Postgraduate Certificate
Big Data Applied to Systems Engineering and Computer Science

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Postgraduate Certificate
Big Data Applied
to Systems Engineering
and Computer Science

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

Website: **www.techtitute.com/pk/information-technology/postgraduate-certificate/big-data-applied-systems-engineering-computer-science**

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01

Introduction

Technological advances in recent decades have greatly influenced the processing capacity, and therefore the amount of data that can be worked with. This is very useful for practically all sectors. However, with different applications in each sector. For example, in the industrial sector, correctly implementing Big Data tools can reveal business opportunities that would otherwise be impossible. For this reason, TECH has developed a program that defines Big Data and its architecture, as well as its practical applications and data visualization. All this, through a 100% online format and without fixed schedules. In such a way that the students are free to organize themselves according to their own time.

Throughout this program, you will learn how to work with Spark, one of the most widely used data storage, processing and analysis engines"

One sector in which Big Data has had a great impact is journalism. After all, data is information, and this is the journalist's raw material. When a newsroom is faced with a large bank of data, it is very difficult to draw conclusions. Even more so, with the limited resources that the media have today. That is why it is crucial to have tools that can process data quickly.

In this sense, the Postgraduate Certificate in Big Data Applied to Systems Engineering and Computer Science includes data processing tools such as Spark and Hadoop. As well as storage, architecture and analysis.

Another point of vital importance in this program is data visualization. It is essential in order to transmit the conclusions in a clear and direct way. In this section we will analyze the different typologies and the visualization and reporting tools.

The final topics have been reserved for the interpretation of information, with some concepts such as Business Intelligence or Business Analytics. As well as privacy, protection and data governance.

These contents will be taught in an online mode, without schedules and with all the contents available from the first day. All you need is a device with an Internet connection. In this way, students will be able to organize themselves according to their time, thereby favoring the assimilation of concepts.

This **Postgraduate Certificate in Big Data Applied to Systems Engineering and Computer Science** 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 Big Data Applied to Systems Engineering and Computer Science
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the 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

The TECH teaching faculty will help you implement the advances of Machine Learning to data analysis"

" Throughout the program you will learn all the keys to Business Intelligence so you can apply it to your projects"

TECH has set up a specific topic to identify the most useful sources of information.

A specific topic has been reserved to deal with the most sensitive data and the most appropriate ways to protect them.

The program's teaching staff includes professionals from sector 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 student will be assisted by an innovative interactive video system created by renowned and experienced experts.
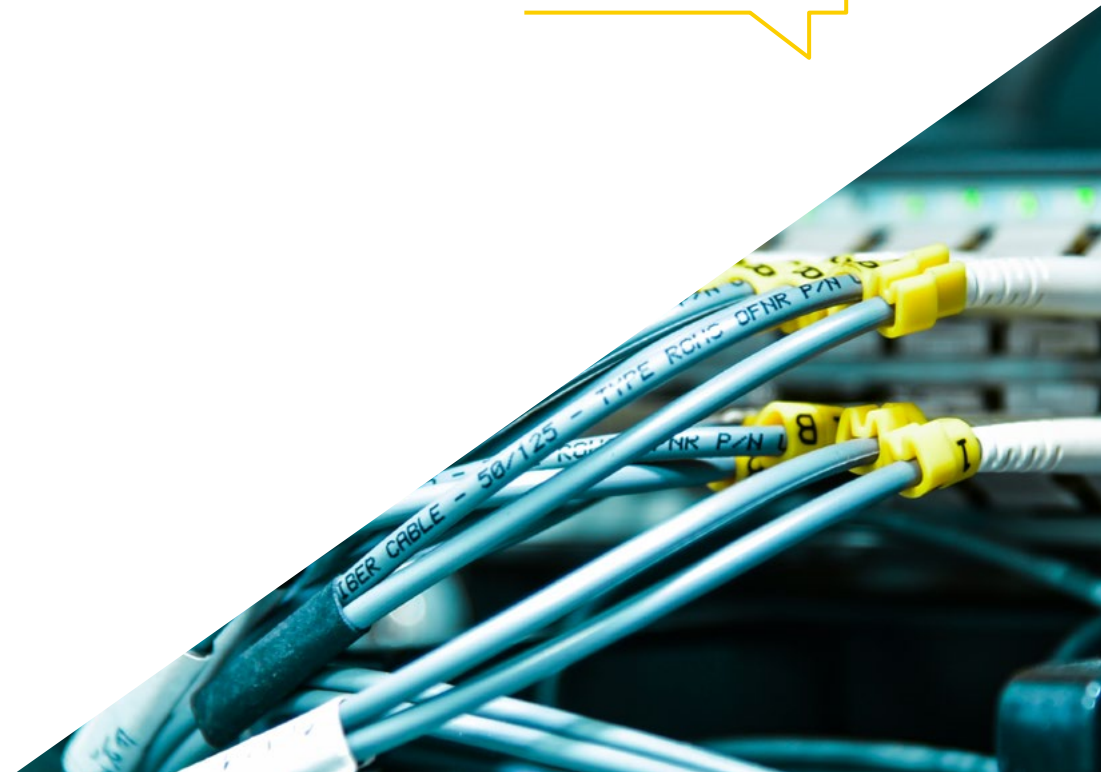
02
Objectives

The graduate in this program will have identified the advantages of Big Data in different areas of a business. They will know the course of the data from its origin to its exploitation, defining also the different forms of storage available. Likewise, the student will be able to visually represent the data through graphs or infographics and will have the necessary notions in terms of privacy to protect the most sensitive data.

Graduates will have the ability to analyze data traceability to detect areas where it is present"

General Objectives

- Identify the benefits of analyzing and exploiting data for decision-making
- Analyze the course of the data from its origin to its exploitation
- Assess the importance of data analytics, as well as the generation of predictive models that provide efficient results

This program gives special importance to the identification of the possibilities of information analysis according to the desired result"

Specific Objectives

- Identify the benefits of analyzing and exploiting data for decision-making

- Analyze the course of the data from its origin to its exploitation

- Define the different forms of storage in which the information can be stored, taking into account the way in which it will be subsequently exploited

- Assess the importance of data analytics, as well as the generation of predictive models that provide efficient results

- Establish the minimum requirements in terms of privacy that are necessary in the area of access to and use of information

- Identify the different elements that make up the platform architecture and the necessary interaction between them

- Analyze the different sources of data that can be the sources of information for the process

- Define the different forms of storage in which the information can be stored, taking into account the way in which it will be subsequently exploited

- Establish the minimum requirements in terms of privacy that are necessary in the area of access to and use of information

- Identify the different elements that make up the platform architecture and the necessary interaction between them

- Develop the differences between the different possibilities of analyzing the information according to the result to be obtained

- Identify the traceability of the data to analyze its usability in those areas where it is present

03

Course Management

This program, by nature, requires teachers who are familiar with large data banks, and who have perfect control of the tools involved in their management. For this reason, the teaching staff has been selected from among the most reputable professionals in the field. They are able to answer the most specific questions and provide tips and shortcuts to make the work more enjoyable.

TECH's teaching faculty will teach you very useful tips for working with Hadoop quickly and efficiently"

Management

Mr. Olalla Bonal, Martín

- Senior Blockchain Practice Manager at EY.
- Blockchain Client Technical Specialist for IBM.
- Director of Architecture for Blocknitive
- Non-Relational Distributed Databases Team Coordinator for wedoIT (IBM Subsidiary)
- Infrastructure Architect at Bankia
- Head of Layout Department at T-Systems
- Department Coordinator for Bing Data Spain S.L.

Professors

Ms. Gómez-Choco González, Rocío

- Data Consultant-Data Engineer at IBM.
- Data Engineer in the IT architecture department at Orange Bank
- Analytical consultant in the analysis department of Ernest and Young
- Graduated in Communications Systems Engineering at Carlos III University
- Postgraduate in Big Data & Analytics at Carlos III University
- Master's Degree in Big Data Architecture at Datahack School

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Structure and Content

The syllabus begins by detailing the application of Big Data to information technologies and defining the most useful sources of information. It then introduces the various elements that are part of the daily work with Big Data: processing, storage, architecture, analysis, visualization and interpretation. Finally, it provides the necessary knowledge to protect data in an appropriate manner and a topic is reserved for the development of data governance.
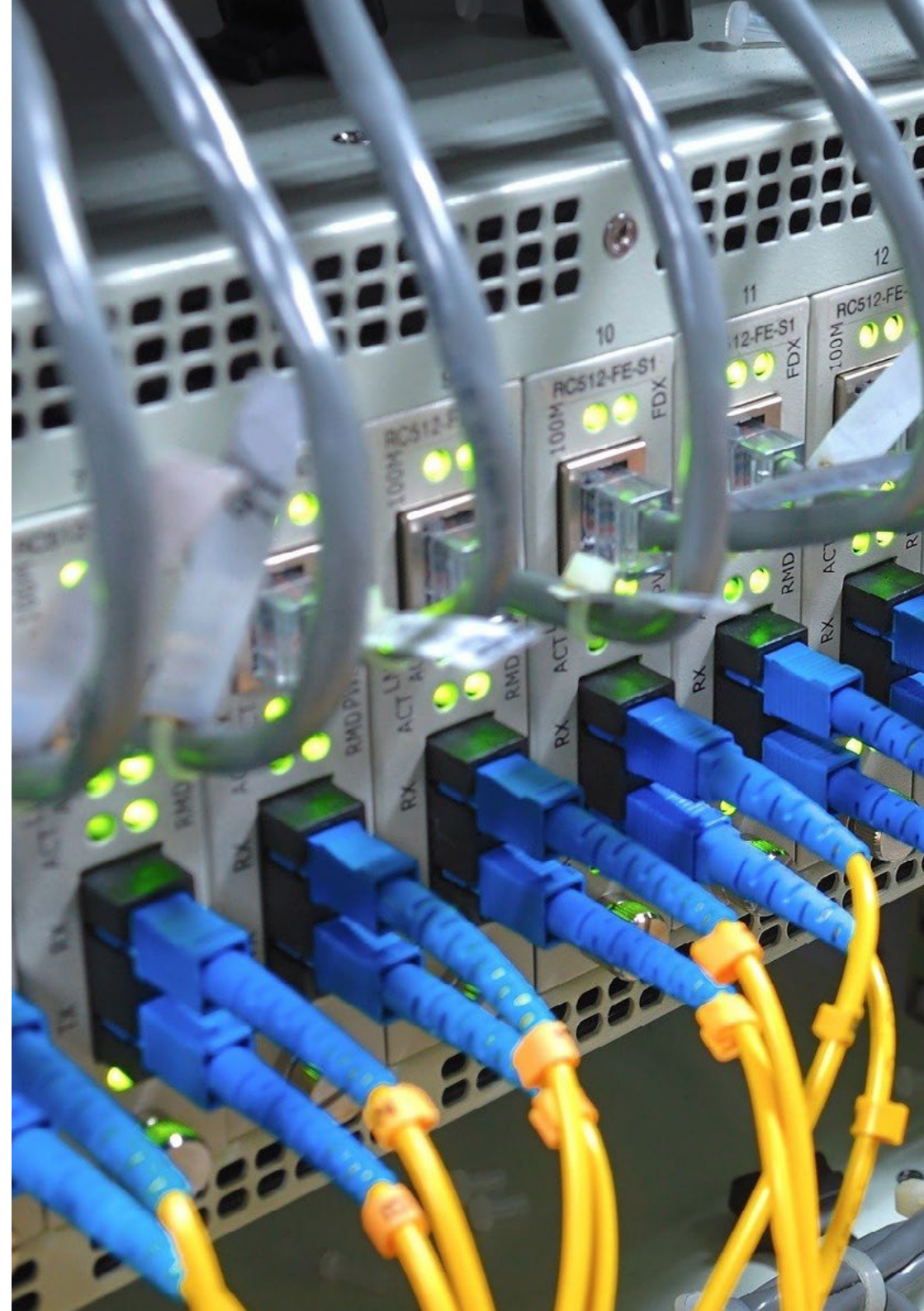
Thanks to TECH you will learn how to store information properly, either in on-site databases or in the cloud"

Module 1. Big Data Applied to Systems Engineering and Computer Science

Learn all the keys to Data Lineage to simplify the process of tracing errors and resolving them quickly"

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 Methodology

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%

tech

20%

25%

4%

3%
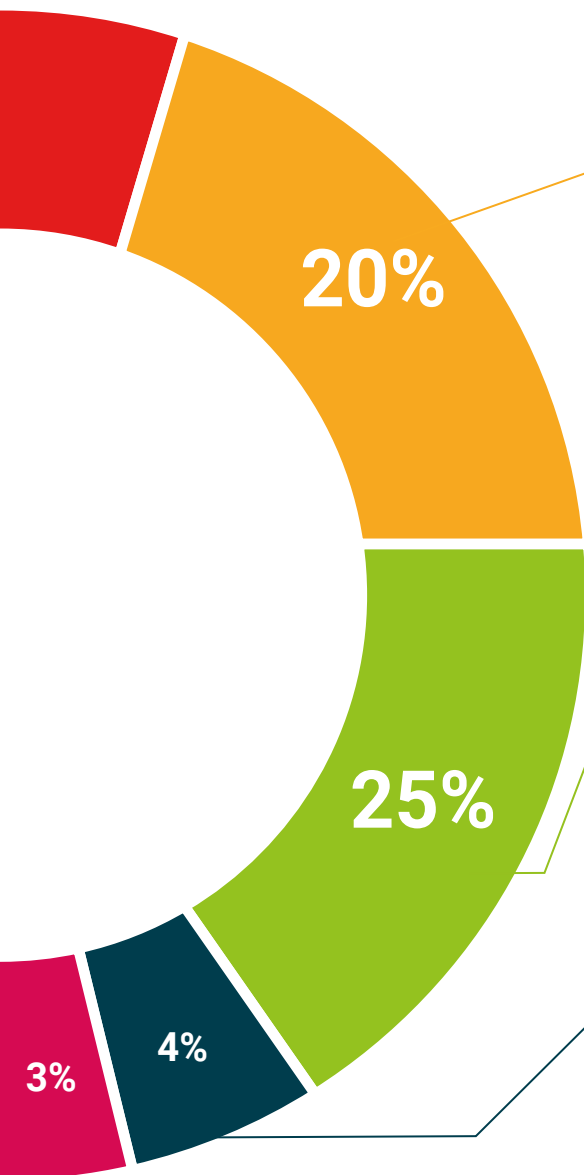
Case Studies

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.

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Certificate

The Postgraduate Certificate in Big Data Applied to Systems Engineering and Computer Science 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 Big Data Applied to Systems Engineering and Computer Science** 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 certificate 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 Big Data Applied to Systems Engineering and Computer Science**

Official Nº of hours: **150 h.**

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

POSTGRADUATE CERTIFICATE
in
Big Data Applied to Systems Engineering
and Computer Science

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 certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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