

E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI -14.**(An Autonomous Institution – Affiliated to Madurai Kamaraj University)****Re –accredited (3rd cycle) with Grade A⁺ and CGPA 3.51 by NAAC****CBCS****DEPARTMENT OF COMPUTER SCIENCE – UG****VALUE ADDED COURSE****(w.e.f. 2023 – 2024 onwards)****PYTHON DJANGO**

1. This Course is taken up by third year Computer Science students.
2. Period of study : V Semester

COURSE STRUCTURE**Contact Hours: 30 hrs****Credit: 1**

S.No.	Sem	Subject Code	Title of the paper
1.	V	23CSVAC1	Theory : PYTHON DJANGO
2.	V	23CSVAC1P	Practical : PYTHON DJANGO LAB

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Introduction to PYTHON: Web development (server-side) - Software development – Mathematics - System scripting - What can Python do? - Why Python?.

Introduction to DJANGO: What is Web Development? - Introduction to Internet - Client Vs Server - Structure of Web Page - Django Architecture - MVT and MVC Pattern - Features of Django - Understanding Django Environment. **Structuring Web Page(HTML)** - What is HTML? - History of HTML - HTML Versions - Applications of HTML - Structure of HTML - Tags and Attributes - Types of Elements/Tags. **Categories of Tags in HTML:** Basic Tags - Paragraph Tags - Heading Tags - Text-Formatting Tags -Phrase Tags - Image Tags - List Tags - Marquee Tags - Hyperlink Tags -Entities and Symbols - Table Tags - Grouping Tags - Form Tags.

Unit II

Styling a Web Page(CSS): What is CSS? - Applications of CSS - Syntax of CSS - Property Vs Values - What is Selector? - Types of Selectors - Inline CSS - Internal CSS - External CSS - **Basic Level Concepts in CSS:** Text-Properties - Background-Properties – Colors - Font Properties - Link Properties - List Properties - Table Properties - Box-Modelling - **Advance Level Concepts in CSS :** Display Properties - Float Properties - Position Properties - Border Properties - Shadow Properties - CSS Units - Transition Properties - Animation Properties - Multi-Column Layouts - Flex-Box Properties - Grid Properties - Media Queries **Bootstrap Framework :** What is Bootstrap? - Installing and Accessing a Bootstrap Components - Applications of Bootstrap - Container Class - Button

– Class - Text Class - Card Class - Accordion Class - Nav-Bar Class - Carousel Class - Icons-Class - Grid Class - Flex-Box Class.

Unit III

Started with Python : What is Python? - History of Python - Applications of Python - Install Python - Create and Run Your First Python Program - Syntax and Indentation of Python. **Python Statements and Comments:** Multi-Line Statements Compound Statements - Simple Statements - Python Comments. **Python Keywords :** List of Keywords - Understand Any Keyword - Identify Python Keywords - Keyword Module - Types of Keywords -Python Variables - Create a Variable - Changing a Value of a Variable - Create a Number, String, List Variables - Get Data Type of Variable - Variable's Case Sensitive .**Python Data-Types :** String Data-Type - Integer Data-Type- Float Data-Type - Complex Data –Type - List Data-Type - Tuple Data-Type - Set Data-Type - Dictionary Data-Type - Boolean Data-Type. **Python Input/Output Statements and Range Function** - What is Input? - Accept Input From a User - Input() Function - Multiple User Inputs From a User in Single Line - Python Input() Vs Raw_Input() - Command Line Input - Output in Python - Range() Function.

Unit IV

Python Operators : Arithmetic Operators - Relational Operators - Assignment Operators - Logical Operators - Membership Operators - Identity Operators - Bitwise Operators. **Python Type Casting:** Implicit Casting - Explicit Casting . **Python Control Flow Statements: Condition Statements** - Simple If - If-Else - Nested If-Else - Elif Ladder - **Iterative Statements :** For – While **Transfer Statements :** Break – Continue – Pass. **Python Functions:** What is a Function? - Advantages of Functions - Types of Functions - Function Declaration - Indentation in Function - Function Parameter and Arguments - Function Return Type - Function Definition - Function Calling - Recursion Function.

Unit V

Python Lists: Creating a Python List - Length of List - Accessing Elements of a List - Iterating a List - Adding Elements to the List - Modifying Elements of the List - Removing Elements From a List - Find an Element in a List - Concatenation of Two Lists - Copying a List - Sorting a List - Reversing a List - Built-In Functions with List - Nested List.**Python Tuples:** What is Tuple - Creating a Tuple - Length of a Tuple - Iterating a Tuple - Accessing Elements of Tuple - Finding an Elements in a Tuple - Adding and Changing Elements in a Tuple - Removing Elements From a Tuple - Count the Elements in Tuple - Copying a Tuple - Concatenating Two Tuples - Built-In Functions in Tuple - Nested Tuple.**Python Sets:** What is Set? - Creating a Set - Accessing Elements of a Set - Find the Length of a Set - Adding Elements to a Set - Removing Elements from a Set -Set Operations - Copying a Set - Sorting the Set - Built-In Functions in Set - Nested Set.**Python Dictionary:** What is Dictionary? - Creating a Dictionary - Accessing Elements of Dictionary - Finding Length of Dictionary - Adding Elements to the Dictionary - Modify the Values of the Dictionary Keys - Removing Elements from the Dictionary - Checking if Key Exists - Join Two Dictionary - Copy a Dictionary - Sorting a Dictionary.**Python Packages & Libraries.**

PRACTICAL

Title of the Paper : PYTHON DJANGO LAB

Subject Code : 23CSVAC1P

List of Programs:

1. HTML Tags
2. Creating Web page in HTML.
3. Table Creation.
4. Form Generation.
5. Creating a Hyperlink
6. CSS Tags
7. File Handling on Python
8. Handling on Datatypes
9. Creating First Django Application
10. File Handling on Django
11. File I/P and File Type Conversions
12. Home Page Generation
13. Form Generation
14. Image Manipulation
15. Creating a web application Django.
16. File Type Conversions web app.
17. File I/O in python.
18. Home Page Creation.
19. Creating an Audio Player.
20. Image Viewer App.