

# Postgraduate Certificate Advanced Databases and XML



## Postgraduate Certificate Advanced Databases and XML

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/information-technology/postgraduate-certificate/advanced-databases-xml](http://www.techtute.com/us/information-technology/postgraduate-certificate/advanced-databases-xml)

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# 01

# Introduction

There are different types of databases, so professionals should know Select which one is best for each context. This Bases program Advanced Data and XML will allow professionals to gain broad insight into this area to develop quality work







*Join our community of students and learn with the best. You will increase your professionalism in a comfortable way"*

The teaching team of this Postgraduate Certificate in Advanced Databases and XML has made a careful selection of each of topics of this training to offer the student a study opportunity as complete as possible and always linked to current events.

The program covers everything related to Databases, from different types of Databases and optimization of working with Databases, to data mining.

This program provides students with specific tools and skills to successfully develop their professional activity in wide environment of Databases. It works key competences such as knowledge of the reality and daily practice in different IT areas and develops responsibility in the monitoring and supervision of their work, as well as specific skills within this field.

In addition, as it is a 100% online Postgraduate Certificate, the student is not conditioned by fixed schedules or need to move to another physical location, but can access contents at any time of the day, balancing their work or personal life with their academic life.

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

- ♦ Case studies presented by experts in Computing Engineering
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on disciplines that are essential for professional practice
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ Its special emphasis on innovative methodologies in advanced Databases
- ♦ 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



*Do not miss the opportunity to take this Postgraduate Certificate in Advanced Databases and XML. It's the perfect opportunity to advance your career"*

“ *This Postgraduate Certificate is the best investment you can make in selecting a refresher program to update your knowledge in Advanced Databases and XML*”

*This program comes with the best educational material, providing you with a contextual approach that will facilitate your learning.*

*This 100% online Postgraduate Certificate will allow you to balance your studies with your professional work while increasing your knowledge in this field.*

Its teaching staff includes professionals belonging to the field of Information Technology, who bring to this program the experience of their work, as well as recognized specialists from leading companies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive education programmed to prepare for real situations.

The program design focuses on Problem-Based Learning, by means of which the professional must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts in Advanced Databases and XML.



02

# Objectives

The program of Advanced Databases and XML is oriented to facilitate performance of the professional in this field to acquire and know main novelties in this area of Computer Science.

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## REFERENCE - SITE

SITE\_ID

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INFORMATION

DATE

“

*This is the best option to learn about the latest advances in advanced databases and XML”*

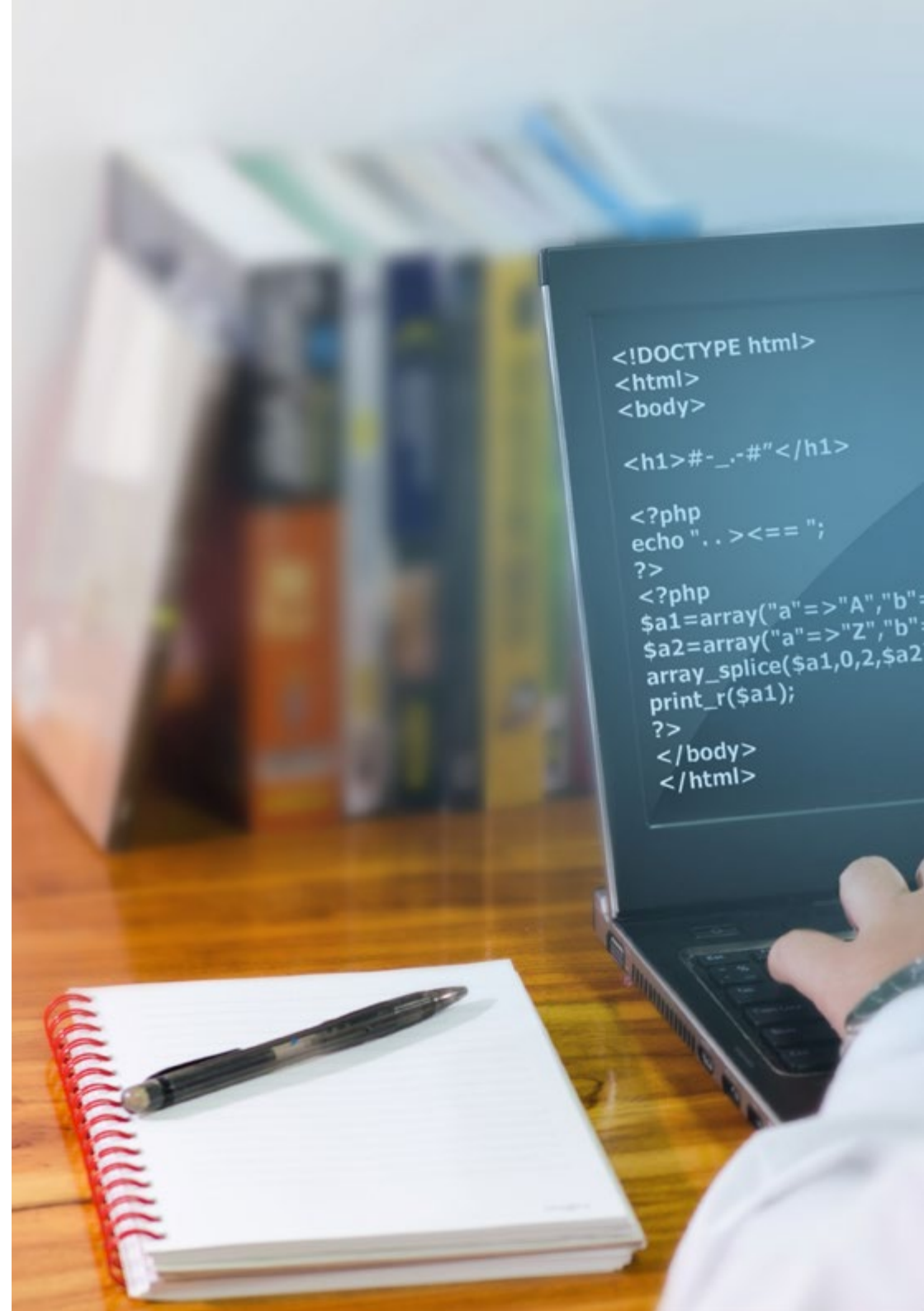


## General Objective

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- To educate scientifically and technologically, as well as to prepare for professional practice of Advanced Databases and XML, all with a transversal and versatile academic experience adapted to new technologies and innovations in this field

“*IT professionals must continue their specialization to adapt to new developments in this field*”





## Specific Objectives

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- ♦ To introduce different database systems currently available in the market
- ♦ To learn the use of XML and Databases for web
- ♦ To understand the advanced database operation, such as parallel and distributed databases
- ♦ To know the importance of indexing and association in database systems
- ♦ To understand the transactional processing operation and retrieval systems
- ♦ To acquire knowledge related to non-relational databases and data mining

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03

# Structure and Content

The content structure has been designed by the best professionals in the Computer Engineering sector, with extensive experience and recognized prestige in the profession.





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*We have the most complete and up-to-date academic program in the market. We strive for excellence and for you to achieve it too"*

## Module 1. Advanced Databases

- 1.1. Introduction to Different Database Systems
  - 1.1.1. Historical Recap
  - 1.1.2. Hierarchical Databases
  - 1.1.3. Network Databases
  - 1.1.4. Relational Databases
  - 1.1.5. Non-Relational Databases
- 1.2. XML and Databases for the Web
  - 1.2.1. Validation of XML Documents
  - 1.2.2. XML Document Transformations
  - 1.2.3. XML Data Storage
  - 1.2.4. XML Relational Databases
  - 1.2.5. SQL/XML
  - 1.2.6. Native XML Databases
- 1.3. Parallel Databases
  - 1.3.1. Parallel Systems
  - 1.3.2. Parallel Database Architectures
  - 1.3.3. Parallelism in Queries
  - 1.3.4. Query Parallelism
  - 1.3.5. Design of Parallel Systems
  - 1.3.6. Parallel Processing in SQL
- 1.4. Distributed Databases
  - 1.4.1. Distributed Systems
  - 1.4.2. Distributed Storage
  - 1.4.3. Availability
  - 1.4.4. Distributed Query Processing
  - 1.4.5. Distributed Database Providers
- 1.5. Indexing and Association
  - 1.5.1. Ordered Indexes
  - 1.5.2. Dense and Sparse Indexes
  - 1.5.3. Multilevel Indices
  - 1.5.4. Index Updating
  - 1.5.5. Static Association
  - 1.5.6. How to Use Indexes in Databases?
- 1.6. Introduction to Transactional Processing
  - 1.6.1. States of a Transaction
  - 1.6.2. Implementation of atomicity and durability.
  - 1.6.3. Sequentiality
  - 1.6.4. Recoverability
  - 1.6.5. Isolation Implementation
- 1.7. Recovery Systems
  - 1.7.1. Failure Classification
  - 1.7.2. Storage Structures
  - 1.7.3. Recovery and Atomicity
  - 1.7.4. Retrieval Based on Historical Record
  - 1.7.5. Concurrent Transactions and Retrieval
  - 1.7.6. High Availability in Databases
- 1.8. Execution and Processing of Queries
  - 1.8.1. Cost of a Query
  - 1.8.2. Selection Operation
  - 1.8.3. Sorting
  - 1.8.4. Introduction to Query Optimization
  - 1.8.5. Performance Monitoring



- 1.9. Non-Relational Databases
  - 1.9.1. Document-Oriented Databases
  - 1.9.2. Graph-Oriented Databases
  - 1.9.3. Key-Value Databases
- 1.10. Data Warehouse, OLAP and Data Mining
  - 1.10.1. Components of Data Warehouses
  - 1.10.2. Architecture of a Data Warehouse
  - 1.10.3. OLAP
  - 1.10.4. Data Mining Functionality
  - 1.10.5. Other Types of Mining



*This program will allow you to advance in your career comfortably"*



# 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.





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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.

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*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.



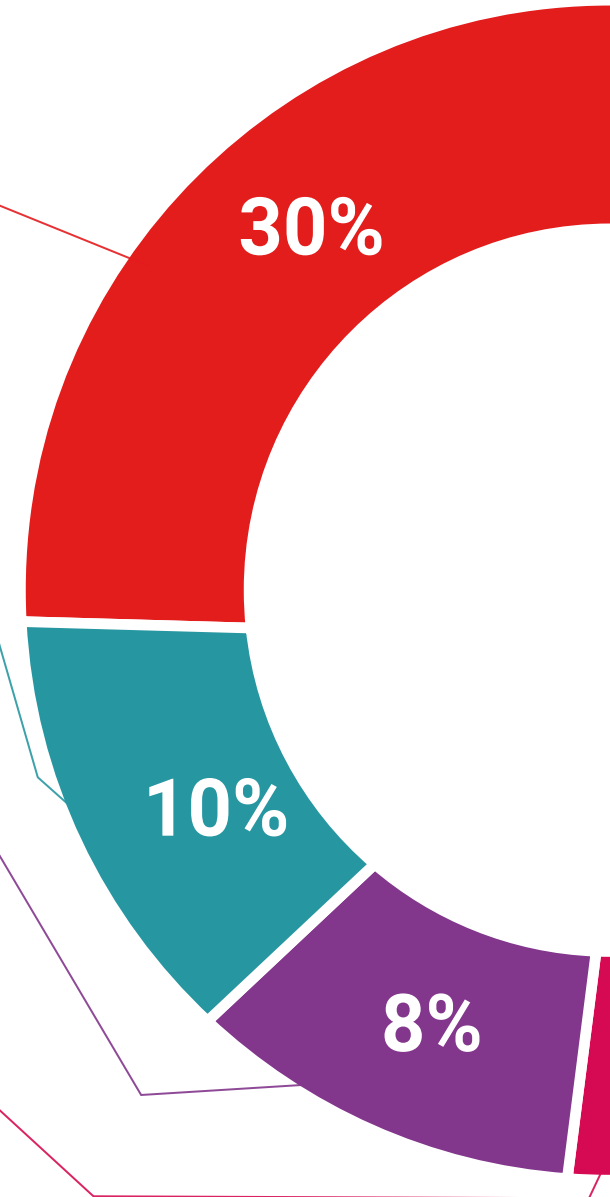
### Practising Skills and Abilities

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.



05

# Certificate

The Postgraduate Certificate in Advanced Databases and XML guarantees, in addition to the most rigorous and updated education, access to a Postgraduate Certificate issued by TECH Global University.





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

This program will allow you to obtain your **Postgraduate Certificate Advanced Databases and XML** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate Advanced Databases and XML**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



\*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH Global University 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 training

development languages

virtual classroom

**tech** global  
university

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# Postgraduate Certificate

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