Python with DJango
(Skill Enhancement Course)

Course Code	23SA8454	**Year**	II	**Semester**	II
Course Category	SE	**Branch**	IT	**Course Type**	Skill Enhancement
Credits	2	**L – T – P**	0-1-2	**Prerequisites**	Python and OOP
Continuous Evaluation:	30	**Semester End Evaluation:**	70	**Total Marks:**	100

Course Outcomes		
Upon successful completion of the course, the student will be able to:		
CO1	Design and build static as well as dynamic web pages and interactive web-based applications	L4
CO2	Web development using Django framework.	L4
CO3	Analyze and create functional website in Django	L4
CO4	Perform CRUD operations and work with cookies and session management.	L4

Contribution of Course Outcomes towards achievement of Program outcomes & Strength of correlations(3:Substantial,2:Moderate,1:Slight)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2		2						2		3	3
CO2	3	2	2		2						2		3	3
CO3	3	2	2		2						2		3	3
CO4	3	2	2		2						2		3	3
Avg.	**3**	**2**	**2**		**2**						**2**		**3**	**3**

Syllabus

Unit No.	CONTENTS	Mapped CO
I	**HTTP:** Web Server and Clients, URL, HTTP Request and Response message format, Status Codes, Introduction to different Python Libraries **Hypertext Markup Language(HTML)**: HTML basics – Elements, attributes and tags, Basic structure, Basic tags, Advanced tags: Table, Forms, Form elements, Frames **Cascading Style Sheets (CSS):** Introduction, advantages, Adding CSS, CSS and page layout – anatomy of a style rule, Selectors: grouping, type selectors, Universal selectors, Descendent selectors, child selectors, class selectors, ID selectors. **Experiments:** a. Write a HTML program, to explain the working of lists. Note: It should have an ordered list, unordered list, nested lists and ordered list in an unordered list and definition lists. b. Write a HTML program, to explain the working of hyperlinks using <a> tag and href, target attributes. c. Create a HTML document that has your image and your friend's image with a specific height and width. Also when clicked on the	**CO1**

	images it should navigate to their respective profiles. d. Write a HTML program, in such a way that, rather than placing large images on a page, the preferred technique is to use thumbnails by setting the height and width parameters to something like to 100*100 pixels. Each thumbnail image is also a link to a full sized version of the image. Create an image gallery using this technique e. Write a HTML program, to explain the working of tables. (use tags: <table>, <tr>, <th>, <td> and attributes: border, rowspan, colspan) f. Write a HTML program, to explain the working of tables by preparing a timetable. (Note: Use <caption> tag to set the caption to the table & also use cell spacing, cell padding, border, rowspan, colspan etc.). g. Write a HTML program, to explain the working of forms by designing Registration form. (Note: Include text field, password field, number field, date of birth field, checkboxes, radio buttons, list boxes using <select>&<option> tags, <text area> and two buttons ie: submit and reset. Use tables to provide a better view). h. Write a HTML program, to explain the working of frames, such that page is to be divided into 3 parts on either direction. (Note: first frame → image, second frame → paragraph, third frame → hyperlink. And also make sure of using "no frame" attribute such that frames to be fixed). i. Write a HTML program, to embed audio and video into HTML web page. j. Write a program to apply different types (or levels of styles or style specification formats) - inline, internal, external styles to HTML elements. (identify selector, property and value).	
II	**JavaScript:** History, inserting JavaScript code, key words, variables, literals, operators, Control structure, Conditional statements, Arrays, Array methods, functions, function literal, function constructor, dynamic function creation, parameter passing, Date object, String object, Window object, document object, DOM: navigating DOM tree, Node methods, Navigating DOM tree, creating nodes, creating element node, text node, attribute node, comment node, removing nodes. **Experiments:** a. Write a program to embed internal and external JavaScript in a web page. b. Create a webpage which uses prompt dialogue box to ask a voter for his name and age. Display the information in table format along with either the voter can vote or not c. Write a program which asks the user to enter three integers, obtains the numbers from the user and outputs HTML text that displays the larger number followed by the words "LARGER NUMBER" in an information message dialog. If the numbers are equal, output HTML text as "EQUAL NUMBERS". d. Write a program to display week days using switch case.	**CO1**

	e. Write a program to print 1 to 10 numbers using for, while and do-while loops. f. Write aprogram to print data in object using for-in, for-each and for-of loops. Display the denomination of the amount deposited in the bank in terms of 100's, 50's, 20's, 10's, 5's, 2's & 1's. (Eg: If deposited amount is Rs.163, the output should be 1-100's, 1-50's, 1-10's, 1-2's & 1-1's)	
III	**Introduction to Django Framework** Understanding Django environment, Features of Django and Django architecture, MVC and MTV, URLs and Views, Mapping the views to URLs, Django Template, Template inheritance Django Models, Creating model for site, Converting the model into a table, Fields in Models, Integrating Bootstrap into Django, Creating tables, Creating grids, Creating carousels. **Experiments:** a. Create a Sample "Hello World" Application using Django b. Create a Login and Registration Page using MVC architecture in Django Framework c. Create a sample page in Django by integrating BootStrap. d. Create an application with Tables, grids in Django e. Create a Django App with Carousels feature.	**CO2**
IV	**Introduction to Django Authentication System**, Security Problem &Solution with Django Creating Registration Form using Django, Adding Email Field in Forms, Configuring email settings, Sending emails with Django, Adding Grid Layout On Registration Page, Adding Page Restrictions, Login Functionality Test and Logout. **Experiments:** a. Create a registration page using Authentication System b. Create an application in Django to send emails using email settings and Grid Layout c. Create an application in Django using page restriction /authentication with Login and Logout Functionality d. Create a sample form using Django Forms.	**CO3**
V	**Connecting SQLite with Django** Database Migrations, Fetch Data From Database, Displaying Data On Templates, Adding Condition On Data, Sending data from URL to view, Sending data from view to template, Saving objects into database, Sorting objects, Filtering objects, Deleting objects, Difference between session and cookie, Creating sessions and cookies in Django **Deploying Django Web Application on Cloud** **Experiments:** a. Create an app in Django which fetches data from database and show as list and also save objects in database b. Create an app in Django for performing CRUD operations on records in a database c. Create an app in Django which uses session management and cookies to store and manage user sessions.	**CO4**

Learning Resources
Text Books
1. Web Technologies, Uttam K. Roy, Oxford. 2. Daniel Rubio, Apress, "Beginning Django Web Application Development and Deployment with Python", 2nd Edition 2017,Apress
Reference Books
1. Tom Aratyn, "Building Django 2.0 Web Applications: Create enterprise-grade, scalable Python web applications easily with Django 2.0",2nd Edition 2018, Packt Publishing. 2. Harry Percival, "Test-Driven Development with Python: Obey the Testing Goat: Using Django, Selenium and JavaScript",2nd Edition 2019, Kindle Edition.
E-Resources & other digital material
1) https://www.djangoproject.com/ 2) https://www.w3schools.com/django/ 3) https://www.w3schools.com/html 4) https://www.w3schools.com/css 5) https://www.w3schools.com/js/