

Osas Inc. Digital Product Engineering

Course Curriculum

Instructor: Osas I.

Office Hours: Monday TBD

Lectures three hours a week

Course Overview

This course is designed to equip students with the skills to design, build, and launch mobile-friendly web applications that solve real-world business problems. The curriculum focuses on end-to-end product development using React and Python, covering design, backend development, deployment, and marketing. This curriculum is designed to provide students with the skills and confidence needed to successfully develop, launch, and grow a digital product, from ideation to market-ready solutions. Students will also integrate Google authentication, handle payments with Stripe, and deploy apps using Docker on platforms like DigitalOcean or Azure. Additionally, students will learn digital marketing strategies (SEO, social media) and how to leverage AI to enhance product development and marketing efforts.

Target Audience

Aspiring digital entrepreneurs

Developers

Freelancers looking to gain skills in web app creation, deployment, and marketing

Learning Outcomes

By the end of the course, students will be able to:

Design and develop mobile-friendly web applications using React and Python

Implement Google authentication and manage payments with Stripe

Deploy applications using Docker on DigitalOcean or Azure

Apply SEO and social media marketing strategies to boost visibility

Use AI tools to enhance app development and marketing efforts

Launch a functional digital product ready for the market

Prerequisites

Basic problem-solving skills

Curiosity and a drive to learn

Topics

1. Getting Started From Ideation & Product Development

Product Engineering Overview

Understanding the end-to-end process of digital product creation.

Business Problem Identification & Validation

Techniques for finding and validating real-world business problems.

User-Centered Design Principles

Design principles focusing on the user experience (UX) and interface (UI).

UX/UI Design, Prototyping, Wireframing

Hands-on with wireframing tools to create initial designs.

React Fundamentals

Introduction to setting up a project, understanding component-based architecture.

2. Back-End Development & APIs

Introduction to Python & Flask

Basics of Python for backend development and creating RESTful APIs using Flask.

Database Management

Managing databases with PostgreSQL or MySQL. User Authentication with OAuth2 (Google)

Securing apps with Google's authentication framework.

Stripe Payment Integration

Handling payments and building secure payment workflows using Stripe.

Hands-on Workshop:

Build a simple web app with user authentication and payment integration.

3. Application Deployment

Docker Fundamentals

Learn the basics of Docker and how to containerize applications for deployment.

Cloud Deployment

Deploy applications on DigitalOcean or Azure.

Hands-on Workshop:

Deploy an app using Docker and test it in a production environment.

4. Product Launch SEO & Digital Marketing

Monetization Strategies

Learn subscription models, advertising, freemium models, and more to generate revenue.

SEO Fundamentals

Learn how to optimize your web application for search engines.

Social Media Marketing

Strategies for building a brand presence using Twitter, LinkedIn, and YouTube.

Content Strategy

Developing content that resonates with your audience and drives traffic.

No Weekly Assignments but you should have a completed product deployed for peer review and feedback.

Course Requirements

Students are required to attend all Zoom lectures and discussions.

Students are required to be hands on and contributing code to their repository on github.

Assessment

Final Project: Each student must develop and launch a fully functional web app by the end of the course. Students will present their fully functional product and receive feedback from peers and the instructor.