

Introduction to Python Programming | Core Python Fundamentals

Web Development & Scripting Series | Python Programming Training

Course: TTEY101 Introduction to Python Programming | Core Python Fundamentals

Duration: 3 days

Skill Level: Introductory

Audience: Experienced programmers and Systems Administrators

Environment: This course is generic and may run on Windows, Linux or OS X

Hands-On Format: This hands-on class is approximately 50/50 lab to lecture ratio, combining engaging lecture, demos, group activities and discussions with comprehensive machine-based practical programming labs and project work.

Delivery Format: We're flexible! This course is available for onsite private classroom presentation, or live online virtual presentation, or can be presented in a combined delivery learning solution. Please also visit our Public Schedule for open-enrollment course dates.

Customizable: This course may be easily tailored to target your specific training skills objectives, tools of choice and learning goals.

Geared for experienced programmers, **Introduction to Python Programming** is a hands-on Python programming course explores the Python language up to an intermediate level. Students will leave this class armed with the skills required to write Python programs dealing with sequences and mappings, program flow control, system calls and file manipulation. The course provides insight to the features of Python that make it an excellent choice for projects of virtually any size.

► Course Objectives: What You'll Learn

The course provides a solid foundation in basic terminology and concepts, extended and built upon throughout the engagement. Processes and best practices are discussed and illustrated through both discussions and group activities. Attending students will be led through a series of advanced topics comprised of integrated lectures, extensive hands-on lab exercises, group discussions and comprehensive demonstrations.

Course Topics Covered: Students will explore:

- Python Overview and History
- Language Basics
- Complex Types and Operators
- Statements and Control Structures
- Functions
- Modules
- Classes
- Advanced Classes
- DB API
- NumPy

Working within in an engaging, hands-on learning environment, guided by our expert Python practitioner, students will learn to:

- Understand the uses for Python in software development, testing and systems administration environments
- How to develop Python applications for a variety of uses
- Packaging and distribution of Python applications and modules
- Communicating with a SQL database using Python
- Use Python for developing automated test scripts

Need different skills or topics? If your team requires different topics or tools, additional skills or custom approach, this course may be easily adjusted to accommodate. We offer additional Python programming courses which may be blended with this

course for a track that best suits your development objectives.

Hands-on Learning: This course is about **50% hands-on lab and 50% lecture**, with extensive programming exercises designed to reinforce fundamental skills and concepts learned in the lessons. **Students will write numerous Python scripts** to reinforce the major concepts covered in this course. The courses will increase in complexity as more sophisticated techniques are introduced. Our courses include ample materials and labs to ensure all students are either appropriately challenged, or assisted, at all times – no matter their skill level.

► Audience: Who Should Attend

This course is appropriate Software Developers, Systems Administrators, and Quality Assurance personnel, as well as anyone else who wants to automate or simplify common tasks with the use of Python scripts.

This is an introductory- level Python programming course designed for programmers with basic development skills in any programming language.

Students should already have a working, user-level knowledge of Unix/Linux, Mac, or Windows. While not required, basic skills with at least one other programming language will be helpful.

► Related Courses: Pre-Requisites & Learning Path

Take Instead: We offer other courses that provide different levels of knowledge or focus:

- TTPS4810: Python Programming Essentials (4 days)
- TTPS4820 Mastering Python Programming (5 days)
- TTPS4870: Python for Scientists (5 days)

Take After: We offer a variety of introductory through advanced web development, programming, design and mobile development courses and learning tracks.

Some recommended follow-on courses include:

- TTPS4850: Advanced Python Programming (4 days)

Please contact us for recommended next steps tailored to your longer term education, project, role or web development objectives.

► Workshop Topics Covered

Session: Python Overview and History

- Why Python?
- How to run Python applications
- Python configuration details

Session: Language Basics

- Program structure
- Strings
 - Basic operations
 - Slices
 - Formatting
- Numbers
 - Types
 - Basic arithmetic operations
 - Formatting
 - Conversions

Session: Complex Types and Operators

- Tuples
- Lists
 - Tuple and List manipulation
 - Basic operations
- Dictionary
- Files
 - Opening
 - Reading
 - Writing

Session: Statements and Control Structures

- Assignment
- Expressions
- if statements
- while loops
- for loops

Session: Functions

- Function Basics
- Scope rules
- Arguments
- Functions as arguments

Session: Modules

- Module Basics
- Namespaces
- Importing and Reloading modules

Session: Classes

- What is a class?
- What is an Object?
- Class basics
- Writing methods

Session: Advanced Classes

- Inheritance
- Operator overloading

Session: DB API

- DB Interfaces
- Connecting to the Server
- Executing SQL Statements
- Parameterized Statements

Session: NumPy

- Downloading and installing NumPy
- Array slicing with NumPy
- Array arithmetic
- Numeric functions

Need courseware? This course is fully customizable, and also available for license with complete support for qualified organizations. To learn more about our Courseware Services and Licensing options, please contact us at Courseware@triveratech.com for details.

► Student Materials: What You'll Receive

Our robust course materials include much more than a simple slideshow presentation handout. Student materials include a comprehensive hard-copy course manual, complete with detailed course notes, detailed lab manuals and workbooks, code samples, software tutorials, diagrams and current reference materials, all directly related to the course at hand, indexed for ease of use. Step-by-step lab instructions, software tutorials and project descriptions are clearly illustrated and commented for maximum learning.

► Setup Made Simple!

Our mission is to ensure a smooth start to your course with minimum set up burden for your team or firm. We offer several course set up options to help meet that goal. Please inquire for details on requirements and costs.

- **Manual Course Setup.** Our team provides a detailed setup guide with specific instructions, packaged software and links for all course tools and labs, as well as much live assistance as

required to prepare your attendees or classroom for the course.

- **Remote Lab Environment.** Your team can access our hosted environment to access and use the software, labs and tools required for the hands-on portion of the training.
- **Provide Pre-Loaded Equipment.** If needed, we can ship in pre-loaded equipment to your site.

► Focused, Skills-Driven Training | Maximizing Your Training Time and Value, while Reducing Risk

Our training programs are designed to be skills-driven, focused events, targeted to deliver the true skills you need to succeed in your projects and role. We'll work with you to ensure that your valuable training time and dollar is truly maximized. If your team requires more or less advanced materials or additional or custom topics, this course may be easily adjusted to accommodate. We offer and can blend on a wide variety of surrounding and supporting tools and elements to build out a truly robust educational experience, for you, your team, or your entire

organization.

Please contact us for details about our **Extended Education Programs** that support, surround, supplement or extend your learning initiatives such as

- **Collaborative mentoring** for your team
- **Pre-and post-training assessments** help place learners on the right path
- Mentored, comprehensive **case-studies** can be woven into your training programs, complete with guided work and instructor interaction
- **Guided or self-paced projects**, homework and exams
- **Interactive, self-paced programs** students

- **Virtual lab hours** and/or constant Mentor access
- Role-basic, Topic-based or Goal-based corporate **Training Roadmap and Learning Paths development**, rollout and support
- Skills-focused custom **New Hire Training Programs** and team **Reskilling initiatives**
- **Learning Management or Vendor Management Services** for your organization
- Plus many additional, flexible learning modules, initiatives and programs that can be delivered across a variety of subjects and modalities, completely tailored for your organization.

► Why Choose Trivera Technologies?

Whether you're a manager choosing a training provider or course to bring to your team, an instructor looking for reliable, solid course materials, or a student looking for an exciting, targeted training class to attend or to recommend to your colleagues - ***Our single focus is to make YOUR training event or experience a success.*** Here's why choosing Trivera Technologies as your **web development training, mentoring and courseware resource** takes the risk right out of your decision making process...

- **Our 'skills-driven' courses are efficient, focused, current and comprehensive.** Our experts target exactly the skills your team needs to succeed in their jobs, projects or roles, rather than taking a 'laundry-list' approach to training, which can often result in overtraining, course overload or overwhelmed students. We'll work with you to define what it is you need to accomplish, and create the right program, training to those goals. Students of all skill levels will be able to hit the ground running with their new skills right after class ends, since the program was correctly designed from the start.
- **Our content is always updated and ready to go.** Our dedicated course development team keeps our training content, courses and student resources completely updated with the latest skills, industry trends and software editions to ensure your team is always getting the most current information, techniques and skills available.
- **Every training event is Unique and Important!** The Trivera team treats every delivery engagement like a first-run, important event, not simply a staffing assignment. For every class we deliver, our team works closely with yours to ensure that your course runs smoothly from start to finish, and that there are **no surprises** in the classroom for you, your students or the instructors. Our experts work with you to choose the right topics and courses that align with your true skills goals, tuning as needed. We align the best all-around trainer to fit your exact needs – not just whoever happens to be 'on the bench'. We offer pre-reading, quizzes and support resources to help assess and prepare your team for the training, so we can best tune the training and maximize their time in the classroom. We'll ensure that your classroom is set up and ready to go prior to course start. Throughout the course delivery, our instructors constantly evaluate the class delivery and students, tuning topics, activities, discussions and labs as needed to ensure all student skill levels and needs are targeted. All activities, data and results are documented and shared with your firm so you have a complete picture of the course and its results, throughout the course delivery, and afterwards. Post training support is also included for your students to address any future related questions.
- **We wholly-own our course content, giving Trivera flexibility & quality above the rest.** Our course materials are **owned** by our company and **fully customizable at little or no cost**. Dozens of training firms and independent instructors purchase and use our course materials, and hire us for training support as well. As a result, our courseware is subject to very stringent quality requirements. Not only will your organization benefit from our own technical team's technical expertise, but also from the feedback of hundreds of students and trainers using these materials, worldwide, on a regular basis. This unique fact guarantees that our materials are not only robust and interesting, but also technically correct, current and of the highest quality and usability.
- **We bring years of practical, current experience into the classroom and content.** Our dynamic instructors and course authors are also skilled Java, JEE, J2EE, .Net, SOA, and web services developers, architects and security-oriented professionals, currently active in their fields. This real-world experience translates directly to your classroom, and into our course materials.
- **We're Java & JEE authors and industry speakers.** Our team was selected to write the online *JEE, EJB, EJB CMP-CMR and Web Services Tutorial Series for IBM developerWorks®*. These are the same instructors who train our classes and author the courseware. Most of our trainers/consultants have also authored additional articles on web services, EJB, Struts, JEE and advanced Java topics, and are recognized speakers and presenters on the industry technical seminar circuit. Our team is comprised on several successful published authors. Members of our team have written or contributed to: *Eclipse Kick Start, Mastering Eclipse; Professional Jakarta Struts; Using Java Tools for Extreme Programming; Mastering Resin; Mastering TomCat and others.*
- **Need a small-business status with whom to team?** Trivera Technologies is a 100% Woman-Owned Small Business Concern. Please contact us to team with us for your small-business or woman-owned set aside opportunities.
- **Our prices and services are guaranteed.** We stand behind our courses and instructors 100%. We'll match or beat any pricing for similar

services, any time. Whether you're a stakeholder organizing your firm's educational services, a student in our live or virtual classroom or a trainer using our materials to educate your own client or team – **Our core mission is to make YOU a success in the classroom.**

► For More Information

Need dedicated training? All courses can be brought **onsite** or produced **online** / virtually for a private presentation, customized to suit your unique requirements or goals. Please contact us for course details and Special Discount Offers. Our pricing is always cost effective, and our services are guaranteed. Please also visit our **Public Training Schedule** for available open enrollment dates that may apply. Please contact Training@triveratech.com for more information, pricing and special offers.

Need courseware or courseware development services? Let us take the risk out of your next courseware purchase, curriculum development project or classroom delivery! All Trivera Technologies course materials are available for corporate license and customization, with complete instructor support and free corporate branding. Samples are available upon request. Please contact us at Courseware@triveratech.com for details, options and excellent pricing.

For more information about our training services, collaborative mentoring services, courseware licensing options, courseware development services, public course schedule, training management services, partner and reseller programs, or to see our complete list of course offerings please visit us at www.triveratech.com, email Info@triveratech.com or call **609.953.1515**.

TRIVERA TECHNOLOGIES | Collaborative IT Training, Mentoring & Courseware Solutions
www.triveratech.com | 609.953.1515 | Info@triveratech.com | Twitter TriveraTech

ONSITE & ONLINE TRAINING | PUBLIC / OPEN ENROLLMENT COURSES | COURSEWARE LICENSING & DEVELOPMENT
MENTORING | ASSESSMENTS | LEARNING PLAN DEVELOPMENT | PARTNER PROGRAMS | CORPORATE TRAINING MANAGEMENT SERVICES