Professional Master's Degree
Additive Manufacturing and 3D Printing

tech global university

Professional Master's Degree
Additive Manufacturing and 3D Printing

- Modality: **Online**
- Duration: **12 months.**
- Certificate: **TECH Global University**
- Accreditation: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: **www.techtitute.com/us/engineering/professional-master-degree/master-additive-manufacturing-3d-printing**

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01

Introduction to the Program

Additive Manufacturing, commonly known as 3D Printing, has revolutionized the way components are designed and produced across multiple industries. Among its main benefits are the ability to customize products and significantly reduce material waste. Therefore, it is essential that engineering professionals stay at the forefront of the latest advances in this area to optimize design processes and boost competitiveness in an ever-evolving global market. With this in mind, TECH has created a pioneering university program focused on Additive Manufacturing and 3D Printing. It is also offered in a convenient, completely online format.

Thanks to this 100% online program, you will design production processes using Additive Manufacturing and 3D Printing technologies"

3D Printing has radically transformed modern manufacturing, with a 150% increase in the adoption of this technology in this industry over the last decade. In this regard, a new study by the United Nations highlights that last year more than 500,000 3D printers were in operation worldwide. It also highlights that the use of Additive Manufacturing techniques has reduced material waste by up to 30% in industrial applications. In view of this, experts need to have a comprehensive understanding of the integration of these technologies into the production chain, as well as the strategies necessary to maximize their benefits and address the associated challenges, ensuring a sustainable transformation in the manufacturing industry.

In this context, TECH presents an innovative Professional Master's Degree in Additive Manufacturing and 3D Printing. Designed by leaders in the industry, the academic program will delve into aspects ranging from the use of specialized modeling tools and the fundamentals of functional part design to the most sophisticated post-processing methods. Graduates will gain advanced skills to design and implement comprehensive solutions in Additive Manufacturing environments, optimizing both material selection and production.

In terms of methodology, the program is delivered 100% online, giving engineers the opportunity to access content from anywhere and at any time, adapting their studies to their schedules. In addition, TECH employs its revolutionary Relearning method. This system consists of the repetition of key concepts to fix knowledge and facilitate lasting learning. All students need is an electronic device with an Internet connection to access the Virtual Campus. There, they will enjoy access to a library of multimedia support resources such as explanatory videos, real case studies, and interactive summaries.

This **Professional Master's Degree in Additive Manufacturing and 3D Printing** contains the most complete and up-to-date university program on the market. Its most notable features are:

- The development of case studies presented by experts in Additive Manufacturing and 3D Printing
- 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 self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies in engineering practice
- 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 facilitate the incorporation of CAD, simulation, and analysis tools to improve the efficiency of industrial processes”

You will assess the performance and quality of manufactured parts, implementing finishing and treatment techniques that guarantee their functionality"

You will integrate Additive Manufacturing solutions into the production chain to reduce time and costs.

You will have access to a learning system based on repetition, which will ensure natural and progressive teaching throughout the entire syllabus.

The teaching staff includes professionals from the field of Additive Manufacturing and 3D Printing, 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.

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 has a huge faculty of more than 6,000 professors of the highest international prestige.

Study at the largest online university in the world and ensure your professional success. The future begins 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 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.

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.

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 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 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

The teaching materials that make up this Professional Master's Degree have been developed by a group of experts in Additive Manufacturing and 3D Printing. The syllabus will delve into issues ranging from the use of specialized modeling software and the key factors in selecting a 3D printer to the most innovative post-processing techniques. As a result, students will acquire the skills necessary to implement innovative solutions in industrial environments, lead digital transformation projects, and optimize production processes, positioning themselves as agents of change in the industry.

You will gain an in-depth understanding of the criteria for selecting the right materials for each application in Additive Manufacturing"

Module 1. Additive Manufacturing

1.1. Additive Manufacturing, Origins and Development of Processes and Materials
    1.1.1. Origins of Technology
    1.1.2. Development of Processes and Materials
    1.1.3. Expansion to Different Industries
1.2. Evolution of Additive Manufacturing Technologies
    1.2.1. Recent Technological Innovations
    1.2.2. Comparison of the Main Technologies
    1.2.3. Impact of Digitalization on the Industry
1.3. Software Technologies Involved in Additive Manufacturing
    1.3.1. Principles of CAD Modeling
    1.3.2. Importance of the STL Format in Printing
    1.3.3. Function of GCODE in Print Execution
1.4. Advantages and Limitations of Additive Manufacturing
    1.4.1. Flexibility in Design and Production
    1.4.2. Limitations in Materials and Size
    1.4.3. Comparison with Traditional Manufacturing
1.5. Differences between Additive and Subtractive Processes. General Comparison of Costs and Production Times
    1.5.1. Comparison of Costs and Production Times
    1.5.2. Applications in Different Industries
    1.5.3. Environmental Impact of Both Processes
1.6. Impact of Additive Manufacturing on Today's Industry. Supply Chain Revolution
    1.6.1. Supply Chain Revolution
    1.6.2. Customization in Short Runs – (No Molds)
    1.6.3. Applications in Local Production
1.7. Main Applications of Additive Manufacturing – Prototype Manufacturing
    1.7.1. Prototype Manufacturing
    1.7.2. Production of Functional Parts
    1.7.3. Applications in Healthcare and Automotive
1.8. Case Studies of Additive Manufacturing
    1.8.1. Implementation in the Aerospace Industry (External Cases)
    1.8.2. Use in the Manufacture of Medical Devices
    1.8.3. Innovative Projects in Construccion

1.9. The Democratization of Additive Manufacturing – The Maker Phenomenon
 1.9.1. Creation of Customized Products
 1.9.2. Global Access to 3D Printing Technology
 1.9.3. Makerspaces Movements and Their Impact
1.10. Future Trends in Additive Manufacturing
 1.10.1. Manufacturing Automation
 1.10.2. New Advanced Materials
 1.10.3. Growth of the Personal Printer Market

Module 2. Additive Manufacturing Technologies and Processes

2.1. Classification of Additive Technologies
 2.1.1. Current Main Technologies by Parts
 2.1.2. Emerging Technologies in 3D Printing
 2.1.3. Classification by Materials Used
2.2. FDM – Fused Deposition Modeling – Operation and Applications
 2.2.1. Operation of the Extrusion Process
 2.2.2. Applications and Precision in Parts
 2.2.3. Limitations of the FDM Process
2.3. SLA – Stereolithography – Functioning, Characteristics, and Applications
 2.3.1. How It Works
 2.3.2. Applications and Precision in Parts
 2.3.3. SLA Limitations
2.4. SLS – Selective Laser Sintering – Operation and Applications
 2.4.1. How It Works
 2.4.2. Applications and Resolution
 2.4.3. SLS Limitations
2.5. MJF – MultiJet Fusion. Technology and Applications
 2.5.1. Multi-Agent Injection Technology
 2.5.2. Sectors Using MJF (Aerospace, Automotive)
 2.5.3. Comparison with Other Technologies
2.6. SLM – DLMS and Additive Manufacturing in Metal, Operation, Processes, and Applications
 2.6.1. Additive Technology for Metals
 2.6.2. Applications in High-Demand Industries
 2.6.3. Optimization of Metal Use in Manufacturing

2.7. Material Jetting: Polyjet, Applications and Layer-by-Layer Material Deposition Process. Detailed and Multicolor Prototype Applications
  2.7.1. Layer-by-Layer Material Deposition Process
  2.7.2. Detailed and Multicolor Prototype Applications
  2.7.3. Limitations in Mechanical Strength
2.8. Binder Jetting. Projection of Binders onto Metal Powder
  2.8.1. Projection of Binders onto Metal Powder
  2.8.2. Industrial Applications in Metal Parts
  2.8.3. Comparison with Laser Sintering
2.9. Advantages of Additive Manufacturing over Traditional Methods
  2.9.1. Flexibility in Creation of Complex Geometries
  2.9.2. Reduction in Material Waste
  2.9.3. Mass Product Customization
2.10. Comparison of Technologies Based on Cost, Quality, and Time
  2.10.1. Cost Evaluation by Technology
  2.10.2. Analysis of Production Times for Each Process
  2.10.3. Final Quality of the Parts Produced

Module 3. Materials for Additive Manufacturing

3.1. Classification of Materials for 3D Printing
  3.1.1. Polymers, Resins, and Metals in 3D Printing
  3.1.2. Composite Materials and Their Properties
  3.1.3. Material Selection Factors
3.2. Thermoplastics in FDM: PLA, ABS, and Others
  3.2.1. Properties of PLA and ABS
  3.2.2. Industrial Applications of Each Thermoplastic
  3.2.3. Selection Factors Based on the Final Product
3.3. Ceramics: A Specific Case of Deposition Printing
  3.3.1. Use of Ceramics in 3D Printing
  3.3.2. Applications in Industry and Art
  3.3.3. Technical Limitations
3.4. Resins for SLA, Types and Applications
  3.4.1. Types of Resins (Rigid, Flexible, Biocompatible)
  3.4.2. Applications in the Medical and Dental Sector
  3.4.3. Post-Printing Treatment of Resins
3.5. Powders for SLS: Nylon, Polyamides, and Others
  3.5.1. Characteristics of Plastic Powders
  3.5.2. Applications in Functional Parts
  3.5.3. Comparison of Materials Based on Strength
3.6. Materials for MultiJet Fusion
  3.6.1. MJF-Compatible Materials
  3.6.2. Advantages in the Production of Lightweight Parts
  3.6.3. Comparison with Other Additive Materials
3.7. Metallic Materials in Additive Manufacturing
  3.7.1. Alloys and Metals Used
  3.7.2. Applications in the Aerospace and Automotive Industries
  3.7.3. Challenges in Metal Printing
3.8. Composite Materials: Advanced Applications
  3.8.1. Combining Materials for Specific Properties
  3.8.2. Applications in High-Tech Industries
  3.8.3. Advantages of Hybrid Materials
3.9. Factors to Consider When Choosing Materials
  3.9.1. Mechanical and Thermal Properties
  3.9.2. Compatibility with Printing Technologies
  3.9.3. Costs and Market Availability
3.10. Recent Innovations in Materials for 3D Printing
  3.10.1. New Biodegradable Materials
  3.10.2. Functional Materials for Printed Electronics
  3.10.3. Development of Recyclable Materials

Module 4. Modeling and File Preparation for 3D Printing

4.1. CAD Software: Tools for 3D Modeling
  4.1.1. Main CAD Programs for 3D Design
  4.1.2. Creating Parametric Models
  4.1.3. Model Editing and Correction Tools

4.2. From CAD Design to STL File
 4.2.1. File Export Process in STL Format
 4.2.2. Considerations Regarding File Resolution and Size
 4.2.3. Optimizing the Model to Avoid Printing Errors
4.3. Adjusting Parameters in the STL File: Resolution and Tolerance
 4.3.1. Using Slicing Software to Generate GCODE
 4.3.2. Adjusting Parameters (Speed, Temperature, Layers)
 4.3.3. Correcting Common Problems in Slicing
4.4. Slicing Software: GCODE Preparation
 4.4.1. Using Slicing Software to Generate GCODE
 4.4.2. Adjusting Parameters (Speed, Temperature, Layers)
 4.4.3. Correcting Common Problems in Slicing
4.5. Design Optimization for Additive Manufacturing
 4.5.1. Design to Improve Printing Efficiency
 4.5.2. Avoiding Unnecessary Support Structures
 4.5.3. Adapting Design to Technology Capabilities
4.6. Strategies for Reducing Support Use
 4.6.1. Design Focused on Minimizing Supports
 4.6.2. Use of Favorable Angles and Geometries
 4.6.3. Technologies That Eliminate the Need for Supports
4.7. Techniques for Improving Surface Finish
 4.7.1. Optimization of Print Settings
 4.7.2. Post-Processing Methods for Improving Surfaces
 4.7.3. Use of Thinner Layers to Improve Quality
4.8. Parametric Modeling and Generative Design
 4.8.1. Advantages of Parametric Modeling in 3D Printing
 4.8.2. Use of Generative Design for Part Optimization
 4.8.3. Advanced Generative Design Tools
4.9. Integration of 3D Scanning into the Workflow
 4.9.1. Use of 3D Scanners for Model Capture
 4.9.2. Processing and Cleaning of Scanned Files
 4.9.3. Integration of Scanned Models into CAD Software
4.10. Pre-Printing Simulations and Analysis
 4.10.1. Simulation of Deformations and Stress in Parts
 4.10.2. Optimization of Orientation and Force Distribution
 4.10.3. Printability Analysis of Complex Models

Module 5. 3D Printers: Types and Selection

5.1. Types of FDM 3D Printers (Cartesian, Delta, Polar)
 5.1.1. Features of Cartesian Printers
 5.1.2. Advantages and Disadvantages of Delta Printers
 5.1.3. Specific Applications of Polar Printers
5.2. FDM Printers: Operation and Maintenance
 5.2.1. Basic Operation of the FDM Process
 5.2.2. Preventive and Corrective Maintenance
 5.2.3. Parameter Adjustment to Improve Quality
5.3. SLA and DLP Printers: Characteristics and Use
 5.3.1. Differences between SLA and DLP
 5.3.2. Industrial Uses and High-Precision Applications
 5.3.3. Specific Maintenance and Care
5.4. SLS Printers: Selection and Configuration
 5.4.1. Selection of SLS Printers according to Application
 5.4.2. Parameter Configuration for High-Strength Parts
 5.4.3. Maintenance Requirements for SLS Printers
5.5. MultiJet Fusion Printers: How to Choose the Right One
 5.5.1. Factors to Consider When Choosing MJF
 5.5.2. Comparison of MJF with Other Technologies
 5.5.3. Recommended Applications for MJF
5.6. Key Factors in Selecting a 3D Printer
 5.6.1. Budget and Operating Costs – Examples
 5.6.2. Size and Complexity of Parts. Volumes and Speeds
 5.6.3. Compatibility with Materials
5.7. Printer Comparison: Cost, Speed, and Quality
 5.7.1. Assessment of Acquisition and Maintenance Costs
 5.7.2. Comparison of Printing Speeds in Different Technologies
 5.7.3. Part Quality According to the Selected Printer

5.8. Large-Format 3D Printers: Applications and Limitations
- 5.8.1. Advantages of Large-Format Printers for Large Parts
- 5.8.2. Limitations in Printing Accuracy and Time
- 5.8.3. Specific Industrial Applications

5.9. Hybrid Solutions: Additive and Subtractive in the Same Equipment
- 5.9.1. Integration of 3D Printing with CNC Milling
- 5.9.2. Advantages of Hybrid Processes for Mold Manufacturing
- 5.9.3. Limitations of Hybrid Technology in Mass Production

5.10. New Trends in 3D Printers
- 5.10.1. Recent Advances in Multimaterial Printing
- 5.10.2. Ceramic Printing
- 5.10.3. Networked 3D Printers and Automation

Module 6. Design for Additive Manufacturing

6.1. Design Focused on Optimizing Weight and Strength
- 6.1.1. Use of Lattice Structures to Reduce Weight
- 6.1.2. Topological Optimization to Improve Strength
- 6.1.3. Application of Simulations in Design

6.2. Geometric Considerations in 3D Printing
- 6.2.1. Complex Geometries Feasible in 3D Printing
- 6.2.2. Orientation and Support Considerations
- 6.2.3. Avoiding Sharp Angles in Overhangs

6.3. Designing Functional Parts vs. Aesthetic Parts
- 6.3.1. Differences Between Functional and Decorative Design
- 6.3.2. Materials and Finishes for Functional Parts
- 6.3.3. Priorities in Geometry Selection

6.4. Reduction of Part and Assembly Count through Additive Manufacturing
- 6.4.1. Consolidation of Complex Assemblies into a Single Part
- 6.4.2. Advantages of Reducing Components for Production
- 6.4.3. Design Considerations for Minimizing Assembly

6.5. Generation of Internal Structures and Lattice/Infill
- 6.5.1. Design of Internal Lattice Structures
- 6.5.2. Optimization to Reduce Material and Weight
- 6.5.3. Applications in Lightweight and Strong Parts

6.6. Application of Generative Design in Complex Projects
- 6.6.1. Use of Software to Generate Optimized Designs
- 6.6.2. Considerations in Parameter Selection
- 6.6.3. Success Stories in Applied Generative Design

6.7. Considerations for Cantilevered Parts and Supports
- 6.7.1. Design Strategies to Avoid Cantilevers
- 6.7.2. Efficient Use of Supports to Reduce Post-Processing
- 6.7.3. Technologies That minimize the Need for Supports

6.8. Rapid Prototyping and Proof of Concept
- 6.8.1. Advantages of Rapid Prototyping in Product Development
- 6.8.2. Iteration Process in Proof of Concept
- 6.8.3. Time Optimization in Functional Prototyping

6.9. Limitations in Design for Additive Manufacturing
- 6.9.1. Restrictions due to Part Size and Resolution
- 6.9.2. Material and Precision Limitations
- 6.9.3. Impact of Printing Speed on Design

6.10. Design Optimization in 3D Printing
- 6.10.1. Design Strategies to Improve Manufacturing Efficiency
- 6.10.2. Reducing Printing Times through Design Adjustments
- 6.10.3. Advanced Optimization Techniques for Cost Reduction

Module 7. Additive Manufacturing Post-Processing and Surface Finishing

7.1. Post-Processing Techniques: Cutting, Sanding, Polishing
- 7.1.1. Automated Methods for Improving Surface Finish
- 7.1.2. Polishing Tools and Equipment for Printed Parts
- 7.1.3. Comparison of Techniques According to Material Type

7.2. Surface Finishes: Painting, Varnishing, and Texturizing
- 7.2.1. Application of Protective Coatings
- 7.2.2. Texturing Techniques to Improve Appearance
- 7.2.3. Use of Paint and Varnishes to Improve Aesthetic Finish

7.3. Heat Treatment and Hardening of Parts
- 7.3.1. Annealing Processes to Improve Strength
- 7.3.2. Applications of Heat Treatment in Printed Metals
- 7.3.3. Key Factors for Successful Hardening

7.4. Post-Printing Assembly Techniques
- 7.4.1. Methods for Joining 3D Printed Parts
- 7.4.2. Use of Adhesives and Welding in Complex Parts
- 7.4.3. Design for Assembly and Simplification of Assembly

7.5. Support Removal Methods
- 7.5.1. Mechanical and Chemical Techniques for Removing Supports
- 7.5.2. Design Optimization to Facilitate Removal
- 7.5.3. Reducing the Impact of Supports in Post-Processing

7.6. Post-Processing for Metallic Materials
- 7.6.1. Polishing and Sanding of 3D Printed Metal Parts
- 7.6.2. Specific Treatments to Improve Mechanical Properties
- 7.6.3. Comparison of Post-Processing Techniques for Different Metals

7.7. Use of Soluble Materials for Supports
- 7.7.1. Advantages of Using Water-Soluble Supports
- 7.7.2. Materials Compatible with Dual Extruder Printers
- 7.7.3. Reducing Post-Processing Time with Soluble Supports

7.8. Automation of Post-Processing: Advanced Systems
- 7.8.1. Automated Machines for Sanding and Polishing
- 7.8.2. Ultrasonic Cleaning Systems for Dust and Residue Removal
- 7.8.3. Use of Robots in Post-Processing of Large Parts

7.9. Quality Control in Printed Parts
- 7.9.1. Visual and Tactile Inspection Techniques
- 7.9.2. 3D Measurement and Scanning Tools for Accuracy Verification
- 7.9.3. Test Methods for Validating Strength and Durability

7.10. Post-Processing to Improve Functionality
- 7.10.1. Additional Treatments to Improve Mechanical Properties
- 7.10.2. Surface Finishes to Improve Functionality in Specific Parts
- 7.10.3. Wear Reduction Through Special Coatings

Module 8. Industry-Specific Applications of Additive Manufacturing

8.1. Automotive: Prototypes and Functional Parts
- 8.1.1. Rapid Prototyping for Design Validation
- 8.1.2. Manufacturing of Functional and Customized Parts for Vehicles
- 8.1.3. Optimization of 3D Printing in the Manufacturing of Lightweight Components

8.2. Aerospace: Optimization of Lightweight Components and Materials
- 8.2.1. Weight Reduction in Aircraft Parts Using Lattice Structures
- 8.2.2. Use of Lightweight Alloys in 3D-Printed Components
- 8.2.3. Certification and Validation of Printed Parts for Aerospace Applications

8.3. Architecture: 3D-Printed Models and Constructions
- 8.3.1. Creation of Detailled Models for Project Presentations
- 8.3.2. Applications of 3D Printing in the Construction of Structures
- 8.3.3. Recent Innovations in Concrete Printing and Architectural Materials

8.4. Health: Prosthetics, Implants, and Biomedical Applications
- 8.4.1. Manufacturing Customized Prosthetics Using 3D Printing
- 8.4.2. Printing Medical Implants Tailored to Patient Needs
- 8.4.2. Innovations in Tissue and Organ Bioprinting

8.5. Fashion and Jewelry: Customization and Unique Design
- 8.5.1. Producing Customized Jewelry with 3D Printers
- 8.5.2. Use of 3D Printing for the Creation of Clothing and Accessories
- 8.5.3. Impact of Additive Technology on the Fashion Industry

8.6. Education and Research: Innovative Projects with 3D Printing
- 8.6.1. 3D Printing as an Educational Tool in Various Disciplines
- 8.6.2. Research Projects Using 3D Printing for Prototyping
- 8.6.2. Use of Technology in Scientific Research Laboratories

8.7. Electronics: Prototyping and Circuit Assembly
- 8.7.1. Rapid Prototyping of Electronic Devices
- 8.7.2. Printing Components for Integrated Circuit Assembly
- 8.7.3. Innovations in Additive Manufacturing of Electronic Products

8.8. Food Industry: 3D Food Printing
- 8.8.1. Applications in the Food Industry for Food Customization
- 8.8.2. 3D Food Printing Technologies and Their Impact on Nutrition
- 8.8.3. Innovations in Printed Textures and Shapes in Food

8.9. Energy and Sustainability: Components for Renewable Energy
- 8.9.1. Production of Key Components for Renewable Energy Using 3D Printing
- 8.9.2. Waste Reduction and Resource Optimization in Additive Manufacturing
- 8.9.3. Innovations in Printing Components for the Solar and Wind Industry

8.10. Other Emerging Sectors: Exploration of New Fields
- 8.10.1. Applications of 3D Printing in Fashion and Art
- 8.10.2. Exploration of Emerging Sectors such as Biotechnology
- 8.10.3. 3D Printing in the Manufacture of Customized Medical Devices

Module 9. Entrepreneurship in Additive Manufacturing

9.1. Business Opportunities in Additive Manufacturing
- 9.1.1. Creation of New Markets for Customized Products
- 9.1.2. Provision of Small-Scale 3D Printing Services
- 9.1.3. Development of Innovative Products through Additive Manufacturing

9.2. Feasibility Analysis of Projects with 3D Printing
- 9.2.1. Assessment of Production and Material Costs
- 9.2.2. Identification of Optimization Opportunities in Projects
- 9.2.3. Methods for Calculating Return on Investment in Additive Projects

9.3. Business Models Based on 3D Printing Services
- 9.3.1. Provision of Services to Businesses and Individuals
- 9.3.2. Strategies for Scaling a 3D Printing Business
- 9.3.3. Profitability of Offering Customized Printing on Demand

9.4. How to Assess Return on Investment (ROI)
- 9.4.1. Methods for Calculating ROI in Additive Projects
- 9.4.2. Key Factors in Assessing Profitability
- 9.4.3. Optimizing Delivery Time to Improve ROI

9.5. Strategies for Marketing 3D-Printed Products
- 9.5.1. Distribution Channels for 3D-Printed Products
- 9.5.2. Digital Marketing Strategies Applied to 3D Printing
- 9.5.3. Positioning Products in the Global Market

9.6. Success Stories of Entrepreneurship in Additive Manufacturing - Example FDM
- 9.6.1. Examples of Companies That Have Grown with 3D Printing
- 9.6.2. Startup Innovations in the Additive Manufacturing Industry
- 9.6.3. Keys to Success in Creating Businesses Based on 3D Printing

9.7. Global Strategy for Protecting Ideas and Products
- 9.7.1. Methods for Protecting Intellectual Property Without Relying on Local Laws
- 9.7.2. Open Licenses and Their Impact on Business Growth
- 9.7.3. Strategies for Competing Globally in Additive Markets

9.8. Sustainability and Additive Manufacturing
- 9.8.1. Additive Manufacturing Applications in the Circular Economy
- 9.8.2. Reducing the Environmental Impact of Additive Processes
- 9.8.3. Use of Recycled and Recyclable Materials in 3D Printing

9.9. Cost Reduction and Process Optimization
- 9.9.1. Methods for Optimizing Material Use and Production Times
- 9.9.2. Techniques for Reducing Waste and Operating Costs
- 9.9.3. Process Automation in the Additive Manufacturing Production Chain

9.10. The Future of Entrepreneurship in 3D Printing
- 9.10.1. Innovations That Are Shaping the Future of Entrepreneurship in Additive Manufacturing
- 9.10.2. New Business Opportunities in Emerging Industries
- 9.10.3. Impact of Additive Manufacturing on the Global Economy

Module 10. 3D Project Development

10.1. Selecting the Right Technology for a Real Project
- 10.1.1. Comparing Technologies Based on Project Type
- 10.1.2. Key Factors in Technology Selection
- 10.1.3. Impact of Selected Technology on Production Costs and Timelines

10.2. Material and Cost Analysis
- 10.2.1. Assessment of Material Costs and Their Impact on the Project
- 10.2.1. Selection of Materials According to the Needs of the Final Product
- 10.2.3. Comparison of Costs Between Different Printing Technologies

10.3. Design Optimization for Additive Manufacturing
- 10.3.1. Design Adjustments to Improve Printing Efficiency
- 10.3.2. Reduction of Supports and Material in the Design Process
- 10.3.3. Optimization of Geometries to Improve Strength and Quality

10.4. Implementation of Supports and Preparation for Printing
- 10.4.1. Strategies for the Correct Implementation of Supports
- 10.4.2. Adjustment of Printing Parameters to Avoid Errors
- 10.4.3. Optimization of Part Orientation to Improve the Final Finish

10.5. 3D Printing Process: From Setup to Printing
- 10.5.1. Setting the Initial Parameters on the Printer
- 10.5.2. Adjusting the Printing Temperature and Speed
- 10.5.3. Troubleshooting Common Problems During the Printing Process

10.6. Post-Processing of Printed Parts
- 10.6.1. Advanced Post-Processing Techniques to Improve Quality
- 10.6.2. Support Removal and Surface Finishing
- 10.6.3. Heat Treatment Methods for Printed Parts

10.7. Presentation of Results: Functional Prototypes
- 10.7.1. Assessment of Prototype Performance in Functional Tests
- 10.7.2. Comparison Between Initial Design and Results Obtained
- 10.7.3. Adjustments to Improve Prototype Functionality

10.8. Strategies for Continuous Improvement in Additive Manufacturing Processes
- 10.8.1. Process Optimization Methods to Reduce Times
- 10.3.2. Improvements in the Quality of the Final Product through Design and Production Adjustments
- 10.8.3. Implementation of Quality Control Systems in Production

10.9. Recent Technological Innovations Applied to Additive Manufacturing
- 10.9.1. New Developments in Advanced Materials for Printing
- 10.9.2. Automation of Online Printing Processes
- 10.9.3. Impact of Artificial Intelligence on Design for Additive Manufacturing

10.10. Optimization of Productivity in 3D Projects
- 10.10.1. Tools to Improve Efficiency in Mass Production
- 10.10.2. Scaling Techniques in Additive Manufacturing Projects
- 10.10.3. Software Innovations to Increase Productivity in 3D Printing

You will promote responsible practices that guarantee the quality, safety, and economic viability of production processes"

04

Teaching Objectives

This university program will provide engineers with advanced skills in Additive Manufacturing and 3D Printing. This will enable professionals to integrate innovative technological solutions into industrial environments, optimize production processes, customize designs, and reduce manufacturing times.

In addition, students will be able to lead digital transformation projects, ensuring the competitiveness and sustainability of organizations in a constantly evolving global market.

You will learn cutting-edge methodologies in product design, promoting customization and adaptation to demanding markets"

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

Interactive summaries of each topic will allow you to consolidate concepts about modeling and file preparation for 3D printing in a more dynamic way"

Specific Objectives

Module 1. Additive Manufacturing
- Master Additive Manufacturing technologies to solve specific problems that can be solved with these technologies
- Analyze parts in 3D to select the best technology, taking into account key factors such as cost, strength, and quantities

Module 2. Additive Manufacturing Technologies and Processes
- Differentiate technologies by their applications
- Compare production times and understand post-processing

Module 3. Materials for Additive Manufacturing
- 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

Module 4. Modeling and File Preparation for 3D Printing
- Differentiate between software and its 3D modeling capabilities
- Transfer files from one software to another and export them in a format compatible with 3D printing

Module 5. 3D Printers: Types and Selection
- Develop skills to select the most suitable 3D printer according to project requirements
- Promote the exploration and adaptation of emerging technologies in 3D Printing, driving continuous improvement and efficiency in production processes

Module 6. Design for Additive Manufacturing
- Learn how to use CAD and simulation software, applying design methodologies that allow you to predict behavior during the printing process
- Identify and manage constraints such as overload angles, the need for supports, and the mechanical properties of materials

Module 7. Additive Manufacturing Post-Processing and Surface Finishing
- Address the best post-processing technique for each of the technologies and materials
- Develop skills to improve the quality, precision, and resistance of parts through polishing, heat treatment, painting, and other finishing techniques

Module 8. Industry-Specific Applications of Additive Manufacturing
- Analyze how Additive Manufacturing is implemented in different industries
- Evaluate the benefits and limitations of the technology in each industry, considering aspects such as cost, time, and quality

Module 9. Entrepreneurship in Additive Manufacturing
- Learn how to develop business plans, market analysis, and specific financing strategies for 3D printing projects
- Acquire tools to assess and mitigate risks, ensuring the viability and sustainability of ventures in this industry

Module 10. 3D Project Development
- Learn how to document, assess, and communicate results, ensuring knowledge transfer and the replicability of the solution developed
- Encourage critical analysis and the resolution of technical and logistical challenges during project implementation

05
Career Opportunities

This university program in Additive Manufacturing and 3D Printing is a unique opportunity for all engineers looking to update their skills and master cutting-edge technologies in the industrial field. With this innovative knowledge, graduates will broaden their professional horizons and significantly enhance their ability to transform production processes, driving growth and competitiveness in their organizations globally.

Would you like to work as an Engineer specialized in Additive Manufacturing and 3D Printing? Achieve it thanks to this university degree in just a few months"

Graduate Profile

Graduates of this Professional Master's Degree will become professionals capable of integrating disruptive technologies into industrial environments, optimizing production processes, and customizing design solutions. They will also have the skills to design, implement, and evaluate innovative systems that improve efficiency and competitiveness. In addition, they will be prepared to lead digital transformation, research, and development projects, driving growth.

You will be highly prepared to create prototypes using 3D printing technologies, allowing for rapid iterations and accurate assessments prior to large-scale production.

- **Technological Adaptation in Production Processes:** Ability to incorporate advanced Additive Manufacturing and 3D Printing technologies into production processes, increasing efficiency and quality in product development.
- **Industrial Problem-Solving:** Ability to apply analytical thinking to identify and solve technical challenges, optimizing manufacturing through innovative solutions based on 3D printing technologies.
- **Commitment to Sustainability and Innovation:** Responsibility in implementing ethical and sustainable principles in the use of advanced technologies, ensuring the efficiency and economic and environmental viability of production processes.
- **Interdisciplinary Collaboration:** Ability to communicate and work effectively with multidisciplinary teams, facilitating the integration of additive manufacturing into the industrial value chain and promoting knowledge transfer between technical and design areas

After completing the program, you will be able to perform your knowledge and skills in the following positions:

1. **Engineer specialized in Additive Manufacturing and 3D Printing:** Responsible for integrating and managing advanced 3D printing solutions in industrial environments to improve production efficiency and promote innovation in product design.
2. **Additive Manufacturing Data Management Engineer:** Responsible for collecting, analyzing, and protecting technical data generated in 3D printing processes, ensuring optimization and traceability in manufacturing.
3. **Engineer specializing in Rapid Prototyping with Additive Manufacturing:** Responsible for creating and validating prototypes using 3D printing technologies, enabling rapid iterations and accurate evaluations prior to large-scale production.
4. **Additive Manufacturing Project Consultant:** Coordinator dedicated to the implementation of 3D printing solutions in the industrial field, collaborating with multidisciplinary teams to adapt technologies to the specific needs of each sector.
5. **Internal Advisor on Additive Manufacturing Technologies:** Manager in manufacturing companies who provides training and specialized workshops on the use of 3D technologies, raising the technological competence of staff and promoting innovation.
6. **Supervisor of Industrial Innovation Projects:** Leader in initiatives that integrate additive manufacturing solutions, optimizing production processes and resources to boost industrial competitiveness.
7. **Engineer in Additive Manufacturing Security and Quality:** Manager of regulations and standards applied to 3D printing technologies, responsible for assessing and mitigating risks related to quality and safety in production.

You will advance your career by creating innovative and sustainable textile solutions, contributing to the evolution of key industries such as automotive and fashion"

06
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.

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.

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.

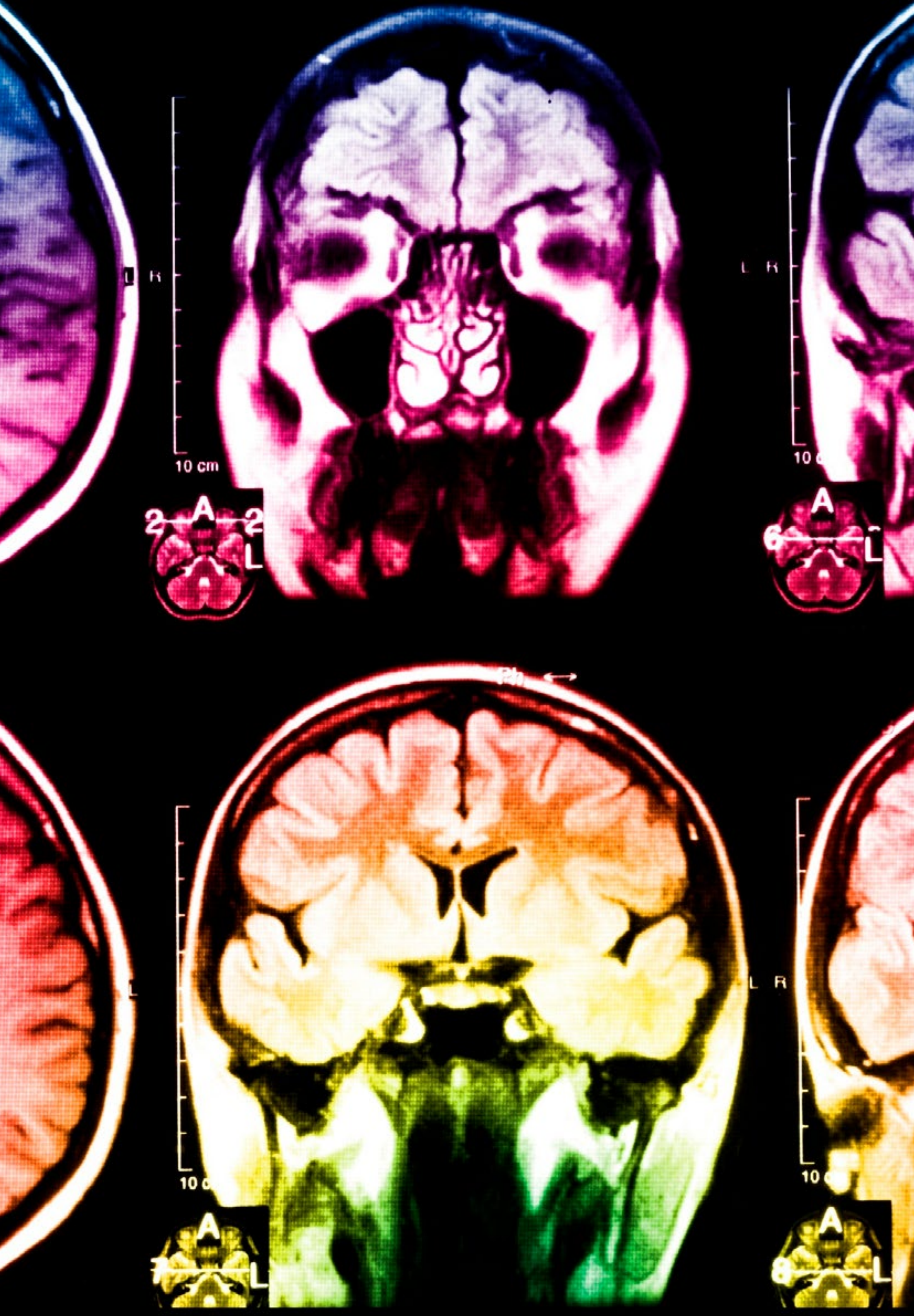
In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

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

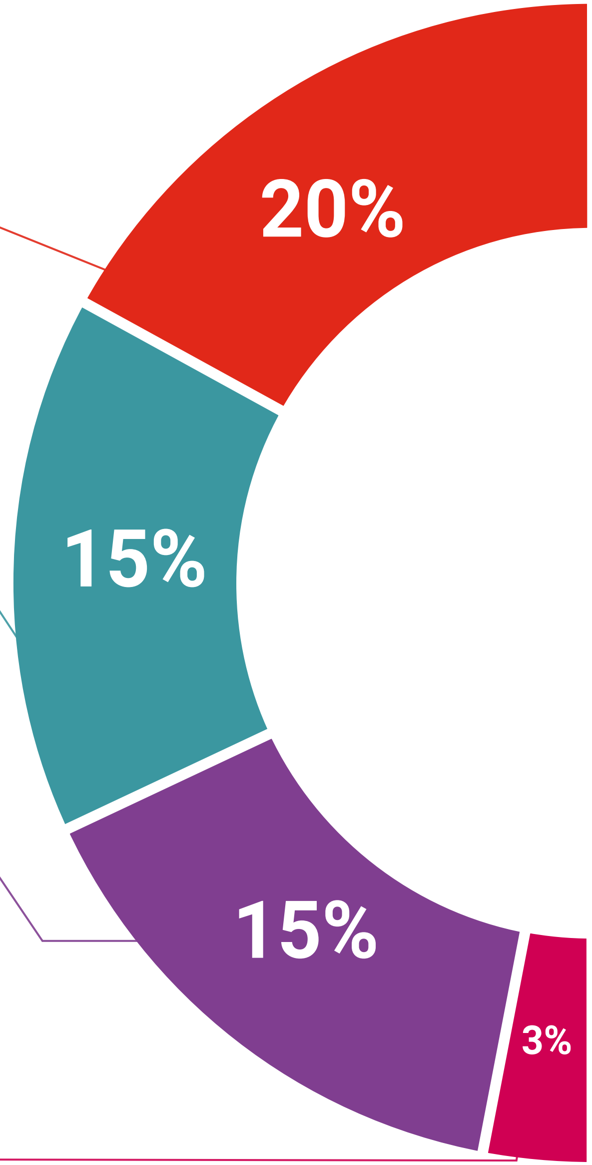
The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

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.

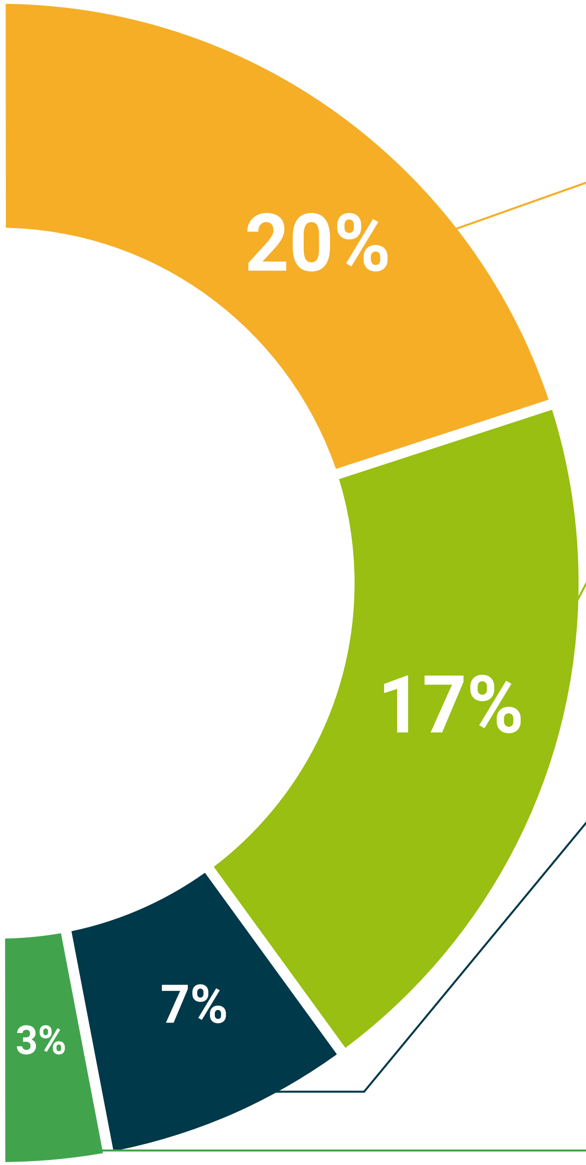
Interactive Summaries

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.

07
Teaching Staff

TECH's philosophy is based on offering the most complete and up-to-date university programs on the educational market, which is why it carefully selects its teaching staff. In order to deliver this Professional Master's Degree, TECH has enlisted the services of true experts in Additive Manufacturing and 3D Printing. These professionals have extensive work experience, where they have contributed to the creation of innovative digital solutions focused on the optimization of industrial processes. In this way, students will gain access to an immersive experience that will allow them to take a significant leap forward in their careers as engineers.

An experienced teaching staff made up of true experts in Additive Manufacturing and 3D Printing will guide you throughout the university program"

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

Mr. Sánchez González, Antonio

- Director of AsorCAD Engineering
- Industrial Designer at Segui Desing
- Project Manager in R&D at Play
- Founder of Innou
- Master's Degree in Technical Management and Production
- Bachelor's Degree in Mechanical Engineering from the University of Southampton

Ms. Contreras, Lucía

- Creative Strategist and Social Media Manager at 3Dnatives
- Head of Influencer Communications at Bebee
- Web Content Editor at Needme
- Master's Degree in Design and Art Direction from CICE
- Bachelor's Degree in Audiovisual Communication from the Complutense University of Madrid

Mr. Alonso Almirall, Óscar

- Head of Additive Manufacturing and 3D Printing at Industria Digital
- Mechanical Engineer at Leitat Technology Center
- Product Development Engineer at Mazel Ingenieros
- Bachelor's Degree in Industrial Engineering with a specialization in Mechanics from the Polytechnic University of Catalonia

Mr. Bafaluy Ojea, Sergi

- Senior Researcher in Additive Manufacturing and 3D Printing in Digital Industry
- Process Engineer at Gestamp Hardtech AB
- Materials Engineer at ABB
- Industrial Doctorate in HP Printing and Computing Solutions
- Degree in Chemical and Materials Engineering from the Polytechnic University of Catalonia and the European School of Engineers

Mr. Tutó Cabedo, Xavier

- Director of Engineering and Design at Industria Digital
- Founder of Kxdesigners
- Master's Degree in Design Research and Management from TFRAF at ISEC
- Bachelor's Degree in Design Engineering from ELISAVA University School

08

Certificate

The Professional Master's Degree in Additive Manufacturing and 3D Printing 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**Professional Master's Degree diploma in Additive Manufacturing and 3D Printing** 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: **Professional Master's Degree in Additive Manufacturing and 3D Printing**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**

tech global university

Mr./Ms. _______________, with identification document ___________
has successfully passed and obtained the title of:

Professional Master's Degree in Additive Manufacturing and 3D Printing

This is a private qualification of 1,500 hours of duration equivalent to 60 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Dean

Unique TECH Code: AFWORD23S techtitute.com/certificates

Professional Master's Degree in Additive Manufacturing and 3D Printing

General Structure of the Syllabus

Subject type	ECTS
Compulsory (CO)	60
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 60

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	Additive Manufacturing	6	OB
1º	Additive Manufacturing Technologies and Processes	6	OB
1º	Materials for Additive Manufacturing	6	OB
1º	Modeling and File Preparation for 3D Printing	6	OB
1º	3D Printers: Types and Selection	6	OB
1º	Design for Additive Manufacturing	6	OB
1º	Additive Manufacturing Post-Processing and Surface Finishing	6	OB
1º	Industry-Specific Applications of Additive Manufacturing	6	OB
1º	Entrepreneurship in Additive Manufacturing	6	OB
1º	3D Project Development	6	OB

Dr. Pedro Navarro Illana
Dean

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*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

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Professional Master's Degree
Additive Manufacturing and 3D Printing

- » Modality: **Online**
- » Duration: **12 months.**
- » Certificate: **TECH Global University**
- » Accreditation: **60 ECTS**
- » Schedule: **at your own pace**
- » Exams: **online**

Professional Master's Degree

Additive Manufacturing and 3D Printing

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