DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Value Added Course

on

Flask

12.02.2025 to 18.02.2025

45 Hours

Course Objectives:

- To learn the fundamentals of Flask and its core components for building web applications.
- To understand HTTP methods, routing, and views in Flask for handling user requests and responses.
- To integrate HTML, CSS, and JavaScript with Flask for creating dynamic and interactive web pages.
- To build RESTful APIs using Flask for handling data communication between the client and server.
- To interact with databases in Flask for managing data, including creating, retrieving, updating, and deleting records.

UNIT I **HTML AND CSS BASICS**

Structure of an HTML document - Basic HTML tags and Attributes - Forms and Input fields - Basic CSS selectors, properties, and values - Types of CSS - Creating a Static Webpage using HTML & CSS - Introduction to JavaScript - DOM Manipulation and Events.

UNIT II **JAVASCRIPT BASICS**

Introduction to JavaScript - DOM Manipulation and Events - Event Handling in JavaScript - Array Functions.

UNIT III **FLASK INTRO**

Overview of Flask as a web framework - Comparison with other web frameworks - Why use Flask? - Prerequisites for Flask Fundamentals - Setting Up Flask - Routing and Views - Handling HTTP Methods - Request and Response Objects.

UNIT IV **API**

Introduction to APIs (RESTful APIs) - Setting Up Flask for API Development - Creating an API using Flask - Handling API Requests and Responses - Returning JSON Responses – Cookies and Sessions

UNIT V   DATABASE INTEGRATION WITH FLASK

Introduction to SQL - Setting up the database connection - Defining models and interacting with the database - Creating and querying database records

UNIT VI   SIMPLE PROJECT DEMO

Simple project Demo using login, logout with CRUD operations

<u>Course Outcomes:</u>

● Develop the ability to build dynamic web applications

● Improves Code debugging skills during practical exercises

● Gain a deeper understanding of web development best practices,

● Cultivate habits of writing clean, Readable and well-documented code.

● Understand how to integrate and manage databases

● Providing opportunities for students to demonstrate their skills