Postgraduate Certificate
Data Structures and Functions in Python

tech technological university

Postgraduate Certificate
Data Structures and Functions in Python

- » Modality: **online**
- » Duration: **6 weeks**
- » Certificate: **TECH Technological University**
- » Dedication: **16h/week**
- » Schedule: **at your own pace**
- » Exams: **online**

Website: **www.techtitute.com/us/information-technology/postgraduate-certificate/data-structures-functions-python**

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01
Introduction

File Handling in Phyton is a skill for programming and manipulating data in a variety of applications. Its importance lies in the fact that it allows programs to store data persistently on a hard disk or other media. This is crucial for retaining information between runs of an application and for sharing it with other users. In turn, this process is essential for automating tasks such as reading multiple files in batches, mass data processing and automatic report generation. For this reason, TECH implements a university program that will address in detail the reading and writing of files using Python. Moreover, it is based on a convenient 100% online format.

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You will delve into Python Dictionaries and store structured data in the form of key-value pairs thanks to this disruptive 100% online university program"

Data Structures and Functions in Python have become fundamental components in software development, given their ability to solve programming-related problems. Among the advantages of these systems is the organization of data in a structured way, which facilitates access and manipulation of information in programs. In addition, the proper use of these tools serves to considerably improve the performance of applications by enabling efficient memory management and fast access to data. However, working with these mechanisms can pose several challenges to experts, especially when faced with complex problems.

In this context, TECH develops a revolutionary program that will comprehensively analyze file management and modeling in Python. Designed by experts in the field, the syllabus will delve into Anonymous Functions and Lamba tools to make codes more concise and readable. Likewise, the syllabus will delve into both reading and writing text files, taking into account the different formats and encodings. The program will also emphasize modeling libraries, as they provide a wide range of tools to address various types of difficulties such as natural language processing.

This is a program that will provide students with a solid theoretical foundation, preparing them for application in practical situations. This is achieved thanks to the leadership and support of an outstanding faculty, composed of experts with extensive professional experience. TECH offers access to the exclusive *Relearning*methodology, an innovative pedagogy based on the repetition of key concepts, ensuring an effective assimilation of knowledge. The only requirement is that the students have a device with Internet access within their reach, in order to access the Virtual Campus and be nourished by the most dynamic didactic content in the academic market.

This **Postgraduate Certificate in Data Structures and Functions in Python** contains the most complete and up-to-date program on the market. The most important features include:

- The development of practical cases presented by experts in Python Development
- The graphic, schematic and practical contents of the book provide theoretical and practical information on those disciplines that are essential for professional practice
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection

Looking to specialize in File Reading and Writing? Achieve it in just over 6 weeks thanks to this innovative program"

You will apply Lambda Functions and perform simple operations in a single line of code.

You will master the most effective File Processing techniques to automate your tasks.

“ *Thanks to the revolutionary Relearning methodology, you will integrate all the knowledge in an optimal way to successfully achieve the results you are looking for"*

The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

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Objectives

This program will provide students with a comprehensive view of Data Structures and Functions in Python. In this way, graduates will be able to apply different data structures from a practical approach, optimizing program performance. At the same time, professionals will create and use functions to reuse codes. Moreover, experts will master both reading and writing text and binary files. Computer scientists will acquire multiple skills that will allow them to make a leap in quality in their profession.

TECH guarantees you a unique Postgraduate Certificate in its style that will boost your professional development through the most exclusive and cutting-edge content"

General Objectives

- Provide a comprehensive understanding of Python
- Enable advanced data and type handling in Python
- Apply the principles of Object Oriented Programming (OOP) in Python
- Encourage the use of best practices and modern methodologies in software development
- Provide comprehensive education in web and mobile development with Python
- Integrate UI/UX principles in software development
- Teach the configuration and use of data development tools and environments
- Delve into the use of data structures and functions in Python
- Learn advanced data visualization techniques with Matplotlib
- Learn performance optimization and data warehousing strategies
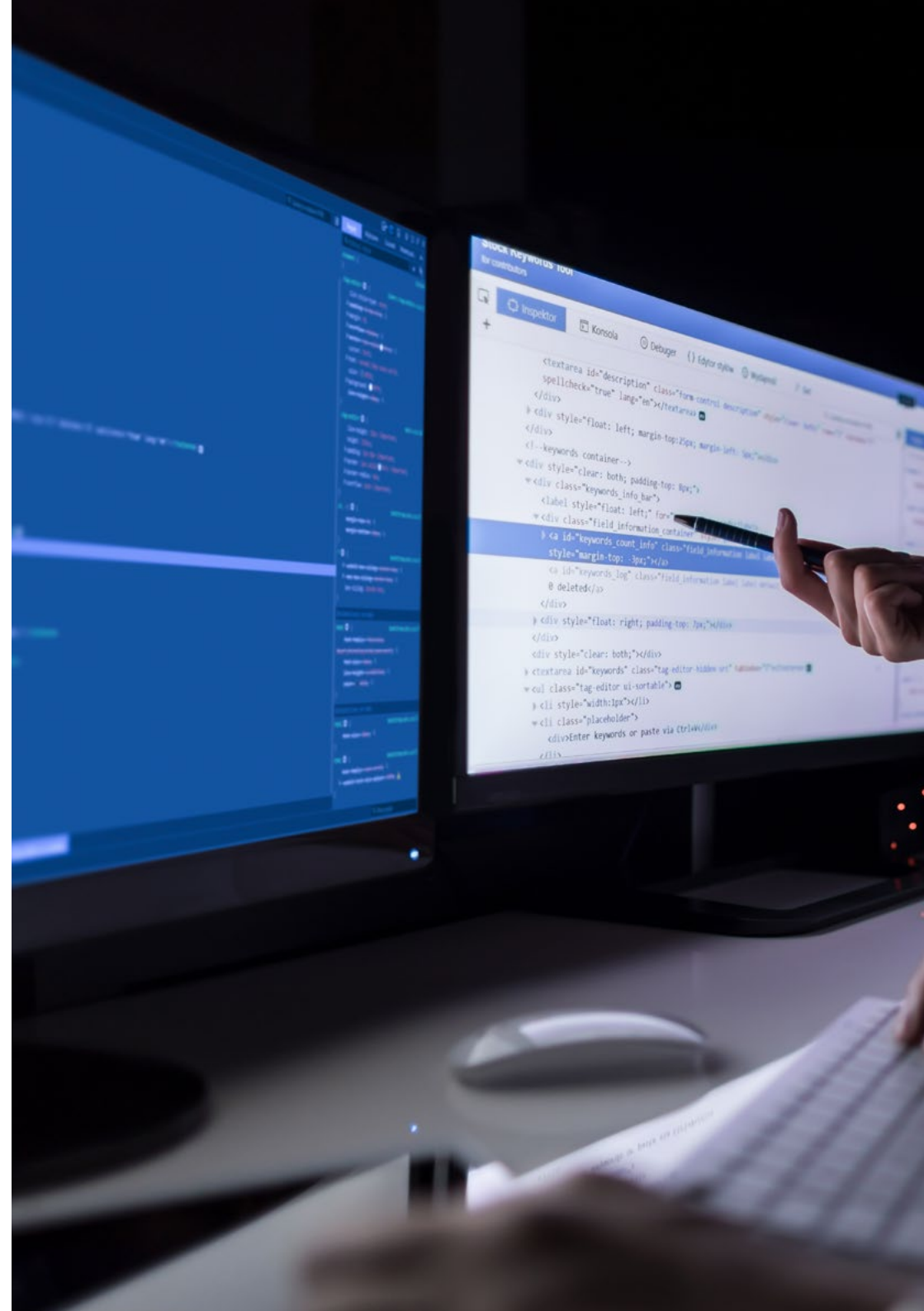
Specific Objectives

- Create and use advanced functions
- Read and write files and their processing

You will delve into different problems related to Python Functions through real cases, in simulated learning environments"

03
Course Management

TECH teachers stand out in the IT field for their continuous participation in projects related to Data Structures and Functions in Phyton. This constant link with the demands of organizations allows them to stay updated about the most innovative tools to generate advanced solutions that meet the needs of customers. In addition, they have actively participated in the development of the study materials, providing highly rigorous explanatory videos. In short, with their guidance, graduates will have the essential skills to face all the challenges in this field of specialization.

You will have access to a syllabus designed by a reputable teaching staff, which will guarantee you a successful learning"

Management

Mr. Matos Rodríguez, Dionis

- *Data Engineer* at Wide Agency Sadexo
- *Data Consultant* at Tokiota
- *Data Engineer* at Devoteam
- *BI Developer* at Ibermática
- *Applications Engineer* at Johnson Controls
- *Database Developer* at Suncapital España
- *Senior Web Developer* at Deadlock Solutions
- *QA Analyst* at Metaconxept
- Professional Master's Degree in *Big Data & Analytics* by the EAE Business School
- Professional Master's Degree in Systems Analysis and Design
- Bachelor's Degree in Computer Engineering from APEC University.

Professors

Mr. Villar Valor, Javier

- Director and Founding Partner of Impulsa2
- *Chief Operations Officer* (COO) at Summa Insurance Brokers
- Director of Transformation and Operational Excellence at Johnson Controls
- Professional Masters Degree in Professional *Coaching*
- Executive MBA from Emlyon Business School, France
- Professional Master's Degree in Quality Management from EOI, Spain
- Computer Engineering from the University Action Pro-Education and Culture (UNAPEC)

Mr. Gil Contreras, Armando

- *Lead Big Data Scientist* at Jhonson Controls
- *Data Scientist-Big Data* at Opensistemas S.A.
- Fund Auditor at Creatividad y Tecnología S.A. (CYTSA)
- Public Sector Auditor at PricewaterhouseCoopers Auditores.
- Professional Master's Degree in *Data Science* at University Center of Technology and Art
- Professional Máster Degree MBA in International Relations and Business from the Center for Financial Studies (CEF).
- Bachelor's Degree in Economics from the Technological Institute of Santo Domingo.

Ms. Gil Contreras, Milagros

- *Content Creator* at MPCTech LLC
- Project Manager
- *Freelance IT Writer*
- MBA from the Complutense University of Madrid
- Degree/Graduate in Business Administration from the Technological Institute of Santo Domingo.

Ms. Delgado Feliz, Benedit

- Administrative Assistant and Electronic Surveillance Operator for the National Drug Control Directorate (DNCD)
- Customer Service at Cáceres y Equipos
- Claims and Customer Service at Express Parcel Services (EPS)
- Microsoft Office Specialist at the National School of Informatics (Escuela Nacional de Informática).
- Social Communicator from the Catholic University of Santo Domingo.

Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"

Structure and Content

This university program will focus on the knowledge and application of data structures and functions in Python. The program will delve into the practical application of various data structures, including dictionaries. In addition, the syllabus will address instruction in reading, writing files and processing them. The materials will also emphasize the importance of good exception handling practices. In addition, the program will provide students with state-of-the-art tools such as PyTorch, in order to address advanced data handling tasks.

You will handle important modeling libraries such as TensorFlow to effectively address advanced data handling procedures"

Module 1. Data Structures and Functions in Python

You will be able to access the Virtual Campus at any time and download the contents to consult them whenever you wish. Don't miss this academic opportunity and enroll!"

04
Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

> *Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world"

You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.

The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

"

Our program prepares you to face new challenges in uncertain environments and achieve success in your career"

The case method has been the most widely used learning system among the world's leading Information Technology schools for as long as they have existed. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the course, students will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

Relearning Methodoloagy

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

In 2019, we obtained the best learning results of all online universities in the world.

At TECH you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically. This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.

This program offers the best educational material, prepared with professionals in mind:

Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.

30%

10%

8%

20%

25%

4%

3%

Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

Certificate

The Postgraduate Certificate in Data Structures and Functions in Python guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"

This **Postgraduate Certificate in Data Structures and Functions in Python** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Certificate in Data Structures and Functions in Python**

Official Nº of Hours: **150 h.**

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Awards the following

DIPLOMA

to

Mr./Ms. _____, with identification number _____.
For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Data Structures and Functions in Python

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

Unique TECH Code: AFWORD23S   techtitute.com/certificates

*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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