



# Sensory Analysis in Enology

» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 16h week

» Schedule: at your own pace

» Tests: online

» Aimed at: University graduates, postgraduates and degree holders who have previously completed any of the programs in the field of Social and Legal Sciences, Administrative and Business Administration.

Website: www.techtitute.com/us/school-of-business/postgraduate-diploma/postgraduate-diploma-sensory-analysis-enology

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Certificate

# 01 **Welcome**

Since the first discoveries of the scientist Rose Marie Pangborn on sensory analysis, this discipline has undergone a great evolution. Statistical programs nowadays facilitate the task of extracting data to determine the different wines, their appellations or elaborations, without completely overlooking the tasting of the product itself. Along these lines, TECH offers professionals in the tourism sector advanced knowledge on sensory studies, organoleptic alterations in wine and conservation in oak barrels. All in a syllabus designed by the best specialists in Enology, which is a unique opportunity to access the most relevant information in a 100% online format, accessible 24 hours a day, from any electronic device with an Internet connection.









# tech 08 | Why Study at TECH?

# At TECH Technological University



#### **Innovation**

The university offers an online learning model that balances the latest educational technology with the most rigorous teaching methods. A unique method with the highest international recognition that will provide students with the keys to develop in a rapidly-evolving world, where innovation must be every entrepreneur's focus.

"Microsoft Europe Success Story", for integrating the innovative, interactive multi-video system.



## The Highest Standards

Admissions criteria at TECH are not economic. Students don't need to make a large investment to study at this university. However, in order to obtain a qualification from TECH, the student's intelligence and ability will be tested to their limits. The institution's academic standards are exceptionally high...

95%

of TECH students successfully complete their studies



# Networking

Professionals from countries all over the world attend TECH, allowing students to establish a large network of contacts that may prove useful to them in the future.

+100000

+200

executives prepared each year

different nationalities



### **Empowerment**

Students will grow hand in hand with the best companies and highly regarded and influential professionals. TECH has developed strategic partnerships and a valuable network of contacts with major economic players in 7 continents.

+500

collaborative agreements with leading companies



#### **Talent**

This program is a unique initiative to allow students to showcase their talent in the business world. An opportunity that will allow them to voice their concerns and share their business vision.

After completing this program, TECH helps students show the world their talent.



#### **Multicultural Context**

While studying at TECH, students will enjoy a unique experience. Study in a multicultural context. In a program with a global vision, through which students can learn about the operating methods in different parts of the world, and gather the latest information that best adapts to their business idea.

TECH students represent more than 200 different nationalities.



### Learn with the best

In the classroom, TECH's teaching staff discuss how they have achieved success in their companies, working in a real, lively, and dynamic context. Teachers who are fully committed to offering a quality specialization that will allow students to advance in their career and stand out in the business world.

Teachers representing 20 different nationalities.



At TECH, you will have access to the most rigorous and up-to-date case analyses in academia"

# Why Study at TECH? | 09 **tech**

TECH strives for excellence and, to this end, boasts a series of characteristics that make this university unique:



### **Analysis**

TECH explores the student's critical side, their ability to question things, their problem-solving skills, as well as their interpersonal skills.



#### **Academic Excellence**

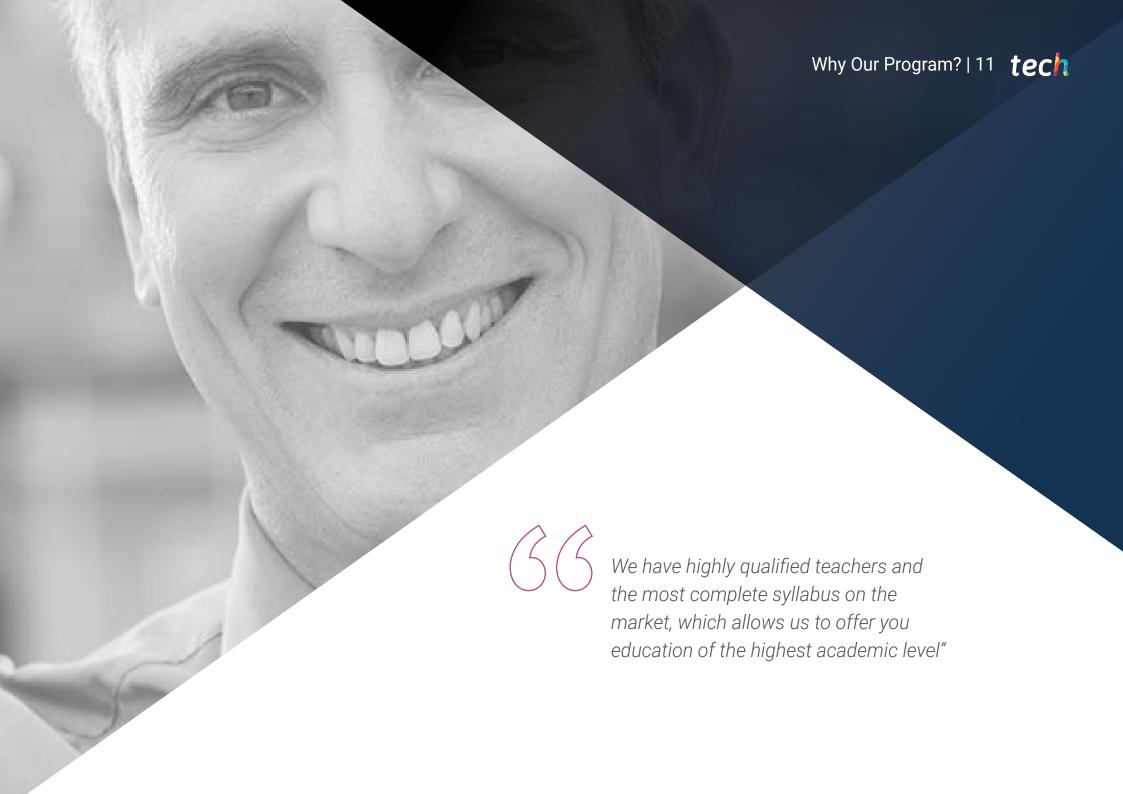
TECH offers students the best online learning methodology. The university combines the Relearning method (postgraduate learning methodology with the best international valuation) with the Case Study. Tradition and vanguard in a difficult balance, and in the context of the most demanding educational itinerary.



# **Economy of Scale**

TECH is the world's largest online university. It currently boasts a portfolio of more than 10,000 university postgraduate programs. And in today's new economy, **volume + technology = a ground-breaking price**. This way, TECH ensures that studying is not as expensive for students as it would be at another university.





# tech 12 | Why Our Program?

This program will provide you with a multitude of professional and personal advantages, among which we highlight the following:



## A Strong Boost to Your Career

By studying at TECH, students will be able to take control of their future and develop their full potential. By completing this program, students will acquire the skills required to make a positive change in their career in a short period of time.

70% of students achieve positive career development in less than 2 years.



# Develop a strategic and global vision of the company

TECH offers an in-depth overview of general management to understand how each decision affects each of the company's different functional fields.

Our global vision of companies will improve your strategic vision.



# Consolidate the student's senior management skills

Studying at TECH means opening the doors to a wide range of professional opportunities for students to position themselves as senior executives, with a broad vision of the international environment.

You will work on more than 100 real senior management cases.



# You will take on new responsibilities

The program will cover the latest trends, advances and strategies, so that students can carry out their professional work in a changing environment.

45% of graduates are promoted internally.



## Access to a powerful network of contacts

TECH connects its students to maximize opportunities. Students with the same concerns and desire to grow. Therefore, partnerships, customers or suppliers can be shared.

You will find a network of contacts that will be instrumental for professional development.



# Thoroughly develop business projects.

Students will acquire a deep strategic vision that will help them develop their own project, taking into account the different fields in companies.

20% of our students develop their own business idea.



# Improve soft skills and management skills

TECH helps students apply and develop the knowledge they have acquired, while improving their interpersonal skills in order to become leaders who make a difference.

Improve your communication and leadership skills and enhance your career.



# You will be part of an exclusive community

Students will be part of a community of elite executives, large companies, renowned institutions, and qualified teachers from the most prestigious universities in the world: the TECH Technological University community.

We give you the opportunity to study with a team of world-renowned teachers.

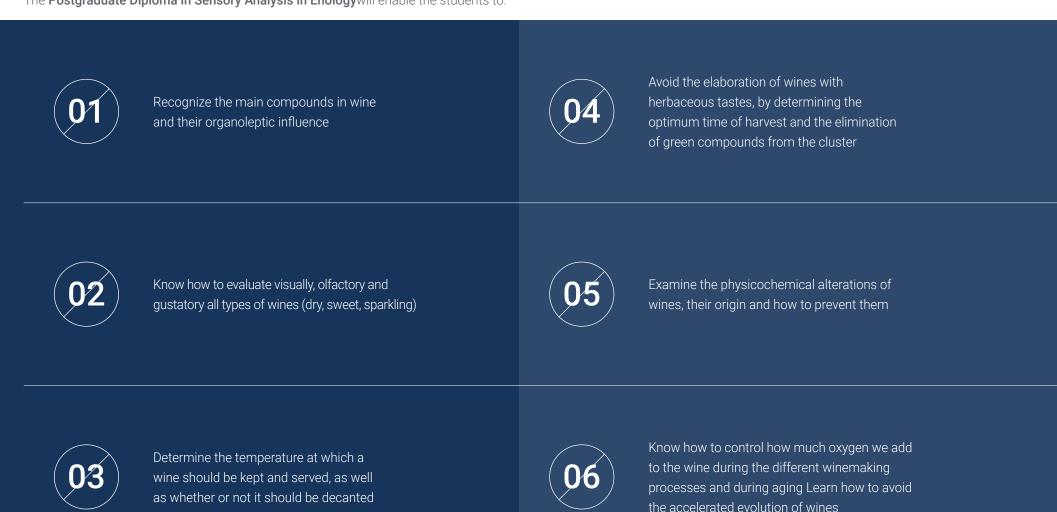




# tech 16 | Objectives

# TECH makes the goals of their students their own goals too Working together to achieve them

The Postgraduate Diploma in Sensory Analysis in Enologywill enable the students to:





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Analyze the composition of oak



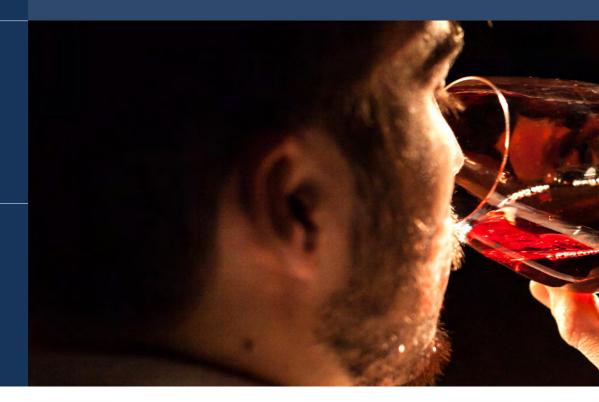
Understand the importance of ellagitannins



Determine the difference between French, American, and Eastern European oak



Examine the phenomena of interaction between the oak barrel and the wine





Be able to understand the concept of grain



Avoid bad practices in the use of fining agents



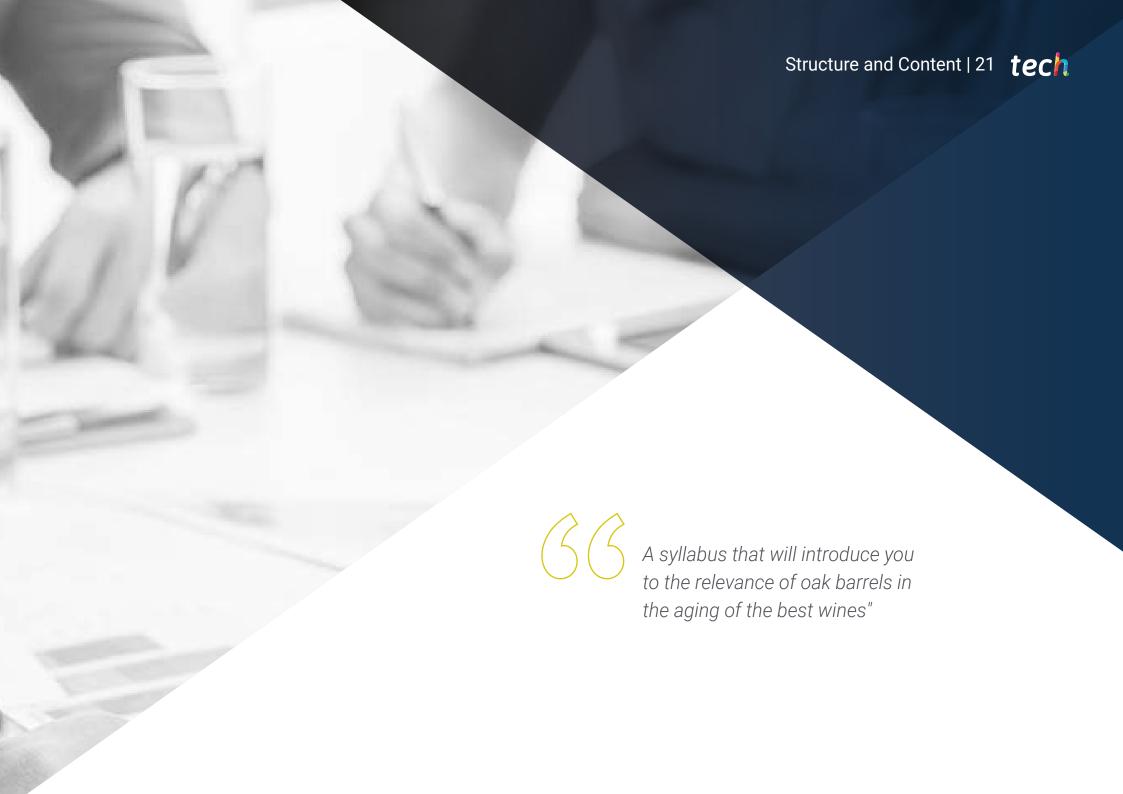


Promote the knowledge of wine altering microorganisms and to know how to avoid their development



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





# tech 22 | Structure and Content

# **Syllabus**

This Postgraduate Diploma has been designed by real experts with extensive professional experience in Enology. A syllabus consisting of 3 modules in which students will learn the most current knowledge and under the maximum scientific rigor of sensory analysis.

An intensive learning of 450 teaching hours, which will allow them to become a specialist in the organoleptic alterations of wines, the importance of the oak barrel in the aging of wines and the transcendental step of clarification and stabilization of the wines.

In this academic itinerary, the professionals will have at their disposal the most innovative pedagogical tools based on video summaries of each topic, videos in detail, specialized readings and case studies. A set of resources that can be accessed at any time of the day from an electronic device with an Internet connection.

In addition, thanks to the Relearning system, based on the repetition of content, students will progress naturally through the syllabus and reduce the long hours of study and memorization.

A unique opportunity to advance professionally through a flexible university program. With no classroom attendance or fixed class schedules, graduates will have the freedom to distribute their course load according to their needs and to combine the most demanding responsibilities with a first-class education.

This Postgraduate Diploma takes place over 6 months and is divided into 3 modules:

Module 1 Sensory Analysis and Organoleptic Alterations in Wines

Module 2 Importance of the Oak Barrel in Wine Aging

Module 3 Wine Clarification and Stabilization



# Where, When and How is it Taught?

TECH offers the possibility of developing this Postgraduate Diploma in Sensory Analysis in Enology in a totally online way. Throughout the 6 months of the educational program, you will be able to access all the contents of this program at any time, allowing you to self-manage your study time.

A unique, key, and decisive educational experience to boost your professional development and make the definitive leap.

# tech 24 | Structure and Content

Module 1. Sensory Analysis and Organoleptic Alterations in Wines									
1.1. 1.1.1. 1.1.2. 1.1.3. 1.1.4. 1.1.5. 1.1.6.	Organoleptic Impact Acids in Must and Wine Sugars in Grapes and Wines Phenolic compounds Alcohol Aromatic Compounds	1.2. 1.2.1. 1.2.2. 1.2.3. 1.2.4.	Wine Sensory Analysis Procedure Visual Phase Smelling Phase Taste Phase Conservation and Service of the Different Types of Wines Decanting and Aeration	1.3. 1.3.1. 1.3.2. 1.3.3.	Alterations in the Visual Phase of Wine  Evolution of the Color and Increase of Tonality Presence of Turbidity Presence of Solids or Precipitates	1.4.1. 1.4.2. 1.4.3.	Organoleptic Alterations Due to the Grape Herbaceous Aromas Chemical and Iodized Tastes Taste of Damp or Moist Soil		
1.5.2. 1.5.3.	Alterations Due to Sulfur Compounds in Wine and their Reduction  Formation of Sulfur Compounds During Alcoholic Fermentation  Formation of Hydrogen Sulfide and Mercaptans During Wine Storage Disulfide Formation  Taste of Light	1.6. 1.6.1. 1.6.2. 1.6.3. 1.6.4.	Oxidative Alterations of Wine Oxidative Enzymes from Grapes Monitoring of Must and Wine Oxidation Ethanal or Acetaldehyde Formation Formation of Ethyl Acetate and Other Sensory Negative Acetates	1.7. 1.7.1. 1.7.2. 1.7.3. 1.7.4.	Changes Due to Yeasts Re-fermentation Wine Flowers De-Acidification Formation of Ethyl-Phenols, Stable or "Animal" Odor.	1.8.1. 1.8.2. 1.8.3.	Alterations in Wine Related to Fung and Certain Volatile Compounds Bitter Almond Taste Tricholo Anisole "Cork Taste" Tetrachloro Anisole and Other Wine Depreciating Compounds		
1.9.1 1.9.2 1.9.3 1.9.4	Smoked or Wine Fat Degradation of Organic Acids	1.10. Alterations Due to Acetic Bacteria 1.10.1. Acetic Acid Pitting 1.10.2. Sugar Breakdown 1.10.3. Wine Acid Transformation							

Module 2. Importance of the Oak Barrel in Wine Aging								
2.1.1. 2.1.2. 2.1.3. 2.1.4.	Knowledge about Cooperage Wood Use of Barrels in Dry White Wines	2.2. 2.2.1. 2.2.2. 2.2.3.	Botanical Differentiation and Origins	2.3. 2.3.1. 2.3.2. 2.3.3.			Wood Drying the Wood Seasoning the Wood	
2.5. 2.5.1. 2.5.2. 2.5.3. 2.5.4. 2.5.5.	The Toasting of the Barrel	2.6.1. 2.6.2. 2.6.3.		<b>2.7.</b> 2.7.1. 2.7.2. 2.7.3. 2.7.4.	The Elagitannins Enological Interest Importance of Tannin in the Structure of Wine	2.8.1. 2.8.2. 2.8.3.	Porosity of the Barrel	
<b>2.9.</b> 2.9.1. 2.9.2. 2.9.3.		2.10.1	The Second Life of Oak Barrels  The Interest of the Second-Hand Barrel  The Use of Second-Hand Barrels for Spirits  Alternatives to Enological Use					

# tech 26 | Structure and Content

Module 3. Wine Clarification and Stabilization								
3.1. 3.1.2. 3.1.3. 3.1.4.	of Harshness and Bitterness Clarification of Coloring Matter (Anthocyanins)	3.2.1. 3.2.2. 3.2.3. 3.2.4.	Clarification of White and Rosé Wines  Elimination of Wine Proteins Elimination of Oxidizable Polyphenols Substitution of Allergenic Clarification Agents in White and Rosé Wines Clarification for the Elimination of Microorganisms Prevention of Malolactic Fermentation		Wine Filtration Influence of Turbidity on Wine Stabilization Depth Filtration or Adsorption Filtration: Soil Filtration and Plate Filtration Tangential Filtration Direct Membrane Filtration Other Methods for Wine Purification after Clarification: Centrifuge, Decanter, Flotation	3.4.3. 3.4.4.	Cation Exchange Cold Treatment of Wines Reverse Osmosis Use of Potassium Polyaspartate	
<b>3.5.</b> 3.5.1. 3.5.2. 3.5.3.	Stabilization of Calcium Tartrate Origin of Calcium in Grapes and Wine Factors Influencing the Formation of Calcium Tartrate Crystals Calcium Removal in Wine	3.6. 3.6.1. 3.6.2. 3.6.3. 3.6.4.	Stabilization of Coloring Matter in Red Wines Origin and Formation of Anthocyanins in Grapes Fixation of the Coloring Matter Anthocyanin-Tannin Condensation Fixation and Stabilization of Anthocyanins with Polysaccharides	<b>3.7.</b> 3.7.1. 3.7.2. 3.7.3.	Instability Caused by Metals Ferrous Breakdown Copper Breakdown Other Physical-Chemical Instabilities		Microbiological Stabilization of Wine Microorganisms that Can Grow in Wine and their Origin Viticultural and Enological Conditions that Favor Microbial Growth Prevention of Microbial Growth	
3.9. 3.9.1. 3.9.2. 3.9.3.	Prevention of Bacterial Growth and Elimination  Acetic Acid Bacteria Oenococcus Oeni Other Lactic Acid Bacteria: Lactobacillus and Pediococcus.	3.10.1 3.10.2 3.10.3	Preventing the Growth and Elimination of Yeasts and Molds Bretanomyces Saccharomyces Cerevisiae Apiculate Yeasts Molds					





The numerous multimedia material provided by TECH will make it easier for you to learn how to stabilize wines"



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.





# tech 30 | Methodology

# TECH Business School uses the 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.





This program prepares you to face business challenges in uncertain environments and achieve business success.



Our program prepares you to face new challenges in uncertain environments and achieve success in your career.

# A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch to present executives with challenges and business decisions at the highest level, whether at the national or international level. 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 business reality is taken into account.



You will learn, through collaborative activities and real cases, how to solve complex situations in real business environments"

The case method has been the most widely used learning system among the world's leading business schools for as long as they have existed. 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 we face in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They must integrate all their knowledge, research, argue and defend their ideas and decisions.

# tech 32 | Methodology

# Relearning Methodology

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

We enhance the Case Study with the best 100% online teaching method: Relearning.

Our online system will allow you to organize your time and learning pace, adapting it to your schedule. You will be able to access the contents from any device with an internet connection.

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 online business school is the only one in the world licensed to incorporate 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.



# Methodology | 33 tech

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. With this methodology we have 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, markets, and financial 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 specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to 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.



## **Management Skills Exercises**

They will carry out activities to develop specific executive competencies in each thematic area. Practices and dynamics to acquire and develop the skills and abilities that a high-level manager needs to develop in the context of the globalization we live in.



#### **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.





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 senior management 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.

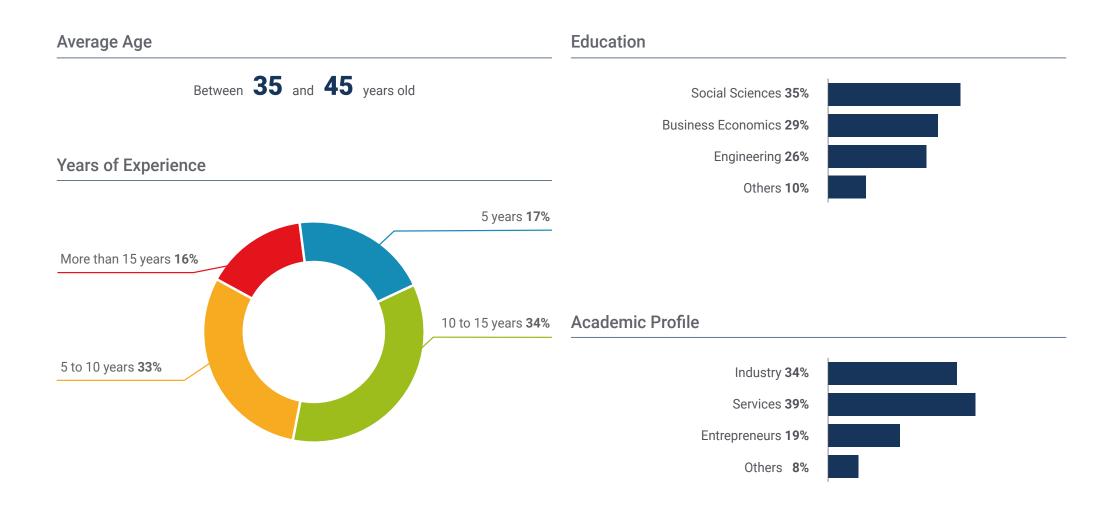




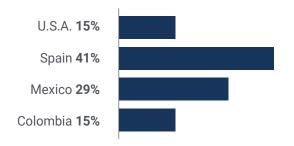
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#### **Geographical Distribution**





# Guillermo Pavón

Manager of a wine tourism company

"This program gave a plus to my resume and greatly improved my experience and relationship with the wine tourism sector. An impulse that has led me to manage an ecotourism company, where we offer a quality service, with the tasting of the best wines"





# tech 42 | Course Management

#### Management



#### Ms. Clavero Arranz, Ana

- General Manager of Bodegas Cepa 21
- 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**

#### 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.

#### Mr. Carracedo Esguevillas, Daniel

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





#### 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

#### 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





# Are you ready to take the leap? Excellent professional development awaits you

This Postgraduate Diploma in Sensory Analysis in Enology from TECH is an intensive program that prepares you to face challenges and business decisions in the field of wine tourism. The main objective is to promote your personal and professional growth. Helping you achieve success.

If you want to improve yourself, make a positive change at a professional level, and network with the best, then this is the place for you.

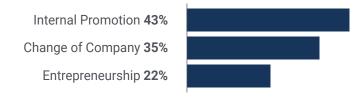
Become an expert in organoleptic analysis and succeed with new tourism projects.

You are facing the best option to fulfill your aspirations in the field of Enology.

#### When the change occurs



#### Type of change



### Salary increase

This program represents a salary increase of more than 30% for our students

Salary before **€30,800** 

A salary increase of **30%** 

Salary after **€40,040** 





# tech 50 | Benefits for Your Company

Developing and retaining talent in companies is the best long-term investment.



#### Growth of talent and intellectual capital

The professional will introduce the company to new concepts, strategies, and perspectives that can bring about significant changes in the organization.



# Retaining high-potential executives to avoid talent drain

This program strengthens the link between the company and the professional and opens new avenues for professional growth within the company.



### **Building agents of change**

You will be able to make decisions in times of uncertainty and crisis, helping the organization overcome obstacles.



### Increased international expansion possibilities

Thanks to this program, the company will come into contact with the main markets in the world economy.







## **Project Development**

The professional can work on a real project or develop new projects in the field of R & D or business development of your company.



#### Increased competitiveness

This program will equip students with the skills to take on new challenges and drive the organization forward.





## tech 54 | Certificate

This **Postgraduate Diploma in Sensory Analysis in Enology** 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 Diploma** issued by **TECH Technological University** via tracked delivery\*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: Postgraduate Diploma in Sensory Analysis in Enology
Official No. of Hours: **450 h.** 



<sup>\*</sup>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.



# Postgraduate Diploma Sensory Analysis

in Enology

» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 16h week

» Schedule: at your own pace

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