

Postgraduate Certificate
Disciplinary Training
in Biology and Geology



Postgraduate Certificate Disciplinary Training in Biology and Geology

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

Website: www.techtute.com/us/education/postgraduate-certificate/disciplinary-training-biology-geology

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01

Introduction

Sustainability, climate change, the improvement of human health or the evolution of geological knowledge are currently the focus of the contents of the subject of Biology and Geology in High School Education. Bringing the complexity of the subject to the students in an attractive way is a challenge for the future teacher. For this reason, TECH has developed this program that facilitates an update in these disciplines and their adaptation to different educational levels. All this, through the contribution of innovative methodologies, educational and attractive scientific experiments and practical experiences transferable to the classroom. A 100% online program, with the most advanced syllabus and taught by a faculty with extensive professional experience in teaching.





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Get a complete update on Biology and Geology and improve your skills as a teacher of these disciplines”

Biology and Geology professionals have advanced knowledge of these disciplines and bringing it to the classroom at High School Education levels is a challenge, given the complexity of some concepts.

However, the numerous current teaching resources and new methodological approaches favor this teaching-learning process. Therefore, in order to encourage future teachers in this task, TECH has developed this 100% online university program that provides the essential content that must be transferred to their students in High School Education.

In order to achieve this objective, this educational institution offers an advanced syllabus with a theoretical-practical perspective on the Disciplinary Training of Biology and Geology. In this way, throughout 150 teaching hours, students will learn what and how to teach science, how to carry out experiments with low-cost resources or the STS methodology.

All this, in addition, complemented by multimedia teaching tools, specialized readings and case studies, developed by a teaching team with a great professional experience in the teaching sector.

Future teachers therefore have an exceptional opportunity to improve their teaching work in Biology and Geology through a 100% online Postgraduate Certificate, which can be taken wherever and whenever they wish. You only need an electronic device (cell phone, tablet or computer) with an Internet connection to be able to view, at any time, the syllabus of this program. A unique opportunity to balance daily responsibilities with a first level university program.

This **Postgraduate Certificate in Disciplinary Training in Biology and Geology** contains the most complete and up-to-date educational program on the market. Its most notable features are:

- ♦ The development of case studies presented by experts in teaching in High School Education
- ♦ 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



Build a scientific knowledge that will increase your students' competences thanks to this university program"

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Reduce study hours thanks to the Relearning system that will focus on acquiring a solid learning of the new concepts of this program”

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.

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 training programmed to train in real situations.

The design of this program focuses on Problem-Based Learning, in which the professional will have to try to solve the different professional practice situations that will arise throughout the academic course. This will be done with the help of an innovative system of interactive videos made by renowned experts.

Approach the new Science-Technology-Society (STS) approach in a practical way and bring it into your daily sessions.

Get an update in Biology and Geology and bring your extensive knowledge to teenage students in a didactic way.



02

Objectives

This Postgraduate Certificate has been designed to offer the teaching professional of Biology and Geology an update on this subject and its orientation to High School students. A challenge that will be much easier thanks to the syllabus and the numerous teaching resources provided by TECH in this program. Therefore, at the end of the 150 teaching hours, the future teachers will have broadened their teaching skills in these disciplines.





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TECH puts at your disposal pedagogical material in which it has used the latest technology applied to educational teaching”



General Objectives

- Introduce students to the world of teaching, from a broad perspective that provides them with the necessary skills for the performance of their work
- Get to know the new tools and technologies applied to teaching
- Learn about the different options and ways the teacher can work in their workplace
- Foster the acquisition of communication and knowledge transmission skills and abilities
- Encourage continuing education for students



This program will give you the tools you need to foster scientific inquiry among your biology students"





Specific Objectives

- ♦ Get to know the different distorted visions of science and its characteristics, therefore understanding the different misconceptions about it
- ♦ Discuss the main characteristics of science teaching, as well as the problems it addresses
- ♦ Mention the relationship between research activity and the scientific method, and its teaching in Biology and Geology
- ♦ Get to know what inquiry learning is and its characteristics
- ♦ Gain knowledge about the scientific method and its characteristics
- ♦ Learn about proposals for teaching biology and geology based on the scientific method and inquiry-based learning

03

Course Management

In order to offer all students a quality university program with the most current content, TECH carries out a rigorous selection process of the teachers who teach its programs. Therefore, future teachers who access this Postgraduate Certificate will have at their disposal a team of specialists in the field of teaching, with extensive professional experience in High School Education and in specializing future professionals in the sector.





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You have at your disposal a teaching team with extensive experience in updating the didactic knowledge of future teaching professionals”

Management



Dr. Barboyón Combey, Laura

- ♦ Teacher of Primary Education and Postgraduate Studies
- ♦ Teacher in Postgraduate University Studies of High School Teacher Formation
- ♦ Teacher of Primary Education in several schools
- ♦ Doctor in Education from the University of Valencia
- ♦ Master's Degree in Psychopedagogy from the University of Valencia
- ♦ Degree in Primary School Education with a major in English Teaching from the Catholic University of Valencia San Vicente Mártir



04

Structure and Content

The syllabus of this Postgraduate Certificate facilitates the future teacher of Biology and Geology an update of their knowledge in this field and its pedagogical adaptation to students of High School Education. In order to further facilitate this work, the graduate will find an advanced syllabus complemented with multimedia teaching material that can be accessed from any electronic device with an Internet connection and at any time of the day.



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A university program that focuses you on the essential Biology and Geology content that you need to convey to high school students"

Module 1. Complements for the Disciplinary Training in Biology and Geology

- 1.1. The Nature of Science as a Teaching Objective and Construction of Scientific Knowledge
 - 1.1.1. The Restricted and Simplifying Concept of Science
 - 1.1.2. The Decontextualized, Accumulative and Objective View of Science
 - 1.1.3. Science as a Neutral, Individualistic, and Elitist Activity
 - 1.1.4. A Teaching Proposal
- 1.2. History of Biology and Geology. Scientific Knowledge, School Science, and Science Education
 - 1.2.1. History of Science as a Teacher's Resource
 - 1.2.2. History of Science as a Training Tool
 - 1.2.3. History of Science in the Teaching of Sciences
 - 1.2.4. Is There Improvement in Science Education?
 - 1.2.5. Science of Scientists
 - 1.2.6. Scholar Science
 - 1.2.7. From Teaching Content to Teaching Competencies
- 1.3. What Science to Teach: Literacy and Scientific Competence
 - 1.3.1. What Science to Teach?
 - 1.3.2. Student Perceptions of Science Education
 - 1.3.3. International Assessments about Science Education
 - 1.3.4. Society's Demand on Science Education
 - 1.3.5. Status of the Science Syllabus
 - 1.3.6. Why Teach Science?
 - 1.3.7. Characteristics of Scientific Literacy Curricular Materials
 - 1.3.8. Scientific Competence
 - 1.3.9. Criteria for the Selection of Scientific Contents Under the Competency Approach
 - 1.3.10. Need for a Contextualized Treatment of the Scientific Syllabus
 - 1.13.11. The Current Syllabus and Scientific Competence
 - 1.13.12. Some Proposals for Developing the Syllabus Based on Scientific Competence
- 1.4. The Big Questions of Biology
 - 1.4.1. What Is Life?
 - 1.4.2. What is the Origin of Life?
 - 1.4.3. What is the Origin of Species?
 - 1.4.4. What Gives Each Organism its Specific Identity and Individual Identity?
 - 1.4.5. How Does the Individual Develop?
 - 1.4.6. What Relationships do Living Things Have with Each Other and with Their Environment?



- 1.5. Biology and the World of the 21st Century The Evolution of Geological Knowledge Up to the 21st Century
 - 1.5.1. New Biology Principles
 - 1.5.2. Improvement of Human Health
 - 1.5.3. Promotion of Industries that Respond to Global Problems
 - 1.5.4. Knowledge in Basic Biology
 - 1.5.5. What Remains to Be Known
 - 1.5.6. Evolution of Geological Knowledge
 - 1.5.7. Challenges of Planetary Geology
 - 1.5.8. The New Era of Seismotectonics
 - 1.5.9. New Challenges of Plate Tectonics
 - 1.5.10. The Long Road of Hominid Evolution
 - 1.5.11. Exploration of Natural Resources
 - 1.5.12. The Geological Perspective on Climate Change
- 1.6. Environmental Issues and Sustainability
 - 1.6.1. What are the Main Environmental Problems?
 - 1.6.2. Characteristics of Environmental Degradation
 - 1.6.3. Individual and Collective Behaviors Associated to Environmental Problems
 - 1.6.4. Sustainability
 - 1.6.5. Scientific-Technological, Educational, and Political Measures
- 1.7. Biology and Geology, and Its Relationship with the Science-Technology-Society (STS) Approach
 - 1.7.1. New Curricular Trends in Science Education
 - 1.7.2. The STS Educational Movement
 - 1.7.3. Teachers' STS Practice in Classrooms and Schools
 - 1.7.4. Some STS Curricular Materials
 - 1.7.5. Advantages and Disadvantages of STS Practice in Science Education
 - 1.7.6. The Iberian STS Movement and Prospective
- 1.8. Teacher Educational Research: Planning, Development and Evaluation of Projects in the Teaching of Biology and Geology
 - 1.8.1. Characteristics of Today's Society
 - 1.8.2. Faculty Research and its Cycles
 - 1.8.3. Elaboration of a Work Plan
 - 1.8.4. Performance in the Classroom
 - 1.8.5. Data Analysis and Process Evaluation
- 1.9. Design of Didactic Experiments
 - 1.9.1. Safety Rules and Cleaning in the Laboratory
 - 1.9.2. Introduction: the Teaching Experiment
 - 1.9.3. Teaching Experiments in Biology
 - 1.9.4. Teaching Experiments in Geology
 - 1.9.5. Low-Cost Teaching Experiments or Experiments with Recycled Materials
- 1.10. Practical Experiences in the Teaching of Biology and Geology
 - 1.10.1. Practical Activities in the Teaching of Biology
 - 1.10.2. Dissemination of Practical Activities
 - 1.10.3. Web Pages on Practical Activities and Virtual Laboratories
 - 1.10.4. Fundamental Characteristics of Practical Activities in Geology
 - 1.10.5. Practical Activities in the Teaching of Geology
 - 1.10.6. Field Practices



Bring to your classroom the best teaching experiments with recycled materials for Biology and Geology subjects and captivate your students"

05

Methodology

This training program offers 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"

At TECH Education School we use the Case Method

In a given situation, what should a professional do? Throughout the program students will be presented with multiple simulated cases based on real situations, where they will have to investigate, establish hypotheses and, finally, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method.

With TECH, educators can experience a learning methodology that is shaking the foundations of traditional universities around the world.



It is a technique that develops critical skills and prepares educators to make decisions, defend their arguments, and contrast opinions.

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Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”

The effectiveness of the method is justified by four fundamental achievements:

1. Educators who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process is solidly focused on practical skills that allow educators to better integrate the knowledge into daily practice.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life teaching.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

Our University is the first in the world to combine case studies with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, which represent a real revolution with respect to simply studying and analyzing cases.



Educators will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.

At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology we have trained more than 85,000 educators with unprecedented success in all specialties. 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 specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

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.

The overall score obtained by our learning system is 8.01, according to the highest international standards.



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



Study Material

All teaching material is produced by the specialist educators who teach the course, specifically for the course, so that the teaching content is really 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.



Educational Techniques and Procedures on Video

TECH introduces students to the latest techniques, with the latest educational advances, and to the forefront of Education. All this, first-hand, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



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 multimedia content presentation training Exclusive system was awarded by Microsoft as a "European Success Story".



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.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



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 your goals.



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.



Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



06

Certificate

The Postgraduate Certificate in Disciplinary Training in Biology and Geology guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



The image features two black graduation caps (mortarboards) against a blue sky with light clouds. The caps are positioned diagonally, with one in the foreground and another slightly behind it. The background is split into a white lower-left section and a red upper-right section by a diagonal line.

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

This program will allow you to obtain your **Postgraduate Certificate in Disciplinary Training in Biology and Geology** 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 in Disciplinary Training in Biology and Geology**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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

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



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