

HTML5, Python & Flask Complete Course

Learn to build full-stack web applications from scratch with HTML5, Python, and Flask. Perfect for beginners and intermediate developers.

[Web & Mobile Design](#) Instructor: Morgan Blake • 5 sections • 50 lessons • 17.75h total

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About this course

Many aspiring web developers struggle with learning disparate technologies separately. This course bridges that gap by integrating HTML5, Python, and Flask into a single, cohesive learning path that takes you from fundamental web concepts to advanced deployment. You'll learn through video lessons, hands-on projects, and real-world examples. By the end, you'll be able to design, build, and deploy dynamic web applications using modern tools and best practices.

Course curriculum

Foundations of Web Development & HTML5 Basics

- **How the Web Works: Browsers, Servers, and HTTP (15m)**
Grasp the foundational concepts of web communication, including how browsers and servers interact over HTTP protocols.
- **Setting Up Your Development Environment (12m)**
Configure VS Code and browser tools for efficient web development. A step-by-step guide to getting started.
- **HTML5 Document Structure and Boilerplate (18m)**
Create your first HTML5 document with proper structure, including doctype, head, and body sections.
- **Using Core HTML5 Elements for Content (20m)**
Master headings, paragraphs, links, images, and lists to build well-structured web pages.
- **Semantic HTML5 Tags for Better Accessibility (15m)**
Learn to use header, nav, main, section, and footer tags to improve page semantics and SEO.
- **Building Interactive Forms with HTML5 (25m)**
Explore form elements and input types to collect user data effectively. Includes real-world examples.
- **Accessibility Best Practices in HTML5 (18m)**
Implement attributes like alt and ARIA to make your web content accessible to all users.

Intermediate HTML5 & Introduction to Python

- **HTML5 Multimedia: Audio and Video Elements (20m)**
Add audio and video to your web pages with HTML5 tags. Covers embedding and basic controls.
- **Introduction to the HTML5 Canvas (25m)**
Get started with the canvas element for drawing graphics. A hands-on project to create simple shapes.
- **Responsive Design with the Viewport Meta Tag (15m)**
Make your web pages look great on any device by understanding responsive design principles.
- **Python Fundamentals: Variables and Data Types (18m)**
Begin your Python journey with variables, strings, numbers, and basic data structures.
- **Operators and Expressions in Python (12m)**
Learn to perform calculations and comparisons using Python's built-in operators.
- **Control Flow: Conditionals and Loops (20m)**
Write code that makes decisions and repeats actions with if statements and for/while loops.
- **Functions, Scope, and Error Handling (22m)**
Define reusable functions, understand variable scope, and handle errors with try/except blocks.
- **Working with Python Data Structures (18m)**
Manipulate strings, lists, dictionaries, and tuples to store and process data efficiently.
- **File I/O in Python (15m)**
Read from and write to files using Python, a key skill for data persistence.

- **Python Practice: Mini-Projects for Beginners (30m)**

Apply what you've learned with simple projects that combine HTML5 and Python basics.

Python Deep Dive & Programming Concepts

- **Object-Oriented Programming in Python (30m)**
Learn to create classes and objects, implement inheritance, and understand polymorphism.
- **Modules, Packages, and Importing Libraries (18m)**
Organize your code into modules and use external libraries from PyPI.
- **Managing Dependencies with Virtual Environments (15m)**
Set up isolated environments for your projects using venv and pip.
- **Working with APIs and JSON Data (25m)**
Fetch data from web APIs and parse JSON responses in Python. Includes a real API case.
- **Advanced Python Features: Comprehensions and Lambdas (20m)**
Write concise code with list comprehensions, lambda functions, and decorators.
- **Regular Expressions for Pattern Matching (22m)**
Use regex to search and manipulate text data efficiently.
- **Introduction to Databases with SQLite (28m)**
Store and retrieve data using Python's sqlite3 module. Build a simple database application.
- **Python Best Practices and Code Optimization (18m)**
Improve code quality with debugging techniques, type hints, and performance tips.

Flask Framework — Building Dynamic Web Applications

- **Introduction to Flask: Why Use It in 2026? (15m)**
Understand Flask's role in modern web development and its advantages for building web apps.
- **Installing Flask and Creating Your First App (20m)**
Set up Flask and write a basic application with route handling. A step-by-step tutorial.
- **Jinja2 Templating: Dynamic HTML Rendering (25m)**
Use Jinja2 templates to display Python data in HTML pages. Includes loops and conditionals.
- **Handling GET and POST Requests in Flask (18m)**
Process form data and handle different HTTP methods to build interactive web pages.
- **Connecting Flask to a Database with SQLAlchemy (30m)**
Integrate a database into your Flask app using SQLAlchemy ORM for efficient data management.
- **Organizing Flask Apps with Blueprints (22m)**
Structure larger applications using Blueprints for better code maintainability.
- **Serving Static Files and Integrating HTML5 (15m)**
Manage CSS, JavaScript, and images in Flask, and tie in HTML5 layouts.
- **Implementing Flash Messages for User Feedback (12m)**
Provide temporary messages to users after actions like form submissions.
- **User Sessions and Basic Authentication (25m)**
Store user data across requests and implement login functionality with sessions.
- **Form Validation and CSRF Protection (20m)**
Secure your forms with validation and cross-site request forgery prevention.

- **Building a RESTful API with Flask (28m)**
Design and implement API endpoints for JSON data exchange.
- **Flask Project: Building a Blog Application (35m)**
Apply all concepts to create a complete blog app with HTML5 frontend and Flask backend.

Advanced Topics & Full-Stack Project Deployment

- **Full-Stack Project Planning and Structure (20m)**
Plan a complete web application with HTML5 frontend and Python/Flask backend.
- **Integrating Third-Party APIs into Flask (25m)**
Use external APIs to fetch data and enhance your application features.
- **Handling Asynchronous Requests in Flask (18m)**
Manage async operations for better performance in your web apps.
- **Security Best Practices for Flask Applications (22m)**
Implement CSRF protection, input validation, and password hashing to secure your app.
- **Testing Flask Apps with pytest (25m)**
Write and run tests to ensure your application works correctly.
- **Deploying Flask to a Live Server (30m)**
Deploy your application using platforms like Heroku or AWS. Includes step-by-step guide.
- **Performance Optimization for Flask Apps (18m)**
Improve app speed with caching, database indexing, and code profiling.
- **Logging and Monitoring in Production (15m)**
Set up logging and monitor your application's health in a live environment.
- **Containerizing Flask with Docker (25m)**
Use Docker to package your Flask app for consistent deployment across environments.
- **CI/CD Pipelines for Flask Projects (20m)**
Automate testing and deployment with continuous integration and delivery.
- **Advanced Flask Patterns and Extensions (22m)**
Explore advanced patterns like middleware and useful Flask extensions.
- **Building a RESTful API with Advanced Features (28m)**
Add pagination, filtering, and authentication to your Flask APIs.
- **Final Project: Complete Full-Stack Deployment (40m)**
Deploy a full-featured web application from scratch, covering all learned concepts.

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