Executive Master's Degree

Lean Manufacturing

MLM

tech technological university

tech technological university

Executive Master's Degree
Lean Manufacturing

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**
- Target Group: **University Graduates who have previously completed any of the degrees in the fields of Social and Legal Sciences, Administrative and Business Sciences**

Website: **www.techtitute.com/us/school-of-business/professional-master-degree/master-lean-manufacturing**

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01

Welcome

In order to maximize their resources and profits, companies require efficient work systems that allow them to produce at the lowest possible cost. With this premise arises Lean Manufacturing, a management philosophy that breaks with many of the existing paradigms, generating a great impact on the organization and the achievement of its goals. For this reason, TECH has made a firm commitment to this program, which provides professionals with the tools they need to implement the Lean strategy with a total guarantee of success in any industry. An unparalleled academic option for its 100% online teaching format, for its flexibility and for having the best didactic material in the current university panorama.

Executive Master's Degree in Lean Manufacturing.
TECH Technological University

Improve the efficiency and quality of your company's production processes thanks to this Executive Master's Degree in Lean Manufacturing"

02

Why Study at TECH?

TECH is the world's largest 100% online business school. It is an elite business school, with a model based on the highest academic standards. A world-class center for intensive managerial skills education.

TECH is a university at the forefront of technology, and puts all its resources at the student's disposal to help them achieve entrepreneurial success"

At TECH Technological University

Innovation

The university offers an online learning model that balances the latest educational technology with the most rigorous teaching methods. A unique method with the highest international recognition that will provide students with the keys to develop in a rapidly-evolving world, where innovation must be every entrepreneur's focus.

"Microsoft Europe Success Story", for integrating the innovative, interactive multi-video system.

The Highest Standards

Admissions criteria at TECH are not economic. Students don't need to make a large investment to study at this university. However, in order to obtain a qualification from TECH, the student's intelligence and ability will be tested to their limits. The institution's academic standards are exceptionally high...

95% | **of TECH students successfully complete their studies**

Networking

Professionals from countries all over the world attend TECH, allowing students to establish a large network of contacts that may prove useful to them in the future.

+100000
executives prepared each year

+200
different nationalities

Empowerment

Students will grow hand in hand with the best companies and highly regarded and influential professionals. TECH has developed strategic partnerships and a valuable network of contacts with major economic players in 7 continents.

+500 | **collaborative agreements with leading companies**

Talent

This program is a unique initiative to allow students to showcase their talent in the business world. An opportunity that will allow them to voice their concerns and share their business vision.

After completing this program, TECH helps students show the world their talent.

Multicultural Context

While studying at TECH, students will enjoy a unique experience. Study in a multicultural context. In a program with a global vision, through which students can learn about the operating methods in different parts of the world, and gather the latest information that best adapts to their business idea.

TECH students represent more than 200 different nationalities.

Learn with the best

In the classroom, TECH's teaching staff discuss how they have achieved success in their companies, working in a real, lively, and dynamic context. Teachers who are fully committed to offering a quality specialization that will allow students to advance in their career and stand out in the business world.

Teachers representing 20 different nationalities.

At TECH, you will have access to the most rigorous and up-to-date case analyses in academia"

TECH strives for excellence and, to this end, boasts a series of characteristics that make this university unique:

Analysis

TECH explores the student's critical side, their ability to question things, their problem-solving skills, as well as their interpersonal skills.

Academic Excellence

TECH offers students the best online learning methodology. The university combines the Relearning method (postgraduate learning methodology with the best international valuation) with the Case Study. Tradition and vanguard in a difficult balance, and in the context of the most demanding educational itinerary.

Economy of Scale

TECH is the world's largest online university. It currently boasts a portfolio of more than 10,000 university postgraduate programs. And in today's new economy, **volume + technology = a ground-breaking price**. This way, TECH ensures that studying is not as expensive for students as it would be at another university.

03

Why Our Program?

Studying this TECH program means increasing the chances of achieving professional success in senior business management.

It is a challenge that demands effort and dedication, but it opens the door to a promising future. Students will learn from the best teaching staff and with the most flexible and innovative educational methodology.

We have highly qualified teachers and the most complete syllabus on the market, which allows us to offer you education of the highest academic level"

This program will provide you with a multitude of professional and personal advantages, among which we highlight the following:

01

A Strong Boost to Your Career

By studying at TECH, students will be able to take control of their future and develop their full potential. By completing this program, students will acquire the skills required to make a positive change in their career in a short period of time.

70% of students achieve positive career development in less than 2 years.

02

Develop a strategic and global vision of the company

TECH offers an in-depth overview of general management to understand how each decision affects each of the company's different functional fields.

Our global vision of companies will improve your strategic vision.

03

Consolidate the student's senior management skills

Studying at TECH means opening the doors to a wide range of professional opportunities for students to position themselves as senior executives, with a broad vision of the international environment.

You will work on more than 100 real senior management cases.

04

You will take on new responsibilities

The program will cover the latest trends, advances and strategies, so that students can carry out their professional work in a changing environment.

45% of graduates are promoted internally.

05

Access to a powerful network of contacts

TECH connects its students to maximize opportunities. Students with the same concerns and desire to grow. Therefore, partnerships, customers or suppliers can be shared.

You will find a network of contacts that will be instrumental for professional development.

06

Thoroughly develop business projects.

Students will acquire a deep strategic vision that will help them develop their own project, taking into account the different fields in companies.

20% of our students develop their own business idea.

07

Improve *soft skills* and management skills

TECH helps students apply and develop the knowledge they have acquired, while improving their interpersonal skills in order to become leaders who make a difference.

Improve your communication and leadership skills and enhance your career.

08

You will be part of an exclusive community

Students will be part of a community of elite executives, large companies, renowned institutions, and qualified teachers from the most prestigious universities in the world: the TECH Technological University community.

We give you the opportunity to study with a team of world-renowned teachers.

04

Objectives

This program has been designed to provide the most comprehensive and up-to-date information on Lean Manufacturing principles over a 12-month period. In this way, the graduate will be able to integrate in his or her organization the most effective continuous improvement processes, eliminate waste, improve quality and productivity with process optimization. All this, in addition, aided by the theoretical-practical approach provided by the syllabus of this university program.

Successfully lead really productive projects thanks to the knowledge that this university program will give you in only 12 months"

TECH makes the goals of their students their own goals too. Working together to achieve them.

The **Executive Master's Degree in Lean Manufacturing** will train the student to:

01 Analyze and be able to distinguish the lean philosophy from other approaches to operations improvement.

02 Identify any waste in the company's processes.

03 Distinguish the different types of industrial processes in which it is possible to act

04 Differentiate the different types of flow in an operational context.

05 Identify the types of demand that our industry must satisfy.

06 Develop the tools and techniques used in Lean Manufacturing quality management.

07 Analyze statistical methods of process control and root cause analysis.

08 Establish the keys to implement and sustain a Kaizen culture in the company.

09 Evaluate organizational, operational and management systems, based on Operational Excellence and High Performance dynamics: LEAN

10 Identify production equipment efficiency problems.

11 Analyze the keys to implement the Lean Manufacturing philosophy in a company.

12 Delve into the best practices for the successful implementation of Lean Manufacturing in an organization.

05

Skills

Throughout this learning process, the professional will have the opportunity to increase his or her leadership to implement the most effective Lean Manufacturing strategies in a company. This will be possible thanks to the numerous didactic resources, including case studies, which will allow you to integrate the methodologies used to improve process efficiency and productivity. Likewise, thanks to the specialized teaching staff, the graduate will be able to resolve any doubts he/she may have about the content of this university program.

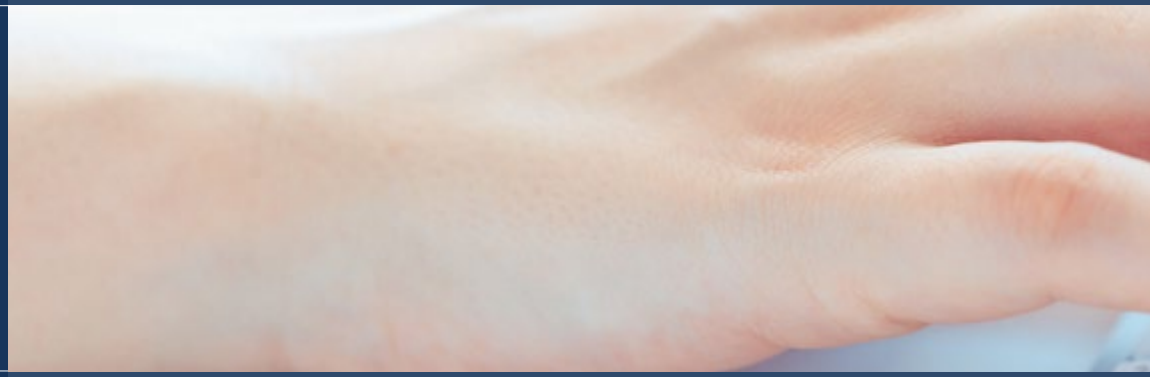
Enhance your leadership skills and implement the principles of Lean Manufacturing in your company"

01 Develop an improvement plan through the analysis of the value stream map.

02 Evaluate and diagnose the process through the current VSM.

03 Applying the principle of flow creation for materials, machines, information and people

04 Integrate other lean tools into the new pull system.



05 Integrate Industry 4.0 or fourth industrial revolution technologies such as IoT or Blockchain into quality management in Lean Manufacturing to make better decisions and ensure compliance with regulations.

06 Apply tools such as Standard Work, "Jidoka", "Andon", "PokaYoke", and "Visual Management" in quality management in Lean Manufacturing.

07 Apply the PDCA/PDSA cycle and the 6M method to identify improvement opportunities and solve problems.

08 Evaluate the structure and advantages of Work Cells and their impact on efficiency and continuous improvement.

09 Measure Overall Equipment Effectiveness (OEE) of equipment in any company

10 Develop skills to identify, select and implement the implementation team.

06

Structure and Content

This Executive Master's Degree in Lean Manufacturing has been designed to provide students with 1,500 hours of first-level education in this field. A learning program of great practical and direct use in their organizations so that they can improve at the same time as the students who take this program. All this, in addition, with a pedagogical approach in line with the current times and the real needs of professionals in the industrial and business sector.

The video clips will support this process of updating knowledge on project management, leadership and problem solving"

Syllabus

The syllabus of this academic option has been designed to provide students with a rigorous and exhaustive knowledge of the Lean Manufacturing methodology and its integration in organizations.

A teaching that will lead the graduate throughout this academic itinerary to carry out a deep analysis of this management philosophy, its principles, the implementation of strategies to achieve the proposed results. All this, in addition, complemented by video summaries of each topic, videos in detail, specialized readings and case studies easily accessible through a digital device with internet connection and at any time of the day.

In this way, you will learn in a much more dynamic way about the difference between processes and flow, value stream mapping, flow generation, quality management and continuous improvement or Total Productive Maintenance TPM.

Likewise, with the Relearning system, based on the continuous reiteration of key concepts, the professional will not have to invest long hours of study and memorization, since this method focuses on the most important concepts, thus making it much easier to consolidate them.

This is a great opportunity for students seeking a complete and intensive learning experience through a flexible academic option that adapts to the daily schedule of the graduate and his or her motivations for professional progression in a business environment that requires qualified personnel with a high level of management knowledge.

This Executive Master's Degree takes place over 12 months and is divided into 10 modules:

Module 1	Lean Manufacturing Principles and Context
Module 2	Value and Waste (Duration): Identification and elimination of non-value-adding activities
Module 3	Value Stream Mapping: Analysis and Mapping of the flow of materials, information and activities in a process. Flow optimization
Module 4	Continuous Flow: Process design for smooth and continuous workflows
Module 5	Pull system: implementation of a demand-driven production system to control production and minimize inventory
Module 6	Lean Quality Management
Module 7	Continuous improvement, Kaizen
Module 8	Evolution of production organization in a Lean system
Module 9	TPM (Total Productive Maintenance), OEE (Overall Equipment Effectiveness)
Module 10	Lean implementation: Strategies and best practices for implementing Lean Manufacturing in an organization.

Where, When and How is it Taught?

TECH offers the possibility of doing this Executive Master's Degree in Lean Manufacturing completely online. Throughout the 12 months of the educational program, you will be able to access all the contents of this program at any time, allowing you to self-manage your study time.

A unique, key, and decisive educational experience to boost your professional development and make the definitive leap.

Module 1. Lean Manufacturing Principles and Context

1.1. Lean Manufacturing
1.1.1. Lean Manufacturing. Origin
1.1.2. Lean Manufacturing Principles
1.1.3. Benefits of Lean Manufacturing Methodology

1.2. Benefits of Lean Manufacturing Methodology Production philosophy at the Toyota plant
1.2.1. Toyota Production System (TPS)
1.2.2. Key principles of the TPS
1.2.3. The Pillars of TPS

1.3. Precursors of Lean Manufacturing
1.3.1. Kiichiro Toyoda, Taiichi Ohno and Shigeo Shingo
1.3.2. Edward Deming
1.3.3. James Womack, Daniel Jones and Michael George

1.4. Lean Concept and its Application in Production
1.4.1. Value Identification and Value Stream Mapping
1.4.2. Creation of continuous flow and establishment of Pull Production
1.4.3. Pursuit of Perfection

1.5. Lean Manufacturing y Gestión de la Calidad Total
1.5.1. Lean Manufacturing y Total Quality Management
1.5.2. Commonalities between Lean Manufacturing and Total Quality Management
1.5.3. Differences between Lean Manufacturing and Total Quality Management

1.6. Lean Manufacturing y 6 Sigma
1.6.1. Lean Manufacturing y 6 Sigma
1.6.2. Commonalities between Lean Manufacturing and 6 Sigma
1.6.3. Differences between Lean Manufacturing and 6 Sigma

1.7. Lean Manufacturing and Process Reengineering
1.7.1. Lean Manufacturing and Process Reengineering
1.7.2. Commonalities between Lean Manufacturing and process reengineering
1.7.3. Differences between Lean Manufacturing and Process Reengineering

1.8. Lean Manufacturing y Teoría de las limitaciones (TOC)
1.8.1. Lean Manufacturing y Teoría de las limitaciones (TOC)
1.8.2. Commonalities between Lean Manufacturing and Theory of Constraints (TOC)
1.8.3. Differences between Lean Manufacturing Theory of Constraints (TOC)

1.9. Lean Manufacturing. Integration with Industry 4.0
1.9.1. Evolution of Lean Manufacturing in the Industry 4.0 era.
1.9.2. Integration of Lean Manufacturing with Industry 4.0
1.9.3. Future of Lean Manufacturing in the era of Industry 4.0

1.10. Applications of the Lean philosophy in other areas: Lean Logistics, Lean Office, Lean Service
1.10.1. Lean Logistics, Lean Office, Lean Service. Applications
1.10.2. Lean Logistics applications
1.10.3. Lean Office applications
1.10.4. Lean Service

Module 2. Value and Waste (Duration): Identification and elimination of non-value-added activities

2.1. Concept of "Value" from the Customer's Perspective
- 2.1.1. Satisfaction of customer needs
- 2.1.2. Perceived value vs. Tangible value
- 2.1.3. Value for money

2.2. Quality Function Deployment
- 2.2.1. Quality Function Deployment. Concept and Definition
- 2.2.2. Techniques for identifying customer needs
- 2.2.3. Quality deployment

2.3. Mura in Lean Manufacturing
- 2.3.1. Demand Variability
- 2.3.2. Production Variability
- 2.3.3. Supply Variability

2.4. Muri in Lean Manufacturing
- 2.4.1. Equipment overload
- 2.4.2. Overloading people
- 2.4.3. System overload

2.5. Mudas related to Manufacturing
- 2.5.1. Overproduction
- 2.5.2. Types and Causes of Overproduction
- 2.5.3. Unnecessary processing

2.6. Quality-related mutations
- 2.6.1. Quality Defects for rework or scrap
- 2.6.2. Causes of Quality Defects
- 2.6.3. Scrap vs. rework

2.7. Transportation related mutations
- 2.7.1. Unnecessary Transportation
- 2.7.2. Causes of Waiting Times
- 2.7.3. Strategies to avoid/minimize waiting times

2.8. Excess Inventory-related debts
- 2.8.1. Excess inventories of PM
- 2.8.2. Excess of in-process inventories
- 2.8.3. Excess inventories of finished product

2.9. Mudas related to the waiting/ social times
- 2.9.1. Types of waiting time
- 2.9.2. Causes of waiting times
- 2.9.3. Strategies to avoid/minimize waiting times

2.10. New Mudas defined
- 2.10.1. Lack of Staff Training
- 2.10.2. Poor utilization of Staff Skills and Abilities
- 2.10.3. Resources dedicated to non-strategic or priority processes

Module 3. Value stream mapping: Analysis and Mapping of the flow of materials, information and activities in a process. Flow optimization

3.1. The Value Stream Map. Value Stream Mapping.(VSM)
3.1.1. Value stream
3.1.2. The value stream map
3.1.3. Selection of a product family

3.2. Connection, Strategy and tactics with the VSM
3.2.1. The Quality Cost Delivery (QCD). The customer is in charge
3.2.2. Hoshin Kanri, from vision to tactics
3.2.3. Visual Management as a mechanism for prioritization and alignment

3.3. Value Stream Map in current status
3.3.1. Value stream mapping
3.3.2. Symbols used in the design of the Value Stream Map
3.3.3. Data Collection

3.4. The timing of a value stream map VSM
3.4.1. Takt Time, the rhythm set by the customer
3.4.2. Cycle Time
3.4.3. Lead Time, the necessary end-to-end time

3.5. The Lean value chain
3.5.1. Problem of overproduction
3.5.2. Characteristics of a Lean value chain
3.5.3. Creation of continuous flow to create Lean processes

3.6. Future State Value Stream Map
3.6.1. Value stream mapping
3.6.2. Symbols used for future design
3.6.3. From the future map to the work plan

3.7. Value chain planning and improvement
3.7.1. Implementation planning
3.7.2. Prioritization of activities
3.7.3. Connecting VSM to strategy

3.8. Value Supply Chain Management
3.8.1. Mapping of the current state of the Supply Chain
3.8.2. Symbols used for its design
3.8.3. Design of the future supply chain

3.9. Value Stream Project Management, the Lean Project
3.9.1. Peculiarities of a Project vs. a Process
3.9.2. The value stream of a project
3.9.3. Analysis of the current state and design of the future

3.10. Yokoten
3.10.1. Yokoten. Fundamentals
3.10.2. The 3 phases of Yokoten
3.10.3. Standard Solution Cycle

Module 4. Continuous flow: Process Design for smooth and continuous workflows

4.1. Continuous Flow
4.1.1. Flow Creation in the Toyota Production System
4.1.2. The Fourteen Principles of the Toyota Way Culture
4.1.3. Total Flow Management, the union of Flow Creation and Pull Flow System

4.2. Processes
4.2.1. Typology of industrial processes
4.2.2. Apartments vs. Processes vs. Flows
4.2.3. Process integration

4.3. Flows
4.3.1. The different types of flows: Materials, Equipment, People and Information
4.3.2. Job-shop vs. Flow-shop
4.3.3. Turbulent flows vs. Linear flows

4.4. Machines, Equipment and Lines
4.4.1. Hardware Reliability as an Essential Element for Flow Creation
4.4.2. Jidoka philosophy as an essential element in Flow Creation
4.4.3. Monument machine vs. Lean Machine

4.5. Materials
4.5.1. Traditional plant layout vs. Lean plant layout
4.5.2. PFEP (Plan-For-Each-Part)
4.5.3. Batch production vs. One-piece-flow (Continuous flow)

4.6. Person
4.6.1. The Internal Customer, concept in a lean environment
4.6.2. The role of a lean manager
4.6.3. The role of a lean operator

4.7. Information
4.7.1. Enterprise Resource Planning System (ERP)
4.7.2. Information systems specific to the industrial environment
4.7.3. Dashboard, as part of the Daily Management System

4.8. Lean Flow System
4.8.1. Muda expulsion in the production process
4.8.2. The Autonomous Cell as a lean paradigm
4.8.3. Lean support tools: 5S, Visual Management, SMED

4.9. Flow Creation application examples
4.9.1. Example of implementation in the automotive sector
4.9.2. Example of application in the metallurgical sector
4.9.3. Example of use in the food sector

4.10. Creation of Flow: Design, Implementation and Improvement of Production Processes. Practical Application
4.10.1. Design for flow creation
4.10.2. Implementation of continuous flow
4.10.3. Improvement of production processes

Module 5. Pull system: implementation of a demand-driven production system to control production and minimize inventory

5.1. Pull System. Fundamentals
5.1.1. Pull Flow System: the fourth principle of Lean Thinking
5.1.2. Push vs. Pull processes
5.1.3. Stability, Flexibility, Synchronization, Concentration

5.2. Demand.
5.2.1. Types of demand
5.2.2. Takt Time, Production Time, Lead Time
5.2.3. Production + Logistics Contract

5.3. Flows
5.3.1. End-to-End: from suppliers to customers
5.3.2. Logistics + Production Connection
5.3.3. Supply routes

5.4. Machines, Equipment and Lines
5.4.1. Logistics train
5.4.2. Containers
5.4.3. Shelving

5.5. Materials
5.5.1. Warehouses
5.5.2. Supermarkets
5.5.3. Line edge

5.6. Person
5.6.1. Pull Flow system managers
5.6.2. Logistics and production operators
5.6.3. The "Mizusumashi" ("*Water spider*")

5.7. Information
5.7.1. Heijunka (Leveling): Leveling box + Logistics box
5.7.2. Kanban
5.7.3. Batch Conformer + Sequencer

5.8. Lean Pull Flow System
5.8.1. Balanced
5.8.2. On-line sequencing
5.8.3. Lean support tools: VSM, OEE, Standard Work, One-point-lesson, Andon

5.9. Examples of Pull Flow System applications
5.9.1. Example of implementation in the automotive sector
5.9.2. Example of application in the metallurgical sector
5.9.3. Example of use in the food sector

5.10. Pull system: Design, Implementation and Improvement of Production Processes. Practical Application
5.10.1. Design of a pull system
5.10.2. Implementation of the pull flow system
5.10.3. Improvement of information in production processes

Module 6. Lean quality management

6.1. Quality Management in Lean Manufacturing
6.1.1. Quality defined as customer satisfaction
6.1.2. Production quality: consistency and conformity
6.1.3. Specifications and quality costs

6.2. Quality measurement: quality indicators
6.2.1. Definition of indicators
6.2.2. Construction of indicators
6.2.3. Examples of a quality scorecard

6.3. Quality systems and lean quality vision
6.3.1. Quality systems and regulations
6.3.2. Compatibility of ISO - TS with Lean Manufacturing
6.3.3. Compatibility of EFQM and Lean Manufacturing

6.4. Concept of "Genchi Genbutsu" (Gemba) and Quality Management. Relevance
6.4.1. Concept of "Genchi Genbutsu" (Gemba)
6.4.2. Application of the concept in practice. Example in the automotive sector
6.4.3. Application of the concept in practice. Example from the capital goods sector

6.5. Standardization and Simplification in quality management using "Standard Work".
6.5.1. Standard Work. Concept and benefits
6.5.2. Application of Standard Work in industry
6.5.3. Example of the application of Standard Work

in a process

6.6. The Jidoka philosophy for early detection of quality problems
6.6.1. Detection of quality problems at source
6.6.2. Production line stoppage
6.6.3. Examples of the application of the Jidoka philosophy in industry

6.7. Andon as a tool for Quality Management
6.7.1. Definition, origin and benefits of Andon
6.7.2. Andon types and examples
6.7.3. Implementation of the Andon system

6.8. "Poka-Yoke. Quality Technology
6.8.1. PokaYoke. Types and causes of errors that prevent
6.8.2. Poka-yoke design process
6.8.3. Examples of Poka- Yoke

6.9. Visual Management
6.9.1. Process visualization
6.9.2. Visual signage
6.9.3. Visual records

6.10. Lean and IOT quality management and Blockchain
6.10.1. Benefits of combining IoT and lean quality management
6.10.1.1. Sensorization for process monitoring
6.10.1.2. Real-time traceability systems and data analytics for quality management
6.10.2. Benefits of combining Lean and Blockchain in quality management.
6.10.2.1. Application of smart contracts for quality assurance and regulatory compliance
6.10.2.2. Design and implementation of a secure and scalable Blockchain infrastructure for quality management.

Module 7. Continuous improvement, Kaizen

7.1. Continuous Improvement and Kaizen in Lean Manufacturing
7.1.1. Continuous improvement and Kaizen
7.1.2. The PDCA/PDSA cycle. Comparison of problem solving methods
7.1.3. Encouraging the participation of the entire organization in kaizen.

7.2. Implementation of the PDCA/PDSA cycle
7.2.1. Plan
7.2.2. Do
7.2.3. Check/Study
7.2.4. Act
7.2.5. Application Examples

7.3. Implementation of "6M" to identify opportunities for improvement
7.3.1. Method Analysis
7.3.2. Machine Analysis
7.3.3. Materials Analysis
7.3.4. Measurement system analysis
7.3.5. Analysis of the external environment
7.3.6. Analysis of the problems generated by People?

7.4. Statistical Methods of Process Control
7.4.1. Process control and statistical methods in process control
7.4.2. Statistics for process control
7.4.3. Common statistical methods in process control

7.5. Causal Analysis: Data Science
7.5.1. Ishikawa Diagram
7.5.2. 5 reasons
7.5.3. Other techniques for root cause analysis

7.6. Application of the 5 S's in continuous improvement
7.6.1. Seiri (Classification): Elimination of unnecessary elements
7.6.2. Seiton (Order): Workplace organization
7.6.3. Seiso (Cleaning): Maintaining a clean and orderly work environment
7.6.4. Seiketsu (Standardization): Establishment of standards and procedures
7.6.5. Shitsuke (Discipline): Maintenance of standards and continuous improvement

7.7. Continuous improvement and IoT
7.7.1. Real-time data collection for process analysis
7.7.2. Process automation to reduce variability and improve quality
7.7.3. Efficiency improvement and cost reduction through remote process monitoring

7.8. Sustaining the Kaizen culture in the long term
7.8.1. Long-term commitment of senior management
7.8.2. Integration of Kaizen as part of the company's culture and not as an add-on/accessory.
7.8.3. Measuring results and long-term incentives for improvements, adapting them to the organizational context

7.9. Practical examples of continuous improvement in different industries
7.9.1. Example in the automotive industry
7.9.2. Example in the food industry
7.9.3. Example in the construction supply industry

7.10. Future trends in continuous improvement
7.10.1. Development of digital tools and platforms for continuous improvement
7.10.2. Incorporation of new project management approaches: User-centered design and evidence-based development
7.10.3. Incorporating emotional intelligence in continuous improvement

Module 8. Evolution of production organization in a Lean system

8.1. The organization of production in a Lean system
8.1.1. The Organization of Production. Key Concepts
8.1.2. Company Structure and Organization
8.1.3. Production systems and work organization

8.2. Organizational differences between a traditional production system and a Lean system
8.2.1. Types of organizational structure
8.2.2. Organizational differences between a traditional system and a Lean system
8.2.3. Organizational advantages of the Lean system

8.3. Concept of "Work Cells" and their impact on efficiency and continuous improvement
8.3.1. Advantages of "Work Cells".
8.3.2. Structure/ Types of "Work Cells".
8.3.3. Management routines "Work Cells" to impact efficiency and continuous improvement

8.4. Implementation of "Continuous Improvement Teams" (Kaizen Teams) to ensure a focus on continuous improvement and problem solving
8.4.1. Incorporation of the Kaizen Teams Concept in the organization.
8.4.2. Activities and methodology
8.4.3. Kaizen Teams Roles and Responsibilities

8.5. Importance of "Autonomy and Accountability" in the evolution towards a lean system and the improvement of efficiency and quality.
8.5.1. Self-managed and agile teams as a key to organizational evolution
8.5.2. The development of people as an added value to the Lean organization.
8.5.3. Structure for leading "Autonomy and accountability" towards a Lean system

8.6. Use of Standard Work to standardize processes and encourage continuous improvement
8.6.1. Standard Work. Key Elements
8.6.2. Benefits of Standard Work as an object of continuous improvement
8.6.3. Implementation of Standard Work in organizations

8.7. Systems for promoting polyvalence and training in lean organizations: The polyvalence matrix
8.7.1. Polyvalence Promotion and Training Systems in Lean Organizations: The Polyvalence Matrix
8.7.2. Advantages of a multipurpose system
8.7.3. Implementation of the polyvalence promotion system

8.8. Evolution of production organization through waste elimination and continuous improvement
8.8.1. Analysis of non-value-adding activities as a basic Lean practice
8.8.2. Waste elimination/reduction strategy
8.8.3. Implementing a waste elimination/ reduction model
8.9. Implementation of Work Cells and continuous improvement groups in different industries. Practical Examples

8.9.1. Implementation of Work Cells in the Automotive Sector
8.9.2. Implementation of work cells in the textile sector.
8.9.3. Implementation of Work Cells in the Food Sector
8.10. Importance of the evolution of the production organization towards a Lean system.

8.10.1. Main aspects in the evolution towards a Lean system
8.10.2. Improved productivity and production organization
8.10.3. Utility of the Lean System for the evolution of the production organization.

Module 9. TPM (Total Productive Maintenance), OEE (Overall Equipment Effectiveness)

9.1. TPM Total Productive Maintenance
9.1.1. TPM Total Productive Maintenance. Fundamentals
9.1.2. Emergence, objectives and benefits
9.1.3. TPM Pillars

9.2. Improved machine efficiency OEE: Problem Identification and Problem Solving Techniques
9.2.1. Identification of efficiency problems
9.2.2. Solving efficiency problems
9.2.3. Machine efficiency monitoring

9.3. Techniques to Reduce Downtime in the Production Process, Maintenance Planning and Programming
9.3.1. Production planning and maintenance
9.3.2. Autonomous Maintenance
9.3.3. SMED

9.4. Equipment Maintenance Management and Purchasing. Decision Criteria
9.4.1. Technical requirements and specifications
9.4.2. Costs and investment
9.4.3. Supplier evaluation: criteria

9.5. Preventative Maintenance Prevention of equipment failures
9.5.1. Installation of the equipment: Maintainability criteria
9.5.2. Preventative Maintenance
9.5.3. Example of a preventive maintenance plan in the railway industry

9.6. Predictive Maintenance Equipment failure prediction
9.6.1. Predictive Maintenance
9.6.2. Sensorization of equipment
9.6.3. Algorithm development with AI

9.7. Safety Improvement Techniques in the Production Process, Identification and Elimination of Hazards in the Workplace
9.7.1. Identification of hazards in the workplace
9.7.2. Risk assessment and protection measures
9.7.3. Emergency Planning

9.8. Guidance for the Implementation of TPM in the Organization, Planning, Training and Implementation of Maintenance Systems
9.8.1. The 14 steps for TPM implementation
9.8.2. Implementation planning
9.8.3. TPM training and maintenance

9.9. Improved energy efficiency: How to optimize energy use and reduce costs through the implementation of TPM
9.9.1. Energy efficiency of equipment
9.9.2. Measuring consumption and efficiency
9.9.3. Identification and elimination of energy losses and improvement

9.10. Examples of TPM implementation
9.10.1. Example of application in the railway sector
9.10.2. Examples in the pharmaceutical sector
9.10.3. Example of application in the sector

Module 10. Lean implementation: **Strategies and best practices for implementing Lean Manufacturing in an organization.**

10.1. Lean implementation. Project Start
10.1.1. Vision and reasons for change
10.1.2. Definition of the action framework and objectives
10.1.3. Selection of the initial project team
10.1.4. Definition of the Project Charter

10.2. Analysis of the current state of the company's processes: Evaluation and identification of areas for improvement and opportunities when implementing the Lean philosophy.
10.2.1. Identification of key processes
10.2.2. Analysis of the current state of the organization and processes.
10.2.3. Technical Analysis/Current culture and main management systems

10.3. Selection of a multidisciplinary work team to lead the Lean philosophy implementation project in the company.
10.3.1. Identification of necessary skills and competencies
10.3.2. Selection of persons
10.3.3. Formation of the Kaizen Teams

10.4. Definition and establishment of clear and measurable objectives for the implementation of the Lean philosophy in the company.
10.4.1. Definition of indicators
10.4.2. Measurement of Indicators
10.4.3. Definition of goals to be achieved at different horizons

10.5. Planning and development of the project to implement the Lean philosophy in the company. Allocation of resources and execution deadlines
10.5.1. Scope Definition
10.5.2. Definition of actions to be carried out and resources required
10.5.3. Definition of the calendar

10.6. Formation of the work team: Training in Lean methodology for the selected work team and other company employees.
10.6.1. Assessment of the knowledge/capabilities of the implementation team
10.6.2. Design of the training plan
10.6.3. Development of the training plan

10.7. Selection of the Pilots to be developed at the beginning
10.7.1. Criteria for selection of pilot scopes
10.7.2. Criteria for selection of persons to be involved who do not belong to the promoter's team
10.7.3. Initial evaluation before starting the pilots

10.8. Development and Implementation of Pilots and Quick Wins
10.8.1. Development of a detailed plan to implement Lean in the selected pilot processes.
10.8.2. Implementation of Quick Wins. Quick Wins Identification and Execution: Improvements to be implemented in the short term in the pilot processes
10.8.3. Continuous monitoring and adjustment of pilots to measure results and make adjustments as needed

10.9. Establishment of global performance indicators: Definition of indicators and key performance indicators (KPIs) to measure the success of the implementation of the Lean philosophy.
10.9.1. Definition of medium and long term SMART objectives
10.9.2. Definition of key indicators to be followed
10.9.3. Follow-up and communication of progress

10.10. Development of a plan to extend the Lean philosophy to the rest of the organization.
10.10.1. Identification of extension areas: criteria
10.10.2. Establishment of the extension plan: pace and resources
10.10.3. Project implementation, monitoring and communication

07

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

TECH Business School uses the Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world"

This program prepares you to face business challenges in uncertain environments and achieve business success.

Our program prepares you to face new challenges in uncertain environments and achieve success in your career.

A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch to present executives with challenges and business decisions at the highest level, whether at the national or international level. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and business reality is taken into account.

> *You will learn, through collaborative activities and real cases, how to solve complex situations in real business environments"*

The case method has been the most widely used learning system among the world's leading business schools for as long as they have existed. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question we face in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They must integrate all their knowledge, research, argue and defend their ideas and decisions.

Relearning Methodology

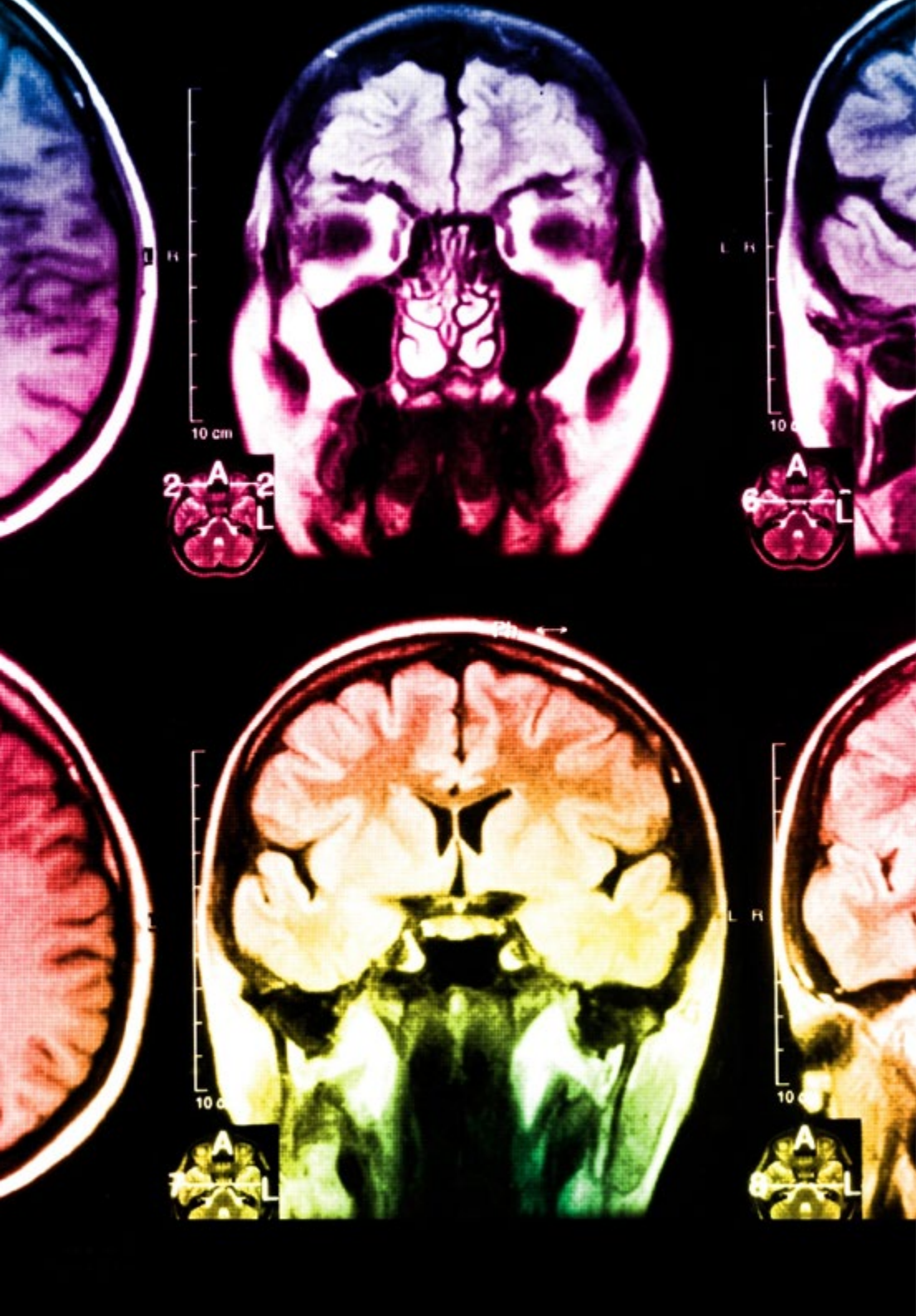
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

Our online system will allow you to organize your time and learning pace, adapting it to your schedule. You will be able to access the contents from any device with an internet connection.

At TECH you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our online business school is the only one in the world licensed to incorporate this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically. With this methodology we have trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, markets, and financial instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.

This program offers the best educational material, prepared with professionals in mind:

Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

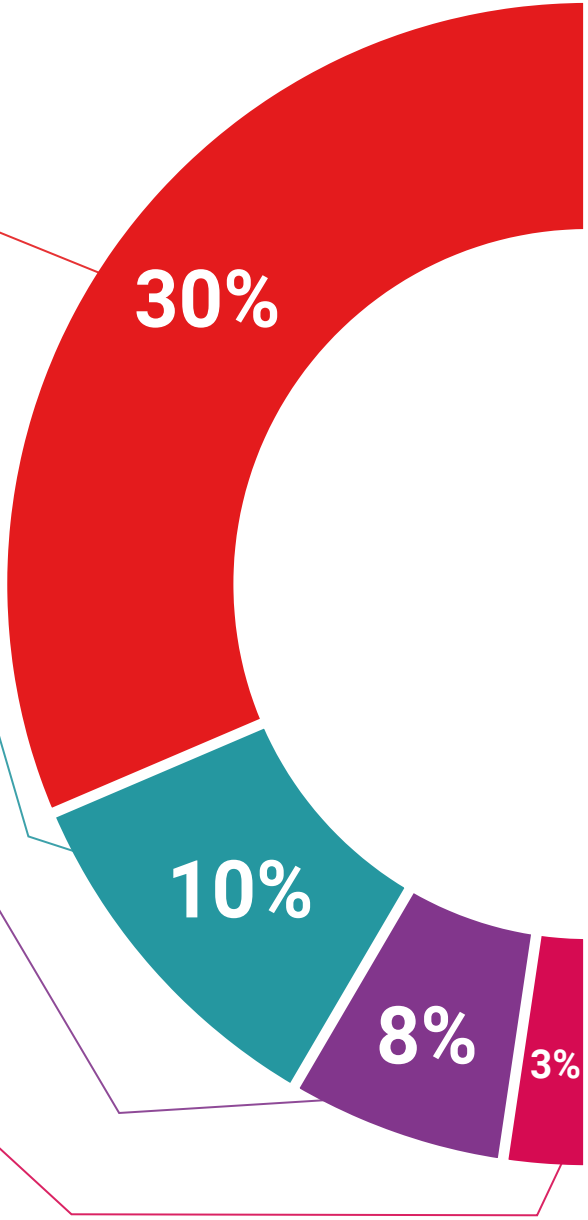
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

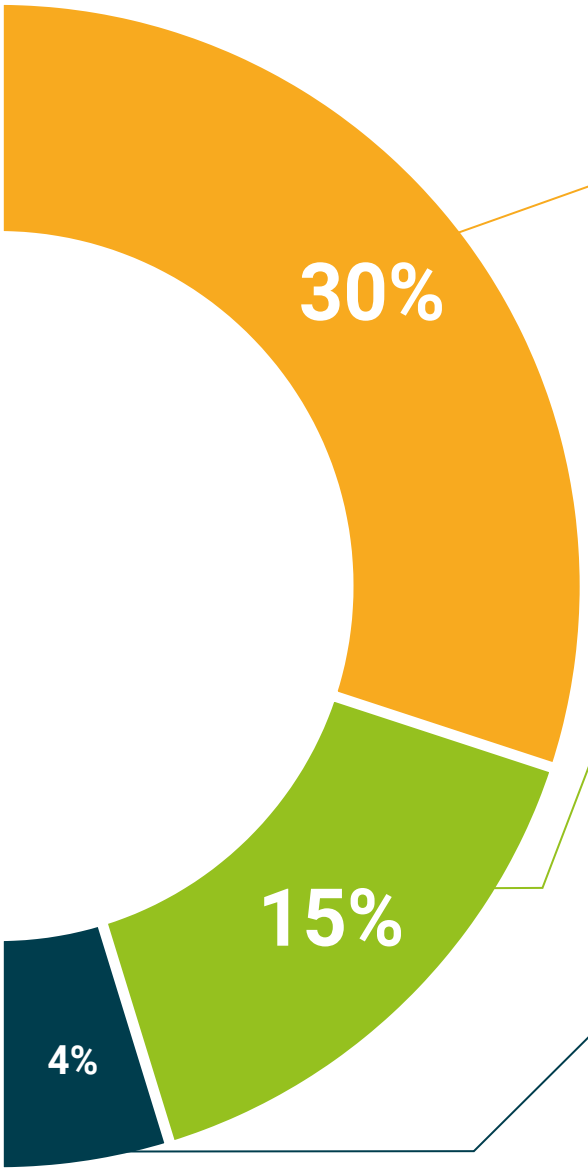
Management Skills Exercises

They will carry out activities to develop specific executive competencies in each thematic area. Practices and dynamics to acquire and develop the skills and abilities that a high-level manager needs to develop in the context of the globalization we live in.

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best senior management specialists in the world.

Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

08

Our Students' Profiles

The Executive Master's Degree is aimed at Graduates who have previously completed any of the following degrees in the field of Social and Legal Sciences, Administration and Economics.

This program uses a multidisciplinary approach as the students have a diverse set of academic profiles and represent multiple nationalities.

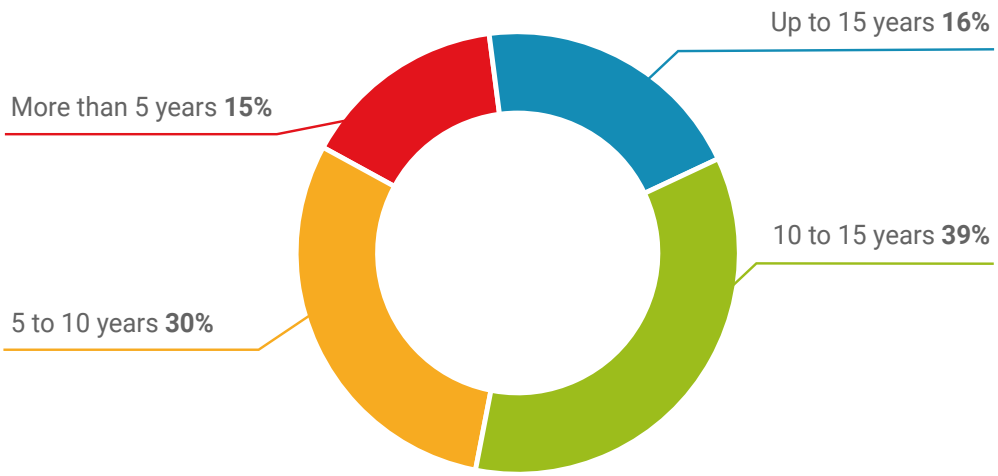
The Executive Master's Degree is also open to professionals who, being university graduates in any area, have two years of work experience in the field of business and industrial project management.

Break the initial barriers of any company when introducing Lean Manufacturing thanks to this university program"

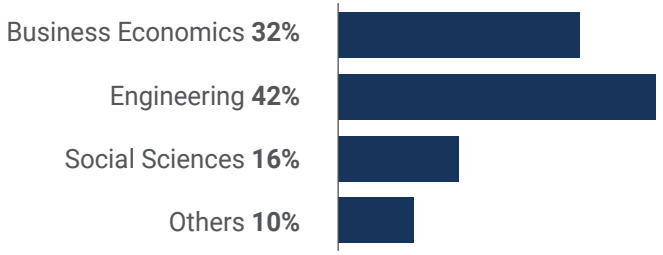
Average Age

Between **35** and **45** years old

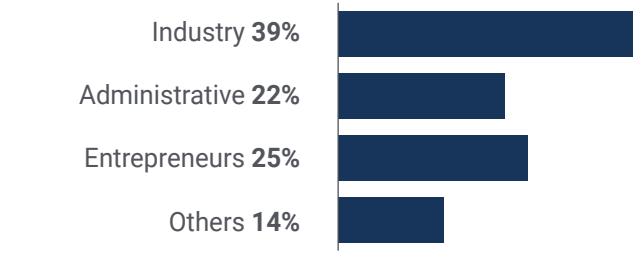
Years of Experience



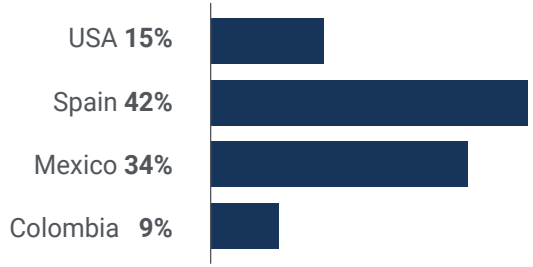
Training



Educational Profile



Geographical Distribution



Sandro Ruiz Urquijo

Director of Corporate Lean Manufacturing

"Studying this program allowed me to implement a production model that is agile, flexible and able to produce at the pace of demand. This not only improved the company, but also my professional career. Because of this, this Executive Master's Degree was a fundamental step in my progression"

09

Course Management

In its premise of offering students a quality education, TECH carries out a rigorous selection process for each and every one of the teachers that make up its programs. Thus, the graduate will have at his disposal a syllabus prepared by distinguished professionals in the business and industrial field with great achievements in the implementation and maintenance of projects in large companies. In addition, given its proximity, you will be able to resolve any questions you may have about the content of this program.

An excellent teaching staff with extensive experience in project management and Lean Manufacturing implementation will guide you through this learning"

Management

Dr. Jover Miravitlles, Luis

- President and Founding Partner Grupo Quarck, S.L. Founding Partner
- Senior Partner in LOGIXS
- Vice President of €-Corp. S.L
- IQS Executive Education Director
- Associate Professor at IE Business School
- Coordinator of the Master's Degree in Integral Business Management at the Universidad Iberoamericana in Mexico City
- Advisor to the employers' association Cecot
- Chemical Engineer at the Chemical Institute of Sarria (IQS)
- Master in Business Administration MBA IESE
- Member of the Hispack organizing committee

Professors

Dr. Antoni Aguilar, Josep

- Founder and President of Actio Crealor Consulting
- Country Manager of The Kaizen Institute
- Operations & SCM Consultant
- Production Manager at Magna International
- IQS Executive Education
- Professor in EUNCET Business School
- Graduate in Business Administration from the University of Lincoln

Dr. Pietro García, Sergio

- Consultant and Director. Lean & Agile. Operations & Strategy Management Consultant
- Operations and Restructuring Consultant at Adoria Consulting
- Process and Continuous Improvement Engineer at Kostal Eléctrica
- Lean Management Professor en LaSalle BCN
- Operations & Supply Chain professor en el IQS Executive Education
- Associate Operations Consultant and Professor at the Chamber of Commerce of Sabadell
- Degree in Industrial Engineering, specializing in business organization and management, Catalunya Polytechnic University

Ms. Díaz Pizarro, Cristina

- Assistant Branch Manager, Banco Santander
- Double Degree in Business Administration and Tourism Management from the University of Extremadura
- University Degree in Neuromarketing from Ineaf Business School
- MIFID II Certification In Financial Advice by Santander Financial Institute
- Real Estate Credit Products Specialist by Santander Financial Institute

Dr. Gambarte Montiel, Rubén

- Industrial Consultant
- Industrial Digital Transformation Consultant and Advisor at Bestplant
- Associate Consultant in Lean Management and Lean Six Sigma at BPR goup SRL, Actio Global, AYO Consulting
- Quality Assurance Manager
- Operations Manager y Lean Manager en Solfer Componenti SRL
- Graduate in Chemical Engineering from the University of Cantabria.
- Master's Degree: Executive Lean Supply Chain Management. Operations management by the Polytechnic University of Catalonia Foundation.
- Master's Degree in Lean Six Sigma in Green Belt & Black Belt by Festo Academy gustavo

Dr. Gustavo, Vitriago Pérez

- Project Manager in Euroports
- Software Implementation Consultant at Software Tecnic Tecnocim
- Senior Consultant en ACTIO Consulting Group
- Lean Six Sigma Consultant
- Senior Consultant in Business Performance Consulting
- Continuous Improvement Specialist & Auditor at Esteban Ikeda/JC
- Bachelor of Science in Naval Sciences Naval Administration and Logistics
- Master's Degree in Integral Logistics by Johnson Controls International
- Master in Automated Production and Robotics by the Polytechnic University of Catalunya
- Black Belt Certification Training - Six Sigma by Kanban University

10

Impact on Your Career

TECH has designed this program to promote its students' professional and personal growth . A process that will allow you to implement the Lean Manufacturing philosophy in the era of Industry 4.0 and in other areas such as Lean Logistics, Lean Office or Lean Service. In this way you will get a boost to your professional career and distinguish yourself from the rest of the competitors. A unique opportunity to face new challenges with the maximum guarantee.

You will position yourself as one of the best experts in Lean Manufacturing and succeed in your industry"

Are you ready to take the leap? Excellent professional development awaits you.

TECH's Executive Master's Degree in Lean Manufacturing is an intensive program that prepares you to face challenges and business decisions in the field of Engineering. The main objective is to promote your personal and professional growth. Helping you achieve success.

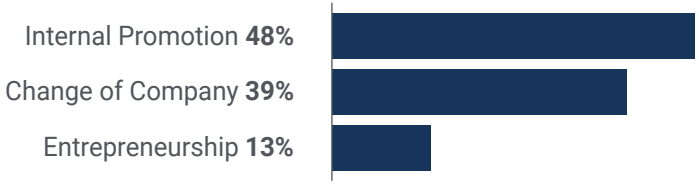
If you want to improve yourself, make a positive change at a professional level, and network with the best, then this is the place for you.

You will nurture your company with the methods used by the precursors of Lean Manufacturing.

Take the leap you are looking for in industrial business management with a quality program.

Time of Change

Type of change



Salary increase

This program represents a salary increase of more than **27%** for our students

11

Benefits for Your Company

Thanks to this academic option, students will increase their knowledge in business management, leadership and provide organizations with useful strategies to improve production, quality and continuous improvement. In this way, companies that incorporate professionals specialized in Lean Manufacturing will achieve a leap of distinction in their sector. A unique opportunity that only TECH, the world's largest digital university, can offer.

Integrate Lean Manufacturing into Industry 4.0 and face the challenges of the future with guarantees"

Developing and retaining talent in companies is the best long-term investment.

01

Growth of talent and intellectual capital

The professional will introduce the company to new concepts, strategies, and perspectives that can bring about significant changes in the organization.

02

Retaining high-potential executives to avoid talent drain

This program strengthens the link between the company and the professional and opens new avenues for professional growth within the company.

03

Building agents of change

You will be able to make decisions in times of uncertainty and crisis, helping the organization overcome obstacles.

04

Increased international expansion possibilities

Thanks to this program, the company will come into contact with the main markets in the world economy.

05

Project Development

The professional can work on a real project or develop new projects in the field of R & D or business development of your company.

06

Increased competitiveness

This program will equip students with the skills to take on new challenges and drive the organization forward.

12

Certificate

The Executive Master's Degree in Lean Manufacturing guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master´s Degree diploma issued by TECH Technological University.

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

This **Executive Master's Degree in Lean Manufacturing** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Executive Master's Degree** issued by **TECH Technological University** via tracked delivery*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Executive Master's Degree, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Executive Master's Degree in Lean Manufacturing**

Official Nº of Hours: **1,500 h.**


tech technological university

Awards the following

DIPLOMA

to

Mr./Ms. _____, with identification number _____.

For having successfully passed and accredited the following program

EXECUTIVE MASTER'S DEGREE

in

Lean Manufacturing

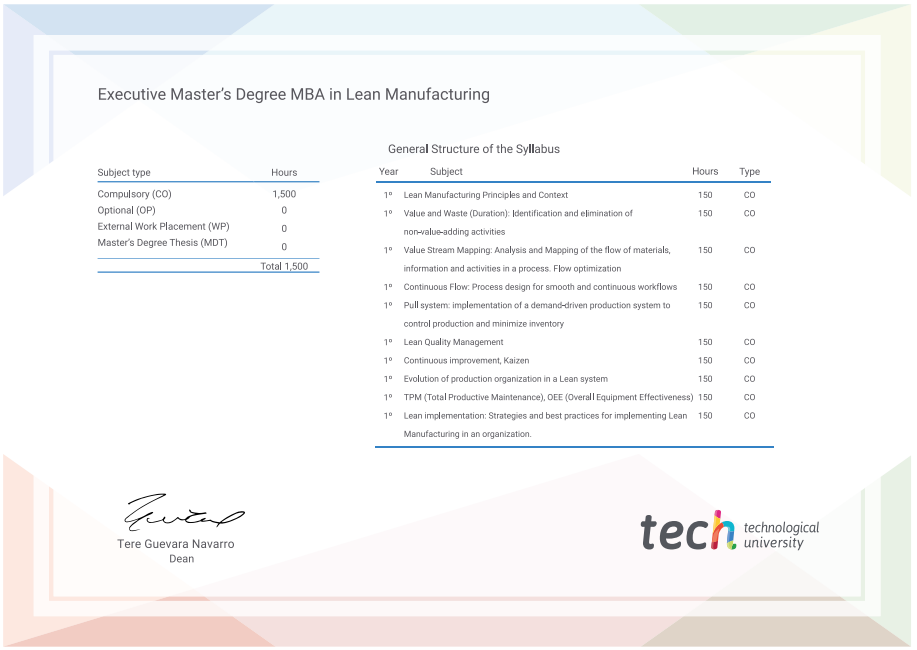
This is a qualification awarded by this University, equivalent to 1,500 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

Unique TECH Code: AFWORD23S techtitute.com/certificates


Executive Master's Degree MBA in Lean Manufacturing

Subject type	Hours
Compulsory (CO)	1,500
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 1,500

General Structure of the Syllabus

Year	Subject	Hours	Type
1º	Lean Manufacturing Principles and Context	150	CO
1º	Value and Waste (Duration): Identification and elimination of non-value-adding activities	150	CO
1º	Value Stream Mapping: Analysis and Mapping of the flow of materials, information and activities in a process. Flow optimization	150	CO
1º	Continuous Flow: Process design for smooth and continuous workflows	150	CO
1º	Pull system: implementation of a demand-driven production system to control production and minimize inventory	150	CO
1º	Lean Quality Management	150	CO
1º	Continuous improvement, Kaizen	150	CO
1º	Evolution of production organization in a Lean system	150	CO
1º	TPM (Total Productive Maintenance), OEE (Overall Equipment Effectiveness)	150	CO
1º	Lean implementation: Strategies and best practices for implementing Lean Manufacturing in an organization.	150	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 EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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Executive Master's Degree
Lean Manufacturing

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Executive Master's Degree

Lean Manufacturing

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