Professional Master's Degree

Sustainable Product Design

Accreditation/Membership

the Design Society
a worldwide community

tech global university

tech global university

Professional Master's Degree
Sustainable Product Design

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

Website: www.techtitute.com/us/design/professional-master-degree/master-sustainable-product-design

Index

01

Introduction to the Program

Sustainable Design has become a strategic pillar within the product industry, driving new ways of conceiving materials, processes, and experiences. In this context, the integration of environmental and social criteria in the development of useful objects not only responds to ethical demands but also to a market that is increasingly aware. According to the United Nations Environment Programme, more than 80% of a product's environmental impact is determined during its design phase. Aware of this reality, TECH promotes an advanced academic opportunity that will enable graduates to master the most cutting-edge tools of responsible design, through an innovative 100% online methodology.

A comprehensive and 100% online program, exclusive to TECH, with an international perspective supported by our membership with The Design Society"

Sustainability has ceased to be an option and has become an essential criterion within the design process. In fact, the urgency to reduce the ecological footprint of products, optimize the life cycle of materials, and respond to the Sustainable Development Goals has profoundly transformed the role of the industrial designer. Today, professionals are required who can merge creativity, innovation, and environmental responsibility in every design decision. However, the lack of solid references and specialized methodologies has generated a growing need for experts who understand the real impact of their decisions, from conceptualization to post-production.

In response to this challenge, TECH launches a pioneering program in Sustainable Product Design. This academic experience is designed to foster critical thinking, applied creativity, and technical expertise in eco-design, life cycle analysis, circular economy, and the use of low-impact biomaterials. Throughout the academic pathway, professionals will analyze real cases, apply simulation and environmental validation software, and study sustainable innovation strategies.

The program also integrates the latest advances in ecological 3D printing, regenerative design, and smart materials, all approached from an ethical, functional, and cultural perspective. This academic offering is delivered in a 100% online environment, with dynamic content accessible anytime and from anywhere in the world. As a distinguishing feature, TECH provides its exclusive Relearning method, which reinforces the mastery of key concepts through a flexible and highly effective learning model.

Thanks to TECH's membership with **The Design Society (DS)**, students will become part of a global community dedicated to design and its study. They will have access to open-access publications and be able to participate in collaborative events. Additionally, the membership supports the maintenance of the society and its platforms, facilitating interaction and access to specialized resources for professional development in design.

This **Professional Master's Degree in Sustainable Product Design** contains the most complete and up-to-date university program on the market. Its most notable features are:

- The development of practical case studies presented by experts in Sustainable Product Design
- 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
- Special emphasis on innovative methodologies in Sustainable Product Design
- 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 master the strategic use of eco-efficient materials and develop solutions with a reduced environmental impact"

You will apply ethical and responsible design practices, considering environmental impact, material circularity, and sustainability throughout the entire product life cycle"

You will incorporate sustainability principles into every stage of Design, from research to production and the product life cycle.

You will carry out life cycle analyses of products, assessing their environmental, social, and economic impact.

The teaching faculty includes professionals from the field of Sustainable Product Design, who contribute their professional experience to this program, along with renowned specialists from leading organizations 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 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

TECH offers this innovative syllabus designed to provide professionals with a comprehensive vision of design from a sustainable, creative, and technically advanced perspective. Throughout the academic program, graduates will explore the fundamentals of design and creativity, delving into project culture, circular economy, and renewable energies. They will also acquire technical skills in 3D modeling with Rhino, learn to select innovative materials, and apply sustainability criteria at every stage of the process. In addition, key competencies in business ethics and creative entrepreneurship will be addressed, both of which are essential for leading responsible projects within contemporary industries.

You will explore materials, cultures, and energy sources that nourish Design with purpose, mastering the tools to transform creativity into tangible and lasting impact”

Module 1. Fundamentals of Design

1.1. Design History
- 1.1.1. Industrial Revolution
- 1.1.2. The Stages of Design
- 1.1.3. Architecture
- 1.1.4. The Chicago School

1.2. Design Styles and Movements
- 1.2.1. Decorative Design
- 1.2.2. Modernist Movement
- 1.2.3. *Art Deco*
- 1.2.4. Industrial Design
- 1.2.5. Bauhaus
- 1.2.6. World War II
- 1.2.7. Transvanguards
- 1.2.8. Contemporary Design

1.3. Designers and Trends
- 1.3.1. Interior Designers
- 1.3.2. Graphic Designers
- 1.3.3. Industrial or Product Designers
- 1.3.4. Fashion Designers

1.4. Design Methodology
- 1.4.1. Bruno Munari
- 1.4.2. Gui Bonsiepe
- 1.4.3. J. Christopher Jones
- 1.4.4. L. Bruce Archer
- 1.4.5. Guillermo González Ruiz
- 1.4.6. Jorge Frascara
- 1.4.7. Bernd Löbach
- 1.4.8. Joan Costa
- 1.4.9. Norberto Chaves

1.5. Language in Design
- 1.5.1. Objects and the Subject
- 1.5.2. Semiotics of Objects
- 1.5.3. The Object Layout and its Connotation
- 1.5.4. Globalization of Signs
- 1.5.5. Proposal

1.6. Design and its Aesthetic-Formal Dimension
- 1.6.1. Visual Elements
  - 1.6.1.1. Form
  - 1.6.1.2. Measure
  - 1.6.1.3. Color
  - 1.6.1.4. Texture
- 1.6.2. Relational Elements
  - 1.6.2.1. Management
  - 1.6.2.2. Position
  - 1.6.2.3. Space
  - 1.6.2.4. Gravity
- 1.6.3. Practical Elements
  - 1.6.3.1. Representation
  - 1.6.3.2. Meaning
  - 1.6.3.3. Function
- 1.6.4. Frame of Reference

1.7. Analytical Design Methods
- 1.7.1. Pragmatic Design
- 1.7.2. Analog Design
- 1.7.3. Iconic Design
- 1.7.4. Canonical Design
- 1.7.5. Main Authors and Their Methodology

1.8. Design and Semantics
- 1.8.1. Semantics
- 1.8.2. The Significance
- 1.8.3. Denotative Meaning and Connotative Meaning
- 1.8.4. Lexicon
- 1.8.5. Lexical Field and Lexical Family
- 1.8.6. Semantic Relationships
- 1.8.7. Semantic Change
- 1.8.8. Causes of Semantic Changes

1.9. Design and Pragmatics
- 1.9.1. Practical Consequences, Abduction and Semiotics
- 1.9.2. Mediation, Body and Emotions
- 1.9.3. Learning, Experiencing and Closing
- 1.9.4. Identity, Social Relations and Objects

1.10. Current Design Context
- 1.10.1. Current Design Issues
- 1.10.2. Current Design Issues
- 1.10.3. Contributions on Methodology

Module 2. Fundamentals of Creativity

2.1. To Create Is to Think
- 2.1.1. The Art of Thinking
- 2.1.2. Creative Thinking and Creativity
- 2.1.3. Thought and Brain
- 2.1.4. The Lines of Research on Creativity: Systematization

2.2. Nature of the Creative Process
- 2.2.1. Nature of Creativity
- 2.2.2. The Notion of Creativity: Creation and Creativity
- 2.2.3. The Creation of Ideas for Persuasive Communication
- 2.2.4. Nature of the Creative Process in Advertising

2.3. The Invention
- 2.3.1. Evolution and Historical Analysis of the Creation Process
- 2.3.2. Nature of the Classical Canon of the invention
- 2.3.3. The Classical View of Inspiration in the Origin of Ideas
- 2.3.4. Invention, Inspiration, Persuasion

2.4. Rhetoric and Persuasive Communication
- 2.4.1. Rhetoric and Advertising
- 2.4.2. The Rhetorical Parts of Persuasive Communication
- 2.4.3. Rhetorical Figures
- 2.4.4. Rhetorical Laws and Functions of Advertising Language

2.5. Creative Behavior and Personality
- 2.5.1. Creativity as a Personal Characteristic, as a Product and as a Process
- 2.5.2. Creative Behavior and Motivation
- 2.5.3. Perception and Creative Thinking
- 2.5.4. Elements of Creativity

2.6. Creative Skills and Abilities
- 2.6.1. Thinking Systems and Models of Creative Intelligence
- 2.6.2. Three-Dimensional Model of the Structure of the Intellect According to Guilford
- 2.6.3. Interaction Between Factors and Intellectual Capabilities
- 2.6.4. Creative Skills
- 2.6.5. Creative Capabilities

2.7. The Phases of the Creative Process
- 2.7.1. Creativity as a Process
- 2.7.2. The Phases of the Creative Process
- 2.7.3. The Phases of the Creative Process in Advertising

2.8. Troubleshooting
- 2.8.1. Creativity and Problem Solving
- 2.8.2. Perceptual Blocks and Emotional Blocks
- 2.8.3. Methodology of Invention: Creative Programs and Methods

2.9. The Methods of Creative Thinking
- 2.9.1. Brainstorming as a Model for the Creation of Ideas
- 2.9.2. Vertical Thinking and Lateral Thinking
- 2.9.3. Methodology of Invention: Creative Programs and Methods

2.10. Creativity and Advertising Communication
- 2.10.1. The Creative Process as a Specific Product of Advertising Communication
- 2.10.2. Nature of the Creative Process in Advertising: Creativity and the Creative Advertising Process
- 2.10.3. Methodological Principles and Effects of Advertising Creation
- 2.10.4. Advertising Creation: From Problem to Solution
- 2.10.5. Creativity and Persuasive Communication

Module 3. Theory and Culture of Design

3.1. The Meaning of Design in Contemporary Culture and Society
- 3.1.1. Introduction to the Concept of Design Culture
- 3.1.2. The Role of the Designer in the Context of Contemporary Society
- 3.1.3. Material Culture and Social Values
- 3.1.4. Globalization in Design

3.2. Information and Communication Theory
- 3.2.1. Information Theory
- 3.2.2. Information and Redundancy
- 3.2.3. Communication Model

3.3. Aesthetics
- 3.3.1. General Concept and Historical Background
- 3.3.2. Aesthetics of Objects
- 3.3.3. Aesthetics and its Categories
- 3.3.4. Dichotomy between Form and Function
- 3.3.5. New Definitions of the Designer's Roles
- 3.3.6. Taste and Design
- 3.3.7. Symbolic and Emotional Values

3.4. Semiology
- 3.4.1. Semiotics
- 3.4.2. Elements of Communication: Sign, Symbol and Message
- 3.4.3. Visual Language

3.5. Ethical Dilemmas of Design in Contemporary Culture and Society
- 3.5.1. The Axiological Dimension of Design
- 3.5.2. Aesthetics Theory
- 3.5.3. Beauty and Ugliness

3.6. Cultural Anthropology
- 3.6.1. Introduction to Cultural Anthropology
- 3.6.2. Conceptual Framework for Anthropological Analysis
- 3.6.3. Design Culture as an Anthropological Object of Study
- 3.6.4. Ethnographic Practice in the Anthropological Understanding of Design Culture
- 3.6.5. Introduction to Ethnographic Fieldwork

3.7. Sociology and Consumer Culture
- 3.7.1. Sociology of Culture
- 3.7.2. The Circuitry and Dynamics of Culture in Technologically Advanced Societies
- 3.7.3. Design Scenarios in Today's Consumer Culture
- 3.7.4. Design Consumption

3.8. Technology and Design
- 3.8.1. Technological Determinism
- 3.8.2. Building Social Imaginaries
- 3.8.3. Social Change and Technology

3.9. Ethics, Design and Consumption
- 3.9.1. Consumer Ethics
- 3.9.2. Professional Ethics in Design
- 3.9.3. Design and Ethics
- 3.9.4. Designer's Ethics Code

3.10. Research and Experimentation Methods Specific to the Subject Matter
- 3.10.1. Research in Design
- 3.10.2. Research Methodology

Module 4. Circular Economy

4.1. Circular Economy Tendency
- 4.1.1. Origin of Circular Economy
- 4.1.2. Circular Economy Definition
- 4.1.3. Circular Economy Necessity
- 4.1.4. Circular Economy as a Strategy

4.2. Circular Economy Features
- 4.2.1. Principle 1. Preserve and Improve
- 4.2.2. Second Principle: Optimize
- 4.2.3. Third Principle: Promote
- 4.2.4. Key Features

4.3. Circular Economy Benefits
- 4.3.1. Economic Advantages
- 4.3.2. Social Benefits
- 4.3.3. Business Benefits
- 4.3.4. Environmental Benefits

4.4. Circular Economy Legislation
- 4.4.1. Regulations
- 4.4.2. European Directives

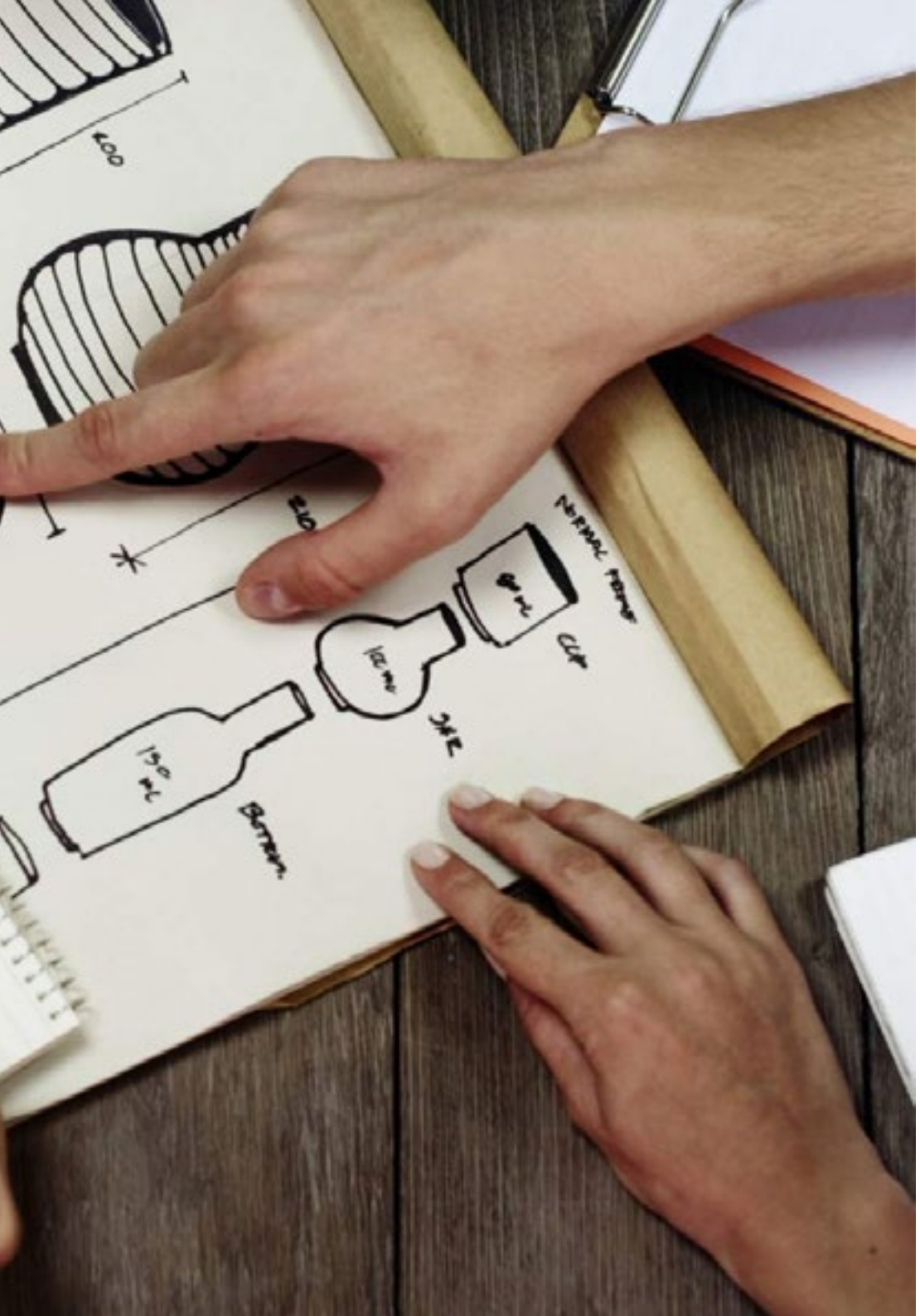
4.5. Life Cycle Analysis
- 4.5.1. Life Cycle Analysis Scope (LCA)
- 4.5.2. Stages
- 4.5.3. Reference Standards
- 4.5.4. Methodology
- 4.5.5. Tools

4.6. Carbon Footprint Calculation
- 4.6.1. Carbon Footprint
- 4.6.2. Types of Scope
- 4.6.3. Methodology
- 4.6.4. Tools
- 4.6.5. Carbon Footprint Calculation

4.7. CO2 Emission Reduction Plans
- 4.7.1. Improvement Plans. Supplies
- 4.7.2. Improvement Plans. Demand
- 4.7.3. Improvement Plans. Facilities
- 4.7.4. Improvement Plans. Equipment
- 4.7.5. Emissions Offsets

4.8. Carbon Footprint Records
- 4.8.1. Carbon Footprint Records
- 4.8.2. Requirements Prior to Registration
- 4.8.3. Documentation
- 4.8.4. Registration Request

4.9. Good Circular Practices
- 4.9.1. Methodology BIM
- 4.9.2. Selecting Material and Equipment
- 4.9.3. Maintenance
- 4.9.4. Waste Management
- 4.9.5. Reusing Material



Module 5. Renewable Energies and Their Current Context

5.1. Renewable Energies
- 5.1.1. Fundamental Principles
- 5.1.2. Conventional Energy vs. Renewable Energy
- 5.1.3. Advantages and Disadvantages of Renewable Energy

5.2. International Environment of Renewable Energy
- 5.2.1. Fundamentals of Climate Change and Energy Sustainability. Renewable Energies vs. Non-Renewable Energies
- 5.2.2. Decarbonization of the World Economy. From the Kyoto Protocol to the Paris Agreement in 2015 and the 2019 Madrid Climate Summit
- 5.2.3. Renewable Energies in the Global Energy Context

5.3. Energy and International Sustainable Development
- 5.3.1. Carbon Markets
- 5.3.2. Clean Energy Certificates
- 5.3.3. Energy vs. Sustainability

5.4. General Regulatory Framework
- 5.4.1. International Energy Regulation and Directives
- 5.4.2. Auctions in the Renewable Electricity Sector

5.5. Electricity Markets
- 5.5.1. Operation of the System with Renewable Energy
- 5.5.2. Renewable Energy Regulation
- 5.5.3. Participation of Renewable Energy in Electricity Markets
- 5.5.4. Operators in the Electricity Market

5.6. Electricity System Structure
- 5.6.1. Electricity Generation
- 5.6.2. Electricity Transmission
- 5.6.3. Market Distribution and Operation
- 5.6.4. Commercialization

5.7. Distributed Generation
- 5.7.1. Concentrated Generation vs. Distributed Generation
- 5.7.2. Self-Consumption
- 5.7.3. Generation Contracts

5.8. Emissions
- 5.8.1. Energy Measurement
- 5.8.2. Greenhouse Gases in Energy Generation and Use
- 5.8.3. Emission Evaluation by Type of Energy Generation

5.9. Energy Storage
- 5.9.1. Types of Batteries
- 5.9.2. Advantages and Disadvantages of Batteries
- 5.9.3. Other Energy Storage Technologies

5.10. Main Technologies
- 5.10.1. Energies of the Future
- 5.10.2. New Applications
- 5.10.3. Future Energy Scenarios and Models

Module 6. Technical Modeling in Rhino

6.1. Rhino Modeling
- 6.1.1. Rhino Interface
- 6.1.2. Types of Objects
- 6.1.3. Navigating the Model

6.2. Fundamental Notions
- 6.2.1. Editing with Gumball
- 6.2.2. *Viewports*
- 6.2.3. Modeling Support

6.3. Precision Modeling
- 6.3.1. Input by Coordinates
- 6.3.2. Distance and Angle Restriction Input
- 6.3.3. Object Restriction

6.4. Command Analysis
- 6.4.1. Additional Modeling Support
- 6.4.2. *SmartTrack*
- 6.4.3. Construction Planes

6.5. Lines and Polylines
- 6.5.1. Circles
- 6.5.2. Freeform Lines
- 6.5.3. Helix and Spiral

6.6. Geometry Editing
- 6.6.1. Fillet and Chamfer
- 6.6.2. Mixture of Curves
- 6.6.3. *Loft*

6.7. Transformations I
- 6.7.1. Move – Rotate – Scale
- 6.7.2. Join – Trim – Extend
- 6.7.3. Separate – Offset – Arrays

6.8. Creating Shapes
- 6.8.1. Deformable Shapes
- 6.8.2. Modeling With Solids
- 6.8.3. Transformation of Solids

6.9. Creating Surfaces
- 6.9.1. Simple Surfaces
- 6.9.2. Extrusion, Lofting, and Surface Revolution
- 6.9.3. Surface Sweeping

6.10. Organization
- 6.10.1. Layers
- 6.10.2. Groups
- 6.10.3. Blocks

Module 7. Entrepreneurship in the Creative Industries

7.1. The Entrepreneurial Project
- 7.1.1. Entrepreneurship, Types and Life Cycle
- 7.1.2. Entrepreneur Profile
- 7.1.3. Topics of Interest for Entrepreneurship

7.2. Personal Leadership
- 7.2.1. Self-Knowledge
- 7.2.2. Entrepreneurial Skills
- 7.2.3. Development of Entrepreneurial Leadership Skills and Abilities

7.3. Identification of Innovative and Entrepreneurial Opportunities
- 7.3.1. Analysis of Megatrends and Competitive Forces
- 7.3.2. Consumer Behavior and Demand Estimation
- 7.3.3. Evaluation of Business Opportunities

7.4. Business Idea Generation in the Creative Industry
- 7.4.1. Tools for the Generation of Ideas: Brainstorming, Mind Maps, Drawstorming, etc.
- 7.4.2. Value Proposition Design: Canvas, 5W
- 7.4.3. Development of the Value Proposition

7.5. Prototyping and Validation
- 7.5.1. Prototype Development
- 7.5.2. Validation
- 7.5.3. Prototyping Adjustments

7.6. Business Model Design
- 7.6.1. The Business Model
- 7.6.2. Methodologies for the Creation of Business Models
- 7.6.3. Business Model Design for Proposed Idea

7.7. Team Leadership
- 7.7.1. Team Profiles according to Temperaments and Personality
- 7.7.2. Team Leadership Skills
- 7.7.3. Teamwork Methods

7.8. Cultural Markets
- 7.8.1. Nature of Cultural Markets
- 7.8.2. Types of Cultural Markets
- 7.8.3. Identification of Local Cultural Markets

7.9. Marketing Plan and Personal Branding
- 7.9.1. Projection of the Personal and Entrepreneurial Project
- 7.9.2. Short- and Medium-Term Strategic Plan
- 7.9.3. Variables for Measuring Success

7.10. Sales Pitch
- 7.10.1. Project Presentation for Investors
- 7.10.2. Development of Attractive Presentations
- 7.10.3. Development of Effective Communication Skills

Module 8. Sustainable Design

8.1. Environmental Status
- 8.1.1. Environmental Context
- 8.1.2. Environmental Perception
- 8.1.3. Consumption and Consumerism

8.2. Sustainable Production
- 8.2.1. Ecological Footprint
- 8.2.2. Biocapacity
- 8.2.3. Ecological Deficit

8.3. Sustainability and Innovation
- 8.3.1. Production Processes
- 8.3.2. Process Management
- 8.3.3. Implementation of the Production
- 8.3.4. Productivity by Design

8.4. Introduction. Ecodesign
- 8.4.1. Sustainable Development
- 8.4.2. Industrial Ecology
- 8.4.3. Eco-Efficiency
- 8.4.4. Introduction to the Concept of Ecodesign

8.5. Ecodesign Methodologies
- 8.5.1. Methodological Proposals for the Implementation of Ecodesign
- 8.5.2. Project Preparation
- 8.5.3. Environmental Aspects

8.6. Life Cycle Assessment (LCA)
- 8.6.1. Functional Unit
- 8.6.2. Inventory
- 8.6.3. Impact Ratio
- 8.6.4. Generation of Conclusions and Strategy

8.7. Improvement Ideas (Ecodesign Strategies)
- 8.7.1. Reduce Impact
- 8.7.2. Increase Functional Unit
- 8.7.3. Positive Impact

8.8. Circular Economy
- 8.8.1. Definition
- 8.8.2. Evolution
- 8.8.3. Success Stories

8.9. *Cradle to Cradle*
- 8.9.1. Definition
- 8.9.2. Evolution
- 8.9.3. Success Stories

8.10. Environmental Regulations
- 8.10.1. Why Do We Need a Regulation?
- 8.10.2. Who Makes the Regulations?
- 8.10.3. European Union Environmental Framework
- 8.10.4. Regulations in the Development Process

Module 9. Materials for Design

9.1. Material as Inspiration
- 9.1.1. Search for Materials
- 9.1.2. Classification
- 9.1.3. The Material and Its Context

9.2. Materials for Design
- 9.2.1. Common Uses
- 9.2.2. Contraindications
- 9.2.3. Combination of Materials

9.3. Art + Innovation
- 9.3.1. Materials in Art
- 9.3.2. New Materials
- 9.3.3. Composite Materials

9.4. Physical
- 9.4.1. Basic Concepts
- 9.4.2. Composition of Materials
- 9.4.3. Mechanical Testing

9.5. Technology
- 9.5.1. Intelligent Materials
- 9.5.2. Dynamic Materials
- 9.5.3. The Future in Materials

9.6. Sustainability
- 9.6.1. Procurement
- 9.6.2. Usage
- 9.6.3. Final Management

9.7. Biomimicry
- 9.7.1. Reflection
- 9.7.2. Transparency
- 9.7.3. Other Techniques

9.8. Innovation
- 9.8.1. Success Stories
- 9.8.2. Materials Research
- 9.8.3. Sources of Research

9.9. Risk Prevention
- 9.9.1. Safety Factor
- 9.9.2. Fire
- 9.9.3. Breakage
- 9.9.4. Other Risks

Module 10. Ethics and Business

10.1. Methodology
- 10.1.1. Document Sources and Research Techniques
- 10.1.2. Bibliographic Quotes and Research Ethics
- 10.1.3. Methodological Strategies and Academic Writing

10.2. The Field of Morality: Ethics and Morals
- 10.2.1. Ethics and Morality
- 10.2.2. Ethical Material and Formal Ethics
- 10.2.3. Rationality and Morality
- 10.2.4. Virtue, Goodness and Justice

10.3. Applied Ethics
- 10.3.1. Public Dimension of Applied Ethics
- 10.3.2. Ethical Codes and Responsibilities
- 10.3.3. Autonomy and Self-Regulation

10.4. Deontological Ethics Applied to Design
- 10.4.1. Ethical Requirements and Principles of Design Practice
- 10.4.2. Ethical Decision Making
- 10.4.3. Relationships and Ethical Professional Skills

10.5. Corporate Social Responsibility
- 10.5.1. Ethical Sense of the Company
- 10.5.2. Globalization and Multiculturalism
- 10.5.3. Non-Discrimination
- 10.5.4. Sustainability and the Environment

10.6. Introduction to Commercial Law
- 10.6.1. Concept of Commercial Law
- 10.6.2. Economic Activity and Commercial Law
- 10.6.3. Significance of the Theory of Sources of Commercial Law

10.7. The Company
- 10.7.1. Economic Concept of the Company and the Entrepreneur
- 10.7.2. Legal Framework of the Company

10.8. The Entrepreneur
- 10.8.1. Concept and Key Characteristics of the Entrepreneur
- 10.8.2. Partnerships and Corporations (Public Limited and Private Limited Companies)
- 10.8.3. Acquisition of Entrepreneurial Status
- 10.8.4. Business Liability

10.9. Competency Regulation
- 10.9.1. Competition Protection
- 10.9.2. Unfair or Illicit Competition
- 10.9.3. Competitive Strategy

10.10. Intellectual and Industrial Property Law
- 10.10.1. Intellectual Property
- 10.10.2. Industrial Property
- 10.10.3. Forms of Protection for Creations and Inventions

You will master advanced design tools and develop projects where creativity and business ethics converge"

04

Teaching Objectives

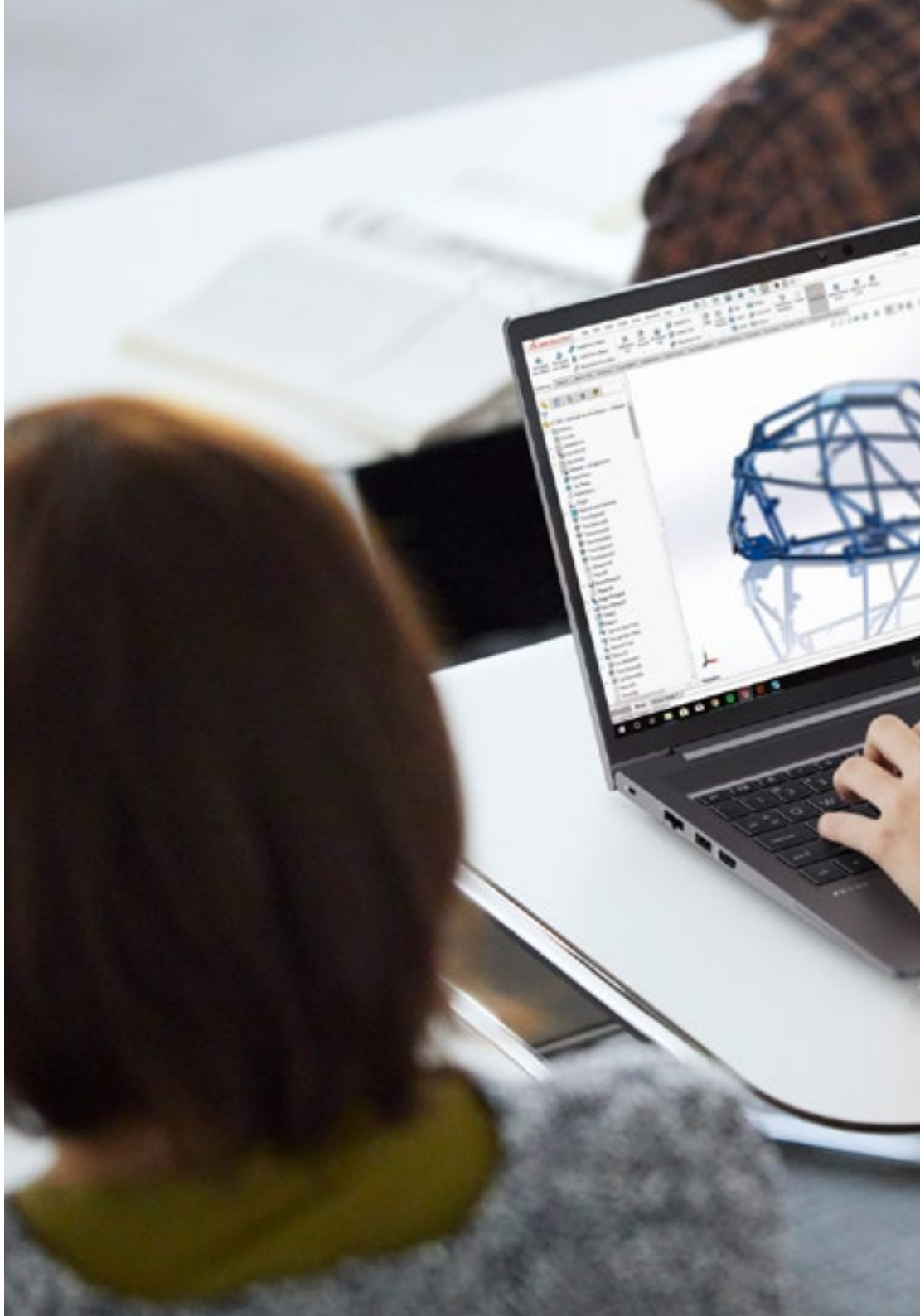
This Professional Master's Degree in Sustainable Product Design has been designed to help Design professionals develop a critical, ethical, and functional perspective on sustainability as applied to product development. Through a practical and strategic approach, graduates will integrate environmental criteria into their projects, selecting responsible materials, optimizing processes, and reducing the ecological impact of their creations. They will also strengthen key competencies in creativity, digital modeling, systems thinking, and life cycle analysis. All of this will enable them to lead innovative proposals across different productive sectors.

You will become a change agent, capable of rethinking materials, processes, and business models with a regenerative approach"

General Objectives

- Understand the fundamental principles of design and their application in sustainable contexts
- Develop creative skills aimed at generating responsible and innovative solutions
- Analyze the sociocultural impact of design through a critical and contextual perspective
- Integrate concepts of circular economy into ideation, development, and production processes
- Evaluate the role of renewable energies within the context of contemporary design
- Master advanced digital tools for technical modeling and 3D prototyping
- Foster an entrepreneurial vision within the creative industries with a sustainable focus
- Design sustainable products considering functionality, environmental impact, and life cycle

You will acquire the skills to redesign processes, materials, and products from a sustainable perspective that is not only enduring but transformative"



Specific Objectives

Module 1. Design Fundamentals

- Identify the essential elements of visual language and their application in functional products
- Understand methodological processes in design from a project-based perspective

Module 2. Fundamentals of Creativity

- Stimulate divergent thinking to generate original and innovative proposals
- Apply creative techniques to solve design problems efficiently and sustainably

Module 3. Theory and Culture of Design

- Analyze the main historical movements and their influence on current design practice
- Assess the cultural and social impact of products in different geographic contexts

Module 4. Circular Economy

- Integrate circular economy principles into product planning and development
- Design strategies to extend the useful life cycle of objects while reducing their ecological footprint

Module 5. Renewable Energies and Their Current Context

- Understand the functioning and benefits of the main sources of renewable energy
- Evaluate the feasibility of incorporating clean energies into production processes related to design

Module 6. Technical Modeling in Rhino

- Develop skills in using Rhino for three-dimensional product modeling
- Optimize geometries and structures through digital tools for sustainable manufacturing

Module 7. Entrepreneurship in the Creative Industries

- Design business models focused on sustainable and differentiated products
- Identify market opportunities within the creative sector with an entrepreneurial vision

Module 8. Sustainable Design

- Apply environmental, ethical, and functional criteria in all phases of design
- Evaluate the impact of design decisions on the environment and society

Module 9. Materials for Design

- Select sustainable materials suitable for the development of innovative products
- Compare technical and environmental properties of different materials according to their intended use

Module 10. Ethics and Business

- Analyze common ethical dilemmas in the field of design and the creative industries
- Promote corporate social responsibility in the management and commercialization of products

05

Career Opportunities

This Professional Master's Degree in Sustainable Product Design will enable graduates to lead innovative projects within key sectors such as industrial design, eco-design, environmental consulting, and the development of new materials. Their creative and technical profile will open doors to companies committed to sustainability, design studios, green startups, and institutions that promote the circular economy. Thanks to their specialized competencies, graduates will be able to manage responsible design processes, advise on the selection of sustainable materials, and create products that balance functionality, aesthetics, and environmental impact.

You will position yourself as a key professional in companies seeking to differentiate themselves through sustainability and responsible design"

Graduate Profile

Graduates of this program will stand out for their ability to integrate creative thinking with an ecological, ethical, and business-oriented approach. Their capacity to develop sustainable, functional, and culturally relevant products will establish them as benchmarks in the field of conscious design. They will be able to apply advanced digital tools, select innovative materials, and participate in collaborative processes with environmental responsibility. In addition, they will demonstrate a solid understanding of circular economy and clean energies, along with a critical perspective on the global challenges facing the sector.

You will stand out with a profile capable of merging aesthetic sensitivity with responsible solutions, designing products that address real challenges without compromising environmental commitment.

- **Sustainable Product Development:** Create functional, aesthetic, and environmentally respectful solutions.
- **Integration of Circular Economy:** Apply circularity principles across all stages of the product life cycle.
- **Selection of Ecological Materials:** Master the choice of sustainable materials based on technical, economic, and environmental criteria.
- **Advanced Digital Modeling:** Technically manage tools such as Rhino to design and visualize products with professional precision.

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

1. **Sustainable Product Designer:** Responsible for developing products that integrate ecological criteria throughout their life cycle, from material selection to environmental impact.
2. **Eco-Design Project Coordinator:** In charge of planning, executing, and supervising sustainable design initiatives within companies or institutions.
3. **Reusable Materials Designer:** Specializes in researching and applying recyclable and sustainable materials in the design of new products.
4. **Consultant in Circular Design Innovation:** Advises companies on implementing circular economy strategies applied to product development.
5. **Sustainable Packaging Designer:** Designs functional packaging with low environmental impact, optimizing its reuse or recycling.
6. **Sustainability Manager in Industrial Design:** Works with design teams to incorporate environmental criteria into the planning and execution of new products.
7. **Product Designer in Triple-Impact Companies:** Develops solutions that balance social, economic, and environmental benefits.
8. **Technical Designer in Material Efficiency Projects:** Optimizes the use of materials and production processes to minimize waste and improve energy efficiency.
9. **Design Consultant for Environmental Certifications:** Collaborates in processes for obtaining certifications such as Cradle to Cradle or ISO 14001, ensuring compliance with sustainability standards.
10. **Designer in Applied Research Teams for Sustainable Development:** Manages multidisciplinary teams exploring new design solutions that address current ecological challenges.

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.

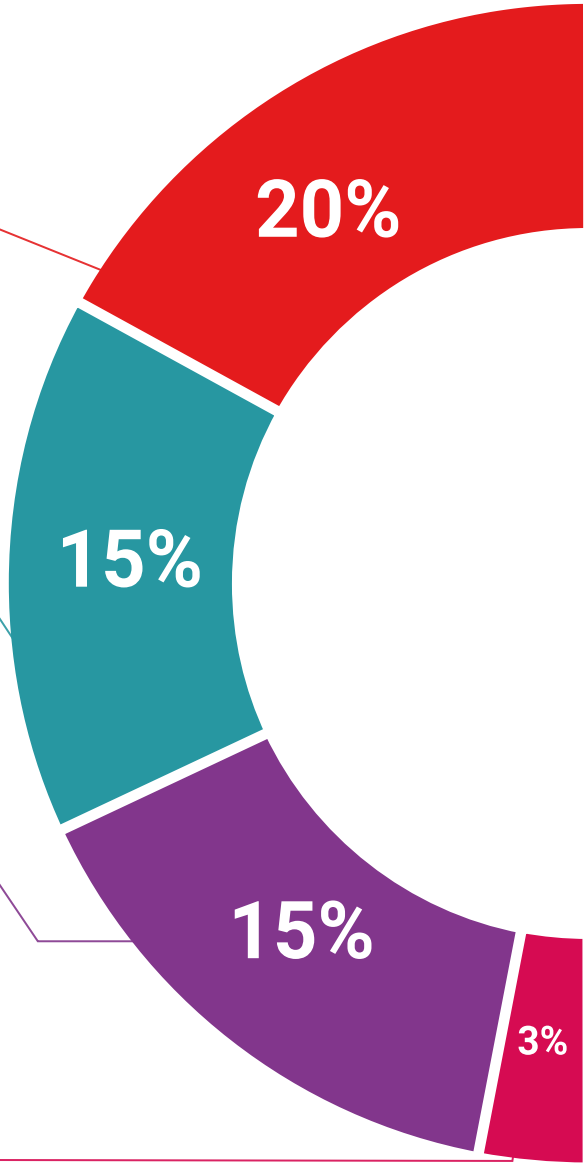
Interactive Summaries

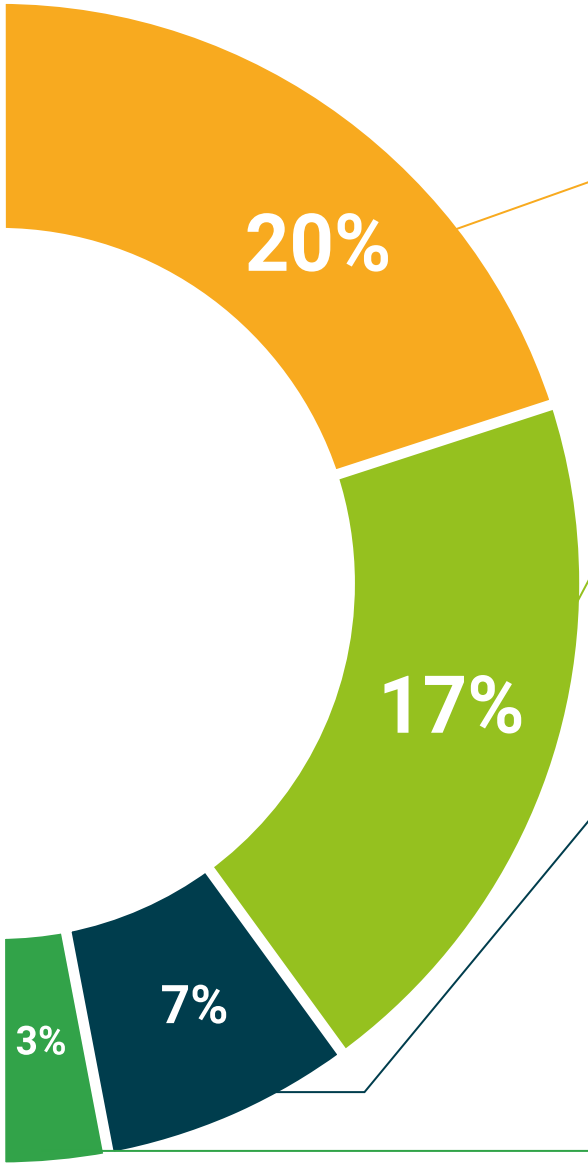
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

Certificate

The Professional Master's Degree in Sustainable Product Design guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the Professional Master's Degree 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 in Sustainable Product Design** endorsed by **TECH Global University**, the world's largest online university.

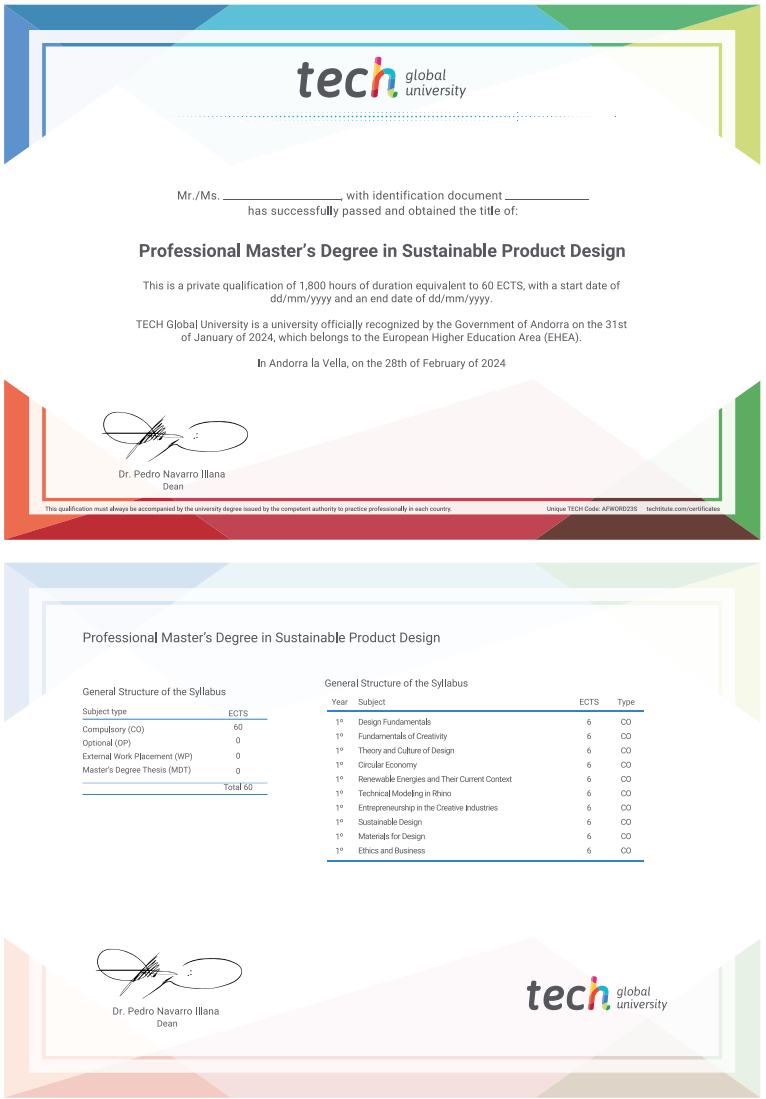
TECH Global University is an official European University publicly recognized by the Government of Andorra (***official bulletin***). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international 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.

TECH is a member of **The Design Society (DS)**, the largest community of leading experts in design science. This membership strengthens its presence in international networks dedicated to the theoretical and practical evolution of design.

Accreditation/Membership

Title: **Professional Master's Degree in Sustainable Product Design**
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 Sustainable Product Design

This is a private qualification of 1,800 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

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWOR023S techtitute.com/certificates

Professional Master's Degree in Sustainable Product Design

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	Design Fundamentals	6	CO
1º	Fundamentals of Creativity	6	CO
1º	Theory and Culture of Design	6	CO
1º	Circular Economy	6	CO
1º	Renewable Energies and Their Current Context	6	CO
1º	Technical Modeling in Rhino	6	CO
1º	Entrepreneurship in the Creative Industries	6	CO
1º	Sustainable Design	6	CO
1º	Materials for Design	6	CO
1º	Ethics and Business	6	CO

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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
Sustainable Product Design

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

Professional Master's Degree

Sustainable Product Design

Accreditation/Membership

the Design Society
a worldwide community

tech global university