**Python**

The below on-line materials are a good starting point to learn and reference the Python Programming Language :

        Official home of Python :  <https://www.python.org/>

        On-line Python tutorial : <https://docs.python.org/3/tutorial/>

        Book : [http://www.diveintopython3.net](http://www.diveintopython3.net/)

We also have two additional sources of information/training available to us, the in-house [MyLearning](http://mylearning.capgemini.com/) space and the external services offered by [Pluralsight](https://learn.pluralsight.com/programs/pluralsight) for which a license is required (issued by the Learning & Development Team).

To cost of the Pluralsight license comes from the Practice, therefore all license requests to Learning & Development Team usually come via your supervisor and must be approved by the Practice Head; the license is usually valid for 6 months.

Once your licence request has been approved you will receive a "Welcome to Pluralsight" email from the Learning & Development Team; this will contain instructions how to access Pluralsight and your license expiry date.

**Capgemini MyLearning**

Searching for Python within MyLearning will find numerous items, below I have extracted a list of e-learning modules which should provide you with a good general understanding of Python from Basic through to Advanced levels :

[Python - Fundamentals](https://capgemini.sumtotal.host/core/pillarRedirect?relyingParty=LM&url=https:%2F%2Fcapgemini.sumtotal.host%2Flearning%2Fapp%2Fmanagement%2FLMS_ActDetails.aspx%3FUserMode%3D0%26ActivityId%3D648206%26ClassUnderStruct%3DFalse%26CallerUrl%3D%2Flearning%2Flearner%2FHome%2FGoToPortal%3Fkey%3D0%26SearchCallerURL%3Dhttps%253A%252F%252Fcapgemini.sumtotal.host%252Fcore%252FsearchRedirect%253FViewType%253DList%2526SearchText%253Dpython%2526Filters%253D%25257BDeliveryMethod_facet_en_gb%25253DWeb-based%25252520Learning%25252CLanguage_facet_en_gb%25253DEnglish%25252520%252528United%25252520States%252529%25252CActivityType_facet_en_gb%25253DWeb%25252520Based%25252520Learning%25257D%2526startRow%253D0%26SearchCallerID%3D2) (1hr 31min)

The Python programming language, its syntax, and standard libraries, have undergone some changes between version 2 and 3. In this course, you'll learn about the key fundamental concepts and features of Python version 3.

[Python - Language Basics](https://capgemini.sumtotal.host/Core/pillarRedirect?relyingParty=LM&url=https:%2F%2FCAPGEMINI.sumtotal.host%2Flearning%2Fapp%2Fmanagement%2FLMS_LearnerReports.aspx%3FUserMode%3D0%26Mode%3D1) (2hr 38min)

This course covers elementary control and data structures in Python 3.x. It also covers sequences and sorts. Finally this course covers OOP in Python, including classes, methods, and objects.

[Python - The Basics](https://capgemini.sumtotal.host/core/pillarRedirect?relyingParty=LM&url=https:%2F%2Fcapgemini.sumtotal.host%2Flearning%2Fapp%2Fmanagement%2FLMS_ActDetails.aspx%3FUserMode%3D0%26ActivityId%3D445783%26ClassUnderStruct%3DFalse%26CallerUrl%3D%2Flearning%2Flearner%2FHome%2FGoToPortal%3Fkey%3D0%26SearchCallerURL%3Dhttps%253A%252F%252Fcapgemini.sumtotal.host%252Fcore%252FsearchRedirect%253FViewType%253DList%2526SearchText%253Dpython%2526Filters%253D%25257BDeliveryMethod_facet_en_gb%25253DWeb-based%252BLearning%25252CLanguage_facet_en_gb%25253DEnglish%252B%252528United%252BStates%252529%25252CActivityType_facet_en_gb%25253DWeb%252BBased%252BLearning%25257D%2526startRow%253D0%26SearchCallerID%3D2) (3hr 28min)

Python has a unique culture and community that has built up around it and that value its core philosophy, expressed as a series of aphorisms, and available at a few key presses from any Python installation. In this course, you'll learn the basics of Python and its philosophy, setting up Python, and writing a basic program with built-in data types, loops and conditionals.

[Python - Classes and Modules](https://capgemini.sumtotal.host/core/pillarRedirect?relyingParty=LM&url=https:%2F%2Fcapgemini.sumtotal.host%2Flearning%2Fapp%2Fmanagement%2FLMS_ActDetails.aspx%3FUserMode%3D0%26ActivityId%3D445784%26ClassUnderStruct%3DFalse%26CallerUrl%3D%2Flearning%2Flearner%2FHome%2FGoToPortal%3Fkey%3D0%26SearchCallerURL%3Dhttps%253A%252F%252Fcapgemini.sumtotal.host%252Fcore%252FsearchRedirect%253FViewType%253DList%2526SearchText%253Dpython%2526Filters%253D%25257BActivityType_facet_en_gb%25253DWeb%252BBased%252BLearning%25257D%2526startRow%253D0%26SearchCallerID%3D2) (2hr 55min)

Python is a lot more than a scripting language, and can be used to create OOP applications using classes, or using a functional paradigm. This course covers some of the ways Python programs can execute. You'll learn about building your own custom functions and classes, and documentation and file handling.

[Python - Iteration and Exceptions](https://capgemini.sumtotal.host/core/pillarRedirect?relyingParty=LM&url=https:%2F%2Fcapgemini.sumtotal.host%2Flearning%2Fapp%2Fmanagement%2FLMS_ActDetails.aspx%3FUserMode%3D0%26ActivityId%3D445785%26ClassUnderStruct%3DFalse%26CallerUrl%3D%2Flearning%2Flearner%2FHome%2FGoToPortal%3Fkey%3D0%26SearchCallerURL%3Dhttps%253A%252F%252Fcapgemini.sumtotal.host%252Fcore%252FsearchRedirect%253FViewType%253DList%2526SearchText%253Dpython%2526Filters%253D%25257BActivityType_facet_en_gb%25253DWeb%252BBased%252BLearning%25257D%2526startRow%253D0%26SearchCallerID%3D2) (3hr 44min)

Iterations and exceptions are nuanced in Python, and so it is important to fully understand how they work in order to produce quality software. In this course, you will learn about comprehensions, a powerful, concise syntax for creating iterable objects. The course also covers iteration and iterables, and exception handling.

[Python - Advanced](https://capgemini.sumtotal.host/Core/pillarRedirect?relyingParty=LM&url=https:%2F%2FCAPGEMINI.sumtotal.host%2Flearning%2Fapp%2Fmanagement%2FLMS_LearnerReports.aspx%3FUserMode%3D0%26Mode%3D1) (1hr 29min)

This course covers advanced Python 3.x concepts including exception handling, decorators, sequences, lambda functions, and generators.

[Python - Automation Programming](https://capgemini.sumtotal.host/core/pillarRedirect?relyingParty=LM&url=https:%2F%2Fcapgemini.sumtotal.host%2Flearning%2Fapp%2Fmanagement%2FLMS_ActDetails.aspx%3FUserMode%3D0%26ActivityId%3D671210%26ClassUnderStruct%3DFalse%26CallerUrl%3D%2Flearning%2Flearner%2FHome%2FGoToPortal%3Fkey%3D0%26SearchCallerURL%3Dhttps%253A%252F%252Fcapgemini.sumtotal.host%252Fcore%252FsearchRedirect%253FViewType%253DList%2526SearchText%253Dpython%2526Filters%253D%25257BDeliveryMethod_facet_en_gb%25253DWeb-based%252BLearning%25252CLanguage_facet_en_gb%25253DEnglish%252B%252528United%252BStates%252529%25252CActivityType_facet_en_gb%25253DWeb%252BBased%252BLearning%25257D%2526startRow%253D0%26SearchCallerID%3D2) (1hr 37min)

Explore Python and how Python can be used to create and manage automation in an IT environment.

[Python - Applications](https://capgemini.sumtotal.host/core/pillarRedirect?relyingParty=LM&url=https:%2F%2Fcapgemini.sumtotal.host%2Flearning%2Fapp%2Fmanagement%2FLMS_ActDetails.aspx%3FUserMode%3D0%26ActivityId%3D655502%26ClassUnderStruct%3DFalse%26CallerUrl%3D%2Flearning%2Flearner%2FHome%2FGoToPortal%3Fkey%3D0%26SearchCallerURL%3Dhttps%253A%252F%252Fcapgemini.sumtotal.host%252Fcore%252FsearchRedirect%253FViewType%253DList%2526SearchText%253Dpython%2526startRow%253D0%26SearchCallerID%3D2) (1hr 10min)

In this course, you'll learn about web programming and GUI programming in Python.

[Python - Web Application Development](https://capgemini.sumtotal.host/core/pillarRedirect?relyingParty=LM&url=https:%2F%2Fcapgemini.sumtotal.host%2Flearning%2Fapp%2Fmanagement%2FLMS_ActDetails.aspx%3FUserMode%3D0%26ActivityId%3D554516%26ClassUnderStruct%3DFalse%26CallerUrl%3D%2Flearning%2Flearner%2FHome%2FGoToPortal%3Fkey%3D0%26SearchCallerURL%3Dhttps%253A%252F%252Fcapgemini.sumtotal.host%252Fcore%252FsearchRedirect%253FViewType%253DList%2526SearchText%253Dpython%2526Filters%253D%25257BActivityType_facet_en_gb%25253DWeb%252BBased%252BLearning%25257D%2526startRow%253D0%26SearchCallerID%3D2) (2hr 29min)

Frameworks provide a way to create powerful web applications in Python. In this course, you will learn about the Django and TurboGears frameworks for developing web applications.

[Selenium and Python](https://capgemini.sumtotal.host/core/pillarRedirect?relyingParty=LM&url=https:%2F%2Fcapgemini.sumtotal.host%2Flearning%2Fapp%2Fmanagement%2FLMS_ActDetails.aspx%3FUserMode%3D0%26ActivityId%3D337574%26ClassUnderStruct%3DFalse%26CallerUrl%3D%2Flearning%2Flearner%2FHome%2FGoToPortal%3Fkey%3D0%26SearchCallerURL%3Dhttps%253A%252F%252Fcapgemini.sumtotal.host%252Fcore%252FsearchRedirect%253FViewType%253DList%2526SearchText%253Dpython%2526startRow%253D0%26SearchCallerID%3D2) (1hr 21min)

Selenium is a set of tools that can be used to automate web testing using a variety of languages including Python. In this course, you'll learn how to set up a Selenium Python project, locate elements, check navigation, display, and input controls. You'll also explore how to execute JavaScript from Python tests, work with Ajax elements, and take remote screenshots.

In addition, I have also included below two e-learning modules relating to Object Oriented Programming to help you acquire/refresh your knowledge around this subject (if required) :

[Object Oriented Programming Fundamentals](https://capgemini.sumtotal.host/Core/pillarRedirect?relyingParty=LM&url=https:%2F%2FCAPGEMINI.sumtotal.host%2Flearning%2Fapp%2Fmanagement%2FLMS_LearnerReports.aspx%3FUserMode%3D0%26Mode%3D1) (2hr 06min)

Most modern programming languages today are object-oriented and learning the concepts associated with this paradigm will greatly improve the quality and speed at which you can create robust applications. In this course, you will learn the fundamental concepts of object-oriented programming, including encapsulation, inheritance, base and derived classes, abstract and sealed classes, casting between types, and interfaces. In addition, you will also learn the JavaScript fundamentals needed for creating web applications, including the basic rules of JavaScript, JavaScript functions, and referencing and modifying HTML elements. This course is one of a series in the SkillSoft learning path that covers the objectives for the Microsoft certification exam Software Development Fundamentals (Exam 98-361), part of the Microsoft Technology Associate (MTA) certification track.

[Beginning Object Oriented Design](https://capgemini.sumtotal.host/Core/pillarRedirect?relyingParty=LM&url=https:%2F%2FCAPGEMINI.sumtotal.host%2Flearning%2Fapp%2Fmanagement%2FLMS_LearnerReports.aspx%3FUserMode%3D0%26Mode%3D1) (2hr 35 mins)

There are a number of concepts and methodologies that encompass what is known as object-oriented design. In this course, you'll explore object-oriented design concepts such as Single responsibility, Open/Closed, Liskov substitution, Interface segregation and Dependency inversion (SOLID), Unified Modeling Language (UML), class responsibility collaboration (CRC) cards, and General Responsibility Assignment Software Patterns (GRASP).

**Pluralsight**

You will find a full learning path for Python within Pluralsight :

<https://app.pluralsight.com/paths/skills/python>

This will guide you through many hours of Beginner, Intermediate and Advanced training videos, below I have extracted a list of learning videos which should provide you with a good general understanding of Python from Beginner through to Advanced level :

**Beginner :**

[Python - The Big Picture](https://app.pluralsight.com/library/courses/python-big-picture) (1hr 05min)

At the heart of creating software is being able to use the right tool for the right job. In this course, Python: The Big Picture, you'll learn about the Python programming language. First, you'll learn what Python is, what makes it different, and why you should care. Next, you'll explore the different ways Python is being used to develop different types of applications today. Finally, you'll discover how to get started working with Python code and what next steps you can take in your Python journey. When you're finished with this course, you'll have a foundational knowledge of Python that will help you as you move forward to recognizing when Python is the right tool for any future jobs you are faced with as a software developer.

[Python - Getting Started](https://app.pluralsight.com/library/courses/python-getting-started) (2hr 59min)

This course will help you learn this powerful and versatile language. Along the way, you’re going to be learning about things like syntax, functions, and classes, exploring how to create a console application and how to convert that same app into a web app, as well learn how to create executable files and an installation wizard from your Python app. In addition to Python, you’ll also be using Flask and Pycharm. This is a beginner-friendly course, but you’ll want to make sure you’re already up to speed on programming basics, such as what a function does and what a variable is.

[Python - Fundamentals](https://app.pluralsight.com/library/courses/python-fundamentals) (5hr 11min)

Python Fundamentals gets you started with Python, a dynamic language popular for web development, big data, science, and scripting. What’s so great about Python? Python is powerful. The Python language is expressive and productive, it comes with a great standard library, and it’s the center of a huge universe of wonderful third-party libraries. With Python you can build everything from simple scripts to complex applications, you can do it quickly, and you can do it with fewer lines of code than you might think possible. But for many people those reasons take back-seat to something more important: Python is fun! Python’s readable style, quick edit-and-run development cycle, and “batteries included” philosophy mean that you can sit down and enjoy writing code rather than fighting compilers and thorny syntax. As your experiments become prototypes and your prototypes become products, Python makes the experience of writing software not just easier but truly enjoyable.

[Python - Variables, Data Types and Conditionals](https://app.pluralsight.com/interactive-courses/detail/7ccfb405-0c69-4066-b504-46464713fd53) (3hr 00min)

Explore the basics of Python and learn what it means to store and manipulate numbers and words as well as make decisions with your program. This course was formerly known as Try Python on Code School.

**Intermediate :**

[Python - Beyond the Basics](https://app.pluralsight.com/library/courses/python-beyond-basics) (7hr 22min)

Python – Beyond the Basics builds directly on the foundations laid in our introductory Python course, Python Fundamentals. Python is a great dynamic language for web development, big data, science, and scripting. In this course we add breadth and depth to your Python skills, exploring the topics you'll need to create robust and readable applications of any size. On completing this course, you'll be familiar with the majority of Python techniques and constructs used in Python programs. Crucially, we'll also advise you on when – and when not – to use the different tools available in Python to best effect, to maximize the quality of your code, your productivity, and the joy inherent in coding in Python.

[The Python Developers Toolkit](https://app.pluralsight.com/library/courses/python-developers-toolkit) (2hr 19min)

Becoming a professional Python developer means knowing more than just the language. Once you make the transition from simple scripts to larger projects, it becomes important to know the tools of the trade and how to use them. This course introduces you to a set of standard tools. We'll see how to install and manage your project's dependencies and how to set up your development environment. Then we'll go into code quality, debugging and documentation. Finally, we'll see how to package and distribute the final product.

[Unit Testing with Python](https://app.pluralsight.com/library/courses/unit-testing-python) (2hr 58min)

This course follows on from the Pluralsight "Python Fundamentals" course, and has more detail about unit testing with Python. We will cover libraries and frameworks such as unittest, doctest and py.test. The aim is to help you to write unit tests that improve code quality, and also support future development. Good unit tests should provide immediate value in terms of reduced debugging and better design, and the investment writing them should pay back over the whole lifetime of your software.

[Build a Job Board with Python and Flask](https://app.pluralsight.com/projects/build-a-job-board-with-python-flask) (2hr 35min)

Python & Flask are great for building a simple website. In this project, you'll use them to build a simple job board. The main page of the site will show all jobs and each job and employer will have dedicated pages. Users will also be able to review each employer.

**Advanced :**

[Full Stack Web Development with Python (WEB2PY)](https://app.pluralsight.com/library/courses/full-stack-web-development-python-web2py) (3hr 02min)

Learn full stack web development using Python and WEB2PY. WEB2PY is an easy to learn, integrate framework that includes a web server, admin, bootstrap, and sqlite database. One simple download has everything you need to build robust, data driven web applications. This project-based course is for beginners new to web development or those who want to quickly learn a Python web framework.

[Advanced Python](https://app.pluralsight.com/library/courses/advanced-python) (3hr 53min)

Over time, Python has exploded in popularity, from being an obscure scripting language to becoming one of the most popular, and widely used languages in the world. In this course, Advanced Python, you'll learn advanced topics, a knowledge of which will set you apart from the greater number of Python developers. First, you'll explore how to gain fine-grained control over attribute access. Next, you'll discover how to intercept class-object construction. Finally, you'll learn the subtle, but powerful, controls Python gives you over class relationships. By the end of this course, you'll know enough Python to understand the advanced techniques used to implement sophisticated frameworks and much more.