Program :	**Diploma in Computer Engineering**
Course Code : **4139**	Course Title: **Application Development Lab**
Semester : **4**	Credits: **No Credits**
Course Category: **Program Core**	
Periods per week: **3 (L:0 T:0 P:3)**	Periods per semester: **45**

Course Objectives:

- Provide practical knowledge to develop and deploy Web Applications using Python Frameworks.

Course Pre-requisites:

Topic	Course code	Course name	Semester
Basic programming logic		Problem Solving & Programming Lab	II
		Programming in C Lab	III
Knowledge of SQL and its usage		Database Management System lab	III

Course Outcomes :

On completion of the course,the student will be able to:

COn	Description	Duration (Hours)	Cognitive Level
CO1	Develop simple programs in python programming language	9	Applying
CO2	Develop a simple web application with form	10	Applying
CO3	Develop a web application with multiple forms	12	Applying
CO4	Design and Develop a Web Application using front-end framework and MVC.	12	Applying
	Lab Exam	2	

CO-PO Mapping

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	3			3			
CO 2	3			3			
CO 3	3			3			
CO 4	3	3	3	3	3	3	3

3-Strongly mapped,   2-Moderately mapped,   1-Weakly mapped

Course Outline

Module Outcomes	Name of Experiment	Duration (Hours)	Cognitive Level
CO1	**Develop simple programs in python programming language**		
M1.01	Develop programs using variables and data types.	2	Understanding
M1.02	Develop programs using control structures and loops.	2	Understanding
M1.03	Develop programs with Lists, Tuples, Sets and Dictionaries	2	Understanding
M1.04	Develop programs using class and objects	3	Understanding
CO2	**Develop a simple web application with form**		
M2.01	Practice installation of Python IDE	1	Applying
M2.02	Practice installation of Python Framework	1	Applying
M2.03	Practice installation of database server	2	Applying
M2.04	Make use of python framework to develop a simple web application	3	Applying
M2.05	Make use of Model-View-Controller architecture to develop a simple web application	3	Applying
CO3	**Develop a web application with multiple forms**		
M3.01	Make use of MVC architecture to develop a web application with multiple forms.	9	Applying
M3.02	Practice deployment of web application in a web server or cloud server	3	Applying
CO4	**Design and Develop a Web Application using front-end framework and MVC.**		

M4.01	Open Ended Experiments ** - Design and Develop a Web Application using front-end framework and MVC.	12	Applying
	Lab Exam	2	

** - Sample Open-ended Experiments:

(Not for End Semester Examination but compulsory to be included in Continuous Internal Evaluation. Students can do open ended experiments as a group of 2-3. There is no duplication in experiments between groups.)

1) Inventory Management

2) Patient Information

3) Hospital Management

4) Customer Relationship Management

5) Order Management

6) Document Management

7) POS Management

8) Loan Management

9) Service Management

10) Warehouse Management

Text / Reference:

T/R	Book Title / Author
T1	Swapnil Saurav, **Learn and Practice Python Programming**
T2	Awanish Ranjan, **Building Websites with Django**
R1	Martin C. Brown, **Python: The Complete Reference**
R3	Antonio Melé, **Django 3 By Example**

Online Resources:

Sl. No.	Website Link
1	http://www.tutorialspoint.com
2	http://www.w3schools.com
3	https://www.python.org
4	https://www.djangoproject.com
5	https://www.learnpython.org