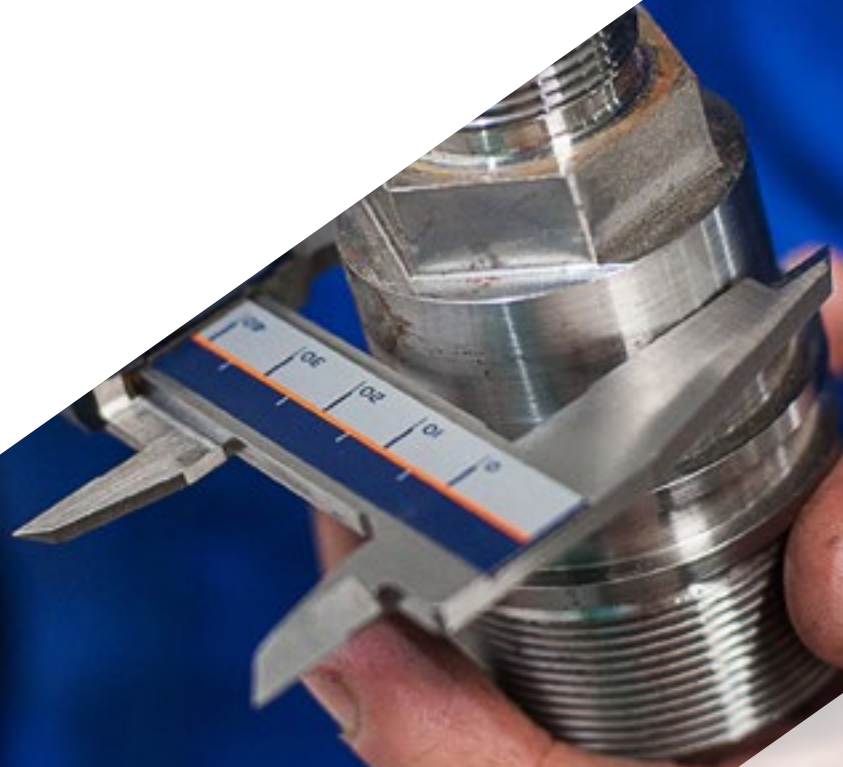


Postgraduate Certificate Material Properties





Postgraduate Certificate_ Material Properties

- » Modality: online
- » Duration: 2 months
- » Certificate: TECH Global University
- » Accreditation: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/engineering/postgraduate-certificate/material-properties

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01

Introduction

This comprehensive program presents the necessary aspects to master the behavior of materials used in engineering, not only metals, but also polymeric, ceramic, composite and nanomaterials.

It also includes the study of corrosion and degradation processes of materials and the latest non-destructive testing techniques to check their condition.



“

Mechanical Engineering has been supported in recent years by new technologies, so professionals in this sector must have extensive digital skills”

TECH's Postgraduate Certificate in Materials Properties is a program specifically designed for professionals who need to strengthen their knowledge of both the conventional aspects of their professional activity as well as the most innovative aspects.

It has an international focus, with content based on that of the most prestigious universities in the world and is aligned with the recommendations of professional associations such as ASME (American Society of Mechanical Engineers) and IMechE (Institution of Mechanical Engineers).

The use of the case method facilitates the learning of concepts, avoiding systematic memorization and repetitive performance of complex calculations.

The content of the Postgraduate Certificate combines the traditional but necessary aspects of the profession, with the most innovative aspects that are renewed in each edition.

With this prestigious training, students will learn to effectively face the challenges of the mechanical engineering profession by mastering all aspects of mechanics and gaining in-depth knowledge of innovation management and continuous improvement processes.

This Postgraduate Certificate provides the necessary bases to maintain an attitude of active observation of innovation, which allows professionals to remain up-to-date and maintain a capacity to adapt to technological changes.

It should be noted that since this is a 100% online Postgraduate Certificate, the student is not conditioned by fixed schedules or the need to move to another physical location, but can access the contents at any time of the day, balancing their work or personal life with their academic life.

This **Postgraduate Certificate in Materials Properties** 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 Material Properties
- ♦ 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 the self-assessment process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies in Materials Properties
- ♦ 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



The completion of this Postgraduate Certificate will place Materials Properties professionals at the forefront of the latest developments in the sector"

“

This Postgraduate Certificate is the best investment you can make in the selection of a refresher program in the field of Material Properties. We offer you quality and free access to content"

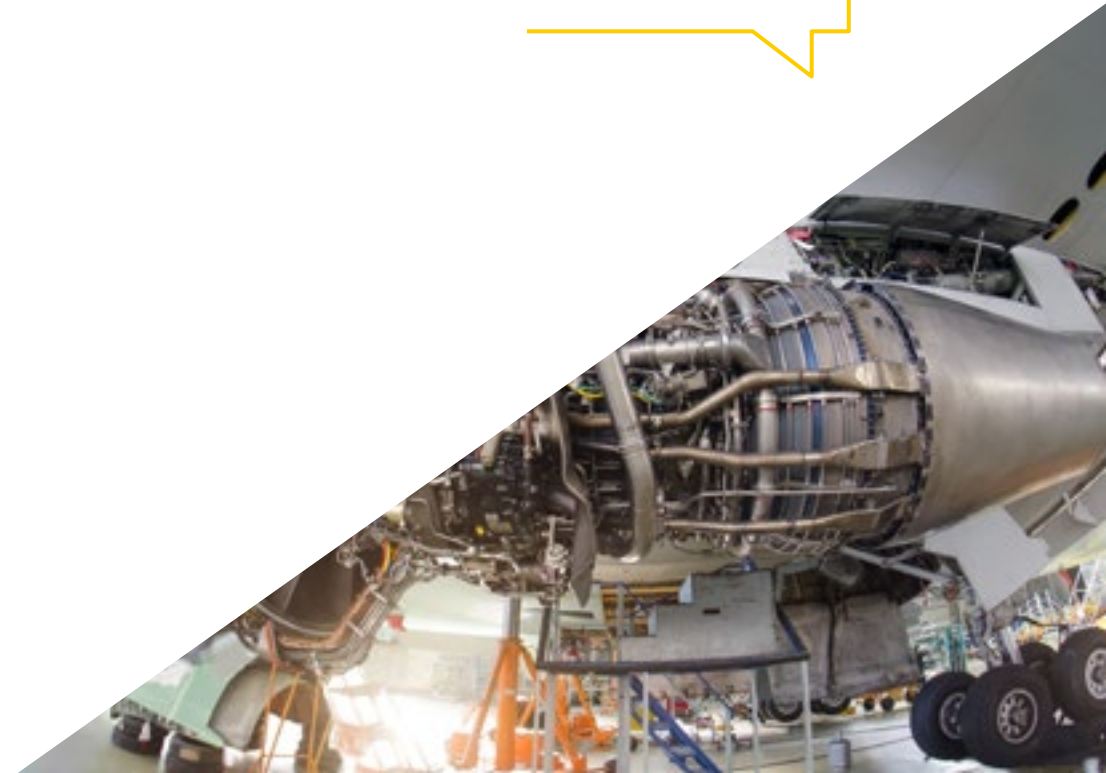
It includes in its teaching staff professionals belonging to the field of Material Properties, who pour into this training the experience of their work, in addition to recognized specialists from reference societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide professionals with situated and contextual learning, i.e., a simulated environment that will provide immersive training, designed for training oneself 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 academic year. To do so, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts in Material Properties.

This training comes with the best didactic material, providing you with a contextual approach that will facilitate your learning.

This 100% online Postgraduate Certificate will allow you to combine your studies with your professional work. You choose where and when to train.



02 Objectives

The Postgraduate Certificate in Material Properties is oriented to facilitate the performance of the professionals so that they acquire and know the main novelties in this field, which will allow them to practice their profession with the highest quality and professionalism.



“

Our goal is for you to become the best professional in your sector. And for this we have the best methodology and content"



General Objectives

- ♦ Provide scientific and technological training for the professional practice of Mechanical Engineering
- ♦ Gain complex knowledge of engineering project management and continuous process improvement
- ♦ Gain complex knowledge of the design of machine elements, engines, structures and installations, including the choice of materials, their method of manufacture and reliability, safety and environmental considerations
- ♦ Delve into the necessary knowledge of Industry 4.0 applied to Mechanical Engineering.
- ♦ Delve into the necessary knowledge of advanced and innovative applications of Mechanical Engineering





Specific Objectives

- ◆ Analyze and evaluate materials used in engineering based on their properties
- ◆ Analyze and evaluate metallic materials, both ferrous and non-ferrous
- ◆ Analyze and evaluate polymeric, ceramic and composite materials
- ◆ Analyze and evaluate materials used in additive manufacturing
- ◆ Know the principles of nanomaterials
- ◆ Understand, analyze and evaluate the processes of corrosion and degradation of materials
- ◆ Evaluate and analyze the different techniques for non-destructive testing of materials



*Join us and we will help you
achieve professional excellence"*

03

Course Management

We have professionals specialized in each area of knowledge, who pour into our training the experience of their work.



“

Our university employs the best professionals in different areas, who pour their knowledge into the elaboration of this complete program"

Management



Mr. Asiain Sastre, Jorge

- ♦ Industrial-Mechanical Technical Engineer University of Salamanca.
- ♦ Director and Co-Founder of AlterEvo Ltd. Professor of Mechanical Engineering
- ♦ Chartered Engineer member of Institution of Mechanical Engineers (CEng MIMechE)
- ♦ Master's Degree in Automotive Engineering
- ♦ MBA



04

Structure and Content

The structure of the contents has been designed by the best professionals in the Mechanical Engineering sector, with extensive experience and recognized prestige in the profession, and aware of the benefits that the latest educational technology can bring to higher education.

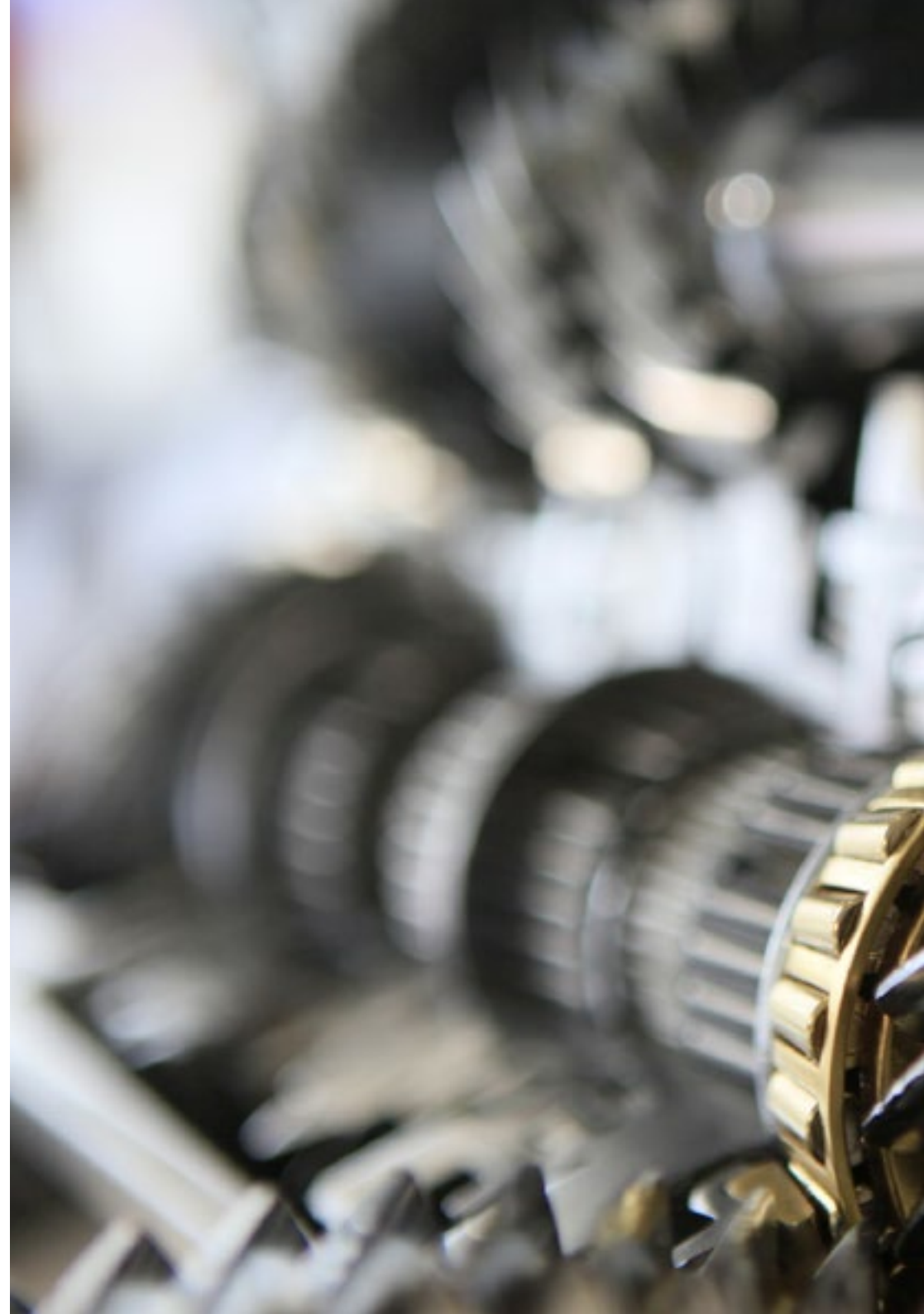


“

We have the most complete and up-to-date scientific program on the market. We strive for excellence and for you to achieve it too"

Module 1. Materials

- 1.1. Material Properties
 - 1.1.1. Mechanical Properties
 - 1.1.2. Electrical Properties
 - 1.1.3. Optical Properties
 - 1.1.4. Magnetic Properties
- 1.2. I-Ferrous Metallic Materials
- 1.3. II-Ferrous Metallic Materials
- 1.4. Polymeric Materials
 - 1.4.1. Thermoplastics
 - 1.4.2. Thermosetting Plastics
- 1.5. Ceramic Materials
- 1.6. Composite Materials
- 1.7. Biomaterials
- 1.8. Nanomaterials
- 1.9. Corrosion and Degradation of Materials
 - 1.9.1. Types of Corrosion
 - 1.9.2. Oxidation of Metals
 - 1.9.3. Corrosion Control
- 1.10. Non-Destructive Testing
 - 1.10.1. Visual Inspections and Endoscopies
 - 1.10.2. Ultrasound
 - 1.10.3. X-Rays
 - 1.10.4. Eddy Currents (Eddy)
 - 1.10.5. Magnetic Particles
 - 1.10.6. Penetrating Liquids
 - 1.10.7. Infrared Thermography





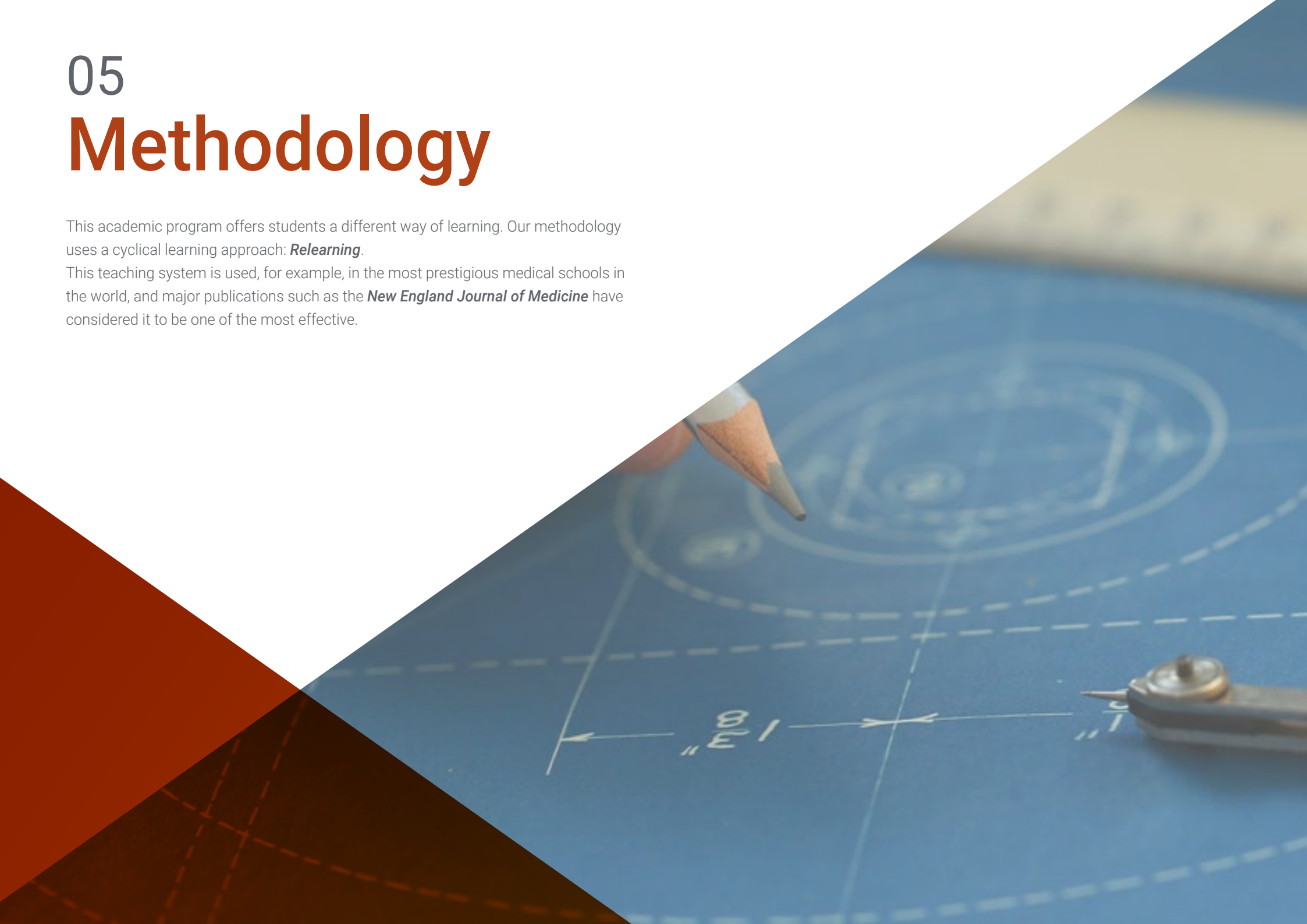
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*This training will allow you to advance
in your career comfortably"*

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"

At TECH we use the Case Method

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”



We are the first online university to combine Harvard Business School case studies with a 100% online learning system based on repetition.



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 intensive Engineering program at TECH Technological University prepares you to face all the challenges in this field, both nationally and internationally. We are committed to promoting your personal and professional growth, the best way to strive for success, that is why at TECH Technological University you will use Harvard case studies, with which we have a strategic agreement that allows us, to offer you material from the best university in the world.



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 is the first university in the world to combine Harvard University case studies with a 100% online learning system based on repetition, which combines 8 different didactic elements in each lesson.

We enhance Harvard case studies 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.



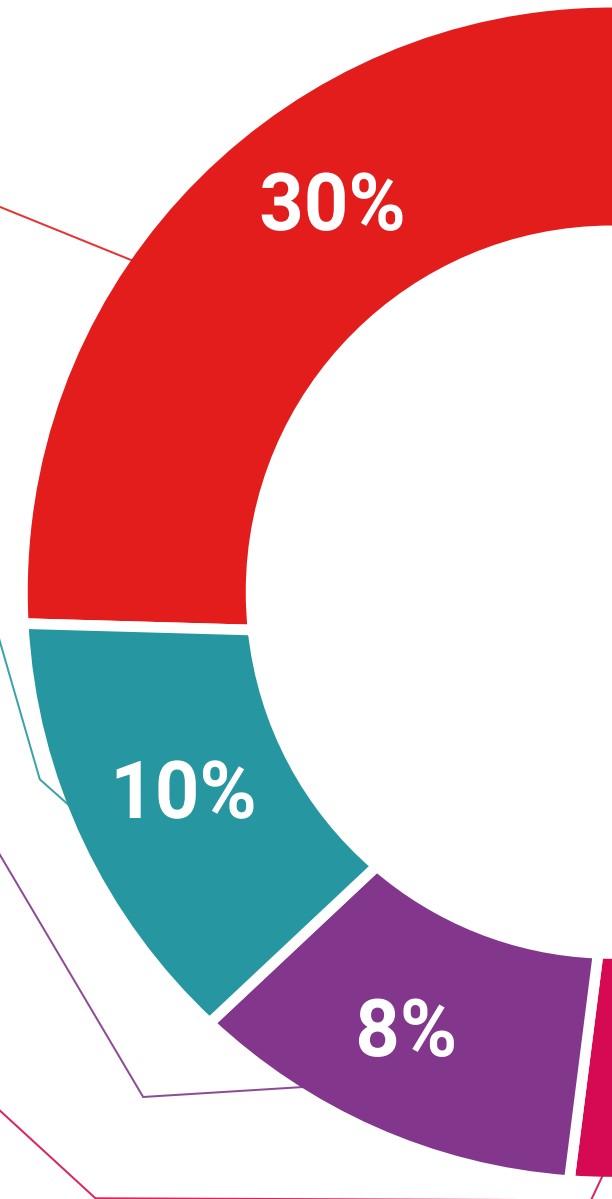
Practising Skills and Abilities

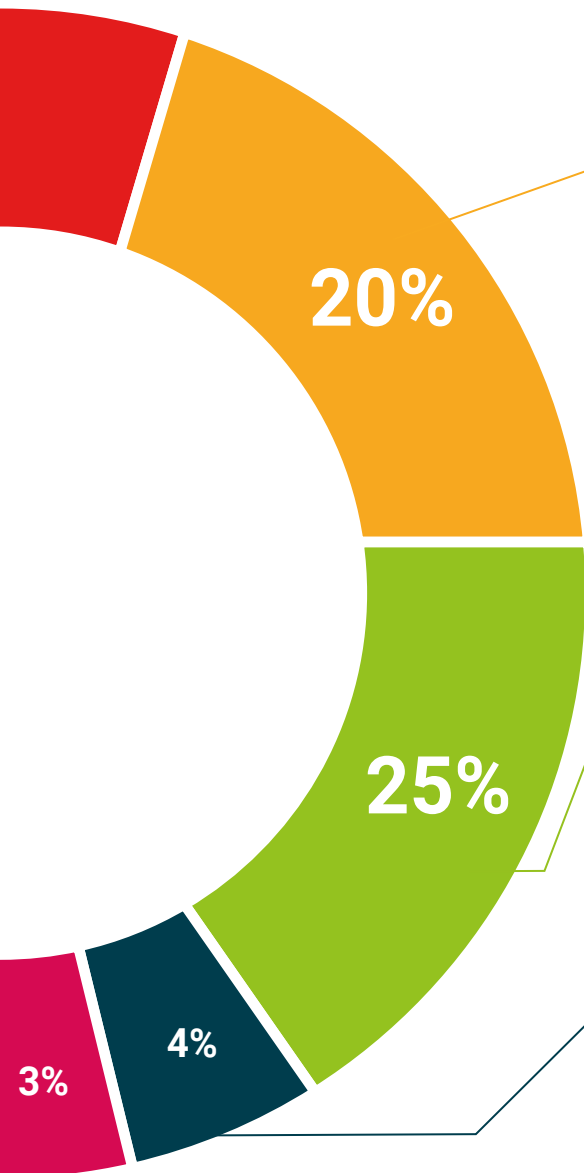
They will carry out activities to develop specific competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



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**

They will complete a selection of the best case studies in the field used at Harvard. 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

Postgraduate Certificate in Material Properties guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



“

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

This private qualification will allow you to obtain a **Postgraduate Certificate in Material Properties** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Material Properties**

Modality: **online**

Duration: **2 months**

Accreditation: **6 ECTS**



future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present quality
online training
development language
virtual classroom



Postgraduate Certificate Material Properties

- » Modality: online
- » Duration: 2 months
- » Certificate: TECH Global University
- » Accreditation: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Postgraduate Certificate Material Properties