

Postgraduate Certificate
Biology and Geology
Syllabus Design



Postgraduate Certificate Biology and Geology Syllabus Design

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

Website: www.techtitute.com/us/education/postgraduate-certificate/biology-geology-syllabus-design

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01

Introduction

In the pedagogical context, subject planning is key to achieving the objectives and competencies established for adequate learning. In this sense, it is essential for the teacher to know all the indispensable elements to carry out educational planning and teaching units in accordance with the syllabus design and current regulations. With this purpose, this 100% online program was created, which provides the future teacher of Biology and Geology with the most advanced knowledge on the design of the subject, the content to be taught, the establishment of objectives, new methodologies and evaluation methods. A compilation of subjects condensed in only 6 weeks and with the most advanced syllabus, prepared by a magnificent teaching team specialized in this field.



“

In only 6 weeks you will improve your planning and creation of teaching programs for your Biology and Geology subject”

The professional who teaches Biology and Geology must address in the classroom the main concepts related to life, health, the environment, and the materials that make up the Earth. A set of scientific knowledge that must be transferred with the highest rigor to students at different educational stages.

In this scenario, planning comes into play as the teacher's main planning tool. In this way, the teacher's work is not dispersed and is focused on achieving educational objectives and competencies. In order to facilitate this work, TECH has created this Postgraduate Certificate in Syllabus Design of Biology and Geology in 100% online mode.

An advanced program with a syllabus prepared by a team of professionals with extensive experience in the teaching sector. In this way, during 150 teaching hours, the future teachers will have access to the key information to create their own planning and teaching unit, in accordance with the existing educational regulations.

In addition, thanks to multimedia teaching resources, essential readings, and case studies, you will learn about the basic elements of planning and the most innovative methodology in a theoretical and practical approach.

An excellent opportunity to advance in the teacher's profession through a flexible and compatible flexible and compatible with the most demanding responsibilities. Students only need an electronic device (computer, cell phone, or tablet) with an Internet connection to be able to view the content of this program at any time of the day. In this way, without attendance or classes with fixed schedules, the graduate will be able to self-manage their study time while increasing their skills for teaching the discipline of Biology and Geology in High School Education.

The **Postgraduate Certificate in Biology and Geology Syllabus Design** contains the most complete and up-to-date educational program on the market. The most important features include:

- ♦ 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



This program provides you with comparative teaching units applied at different educational levels of High School Education. Enroll now”

“

With this program you will be aware of the legislation that guides the Biology and Geology syllabus design”

Become an exceptional teacher and manage your work in the classroom by addressing the diversity of your students thanks to this program.

In only 6 weeks you will be up-to-date with the new techniques and methodological strategies to favor the learning of Biology and Geography.

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 educational year. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.



02

Objectives

The objective of this program is to provide the future teacher with the necessary skills and tools to be able to plan the subject of Biology and Geology in High School Education. A task that will be much easier to achieve thanks to the numerous pedagogical resources provided by TECH and the excellent work done by the teacher's team in the development of this advanced syllabus.





“

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
- ♦ Know the new tools and technologies applied to teaching
- ♦ Show the different options and ways the teacher can work in their post
- ♦ Promote the acquisition of communication and knowledge transmission skills and abilities
- ♦ Encourage continuing education for students





Specific Objectives

- ♦ Define the concept of syllabus
- ♦ Detail the elements that make up the syllabus
- ♦ Explain the concept of syllabus design
- ♦ Describe the levels of concreteness of the syllabus
- ♦ Explain the different models of the syllabus
- ♦ Determine the aspects to be taken into account in the elaboration of a teaching program



You will be able to design and plan your course with the essential elements and the most innovative resources with the syllabus of this program"

03

Course Management

TECH has brought together an excellent team of teachers with many years of experience in the teaching sector, both in the different educational stages and in teaching future teachers. In this way, students entering this program will obtain the most accurate and current information on the Biology and Geology syllabus design.





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The faculty of this university program stands out for its human quality and its closeness to the students. Enroll now”

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 teaching program is the key working tool for the teacher. For this reason, TECH provides in this program the most advanced syllabus for its development, taking into account the educational regulations governing the syllabus design of Biology and Geology, in this way, as well as the most current methodological processes to promote learning. All of this is complemented by a library of multimedia resources that can be accessed 24 hours a day, 7 days a week.



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*A syllabus that will guide you every step
of the way to successfully design your
Biology and Geology subject syllabus"*

Module 1. Biology and Geology Syllabus Design

- 1.1. Syllabus and its Structure
 - 1.1.1. School Syllabus: Concept and Components
 - 1.1.2. Syllabus Design: Concept, Structure and Functioning
 - 1.1.3. Levels of Syllabus Specification
 - 1.1.4. Syllabus Model
 - 1.1.5. Educational Programming as a Working Tool in the Classroom
- 1.2. Legislation as a Guide to Syllabus Design and Key Competencies
 - 1.2.1. Review of Current National Educational Legislation
 - 1.2.2. What are Competencies?
 - 1.2.3. Types of Skills
 - 1.2.4. Key Competencies
 - 1.2.5. Description and Components of Key Competencies LOMCE
- 1.3. The Spanish Education System Teaching Levels and Modalities
 - 1.3.1. Education System: Interaction between Society, Education and the School System
 - 1.3.2. The Educational System: Factors and Elements
 - 1.3.3. General Characteristics of the Spanish Educational System
 - 1.3.4. Configuration of the Spanish Educational System
 - 1.3.5. Compulsory High School Education
 - 1.3.6. Baccalaureate
 - 1.3.7. Professional Formation
 - 1.3.8. Artistic Education
 - 1.3.9. Language Teaching
 - 1.3.10. Sports Education
 - 1.3.11. Adult Education
- 1.4. Analysis of Syllabus from the Specialty of Biology and Geology
 - 1.4.1. Establishment of the Biology and Geology Teacher Specialty
 - 1.4.2. Official Syllabus of the Subjects Assigned to the Teacher Specialization Biology and Geology (ESO)
 - 1.4.3. Official Syllabus of the Subjects Assigned to the Teacher Specialization Biology and Geology (High School)
 - 1.4.4. Vocational Training and their Arrangement
 - 1.4.5. The Teachers of the Biology and Geology Teaching Specialization in the Organizational Diagram of High School Education Institutes
- 1.5. The Teaching Program I: Introduction to the Teaching Programming in the Specialty of Biology and Geology
 - 1.5.1. What is Pedagogical Autonomy (Center Autonomy)?
 - 1.5.2. What Is a Teaching Plan? Characteristics and Functions
 - 1.5.3. Justification and Contextualization of a Teaching Program
 - 1.5.4. Basic Elements of a Teaching Program: Objectives, Contents, and Key Competences
 - 1.5.5. Teaching Programming by Key Competencies Contribution of our Specialty to the Competencies
 - 1.5.6. Considerations for Vocational Training Cycles
- 1.6. The Teaching Program II: the Treatment of Methodology, Assessment, Resources and other Elements of the Teaching Program
 - 1.6.1. Concept and General Considerations on the Methodology Autonomy
 - 1.6.2. Main Aspects to be Considered within the Methodology
 - 1.6.3. Concretization of Methodological Principles
 - 1.6.4. Practical Application of Constructivism
 - 1.6.5. Learning Styles
 - 1.6.6. General Aspects to Consider when Scheduling the Assessment Process
 - 1.6.7. Recovery of Pending Subjects
 - 1.6.8. Resources
 - 1.6.9. Extracurricular and Complementary Activities
 - 1.6.10. Attention to Diversity
 - 1.6.11. Assessment of the Program and Teaching Practice
 - 1.6.12. Final Conclusions for Programming
- 1.7. The Teaching Unit I: General Aspects of the Teaching Units Didactic Objectives and Competencies
 - 1.7.1. Introduction to the Teaching Unit
 - 1.7.2. Identification/ Justification
 - 1.7.3. Contextualization
 - 1.7.4. Teaching Objectives
 - 1.7.5. Criteria for Definition of Objectives
 - 1.7.6. Competencies
 - 1.7.7. Objectives in Terms of Competencies (Relation of Objectives and Competencies)

$2 \text{C}_3\text{H}_4\text{O}_3 + 2 \text{ATP} + 4 \text{H}^+$
 $2 \text{NAD}^+ + 4 \text{H}^+ + 4 \text{e}^- \rightarrow 2 \text{NADH} + 4 \text{H}^+$
 $2 \text{Acetyl CoA} + 6 \text{H}_2\text{O} + 2 \text{ADP} + 2 \text{P}_i$
 $2 \text{Coenzyme A} \rightarrow$
 2Acetyl Co
 $\text{NAD}^+ \rightarrow \text{FAD} \rightarrow \text{Cyt.}$
 H_2CO_3
 $\text{ADP} + 2 \text{P}_i \rightarrow 2 \text{C}_3\text{H}_4\text{O}_3 + 2 \text{ATP} + 2 \text{NADH} + \text{H}^+$
 $2 \text{H}_2\text{O} + 34 \text{ATP}$
 $\text{C}_6\text{H}_{12}\text{O}_6 + 6 \text{O}_2 + 38 \text{ADP} + 38 \text{P}_i \rightarrow 6 \text{CO}_2 + 6 \text{H}_2\text{O}$
 $\text{H}_2\text{CO}_3 \rightarrow \text{NH}_3$
 $\text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{CO}_3$
 $\text{Acetyl CoA} + 2 \text{CO}_2 + 4 \text{H}^+$
 glycolysis
 $\text{Acetyl CoA} \rightarrow \text{e}^- \text{transport}$
 Krebs cycle
 fermentation
 $2 \text{C}_3\text{H}_4\text{O}_3 \rightarrow 2 \text{C}_2\text{H}_4\text{O} \rightarrow 2 \text{C}_2\text{H}_5\text{OH}$
 $2 \text{NAD}^+ \rightarrow 2 \text{NADH} + \text{H}^+$
 $+ 34 \text{ADP} + 34 \text{P}_i$
 $\text{C}_6\text{H}_{12}\text{O}_6 + 2 \text{ADP} + 2 \text{P}_i$
 $2 \text{H}^+ + 2 \text{e}^- + \text{O}_2 \rightarrow \text{H}_2\text{O}$

IOLOG

- 1.8. The Teaching Unit II: Inclusion of Contents, Assessment, and Methodology as the Central Axis of the Teaching Unit
 - 1.8.1. Criteria for the Selection, Organization and Time Distribution of Content
 - 1.8.2. Treatment of the Assessment in the Teaching Unit
 - 1.8.3. Differences between the Inclusion of Methodology in a Teaching Program and in a Teaching Unit
 - 1.8.4. Definition of Teaching Strategies
 - 1.8.5. Methodology According to the Teaching Model
 - 1.8.6. Methodological Strategies and Techniques According to the Teaching Model
 - 1.8.7. Strategies and Techniques that Can Support Each Learning Style
 - 1.8.8. Methods that Favor the Development of Competencies
 - 1.8.9. Methodology for the Attention to Diversity
 - 1.8.10. Methodology to Deal with Transversal Elements and Education in Values
- 1.9. The Management of Classroom Work
 - 1.9.1. Planning of Classroom Work
 - 1.9.2. Classroom Management and Attention to Diversity
 - 1.9.3. Time Distribution
 - 1.9.4. Criteria for the Selection and Sequencing of Activities
- 1.10. Recommendations and More Common Syllabus Design Errors
 - 1.10.1. Layout Collection of the Elements of a Teaching Plan
 - 1.10.2. Layout Collection of the Elements of a Teaching Plan for ESO and High School
 - 1.10.3. Comparison between Teaching Program and Teaching Unit for ESO and High School and between Teaching Program and Work Unit in Vocational Training Cycles
 - 1.10.4. Recommendations for Good Syllabus Design
 - 1.10.5. Most Common Mistakes that can be Made in the Syllabus Design of Teaching Programs and Teaching or Work Units

“ This university program will help you avoid the main mistakes in the syllabus design of the Biology and Geology subject ”

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.





“

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.

“

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 Biology and Geology Syllabus Design guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



The image features two black graduation caps (mortarboards) against a blue sky with light clouds. One cap is in the foreground on the left, held by a hand, and the other is slightly behind it to the right. The background is split into a white diagonal area at the bottom and a red area at the top right.

“

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

This **Postgraduate Certificate in Biology and Geology Syllabus Design** 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 Biology and Geology Syllabus Design**

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 language
virtual classroom

tech technological
university

Postgraduate Certificate
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Syllabus Design

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