

# Postgraduate Certificate Physics and Chemistry Syllabus Design





## Postgraduate Certificate Physics and Chemistry 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/in/education/postgraduate-certificate/physics-chemistry-syllabus-design](http://www.techtitute.com/in/education/postgraduate-certificate/physics-chemistry-syllabus-design)

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# 01

# Introduction

A large part of the success of a subject taught in High School Education is the result of the correct design of its syllabus and didactic units. This is even more important in disciplines such as Physics or Chemistry, which deal with scientific concepts, sometimes complex at certain educational levels. To facilitate the work of the teacher, TECH has created this 100% online program, which will allow the professional to delve into the methodology, the implementation of activities, and the evaluation of these subjects. For this purpose, it will also have access to multimedia teaching resources, developed by a specialized teaching team, which can be accessed 24 hours a day, 7 days a week.



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*A Postgraduate Certificate that provides you with the keys you need to design a first-level program and teaching unit in Physics and Chemistry in High School Education"*

In the current educational systems, the educational development of students is sought, taking into account their own characteristics, their cognitive level and promoting the use of didactic resources and the most innovative methodologies in the classroom. In this scenario, the Physics and Chemistry teachers can face the teaching of their subject with greater guarantee, as long as they take into account all the necessary and required elements in the elaboration of their programming.

A correct design and adequate planning will favor the student's learning, who will assimilate in a much more appropriate way scientific concepts that, at first sight, may be difficult. That is why TECH has created this Postgraduate Certificate in Physics and Chemistry Syllabus Design exclusively online.

It is a program with a syllabus that offers a theoretical-practical approach to the objectives, method, competencies, contents, and resources to be used in the elaboration of a didactic program and unit. In addition, complying with the legislation in force for its execution in High School Education. This program is completed by the pedagogical tools (video summaries, *in focus* videos, essential readings, and case studies), which you can access 24 hours a day, from any electronic device with an Internet connection.

Productive and useful learning that you can acquire without investing many hours of study and memorization. This educational institution employs the Relearning method, based on the continuous reiteration of key content throughout the development of the program. This will allow the student to consolidate new concepts in a much easier way.

This institution therefore offers an unparalleled opportunity to improve in the teaching field through a flexible Postgraduate Certificate, compatible with the most demanding responsibilities and prepared by experts with extensive experience in the teaching sector.

This **Postgraduate Certificate in Physical and Chemistry Curriculum 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 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



*With TECH's Relearning system, you will not need to invest a great amount of study hours. Enroll now"*



“

*This is an educational program that provides you with practical examples for you to integrate into your Physics and Chemistry sessions in ESO, High School or FP"*

*In just 6 weeks you will get the learning you need to improve your teaching units and effectively address diversity in your classroom.*

*Get the most important information on methodologies, activity design and evaluation of your subject with this Postgraduate Certificate.*

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

During the 6 weeks of this university program, the students will obtain an advanced learning on the design elements essential to create a program and didactic unit. All of this, aimed at providing the necessary resources to Physics and Chemistry teachers who seek to advance in their field and provide their students with the most dynamic and productive teaching.





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*This educational option will give you a broad overview of the regulatory system that governs the curricular design of the disciplines of Physics and Chemistry”*



## General Objectives

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- ♦ 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

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*Thanks to this university program, you will incorporate the latest TIC resources into your physics and chemistry sessions”*





## Specific Objectives

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



# 03

# Course Management

TECH has a philosophy based on quality education within everyone's reach. Following these parameters, this educational institution has selected a teaching team made up of professionals with extensive experience in the educational sector. In this way, students who access this Postgraduate Certificate will have an excellent teaching staff that will provide them with the most relevant information on Physics and Chemistry Syllabus Design.





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*Grow professionally as a teacher with real experts in the education sector. 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

This Postgraduate Certificate has been developed by a team of teaching professionals with extensive experience in educational centers. Their knowledge about the Syllabus Design is reflected in a syllabus that leads students to obtain the most relevant and current information on the elements that should be contained in a program and a didactic unit. For this purpose, it also has multimedia didactic resources and a Relearning system, which will allow you to acquire a much simpler and dynamic learning process.





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*This program provides you with a theoretical and practical vision of the Physics and Chemistry Syllabus Design with which you will be able to advance in the preparation of your own subject”*



## Module 1. Physics and Chemistry Syllabus Design

- 1.1. Curriculum and its Structure
  - 1.1.1. School Curriculum: Concept and Components
  - 1.1.2. Curriculum Design: Concept, Structure and Functional Criteria
  - 1.1.3. Levels of Curriculum Specification
  - 1.1.4. Curriculum Models
  - 1.1.5. Educational Programming as a Working Tool in the Classroom.
- 1.2. Legislation as a Guide and Key Skills
  - 1.2.1. Review of Current National 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
- 1.3. 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 the Syllabus in Relation to the Field of Sciences
  - 1.4.1. A Review of Educational Laws
  - 1.4.2. Types of Subjects According to the LOMCE
  - 1.4.3. The Organization of Compulsory High School Education in Relation to Sciences
  - 1.4.4. The Organization of the Baccalaureate in Relation to Sciences
  - 1.4.5. The Organization of the Professional Formation in Relation to Sciences





- 1.5. Didactic Programming I
  - 1.5.1. The Teaching Specialty
  - 1.5.2. Regarding the Autonomy of the Centers
  - 1.5.3. Annual General Programming
  - 1.5.4. Educational Projects at the Center
  - 1.5.5. Introduction to the Didactic Programming
  - 1.5.6. General Characteristics in Programming The Context
  - 1.5.7. Syllabus Elements: The Stage Objectives
  - 1.5.8. Science Content
  - 1.5.9. Baccalaureate Science Content
- 1.6. Didactic Programming II
  - 1.6.1. What is a Didactic Program: Justification, Characteristics and Functions
  - 1.6.2. The Importance of the Context: Educational Center, Students and Social Environment
  - 1.6.3. Elements that Should be Part of Programming: Objectives, Methodology, Skills and Contents
  - 1.6.4. Skill Based Programming
  - 1.6.5. The Use of ICTs to Support Teaching Work
  - 1.6.6. Methods, Principles and Methodological Strategies
  - 1.6.7. Evaluation Criteria and Evaluable Learning Standards
- 1.7. Didactic Programming III Methodology, Design of Activities and Evaluation
  - 1.7.1. Elements that Should Be Part of Programming: The Evaluation
  - 1.7.2. Assessment Procedures, Criteria and Instruments
  - 1.7.3. Attention to Diversity
  - 1.7.4. What is to Evaluate?
  - 1.7.5. Evaluation Processes Competency-Based Assessment
  - 1.7.6. Assessment Criteria vs. Assessment Tools
- 1.8. The Didactic Unit Activities
  - 1.8.1. The Concepts and the Reality of the Student Ways of Approach
  - 1.8.2. Types of Activities
  - 1.8.3. The Temporalization
  - 1.8.4. Attention to Diversity
  - 1.8.5. The Research Model as Action
  - 1.8.6. Critical Reflection on the Teaching Activity
- 1.9. The Didactic Unit Exemplifying
  - 1.9.1. The Didactic Unit in ESO
  - 1.9.2. The Didactic Unit in Baccalaureate
  - 1.9.3. Editorials and Teaching Work
- 1.10. Professional Formation
  - 1.10.1. Approach to Professional Formation as a Teacher
  - 1.10.2. Legislative Development of the Professional Formation
  - 1.10.3. Science Content in Professional Formation
  - 1.10.4. Programming in Professional Formation



*A complete program that will allow you to successfully design your didactic program for Physics and Chemistry subjects"*

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

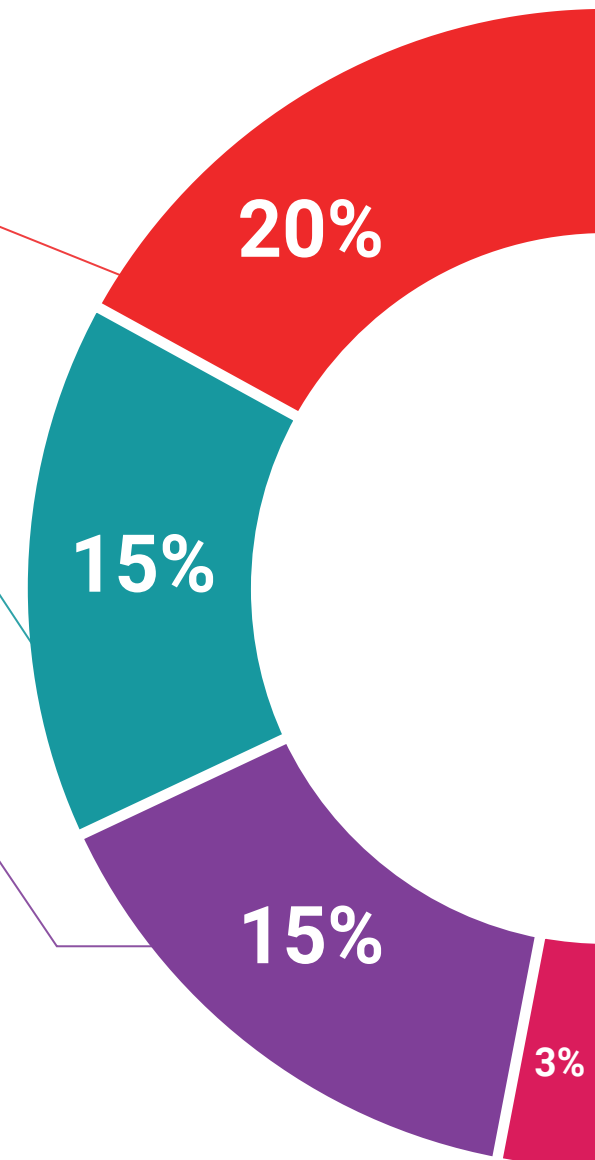
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

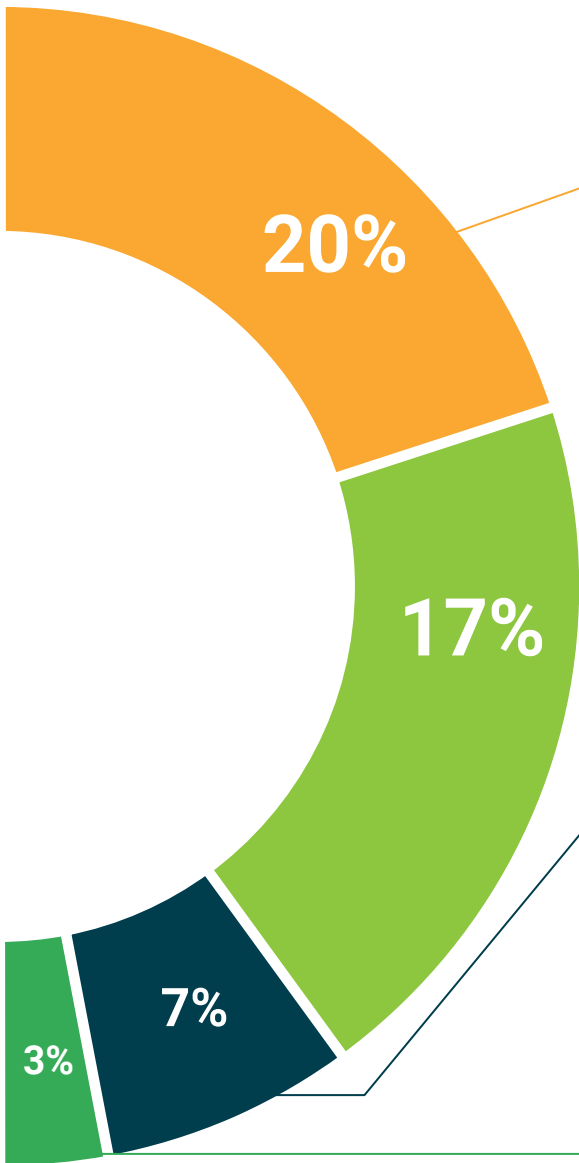
This exclusive multimedia content presentation training Exclusive system was awarded by Microsoft as a "European Success Story".



#### 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 Physical and Chemistry Curriculum Design 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 Physical and Chemistry 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 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 Physics and Chemistry Syllabus Design**

Official N° of Hours: **150 h.**



\*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.

future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

personalized service innovation

knowledge present

development languages

virtual classroom

**tech** technological  
university

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