

# Postgraduate Certificate

## Enotechnics and Stabilization of Wines



## Postgraduate Certificate Enotechnics and Stabilization of Wines

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

Website: [www.techtute.com/us/engineering/postgraduate-certificate/enotechnics-stabilization](http://www.techtute.com/us/engineering/postgraduate-certificate/enotechnics-stabilization)

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# 01

# Introduction

The presence of microorganisms and their nutritional influence on the product will be decisive in the elaboration of wine and its final result. The serious intrusiveness that exists in this sector means that companies are forced to carry out an intensive search for specialists with exhaustive qualifications in the viticultural area and who are up to date with all the novelties in this field. All this, to promote a meticulous process that depends on the coordination of many procedures, especially in the stabilization of matter, filtration and clarification of wines of all types. For this reason, TECH offers an intensive program that delves into wine instabilities caused by metals and the prevention and elimination of bacteria, yeast and mold growth and elimination, among other issues. A program that, thanks to its 100% online modality, adapts to the personal and professional circumstances of the students.





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*With this Postgraduate Certificate you will master the microbiological stabilization of wine in only 6 weeks”*

The chemical composition of wines will directly influence their organoleptic properties. During winemaking, specialists encounter natural threats from microorganisms that have been latent in the product since the vines have been growing. It is therefore essential that professionals working in this area can control the stabilization and growth of bacteria such as fungi or molds that affect production.

For this reason, TECH offers a comprehensive qualification on the fining of red, white and rosé wines, their filtration, the stabilization of potassium bitartrate in wine, as well as calcium tartrate, colorants and the instability that can be caused by metals. A 100% online program that aims to reach students with dynamic audiovisual materials and with a digital modality that opens up possibilities in terms of schedule and travel and is compatible with the other activities of the specialists' daily life, such as their work occupation.

In this way, engineering graduates and other interested professionals who enroll in the program will benefit from teaching based on pedagogical innovation and the *Relearning* methodology, which will avoid long hours of study and will give them the possibility of assimilating the concepts in a simple and gradual manner. In addition, TECH is supported by a team of professionals with extensive experience in the wine sector, with whom students can contact through a direct communication channel to resolve their doubts. The aim is to unify all the tools available to TECH to offer a program that is as rigorous as it is effective.

This **Postgraduate Certificate in Enotechnics and Stabilization of Wines** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ Case studies presented by experts in Enological Engineering and Viticulture
- ◆ The graphic, schematic, and practical contents with which they are created, provide 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



*Register now to successfully apply potassium polyaspartate and stabilize the components of the wine you are treating"*

“

*Do you want to get into wine clarification and stabilization? Join TECH now to intervene with precision, thanks to this Postgraduate Certificate"*

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, through which the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the students will be assisted by an innovative interactive video system created by renowned experts.

*In the Virtual Campus you will have access to 150 hours of additional high quality material and you will be able to contact directly with the teachers to solve your doubts.*

*The wine industry needs professionals like you, interested in the elimination of calcium in wine and the improvement of the final product.*





# 02

# Objectives

The main objective of this Postgraduate Certificate in Enotechnics and Stabilization of Wines is to discover to engineering graduates and other interested professionals the importance of viticulture for the production of great wines. It is an intensive program dedicated to the clarification and stabilization of different types of wines. At the same time, students will acquire knowledge in wine filtration and stabilization against the growth of microorganisms. In this way, and through the teaching of expert teachers in the wine area, the students will enjoy during 6 weeks of a dynamic and modern learning that is equipped with audiovisual tools to reach it effectively and with future projections in their professional career.





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*Do not wait any longer to fulfill your objectives, this program offers you all the knowledge you need to distinguish yourself in the labor market and to investigate in the filtration of wines”*



## General Objectives

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- ◆ 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
- ◆ Delve into the sensory analysis of wine Aspects to evaluate and how to carry it out
- ◆ Identify the organoleptic alterations of the wine







### Specific Objectives

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- ◆ Be able to identify an organoleptic problem (gustatory, aromatic or visual) and be able to correct it by means of the different types of fining
- ◆ Give practical and visual examples to help identify the different instabilities or problems that can occur in a wine
- ◆ Determine solutions to avoid the problems of physical-chemical and microbiological instability of wine
- ◆ Avoid bad practices in the use of fining agents
- ◆ Promote the knowledge of wine altering microorganisms and to know how to avoid their development
- ◆ Analyze the filtration methods prior to wine stabilization, and to have the ability to choose the most appropriate one(s) according to the objectives to be achieved
- ◆ Make the students aware of the importance of stabilization in order to avoid problems with the final product or its depreciation on the market
- ◆ Encourage the student's interest in the use of ecological and non-allergenic products (fining agents) As well as, the choice of stabilization methods that involve less energy expenditure



*Enroll now in this Postgraduate Certificate and enjoy an exhaustive teaching that dedicates a part of the course to the cold treatment of wines and reverse osmosis"*



03

# Course Management

TECH has called upon experts in Enological Engineering to share their theoretical and practical knowledge through this Postgraduate Certificate. In addition, this teaching team has been in charge of developing the contents that appear in the program and that will be useful to the specialists for their practical work in the wine-making field. At the same time, students will be able to contact the teachers through a direct communication channel, the Virtual Campus, through which they will be able to solve all their questions about the subject.





A composite image featuring a microscopic view of biological tissue, likely a cross-section of a plant stem or root, showing various cellular structures and colors (purple, pink, brown). The image is split diagonally, with the top-left portion showing the tissue and the bottom-right portion being a solid dark red color.

“

*Are you going to miss the opportunity to meet prestigious experts in your own sector? Open the doors to your future with the help of the teaching group that TECH has carefully selected"*

## 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. Masa Guerra, Rocío

- ♦ Winemaker at Bodegas Protos
- ♦ Assistant winemaker at Matarromera Winery
- ♦ Responsible for incoming grapes at Bodega Emilio Moro
- ♦ Responsible for quality at BRC and winemaker at Viñedos Real Rubio
- ♦ Winemaking Assistant at Bodega Solar Viejo
- ♦ Winery and vineyard manager at Ébano Viñedos y Bodegas
- ♦ Assistant winemaker and laboratory technician at Bodega El Soto
- ♦ Degree in Oenology from the Escuela Técnica Superior de Ingenierías Agrarias de Palencia (Palencia School of Agricultural Engineering)
- ♦ MBA in Wine Business Management from the Business School of the Chamber of Commerce of Valladolid

### Mr. Sáez Carretero, Jorge

- ♦ Viticulture Manager at Cepa 21 Winery
- ♦ Viticulture Technician at Fontana Winery
- ♦ Viticulture Manager at GIVITI
- ♦ Graduate in and Science Engineering from the Polytechnic University of Madrid
- ♦ Professional Master's Degree in Viticulture and Enology from the Polytechnic University of Madrid
- ♦ Accredited as Integrated Pest Management Advisor
- ♦ Accredited as Advisors of the Official Register of Producers and Operators of Phytosanitary Defense Means





# 04

## Structure and Content

The syllabus of this Postgraduate Certificate in Enotechinics and Stabilization of Wines has been developed jointly with professionals working in the chemical sector around Viticulture. Thanks to their contribution and the incorporation of theoretical and practical tools, the student will be able to take the program with all the facilities and guarantees to acquire all the knowledge in a simple way. All this is focused on instructing students for their professional practice so that they are able to learn about the viticultural and enological conditions that favor microbial development and recreate them artificially. Likewise, the *Relearning* methodology applied by TECH exempts the student from the hours of memorization common in orthodox programs. In this case, the assimilation of contents will be simple and will be given by experts in the area.







“

*You are just one click away from joining a modern and digital program designed for awakened professionals like you"*



## Module 1. Wine Clarification and Stabilization

- 1.1. Clarification of Red Wines
  - 1.1.1. Clarification of Tannins, Elimination of Harshness and Bitterness
  - 1.1.2. Clarification of Coloring Matter (Anthocyanins)
  - 1.1.3. Substitution of Allergenic Fining Agents in Red Wines
  - 1.1.4. Specific Clarification to Eliminate Microorganisms
- 1.2. Clarification of White and Rosé Wines
  - 1.2.1. Elimination of Wine Proteins
  - 1.2.2. Elimination of Oxidizable Polyphenols
  - 1.2.3. Substitution of Allergenic Clarification Agents in White and Rosé Wines
  - 1.2.4. Clarification for the Elimination of Microorganisms Prevention of Malolactic Fermentation
- 1.3. Wine Filtration
  - 1.3.1. Influence of Turbidity on Wine Stabilization
  - 1.3.2. Depth Filtration or Adsorption Filtration: Soil Filtration and Plate Filtration
  - 1.3.3. Tangential Filtration
  - 1.3.4. Direct Membrane Filtration
  - 1.3.5. Other Methods for Wine Purification after Clarification: Centrifuge, Decanter, Flotation
- 1.4. Stabilization of Potassium Bitartrate in Wine
  - 1.4.1. Origin of Potassium in Grapes and Wine
  - 1.4.2. Cation Exchange
  - 1.4.3. Cold Treatment of Wines
  - 1.4.4. Reverse Osmosis
  - 1.4.5. Use of Potassium Polyaspartate
  - 1.4.6. Carboxymethyl Cellulose and Metatartaric Acid
- 1.5. Stabilization of Calcium Tartrate
  - 1.5.1. Origin of Calcium in Grapes and Wine
  - 1.5.2. Factors Influencing the Formation of Calcium Tartrate Crystals
  - 1.5.3. Calcium Removal in Wine





- 1.6. Stabilization of Coloring Matter in Red Wines
  - 1.6.1. Origin and Formation of Anthocyanins in Grapes
  - 1.6.2. Fixation of the Coloring Matter
  - 1.6.3. Anthocyanin-Tannin Condensation
  - 1.6.4. Fixation and Stabilization of Anthocyanins with Polysaccharides
- 1.7. Instability Caused by Metals
  - 1.7.1. Ferrous Breakdown
  - 1.7.2. Copper Breakdown
  - 1.7.3. Other Physical-Chemical Instabilities
- 1.8. Microbiological Stabilization of Wine
  - 1.8.1. Microorganisms that Can Grow in Wine and their Origin
  - 1.8.2. Viticultural and Enological Conditions that Favor Microbial Growth
  - 1.8.3. Prevention of Microbial Growth
- 1.9. Prevention of Bacterial Growth and Elimination
  - 1.9.1. Acetic Acid Bacteria
  - 1.9.2. Oenococcus Oeni
  - 1.9.3. Other Lactic Acid Bacteria: Lactobacillus and Pediococcus.
- 1.10. Preventing the Growth and Elimination of Yeasts and Molds
  - 1.10.1. Bretanomyces
  - 1.10.2. Saccharomyces Cerevisiae
  - 1.10.3. Apiculate Yeasts
  - 1.10.4. Molds

“*Join the latest advances in the wine industry thanks to a training course that will help you master the prevention of yeast and mold growth and elimination*”



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.

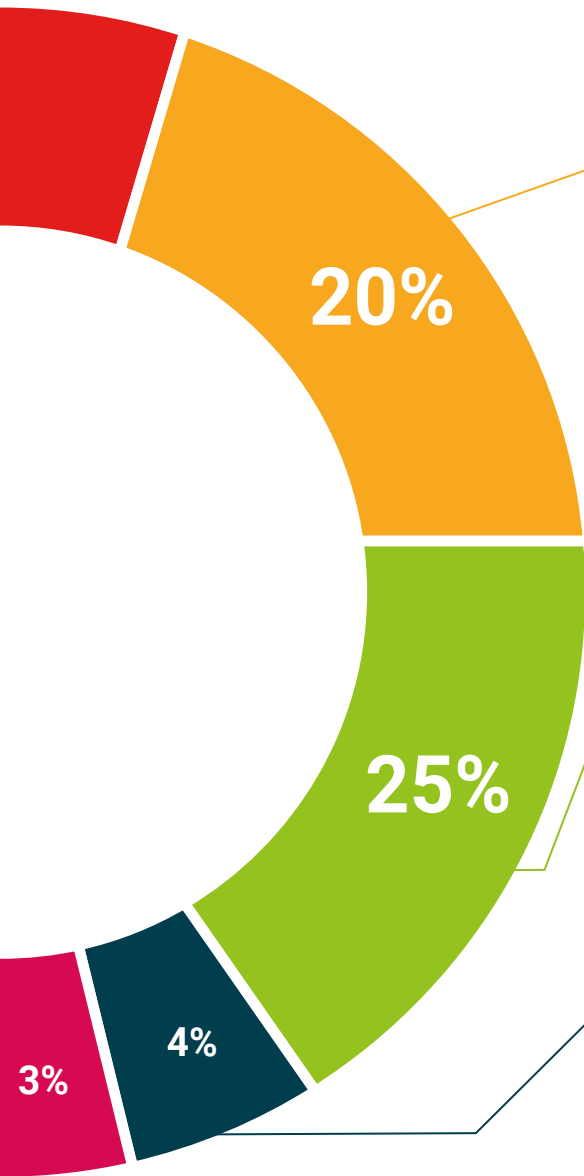


### Additional Reading

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 EnoTechnics and Stabilization of Wines 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 Enotechnics and Stabilization of Wines** 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 Enotechnics and Stabilization of Wines**

Official N° of Hours: **150h**.



\*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 lang  
virtual classroom



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