

Postgraduate Certificate 3D Printers





Postgraduate Certificate 3D Printers

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

Website: www.techtitude.com/us/design/postgraduate-certificate/3d-printers

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01

Introduction to the Program

3D printers have emerged as a transformative technology in multiple areas, standing out for their ability to create three-dimensional objects with high precision. So much so that the International Monetary Fund predicts that the international Additive Manufacturing market will reach a value of \$41.1 billion in the coming years. In this context, professionals need to have a solid understanding of the latest techniques to optimize the design of innovative and customized products. For this reason, TECH has created an innovative university program focused on the use of state-of-the-art 3D printers. It is based on a flexible, completely online format that is adapted to the schedules of busy professionals.



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*Thanks to this 100% online program,
you will master the use of advanced
3D printers to create parts of the
highest quality and precision”*

3D printing technology has transformed the production and design of objects, enabling the creation of high-precision parts and prototypes quickly. This advance not only reduces costs but also promotes innovation and sustainability by enabling the manufacture of products on demand and with a lower environmental impact. In fact, the relevance of 3D printers lies in their ability to revolutionize the way objects are conceived and manufactured, opening up new possibilities in product development and solutions.

In this context, TECH presents a revolutionary program in 3D Printers. The academic itinerary delves into key topics related to the materials used in Additive Manufacturing. Through the analysis of compounds, students will develop advanced skills to select the appropriate material according to the mechanical, thermal, and functional properties required for each Design project. In addition, they will acquire a sustainability-based approach that will allow them to incorporate biodegradable and recyclable materials into their creations, optimizing the environmental impact of their creations.

On the other hand, TECH's methodology is designed to adapt to the needs of professionals, offering a flexible and accessible approach. With a 100% online format, the content is available 24 hours a day, 7 days a week, allowing professionals to access it from any device with an Internet connection. In addition, the Relearning system allows students to delve into topics at their own pace, consolidating the knowledge acquired through practice and continuous application.

This **Postgraduate Certificate in 3D Printers** contains the most complete and up-to-date program on the market. The most important features include:

- ♦ The development of case studies presented by experts in 3D Printers
- ♦ 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
- ♦ 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



You will analyze the material costs and production time associated with 3D printing, optimizing these factors to increase the profitability of Design projects"

“

You will develop the use of ceramics in three-dimensional manufacturing through advanced techniques, optimizing their application in various production processes”

The teaching staff includes professionals from the field of 3D Printers, who bring their work experience to this program, as well as renowned specialists from leading companies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive learning experience designed to prepare for real-life situations.

This program is designed around Problem-Based Learning, whereby the student must try to solve the different professional practice situations that arise throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.

With TECH's revolutionary Relearning method, you will integrate all the knowledge in an optimal way to successfully achieve the results you are looking for.

You will learn how to use MultiJet Fusion to optimize precision and efficiency in the creation of complex parts.



02

Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it relies on an enormous faculty of more than 6,000 professors of the highest international renown.



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*Study at the world's largest online university
and guarantee your professional success.
The future starts at TECH”*

The world's best online university, according to FORBES

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.



The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.



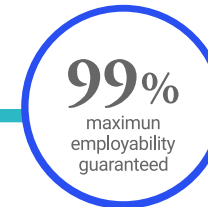
Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.



The top-rated university by its students

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.



03

Syllabus

This syllabus will provide designers with in-depth knowledge of the materials used in Additive Manufacturing, from polymers and resins to metals and advanced composites. The syllabus will also analyze the use of biodegradable materials, which are becoming increasingly popular in sustainable production, helping to reduce the environmental impact of industrial processes. In this way, students will acquire advanced technical skills to select the right material according to the mechanical, thermal, and functional properties required for each Design project.





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You will develop functional prototypes using 3D printers and ensure that the parts stand out for their strength”

Module 1. Materials for Additive Manufacturing

- 1.1. Classification of Materials for 3D Printing
 - 1.1.1. Polymers, Resins, and Metals in 3D Printing
 - 1.1.2. Composite Materials and Their Properties
 - 1.1.3. Material Selection Factors
- 1.2. Thermoplastics in FDM: PLA, ABS, and Others
 - 1.2.1. Properties of PLA and ABS
 - 1.2.2. Industrial Applications of Each Thermoplastic
 - 1.2.3. Selection Factors Based on the Final Product
- 1.3. Ceramics: A Specific Case of Deposition Printing
 - 1.3.1. Use of Ceramics in 3D Printing
 - 1.3.2. Applications in Industry and Art
 - 1.3.3. Technical Limitations
- 1.4. Resins for SLA, Types and Applications
 - 1.4.1. Types of Resins (Rigid, Flexible, Biocompatible)
 - 1.4.2. Applications in the Medical and Dental Sector
 - 1.4.3. Post-Printing Treatment of Resins
- 1.5. Powders for SLS: Nylon, Polyamides, and Others
 - 1.5.1. Characteristics of Plastic Powders
 - 1.5.2. Applications in Functional Parts
 - 1.5.3. Comparison of Materials Based on Strength
- 1.6. Materials for MultiJet Fusion
 - 1.6.1. MJF-Compatible Materials
 - 1.6.2. Advantages in the Production of Lightweight Parts
 - 1.6.3. Comparison with Other Additive Materials
- 1.7. Metallic Materials in Additive Manufacturing
 - 1.7.1. Alloys and Metals Used
 - 1.7.2. Applications in the Aerospace and Automotive Industries
 - 1.7.3. Challenges in Metal Printing



- 1.8. Composite Materials: Advanced Applications
 - 1.8.1. Combining Materials for Specific Properties
 - 1.8.2. Applications in High-Tech Industries
 - 1.8.3. Advantages of Hybrid Materials
- 1.9. Factors to Consider When Choosing Materials
 - 1.9.1. Mechanical and Thermal Properties
 - 1.9.2. Compatibility with Printing Technologies
 - 1.9.3. Costs and Market Availability
- 1.10. Recent Innovations in Materials for 3D Printing
 - 1.10.1. New Biodegradable Materials
 - 1.10.2. Functional Materials for Printed Electronics
 - 1.10.3. Development of Recyclable Materials



You will increase your knowledge through real-life cases and the resolution of complex situations in simulated learning environments"

04 Teaching Objectives

This TECH university program aims to develop advanced skills in 3D printing technology among professionals. Graduates will gain in-depth knowledge of the application of materials such as thermoplastics, enabling them to optimize Manufacturing processes. They will also strengthen their skills in the implementation of innovative techniques, such as the use of MultiJet Fusion, to improve the precision of parts. Finally, these skills will enable them to lead technology projects, advancing sustainable solutions within Additive Manufacturing.





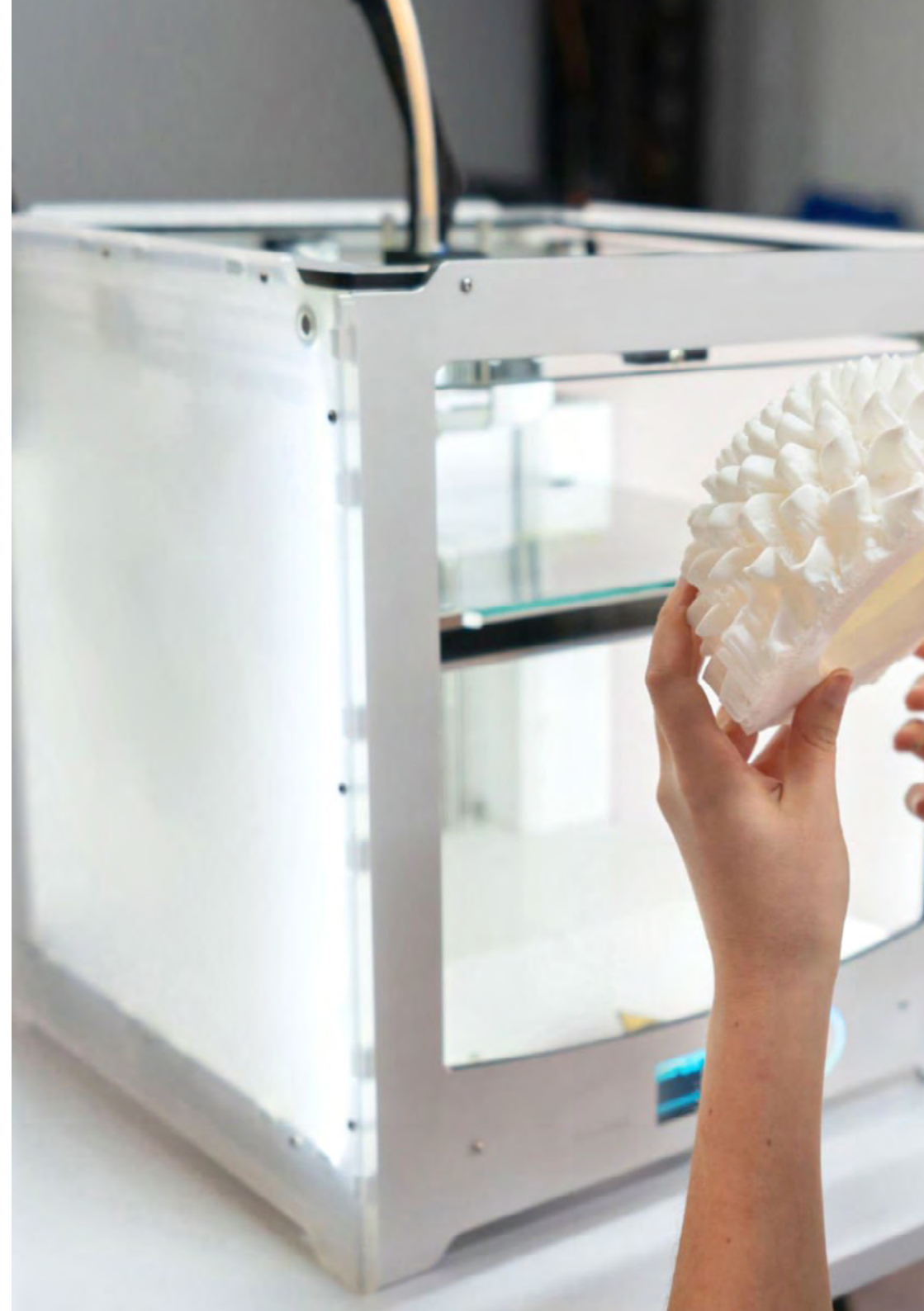
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You will identify how compatibility with 3D printing technologies optimizes the creation of customized parts”



General Objectives

- ♦ Understand the concepts of how Additive Manufacturing works
- ♦ Delve into the technologies specifically for the materials used
- ♦ Understand how each technology works and its application, whether by the function of the part or object or by its performance
- ♦ Use 3D surface modeling software
- ♦ Delve into the different types of 3D printers, understanding their operating principles
- ♦ Learn about topological design and optimization of parts for 3D printing
- ♦ Use the most advanced post-processing techniques to optimize 3D printing
- ♦ Visualize products for specific sectors such as automotive, aerospace, and architecture
- ♦ Encourage the identification of business opportunities in the field of Additive Manufacturing
- ♦ Develop project management skills, from conceptualization and design to manufacturing and post-processing of parts





Specific Objectives

- ♦ Identify and classify the different types of materials used in Additive Manufacturing
- ♦ Evaluate material selection criteria based on specific product requirements and available additive manufacturing technologies

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You will adjust technical parameters such as resolution, printing speed, and temperature to achieve maximum precision in the final parts”

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.

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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

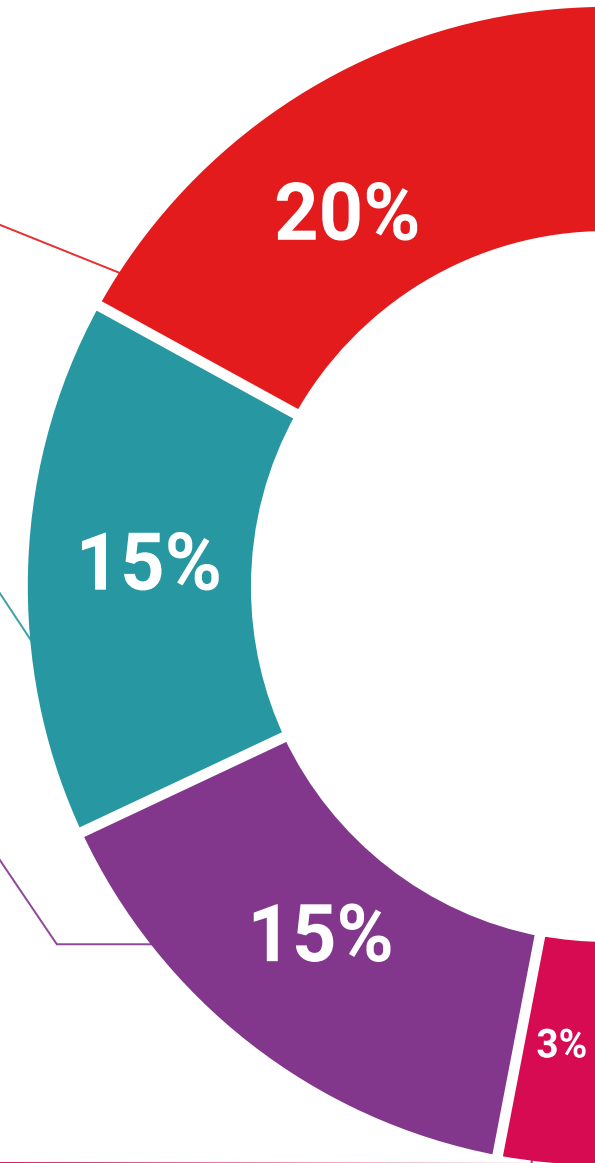
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

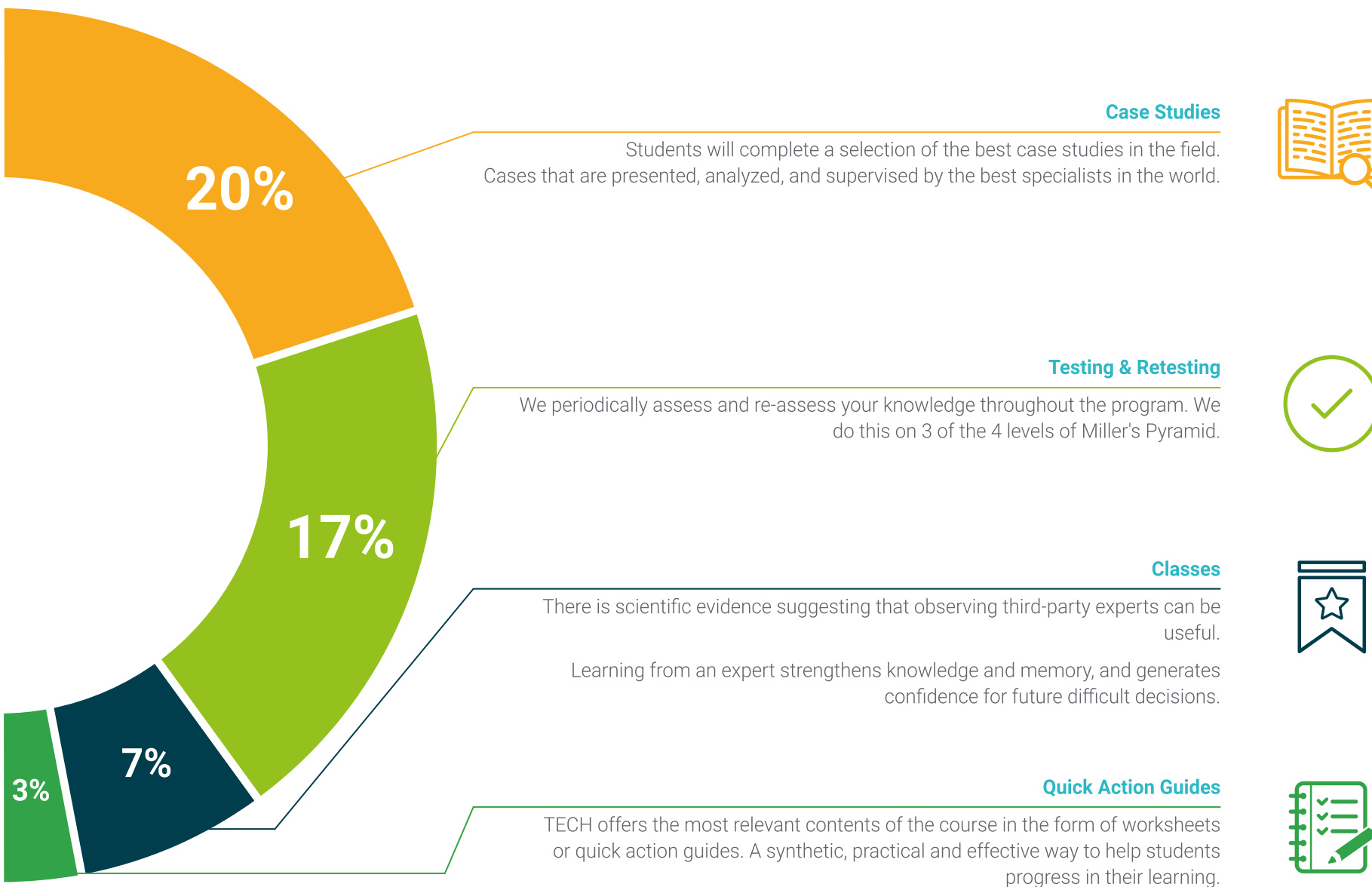
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

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





06

Teaching Staff

In its commitment to offering innovative and comprehensive academic opportunities, TECH Global University carries out a thorough process to select the experts responsible for guiding the program. In this case, the university program focuses on design using 3D printers and is taught by highly respected professionals in the field. These specialists have developed practical content that responds to current market demands, providing graduates with tools and knowledge that can be directly applied in their daily work. As a result, the focus on design with advanced technologies will significantly enhance your skills in creating customized solutions.



“

The teaching team, made up of specialists in Additive Manufacturing and 3D Printing, has designed hours of additional content so that you can expand each section of the syllabus in a personalized way”

Management



Mr. Parera Buxeres, Antoni

- ♦ CEO and Creative Director at Innou
- ♦ Project Manager and Industrial Designer at Play
- ♦ Master's Degree in Project Management and Efficient Project Management from the Polytechnic University of Catalonia
- ♦ Bachelor of Arts with a specialization in Design from the University of Southampton

Professors

Mr. López Ratti, Diego

- ♦ Project Manager at Innou
- ♦ Expert in 3D Printer Assembly and Maintenance
- ♦ Master's Degree in Sustainable Product Design from IED Barcelona
- ♦ Bachelor's Degree in Product Design and Industrial Design from IED Barcelona



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A unique, crucial and decisive learning experience to boost your professional development”

07 Certificate

This Postgraduate Certificate in 3D Printers guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the 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 diploma for the **Postgraduate Certificate in 3D Printers** 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 3D Printers**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**





Postgraduate Certificate 3D Printers

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

Postgraduate Certificate

3D Printers

