

Introduction to Full Stack Web Development with Python and Django

Modern Skills for Robust Web Development | Core Python, Classes, Django Architecture, Views, Querying, Templates, Testing & More

Course Snapshot

www.triveratech.com

- **Course: Introduction to Full Stack Web Development with Python and Django (TTPS4860)**
- **Duration:** 5 days
- **Audience & Skill-Level:** This is an **introductory-level** course geared for anyone **new to Python** who wants to use Python and Django in full stack web development projects. Prior scripting or development experience is recommended.
- **Hands-on Learning:** This hands-on course combines engaging expert lessons, demos and group discussions with real-world, skills-focused machine-based labs and exercises. Student machines are required.
- **Delivery Options:** This course is available for **onsite private classroom presentation, live online virtual presentation**, or can be presented in a **blended learning format**. Please also ask about our **Self-Paced / Video / QuickSkills** or **Mini-Camp / Short Course** flexible delivery options.
- **Public Schedule:** This course has active dates on our live-online open enrollment **Public Schedule**.
- **Customizable:** This course agenda, topics and labs can be further adjusted to target your specific training skills objectives, tools and learning goals. Please ask for details.

Overview

Geared for experienced web developers new to Python, **Introduction to Full Stack Web Development with Python and Django** is a five-day hands-on course that teaches students how to develop Web applications using the Django framework. Students will explore the basics of creating basic applications using the MVC (model-view-controller) design pattern, as well as more advanced topics such as administration, session management, authentication, and automated testing. This comprehensive, practical course provides an in-depth exploration of working with the programming language, not an academic overview of syntax and grammar. Students will immediately be able to use Python to complete tasks in the real world.

Course Topics: This is the high-level list of topics covered in the course. See below for detailed sessions, lessons and labs:

- The Python Environment
- Getting Started
- Flow Control
- Lists and Tuples
- Working with Files
- Dictionaries and Sets
- Functions
- Errors and Exception Handling
- Using Modules
- Classes
- Django Architecture<
- Configuring a Project
- Adding an Application
- Login for Nothing and Admin for free<
- Basic Views (AKA Controllers and Templates)
- Querying the Models
- Working with Templates
- Forms
- Automated Testing

Learning Objectives

This course is approximately **40% hands-on**, combining expert lecture, real-world demonstrations and group discussions with machine-based practical labs and exercises. Working in a hands-on learning environment, guided by our expert team, attendees will learn to:

- Develop full-stack web sites based on content stored in an RDMS
- Use python data types appropriately
- Define data models
- Understand the architecture of a Django-based web site
- Create Django templates for easy-to-modify views
- Map views to URLs
- Take advantage of the built-in Admin interface
- Provide HTML form processing

Need different skills or topics? If your team requires different topics or tools, additional skills or custom approach, this course may be further adjusted to accommodate. We offer additional python, scripting, web development, database, analytics and other related topics that may be blended with this course for a track that best suits your needs. Our team will collaborate with you to understand your needs and will target the course to focus on your specific learning objectives and goals.

Audience & Pre-Requisites

This **introductory-level** Python course is geared for experienced web developers new to Python who want to use Python and Django for full stack web development projects.

Take Instead: We offer other flavors of introductory-level Python courses for specific needs and audience levels depending on student roles and goals:

- TTEY101 Introduction to Programming Basic and Python for Non-Developers (3 days)
- TTPS4800 Python Programming Basics (3 days) – subset course for attendees who just need scripting basics
- TTPS4820 Mastering Python Programming (5 days) – superset of the 3-day Intro course with extended topics and labs
- TTPS4860 Introduction to Full Stack Web Development with Python and Django (5 days)
- TTPS4824 Python for Network / System Administrators (4 days)- introductory level for networking as opposed to web focus
- TTPS4874 Applied Python for Data Science (4 days) – introductory level with depth for data science focus
- TTPS4894 Python for Security Professionals (4 days) – introductory level with security focus as opposed to web development

Take Next:

- TTPS4866 Advanced Django (2 days)

Additional Follow On Courses: Our Python tracks include a wide variety of follow-on courses and learning paths for leveraging Python for next-level web development, data science / machine learning, networking, task automation, security and other topics. Please see the attached **Python Training Suite** list of courses or inquire for recommendations based on your specific role and goals.

Enhanced Learning Services: Please also ask about our **Pre-Training Class OnRamp & Prep / Primer** offerings, **Skills Gap Assessment Services, Case Studies, Knowledge Check Quizzes, Skills Immersion Programs & Camps, Collaborative Mentoring Services and Extended Learning Support & Post Training** services.

Course Topics / Agenda

Please note that this list of topics is based on our standard course offering, evolved from typical industry uses and trends. We'll work with you to tune this course and level of coverage to target the skills you need most. Topics, agenda and labs are subject to change, and may adjust during live delivery based on audience needs, skill-level and participation.

1. The Python Environment

- Starting Python
- Using the interpreter
- Running a Python script
- Getting help
- Editors and IDEs

2. Getting Started

- Using variables
- Built in functions
- Strings
- Numbers
- Converting among types
- Writing to the screen
- Command line parameters

3. Flow Control

- About flow control

- Conditional expressions
- Relational and Boolean operators
- **while** loops

4. Lists and Tuples

- About sequences
- Lists and list methods
- Tuples
- Indexing and slicing
- Iterating through a sequence
- Sequence functions, keywords, and operators
- List comprehensions

5. Working with Files

- File overview
- The **with** statement

- Opening a file
- Reading/writing files

6. Dictionaries and Sets

- About dictionaries
- Creating and using dictionaries
- About sets
- Creating and using sets

7. Functions

- Returning values
- Function parameters
- Variable Scope
- Sorting with functions

8. Errors and Exception Handling

- Exception overview

- Using try/catch/else/finally
 - Handling multiple exceptions
 - Ignoring exceptions
- 9. Modules and Packages**
- Creating Modules
 - The **import** statement
 - Module search path
 - Creating packages
- 10. Classes**
- About OO programming
 - Defining classes
 - Constructors
 - Properties
 - Instance methods and data
 - Class/static methods and data
 - Inheritance
- 11. Django Architecture**
- Django overview
 - Sites and apps
 - Shared configuration
 - Minimal Django layout
 - Built in flexibility
- 12. Configuring a Project**
- Executing manage.py
 - Starting the project
 - Generating app files
 - App configuration
- Database setup
 - The development server
 - Using **cookiecutter**
- 13. Creating models**
- Defining models
 - Related objects
 - SQL Migration
 - Simple model access
- 14. Login for Nothing and Admin for Free**
- Setting up the admin user
 - Using the admin interface
- 15. Views**
- What is a view
 - HttpResponse
 - URL route configuration
 - Shortcut: `get_object_or_404()`
 - Class-based views
- 16. Templates**
- About templates
 - Variable lookups
 - The **url** tag
 - Shortcut: **render()**
- 17. Querying Models**
- QuerySets
 - Field lookups
 - Chaining filters
 - Slicing QuerySets
 - Related fields
 - Q objects
- 18. Advanced Templates Use**
- Comments
 - Inheritance
 - Filters
 - Escaping HTML
 - Custom filters
- 19. Forms**
- Forms overview
 - GET and POST
 - The Form class
 - Processing the form
 - Widgets
 - Validation
 - Forms in templates
- 20. Automated Testing**
- Why create tests?
 - When to create tests
 - Using Django's test framework
 - Using the test client
 - Running tests
 - Checking code coverage

For More Information

All courses can be presented **onsite** or **online**, or in a **combined / flex / blended learning format**, tailored to target your specific audience, needs and learning goals. We also offer focused, flexible **short courses**, **self-paced learning** options, **recorded sessions** and more. We train beginner to advanced skills in all areas we cover, and offer **New Hire / Cohort Training**, **Boot Camps**, **Skills Immersion Programs**, **Reskilling Programs**, **Skills Migration & Transition Programs**, and more. We collaborate with you to ensure all courses are truly targeted to meet your specific needs and learning skills, maximizing your valuable training time, as well as your important budget. Please also visit our extensive **Public Training Schedule** for training for smaller groups or individuals. Please contact us for course details, **Corporate Rates** and **Special Discount Offers**.

For more information about our dedicated training services, collaborative coaching services, courseware licensing options, public course schedule, training management services, partner programs, or to see our complete list of course offerings and special offers please visit us at www.triveratech.com, email Info@triveratech.com or call us toll free at **844-475-4559**. Our pricing and services are always satisfaction guaranteed.

TRIVERA TECHNOLOGIES • Collaborative IT Training, Coaching & Skills Development Solutions
www.triveratech.com • toll free +1-844-475-4559 • Info@triveratech.com • Twitter TriveraTech

ONSITE, ONLINE & BLENDED TRAINING SOLUTIONS • PUBLIC / OPEN ENROLLMENT COURSES • COURSEWARE LICENSING & DEVELOPMENT
MENTORING • ASSESSMENTS • LEARNING PLAN DEVELOPMENT • SKILLS IMMERSION PROGRAMS / RESKILLING / NEW HIRE / BOOT CAMPS
PARTNER & RESELLER PROGRAMS • CORPORATE TRAINING MANAGEMENT • VENDOR MANAGEMENT SERVICES

Trivera Technologies is a Woman-Owned Small-Business Firm