

# Postgraduate Certificate

## Databases for Full Stack Developers



## Postgraduate Certificate Databases for Full Stack Developers

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

Website: [www.techtute.com/us/information-technology/postgraduate-certificate/databases-full-stack-developers](http://www.techtute.com/us/information-technology/postgraduate-certificate/databases-full-stack-developers)

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# 01

# Introduction

In the development of any application there is the need to persist the information that is handled, for this purpose we have the databases. The applications have different characteristics with respect to the type of information they store, the workload and the users' connection mode that will help us to determine which type of database to use. This 100% online program addresses the database system's own capabilities to provide an application with: availability, scalability, response time, performance, data consistency, etc. In this way, specialized knowledge is generated in the student to correctly choose the most appropriate type of database.



“

*Endows as many options as possible within  
the current spectrum of market-leading  
database systems”*

Every day around the world millions of data is generated, this is what is known as the information age. All of them are stored in databases to be broken down and studied in detail. Today, any self-respecting company, regardless of its size, must have a database with which to organize data about your organization. For it to be as effective as it should be, it is not enough to have it, you have to know how to manage it.

This Postgraduate Certificate provides the most updated knowledge about the main databases used in mobile development. Analyzing how each one is developed, studying different types of development with MySQL, Oracle Database, Oracle SQL Server, NoSQL and Graphs, among other specialties.

An online Postgraduate Certificate with great flexibility, as there are no on-site classes or fixed schedules. The student will be the one who decides when, where and how to take on the entire course load. All the content of the virtual classroom can be followed from any device with internet connection and is available for download.

This **Postgraduate Certificate in Databases for Full Stack Developers** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ Case studies presented by experts in Databases for Full Stack Developers
- ◆ 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 for experts and individual reflection work
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



*This Postgraduate Certificate will provide you with specialized knowledge about the different Databases for the development of Mobile Applications”*

“

*You will have access to a wide range of didactic material, which will provide you with specialized knowledge to correctly choose the most suitable type of database”*

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

*Succeed with the best professionals and acquire the knowledge and skills you need to embark on the Databases.*

*With TECH you will be at the forefront and you will be able to advance towards your professionalization in exclusive and most demanded topics in the IT environment.*

```
...ations = [], c
control
observations - [control]
...idates
...ze
...
# Public: the experiment's context
39 def context
40   experiment.context
41 end
42
# Public: the name of the experiment
44 def experiment_name
45   experiment.name
46 end
47
# Public: was the result a match between all
49 def matched?
lib/scientist/result.rb 1:1
```

# 02

# Objectives

The objective of this specialization is to enable IT professionals with the knowledge and skills necessary to program and develop applications and web spaces, using the most advanced tools and techniques of the moment. Through a work approach that is totally adaptable to the students, this Postgraduate Certificate will progressively lead them to acquire the competencies that will propel them to a higher professional level.







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*A Postgraduate Certificate at the forefront of technology, which will allow you to progressively advance in the acquisition of the knowledge you need to work with databases”*



## General Objectives

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- ◆ Analyze the use of databases in the development of applications
- ◆ Determine the different database systems in use today
- ◆ Identify why to use one system or another
- ◆ Examine the loading and accessing process in each of the leading database types in your field





## Specific Objectives

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- ◆ Determine why to use a database in application development
- ◆ Examine the types of databases available and their differences
- ◆ Develop a clear idea of what to use each type of database for
- ◆ Establish how to connect to and load/extract data from different database types
- ◆ Analyze the use of database in current development paradigms



*This is a unique, key and decisive Postgraduate Certificate to boost your professional development”*

03

# Course Management

This Postgraduate Certificate has a group of highly qualified professionals to develop the contents of the program. Within their extensive professional experience, they have managed multiple IT projects. In this way, the student will not only have an empirical knowledge of the most used databases in the sector, but also a series of examples of their application in real companies.





“

*Learn from reference professionals, the latest advances in databases for Full Stack”*

## Management



### Mr. Olalla Bonal, Martín

- ◆ Client Technical Specialist Blockchain in IBM
- ◆ Blockchain Hyperledger and Ethereum Architecture Manager at Blocknitive
- ◆ Director of the Blockchain area at PSS Information Technologies
- ◆ Chief Information Officer at ePETID - Global Animal Health
- ◆ IT Infrastructure Architect at Bankia - wdoIT (IBM - Bankia Join Venture)
- ◆ Project director and manager at Daynet integral services
- ◆ Director of Technology at Wiron Construcciones Modulares
- ◆ Head of IT Department at Dayfisa
- ◆ Head of IT department at Dell Computer, Majsja and Hippo Viajes
- ◆ Electronics Technician in IPPF Juan de la Cierva



## Professors

### Mr. Gómez Rodríguez, Antonio

- ◆ Cloud Solutions Engineer at Oracle
- ◆ Project Manager at Sopra Group
- ◆ Project Manager at Everis
- ◆ Project Manager at Public Company for the Management of Cultural Programs. Department of Culture of Andalusia
- ◆ Information Systems Analyst. Sopra Group
- ◆ Degree in Telecommunications Engineering from the Polytechnic University of Catalonia
- ◆ Postgraduate Degree in Information Technologies and Systems, Catalan Institute of Technology
- ◆ E-Business Master, La Salle School of Business

# 04

# Structure and Content

Based on educational effectiveness, TECH has carefully selected the contents of this program, which includes all the fields of study essential to achieve real knowledge of the subject. With the latest updates and aspects of the Full Stack sector. We have established a syllabus whose module offers a broad perspective of databases. From the first day the students will see their knowledge broadened, which will enable them to grow professionally.





“

*Thanks to the contents to which you will have access and the practical cases that you will develop during the program, you will have a support when facing real situations”*

## Module 1. Databases for Full Stack Developers

- 1.1. Databases for Full Stack Developers
  - 1.1.1. Database within Application Development
  - 1.1.2. Database Capabilities
  - 1.1.3. SQL (*Structured Query Language*)
- 1.2. Choice of Database
  - 1.2.1. Application or Service to be Considered
  - 1.2.2. Database Categories
  - 1.2.3. Database Overview
- 1.3. Development with MySQL
  - 1.3.1. Development with MySQL
  - 1.3.2. Deployment of Relational Model with MySQL
  - 1.3.3. Connection to MySQL
- 1.4. Development with Oracle Database
  - 1.4.1. Development with Oracle DB
  - 1.4.2. Model Deployment
  - 1.4.3. Connection to Oracle Database
- 1.5. Development with Oracle SQL Server
  - 1.5.1. Oracle SQL Server
  - 1.5.2. Model Deployment
  - 1.5.3. Connection to SQL Server
- 1.6. Development with NoSQL
  - 1.6.1. Comparison with SQL Databases
  - 1.6.2. Database Creation in MongoDB
  - 1.6.3. Connection to MongoDB
- 1.7. Development with Graphs
  - 1.7.1. Development with Graphs
  - 1.7.2. Database Creation with Neo4j
  - 1.7.3. Connection with Neo4j
- 1.8. Development with Key-Value Database
  - 1.8.1. Development with K-V Database
  - 1.8.2. Database Creation with Redis
  - 1.8.3. Connection with Redis
- 1.9. Databases with Other Data Types
  - 1.9.1. *Elastic Search*
  - 1.9.2. *Immemory Database*
  - 1.9.3. Development with Spatial Data
- 1.10. Database. Advanced Aspects
  - 1.10.1. Databases in Cloud Native Development
  - 1.10.2. Databases in Microservices Architecture
  - 1.10.3. CI/CD and Databases



*Upgrading your level of professionalization is possible with a flexible and effective learning study method"*



# 05 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.



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*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.





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.





#### 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.



# 06 Certificate

The Postgraduate Certificate in Databases for Full Stack Developers guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



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

This **Postgraduate Certificate in Databases for Full Stack Developers** 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 Databases for Full Stack Developers**

Official N° of hours: **150 h.**



\*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.

future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
development languages  
virtual classroom



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