

Postgraduate Certificate RAMS Engineering Fundamentals



Postgraduate Certificate RAMS Engineering Fundamentals

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

Website: www.techtute.com/us/engineering/postgraduate-certificate/rams-engineering-fundamentals

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01

Introduction

The program introduces students to the knowledge necessary for design that optimizes reliability, maintainability, availability and safety, including reliability analysis of both elements and element systems, using both qualitative and quantitative methods, and the design of life testing and reliability improvement plans. The concepts of machine safety and risk analysis are studied, as well as environmental considerations and circular economy principles that affect the design of machinery.

Finally, the Reliability Centered Maintenance (RCM) methodology is used to audit the design and to generate maintenance plans that optimize the life cycle of the machines.





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Learn to design, evaluate and manage Mechanical Engineering projects thanks to this high-level training.

TECH's Postgraduate Certificate in RAMS Engineering Fundamentals 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 RAMS Engineering Fundamentals** 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 RAMS Engineering Fundamentals
- ◆ 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 RAMS Engineering Fundamentals
- ◆ 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 RAMS Engineering Fundamentals professionals at the forefront of the latest developments in the sector"

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This Postgraduate Certificate is the best investment you can make in the selection of a refresher program in the field of RAMS Engineering Fundamentals. We offer you quality and free access to content”

It includes in its teaching staff professionals belonging to the field of RAMS Engineering Fundamentals, 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. For this purpose, the professional will be assisted by an innovative interactive video system developed by renowned and experienced experts in RAMS Engineering Fundamentals.

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 RAMS Engineering Fundamentals 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.



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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



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





Specific Objectives

- ◆ Master the principles of reliability, availability, maintainability and safety (RAMS) engineering
- ◆ Evaluate and analyze the reliability of elements and systems using both qualitative and quantitative systems
- ◆ Master the mathematics used in reliability analysis
- ◆ Design accelerated life testing and reliability improvement plans on mechanical components
- ◆ Analyze and evaluate safety risks in mechanical elements
- ◆ Analyze and evaluate risks to the environment in mechanical elements
- ◆ Apply the principles of circular economy to the design of mechanical systems
- ◆ Create maintenance plans based on the Reliability Centered Maintenance (RCM) methodology to ensure the safety and reliability of mechanical elements

03

Course Management

In our university we have professionals specialized in each area of knowledge, who pour their work experience into our training programs.





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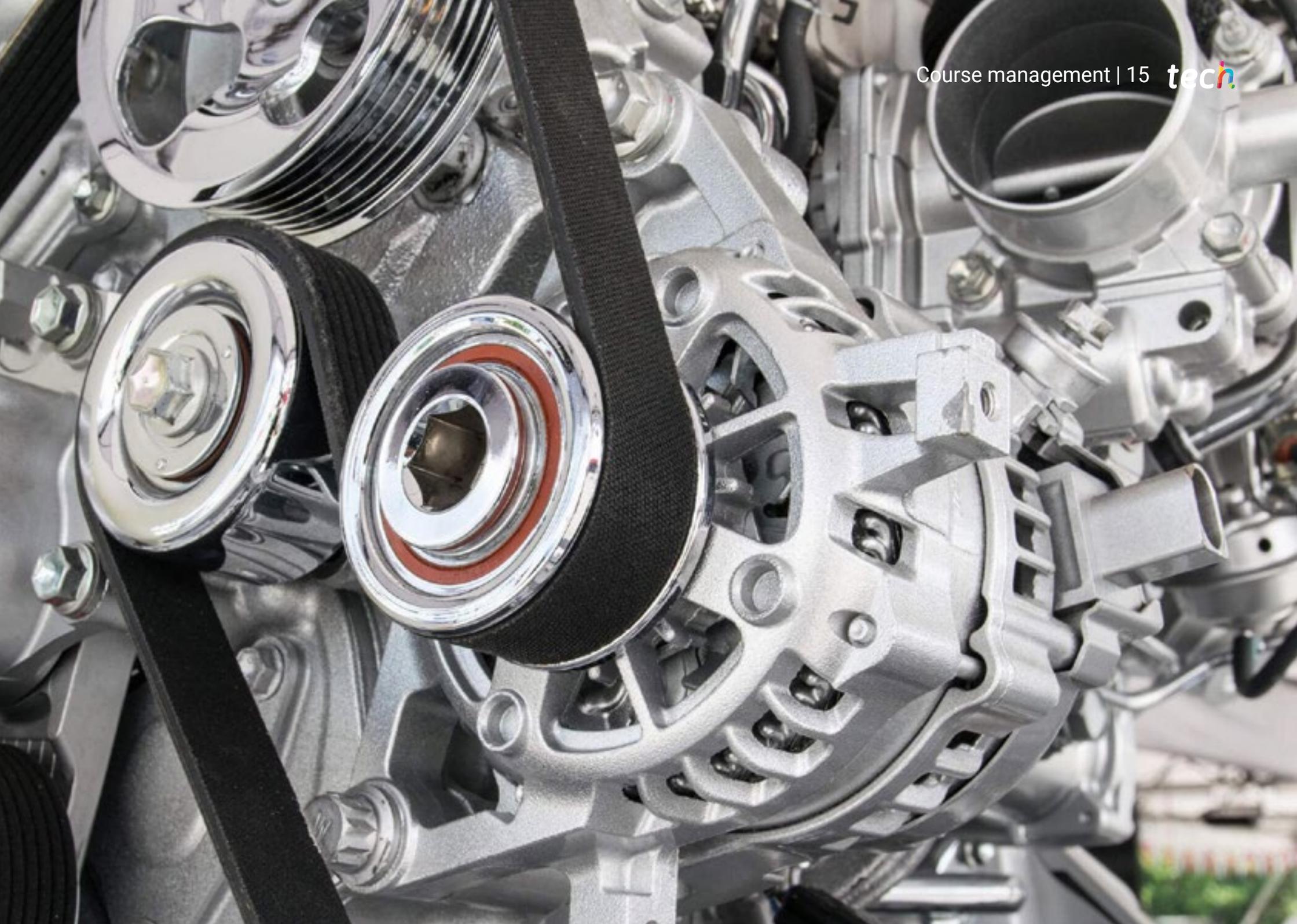
Our university employs the best professionals in different areas, who pour their knowledge into the elaboration of this complete program”

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 academic program in the market. We strive for excellence and for you to achieve it too.”

Module 1. Design for Reliability, Safety and Environment

- 1.1. RAMS Engineering Fundamentals
 - 1.1.1. Reliability, Maintainability and Availability Functions
 - 1.1.2. Failure Curves
 - 1.1.3. Statistical Distributions
- 1.2. Reliability of Elements
- 1.3. System Reliability
 - 1.3.1. Reliability Block Diagrams-RBD
- 1.4. Reliability Analysis I- Qualitative Methods
 - 1.4.1. Failure Mode and Effects Analysis-FMEA
- 1.5. Reliability Analysis II- Quantitative Methods
 - 1.5.1. Fault Tree Analysis-FTA
- 1.6. Improved Reliability and Accelerated Life Testing
 - 1.6.1. Reliability Improvement Plans
 - 1.6.2. Accelerated Life Assays HASS/HALT
- 1.7. Machine Safety
 - 1.7.1. Security Management Programs
- 1.8. Risk Analysis
 - 1.8.1. Risk Matrix
 - 1.8.2. ALARP
 - 1.8.3. Operational Hazard Studies-HAZOP
 - 1.8.4. Safety Level-SIL
 - 1.8.5. Event Tree Analysis-ETA
 - 1.8.6. Root Cause Analysis-RCA
- 1.9. Environment and Circular Economy
 - 1.9.1. Environmental Management
 - 1.9.2. Fundamentals of Circular Economy
- 1.10. Reliability Centered Maintenance-RCM
 - 1.10.1. SAE Standard JA1011
 - 1.10.2. Failure Management Policies





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A comprehensive and multidisciplinary educational program that will allow you to excel in your career, following the latest advances in the field of Mechanical Engineering”

05

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



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TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”

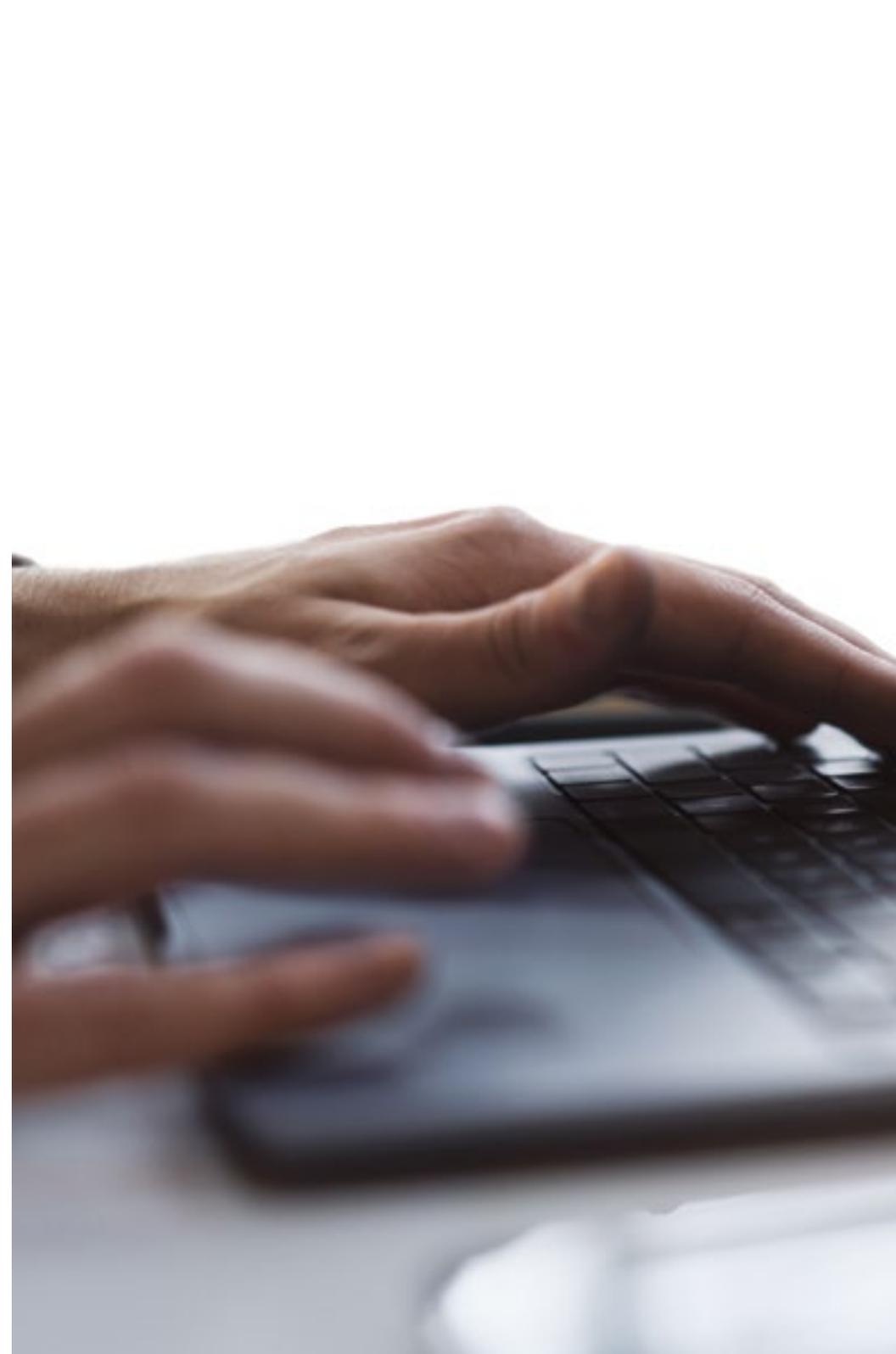
The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist. The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

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*At TECH you will NOT have live classes
(which you might not be able to attend)”*



The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

“*TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want*”

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

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.



A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule”

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.



As such, the best educational materials, thoroughly prepared, will be available in this program:



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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



Interactive Summaries

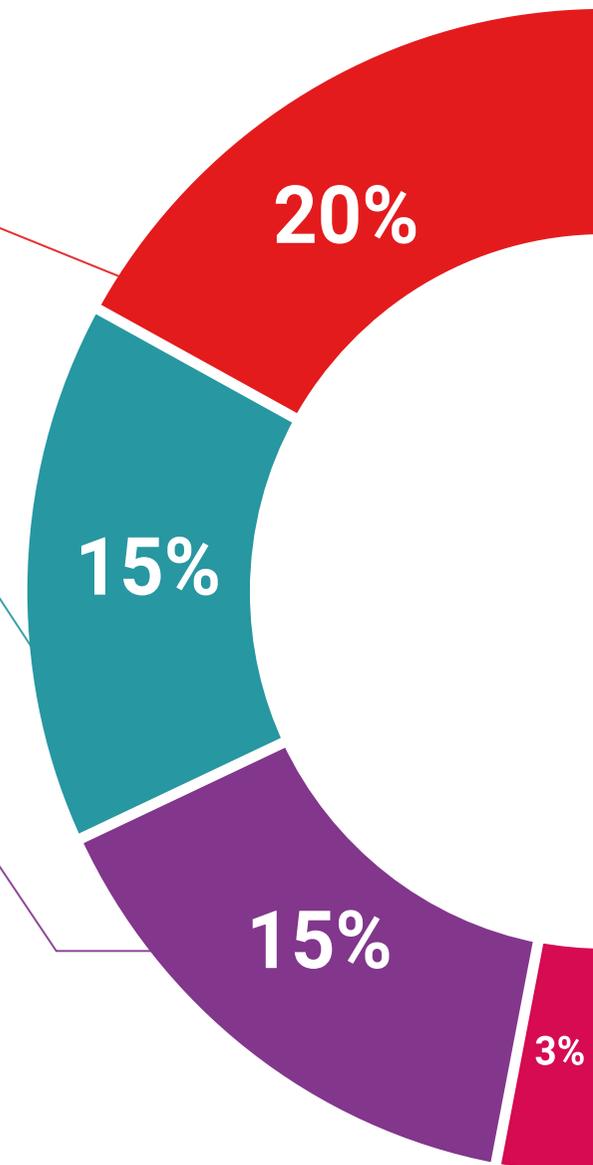
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

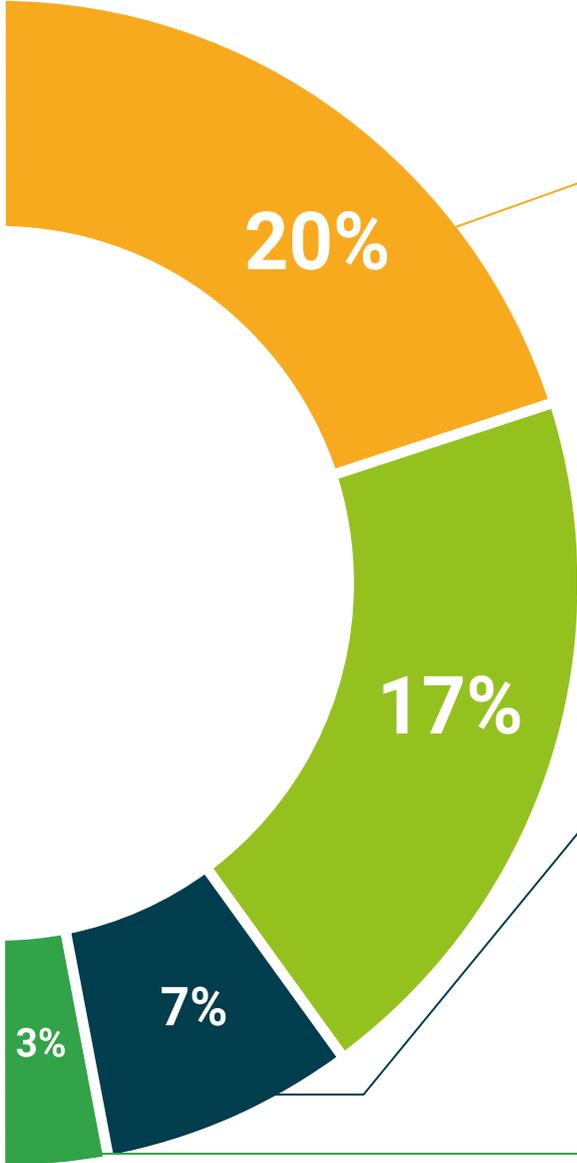
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





Case Studies

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.



Testing & Retesting

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



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 for future difficult decisions.



Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.



06

Certificate

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



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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 RAMS Engineering Fundamentals** 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.

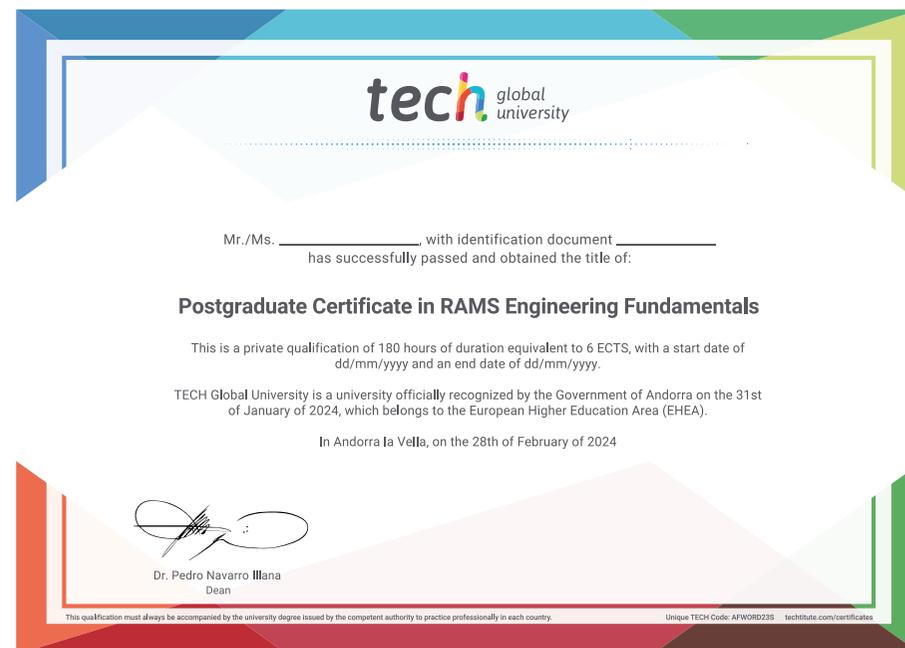
This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in RAMS Engineering Fundamentals**

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
online training
development languages
virtual classroom

tech global
university

Postgraduate Certificate
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Postgraduate Certificate

RAMS Engineering Fundamentals

