Postgraduate Certificate

Specialist in Enological Microbiology

tech technological university

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Postgraduate Certificate

Specialist in Enological Microbiology

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

Website: **www.techtitute.com/us/engineering/postgraduate-certificate/specialist-enological-microbiolog**

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01

Introduction

The final result of the wine as a product is influenced by the evolution of its fruit and its biological composition from the first stage. In this sense, professionals working in the wine industry must maintain stable microbiological parameters at all times, and to do so, they are equipped with chemical tools that contribute to growth, among other things. The Enological Engineering graduates are involved in the conservation of grapes, since the organic alternative to artificial compounds that reduce the environmental impact of production will depend on them. In this line, TECH has designed a Postgraduate Certificate for specialists to be able to master the alterations of wine and control the growth of microorganisms, among other skills. This is a 100% online program, so that students can learn the subject in just 6 weeks.

With this Postgraduate Certificate, you will know perfectly the microbiostatic substances involved in the growth of microorganisms in only 6 weeks"

Vineyards and other farms have always opened a social debate between those who support organic, biodynamic and vegan wines and those who wish to maintain the usual supply. In this sense, given the resources available to the individual to continue production and that at the soil level are lacking, companies must seek a respectful and efficient alternative that allows to reduce the hectares of plantation without affecting the level of production, nor the quality of the product.

In order to provide solutions to current and emerging problems associated with climate change, TECH offers a program aimed at graduates in Enological Engineering and other professionals interested in the wine industry. In this way, students will learn about the importance of malolactic fermentation, wine alterations and biological disinfection in wineries, among many other issues.

This is a program that offers theoretical and practical knowledge with the support of a professional team made up of winemakers with extensive experience in the sector. These teachers will be the ones who will teach the program and provide students with the keys to develop towards sustainability in an ever-changing field. TECH also incorporates audiovisual materials in different formats for students to obtain great dynamism during the study weeks to motivate them and increase their performance. All this, with a 100% online modality that allows the specialists to combine the academic experience and their personal life.

This **Postgraduate Certificate in Specialist in Enological Microbiology** contains the most complete and up-to-date educational program on the market. Its most outstanding features are:

- Case studies presented by experts in Enological Engineering and Viticulture.
- The graphic, schematic and eminently practical contents with which it is conceived provide Scientific information on those disciplines that are essential for professional practice.
- Practical exercises where the self-assessment process can be carried out 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.

Thanks to TECH, you will master the microbiological analysis of wine and increase your skills as an experienced wine professional."

Yeasts directly condition the quality of wines ultimately. Discover how they influence vine metabolism with TECH"

Register now to discover the physical methods of removing microorganisms, such as nominal, absolute and tangential filtration.

Learn about the study of fungi and other microorganisms involved in wine to find out how to contain their growth.

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 provide the professionals with situated and contextual learning, i.e., a simulated environment that will provide an immersive education programmed to learn in real situations.

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

02

Objectives

This Postgraduate Certificate in Specialist in Enological Microbiology has been designed for winemaking engineers and other interested professionals to develop their skills in microbiological analysis with innovative tools. TECH achieves this, thanks to the introduction of real simulations, which will make students fully prepared to apply them in practice. It is a program with great flexibility, since the specialists will be able to acquire the knowledge at any time and place, according to the 100% online modality used by TECH.

TECH's objective is for you to fulfill yours, project your career towards organic pesticides so that you can create a new paradigm in agriculture"

General Objectives

- Provide the widest possible range of viticultural knowledge
- Show the student the importance of viticulture for the production of great wines
- Inculcate the need for environmental protection based on sustainability
- Substantiate the enological importance of these compounds both in the winemaking stages and in the final product
- Examine the microorganisms associated with the winemaking process, their nutritional requirements, and the beneficial or detrimental properties they can contribute to the wine
- Provide knowledge for the production of white wines.
- Determine the wide range of existing possibilities in order to choose the most appropriate processes for a given terroir, grape variety and wine style
- Develop to the maximum the most advanced enology so that the student can produce top quality white wines
- Turn the student into an expert in red winemaking
- Determine the varieties used or with potential in the vinification of sparkling wines
- Examine the viticultural elements that affect winemaking
- Generate specialized knowledge about the expedition Preparation of wines for consumption
- Establish the importance of winemaking for this group of great wines
- Substantiate the need to protect these heritage treasures as part of our culture
- Broaden knowledge of fining and elimination of the various components that can depreciate the wine
- Broaden the knowledge of barrel construction
- Present the importance of barrel toasting
- Deepen in the sensory analysis of wine Aspects to evaluate and how to carry it out
- Identify the organoleptic alterations of the wine

Specific Objectives

- Acquire a global knowledge of enological microbiology
- Analyze wine defects and correctly attribute them to each microbial group
- Fundamentally understand the concept of microbiological stability and be aware of the problems associated with different types of wine and the deviations they can have depending on the time of winemaking
- Examine the mechanism of action of antimicrobial compounds and how to control spoilage microorganisms
- Develop good cellar practices for cleaning and disinfection
- Establish methods for counting microorganisms and microscopic identification of each microbial group

Enroll now in this Postgraduate Certificate to broaden your skills and become a much more competitive professional in the labor market"

03

Course Management

TECH has called on a professional team that works in laboratories and that corresponds to doctors in Agricultural Engineering with years of experience in the sector. Thanks to their contribution, students will not only have theoretical knowledge, but will also be able to acquire the keys to the actions of professionals in the real world of winemaking. In this way, the students' follow-up will be exhaustive, in order to achieve the objectives of the program: to enrich the professional career of the graduates in Engineering and to focus them on the future solutions of agricultural management.

Get closer to new agricultural trends, thanks to the support of experts with years of experience in the wine industry"

Management

Ms. Clavero Arranz, Ana

- Chief Executive Officer of Grupo Bodegas Emilio Moro
- Chief Financial Officer of Grupo Bodegas Emilio Moro
- Head of Administration at Bodegas Cepa 21
- Administration Technician at Bodegas Convento San Francisco
- Professional Master's Degree in Business Administration and Management from the University of Valladolid.
- Professional Master's Degree in Financial Management from ESIC
- Executive Coach by ICF
- Digital Immersion Program for CEOS (ICEX)
- Executive Development Program by IESE

Professors

Ms. Arranz Núñez, Beatriz

- Winemaker in Viñas del Jaro
- Assistant Winemaker at Viña Buena
- Winemaker at Familia A. De La Cal Winery
- Attendees Winemaker at Viña Cancura
- Winery worker at Vitalpe
- Winemaker trainer at the Business Development Institute
- Winemaker and guide at the Valladolid Provincial Wine Museum
- Overseer of the Superior Council of the Ribera del Duero D.O.
- Degree in Enology from the University of Valladolid.

Mr. Carracedo Esguevillas, Daniel

- Deputy winemaker at Viñas del Jaro
- Laboratory Manager at Viñas del Jaro
- Assistant Winemaker at Bodegas y Viñedos de Cal Grau
- Graduates in Enology from the University of Valladolid.

04

Structure and Content

The syllabus of this Postgraduate Certificate in Specialist in Enological Microbiology has been carefully designed by experts in the biological area, who will transmit their knowledge through audiovisual contents that are easy to assimilate and that will prepare them for real performance in the work environment through the simulation of cases. These professionals will share all their wine knowledge through audiovisual materials, with a theoretical-practical format that will allow the pace of study to be adapted to each student. In addition, TECH applies the Relearning methodology to exempt students from long hours of memorization and to allow them to assimilate all the contents in a gradual and simple way.

Know the nutritional requirements that are demanded of the wine industry so that you can offer a product with high microbiological quality"

Module 1. Enological Microbiology

1.1. Yeast
- 1.1.1. Yeast Strains in Winemaking
- 1.1.2. Nutritional Requirements
- 1.1.3. Nitrogen
- 1.1.4. Growth Factors
- 1.1.5. Survival
- 1.1.6. Metabolism
- 1.1.7. Glucose, Sulfhydric, Glycosidases, Hand Proteins, Aromatic Compounds

1.2. Lactic Acid Bacteria
- 1.2.1. Types of Lactic Acid Bacteria in Winemaking
- 1.2.2. Nutritional Requirements and Factors Affecting Growth and Viability in Wine
- 1.2.3. Metabolism
- 1.2.4. Sugars, Organic Acids, Nitrogenous Compounds, Glycerol Degradation, Aromatic Compounds

1.3. Acetic Acid Bacteria
- 1.3.1. Yeast Strains in Winemaking
- 1.3.2. Nutritional Requirements
- 1.3.3. Nitrogen, Growth Factors and Survival
- 1.3.4. Metabolism
- 1.3.5. Glucose, Hydrogen Sulfide, Glycosidases, Hand Proteins and Aromatic Compounds.

1.4. Fungi and Other Microorganisms
- 1.4.1. Common Strains in Wine
- 1.4.2. Nutritional Requirements
- 1.4.3. Nitrogen, Growth Factors and Survival
- 1.4.4. Metabolism
- 1.4.5. Glucose, Mycotoxins and Aromatic Compounds

1.5. Microbial Ecology During Winemaking
- 1.5.1. Saccharomyces and Non-Saccharomyces Yeasts in Grape/Must, ALF and Post ALF
- 1.5.2. Dekkera/Brettanomyces in Grapes/Must, ALF and Post ALF
- 1.5.3. Lactic Acid Bacteria in Grapes/Must, ALF, MLF and Post MLF
- 1.5.4. Microbial Interactions
- 1.5.5. Saccharomyces/Oenococcus, Saccharomyces/Lactobacillus, Oenococoecus/Pediococcus/Lactobacillus

1.6. Importance of Malolactic Fermentation (MLF)
- 1.6.1. Advantages of MLF
- 1.6.2. Spontaneous vs. Directed MLF
- 1.6.3. Starter Cultures
- 1.6.4. Co-Inoculation vs. Sequential MLF
- 1.6.5. Climate Change and Microbiological Stability

1.7. Wine Alterations
- 1.7.1. Wine Altering Microorganisms
- 1.7.2. Acetobacter, Dekkera/Brettamomyces, Veil/Biofilm Yeasts, Saccharomycodes, Zygosaccharomyces
- 1.7.3. Defects in Wines Associated with Microorganisms
- 1.7.4. Volatile Acidity, Ethyl Carbamate, Mouse Aroma, Post MLF Lactic Bacteria Growth
- 1.7.5. Geranium Aroma, Biogenic Amines, Acrolein, Mannitol, Viscosities, Tartaric Turnaround

1.8. Control of the Growth of Microorganisms
- 1.8.1. Microbicidal Substances: Sulfur Dioxide, Dimethyl Dicarbonate, Lysozyme
- 1.8.2. Microbiostatic Substances: Sorbic Acid, Chitosan, Fumaric Acid and Others.
- 1.8.3. Removal of Microorganisms by Physical Methods: Nominal, Absolute and Tangential Filtration

1.9. Biological Cleaning and Disinfection in the Winery
- 1.9.1. Detergents, Cleaners and Surfactants: Alkali, Acids, Surfactants
- 1.9.2. Disinfectants: Iodine, Quaternary Ammonium Compounds, Sulfur Dioxide, Peroxides and Chlorine
- 1.9.3. Derivatives, Ozone, Hot Water and Steam

1.10. Microbiological Analysis of Wine
- 1.10.1. Microscopic Observation
- 1.10.2. Microscopic Yeast Count: Thoma Chamber and Methylene Blue.
- 1.10.3. Bacteria Microscopic Count: Petroff's Chamber
- 1.10.4. Plate Count of Microorganisms: Classical Technique of Serial Dilutions and Membrane Filtration Technique
- 1.10.5. Rapid Bacterial/Yeast Classification Tests
- 1.10.6. Other Techniques

A program designed for professionals like you, who wish to delve into the microscopic study of the wine process, from its initial phase to its bottling"

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.

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 is the most widely used learning system in the best faculties in the world. 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 program, the studies 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

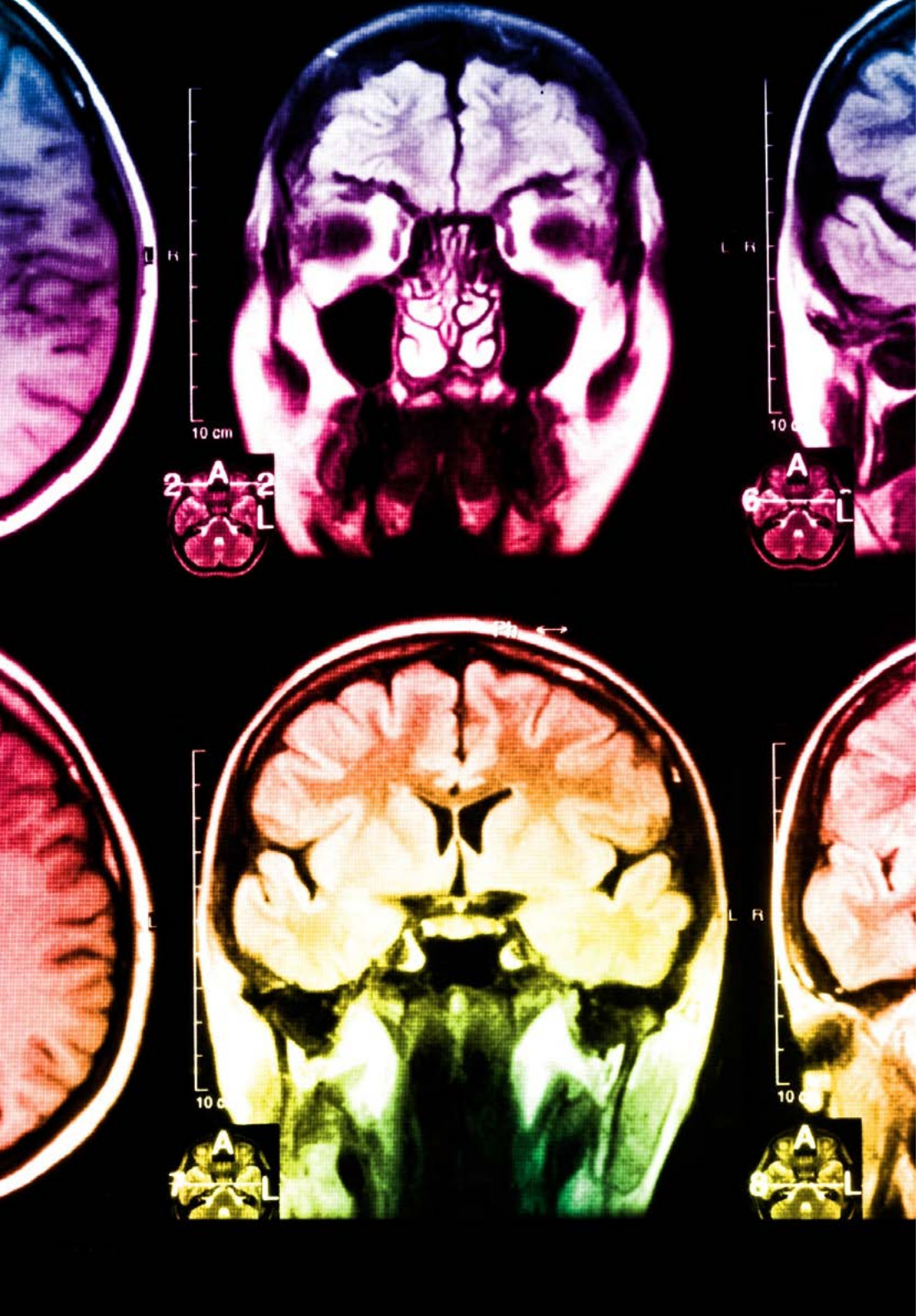
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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.

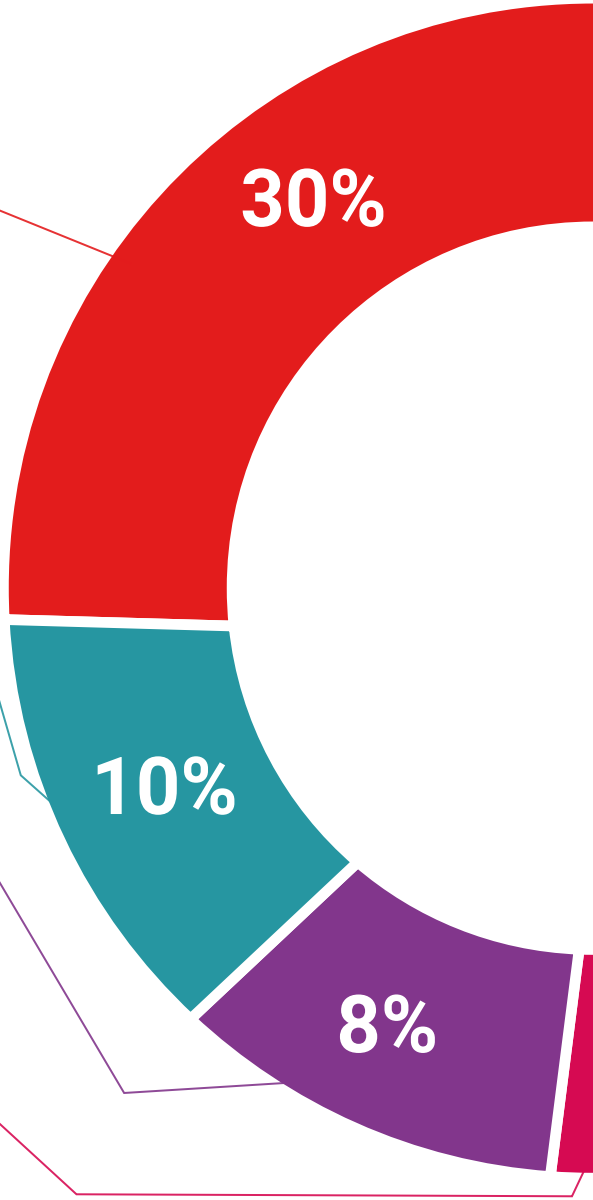
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

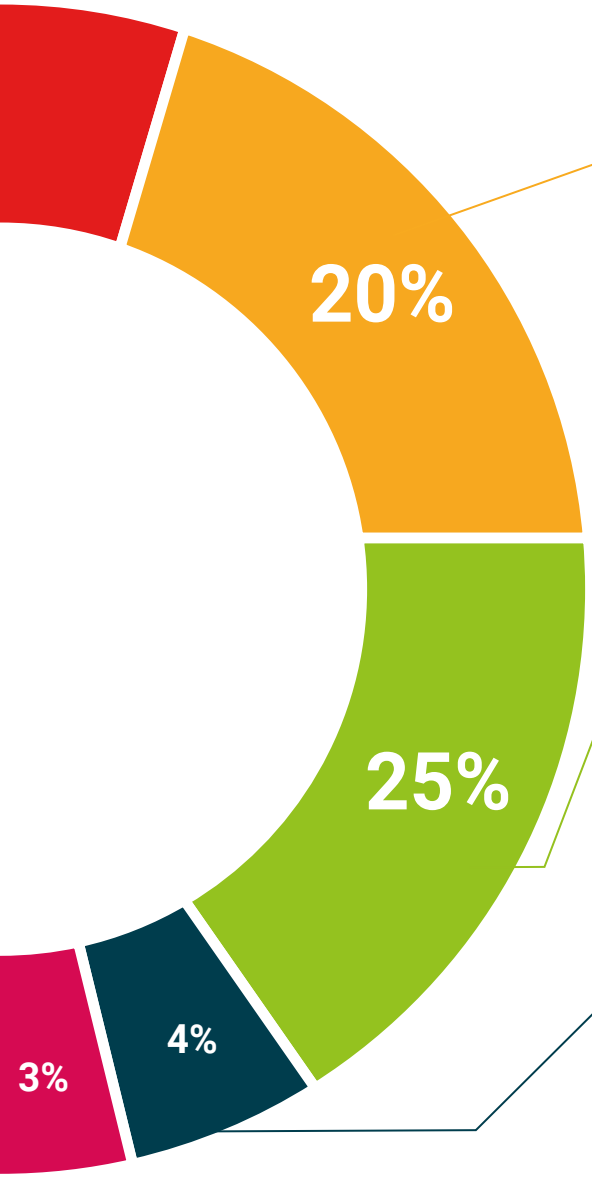
Practising Skills and Abilities

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 Specialist in Enological Microbiolog guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.

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

This **Postgraduate Certificate in Specialist in Enological Microbiology** contains the most complete and up-to-date program on the market. .

After the students have 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 Specialist in Enological Microbiology**

Official Nº of Hours: **150 hours.**


tech technological university

Awards the following

DIPLOMA

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Specialist in Enological Microbiolog

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro

Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

*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.

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