CO3						3					1		
CO4			3										
CO5	1					3							
CO6			3										
CO7						3					1		
CO8			3							1			
CO9			3							1			

Reference Books:

1. John V Guttag. “Introduction to Computation and Programming Using Python”, Prentice Hall of india
2. R. Nageswara Rao, “Core Python Programming”, dreamtech
3. Wesley J. Chun. “Core Python Programming - Second Edition”, Prentice Hall
4. Michael T. Goodrich, Roberto Tamassia, Michael H. Goldwasser, “Data Structures and Algorithms in Pyhon”, Wiley
5. Kenneth A. Lambert, “Fundamentals of Python – First Programs”, CENGAGE Publication
6. Luke Sneeringer, “Professional Python”, Wrox
7. Hacking Secret Ciphers with Python”, Al Sweigart, URL https://inventwithpython.com/hacking/chapters

List of Practical Assignments:

Students are given programming assignments to learn following :

1. How to take input through file/command line/ network.
2. Concept of Python List, Python String, Python Dictionary, Python Tuples and data type conversion.

3. Techniques of function calling, modules like import, from import etc.
4. Basic I/O functions and exception handling in Python.
5. Concept of object oriented programming, built in class attributes, regular expressions for pattern matching.
6. To work with database interfaces (Sqlite).
7. Concept of networking using Python
8. Web development using web framework flask,bootstrap.
9. Use of XML, CSS, HTML, AJAX to understand the concept behind the web browsing.
10. A project to be developed which uses the above concept.