



(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)

S.P.G.Chidambara Nadar - C.Nagammal Campus

S.P.G.C.Nagar, K.Vellakulam - 625 701 (Near Virudhunagar), Madurai District.



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Industry Certified Value-Added Course

on

“Building Your First SaaS Product”

01.06.2026 to 06.06.2026

SYLLABUS

Course Overview

This six-day workshop introduces students to the complete process of building an AI-assisted Micro SaaS product. The workshop begins with design thinking and prompt engineering, then moves into MVP planning, Streamlit-based prototyping, React-based interface development, database integration, cloud deployment, and product launch preparation.

Prerequisites

Basic computer knowledge and interest in building digital products. Prior programming knowledge is helpful but not mandatory.

Course Objectives

1. To introduce students to the fundamentals of Software-as-a-Service (SaaS) product development.
2. To provide hands-on experience in designing and developing a Minimum Viable Product (MVP).
3. To familiarize students with modern software development tools, workflows, and deployment practices.
4. To develop skills in frontend, backend, database, and API integration.
5. To train students in cloud deployment and product launch methodologies.

S. No.	Syllabus
1	Design Thinking, Prompt Engineering, and Development Setup — Micro SaaS Architecture — Design Thinking for Product Development — AI Prompting for Requirements, UI, Code, and Debugging — Software Development Workflow — Frontend, Backend, Database, API, and Deployment Overview — GitHub and Development Environment Setup
2	Problem Statement, MVP Scope, and Technical Planning — Problem Statement Selection — Use Case Definition — MVP Feature Finalization — Functional and Non-Functional Requirements — User Flow and Application Flow Design — Data Flow Planning — Page and Module Planning — API Flow Planning — Database Requirement Planning — Technology Stack Selection — Basic Project Structure

3	Streamlit-Based MVP Development — Introduction to Streamlit Framework — Python Environment Setup — Streamlit Application Structure — Building Single-User Application Flow — Creating Forms and Input Sections — Displaying Outputs and Results — Basic UI Layout Design — File Upload and Download Handling — Basic Data Handling for MVP
4	Streamlit MVP Completion and Deployment — Completing the Functional MVP — Improving User Interface and Application Flow — Basic Data Storage Using CSV, JSON, or SQLite — Preparing Project Files for Deployment — GitHub Repository Setup — Hosting Using Streamlit Community Cloud — Overview of Other Hosting Platforms — Testing the Live MVP
5	React-Based Product Interface and Database Integration — Introduction to React-Based Product Development — Understanding Frontend Product Structure Creating Responsive Product Interface — Converting Streamlit Prototype into React Interface — Using Modern UI Frameworks and Styling Tools — Database Integration Overview — Connecting Application with Backend or Database Services Managing Product Data.
6	Cloud Deployment and Product Launch Preparation — Preparing React Application for Deployment — Hosting Frontend on Cloud Platforms — Backend and Database Deployment Overview — Environment Configuration — Final Product Testing — Product Demo Preparation — Basic Launch Strategy — Future Scope: Authentication, Payments, Analytics, Admin Panel, and Multi-User SaaS Scaling

Total Hours: 50

Course Outcomes (COs)

After successful completion of this course, the students will be able to:

CO No	Course Outcome	Knowledge Level
CO1	Apply the SaaS product development lifecycle to design and build software solutions from concept to deployment.	K3-Apply
CO2	Develop and deploy a functional Minimum Viable Product (MVP) application using appropriate software development practices.	K3-Apply
CO3	Utilize Streamlit and React frameworks to create interactive and user-friendly web applications.	K3-Apply
CO4	Implement GitHub-based project management and collaboration techniques for effective team-based software development.	K3-Apply
CO5	Apply cloud deployment and hosting methodologies to publish and maintain web applications in a cloud environment.	K3-Apply

Programme Specific Outcomes (PSOs):

PSO1:

Professional Skills: The ability to understand, analyze and develop computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics, and networking for efficient design of computer-based systems of varying complexity.

PSO2:

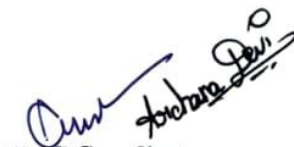
Problem-Solving Skills: The ability to apply standard practices and strategies in software project development using open-ended programming environments to deliver a quality product for business success.

Course Name	CO No	POs											PSOs	
		1	2	3	4	5	6	7	8	9	10	11	1	2
Building your First SaaS product	CO1	H	H	H	M	-	M	M	M	-	-	-	H	M
	CO2	H	H	-	-	M	M	M	M	M	-	-	M	M
	CO3	H	H	H	-	M	M	M	-	M	-	-	M	M
	CO4	H	H	H	M	-	M	M	-	M	-	M	M	M
	CO5	H	H	H	M	M	M	M	M	M	M	M	M	M

L - Low, M - Medium, H - High, '-' - no correlation

VAC Building your First SaaS product	SDGs																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
				✓				✓	✓								


Coordinators
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