SILVER OAK UNIVERSITY

School of Technology, Design And Computer Application
Silver Oak College of Computer Application
Bachelor of Science Computer Science & Information Technology
Course Name: Integrated Web Solutions-I
Course Code: 3040243207
Semester: 4th

Prerequisite: Django and Odoo are written in Python so you have knowledge about basic data types, control structures, functions, and object-oriented programming concepts. Have Knowledge of Database concepts like relational databases, SQL and ORM (Object-Relational Mapping) libraries in Python.

Course Objective: To create high-quality web applications that meet the specific requirements of businesses or clients, whether it's automating processes, improving efficiency, enhancing user experience, or achieving other business goals.

Teaching Scheme:

Teaching Scheme				
L	T	P	Contact Hours	Credit
3	0	2	5	4

Contents:

Unit No.	Course Contents	Teaching Hours	% Weightage
1	**Django Overview** Installation in virtualenv, Django Architecture, Creating project and apps, Creating superuser and other commands **Working with APIs and Developer Tools and SQL** RESTful architecture, Working with APIs, Request library, Assert statements, Testing, Git, Intro to SQL, CRUD	11	26
2	**Web Development using Django** HTTP protocol, MVC model, Virtual environment, Django structure, Generic Views, Form Processing, File Uploading, HTML templates, Page Redirection, URL dispatcher, ReportLabs	10	24
3	**Introduction and Technical Fundamentals of ODOO Add-ons** History of Odoo, Add-on module structure and manifest file usage, Writing your first module, Relation fields with fields, views, functions, and menu, Widgets and controls in UI, Domain - dynamic UI visions with structure, modules, ATTRS, and on-change, Views, view attributes, diagram view, graph view, calendar view, Model and class-level attributes, Creating a base module, Field parameters, Complex fields, Designing Kanban views, Introduction to constraints, SQL constraints, automatic reserve fields	10	24

4	**Traditional ORM methods** Advanced ORM methods, Procedure from the GUI followed by method of follow-up, API decorations in Odoo, differences between versions and Odoo calls, Most used API decorations, Relational Field Operations with the API, Review of commonly used ORM methods, PMS editing and expression	11	26

Course Outcome:

Sr. No.	CO-Statement	Unit No
CO-1	Analyze the proficiency in designing, implementing, and testing modular, reusable, and maintainable code solutions using object-oriented principles.	1
CO-2	Students will be able to efficiently interact with APIs, utilize developer tools for debugging and optimization, and proficiently manage and query databases using SQL.	2
CO-3	Analyze and apply the Odoo Addons proficiency in designing, developing, and customizing Odoo addons to extend and enhance the functionality of the Odoo ERP platform.	3
CO-4	Appling ORM Models is the mastery of designing, implementing, and querying object-relational mapping (ORM) models to interact with databases seamlessly in software applications.	4

Teaching & Learning Methodology:

1. Problem - based Learning
2. Design Thinking
3. Cooperative-based Learning

List of Practical's: Total Hours: 28

Sr. No.	Practical Name
1	Python Program to Find Factorial of Number Using Function.
2	Develop programs to learn concept of functions scoping, recursion and list mutability.
3	Develop programs to understand working of exception handling and assertions.
4	Create Web Database Application "Address Book" with options to a) add/ insert a record b) modify a record c) display a record d) delete a record
5	Create Web Database Application "Event Registration" with options to a) Event Registration b) Cancel Registration c) display a record
6	A simple "Hello World" application using Django.

7	Create an extension or module library in Python to implement Calculator.
8	Create online registration Web page for Youth festival. Apply Database CRUD operations in Django Framework.

Major Equipment:

1. Latest PCs with related software

Books Recommended:

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 - ", Prentice Hall
4. Michael T. Goodrich, Roberto Tamassia, Michael H. Goldwasser, "Data Structures and Algorithms in Pyhon", Wiley

List of Open-Source Software/learning website:

1. https://djangoforbeginners.com/message-board/
2. https://www.odoo.com/slides/getting-started-

CO-PO-PSO Matrix:

Co. No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO-1	3	1	1	1	1								1	2
CO-2		2		2								1	1	1
CO-3	3			2	3							1	1	2
CO-4	3	2	1	1									1	1