Advanced Master's Degree
MBA in Data Science Management
(DSO, Chief Data Science Officer)

A M D M B A D S M C D S O

tech global university

Advanced Master's Degree
MBA in Data Science Management (DSO, Chief Data Science Officer)

» Modality: **online**
» Duration: **2 years**
» Certificate: **TECH Global University**
» Accreditation: **120 ECTS**
» Schedule: **at your own pace**
» Exams: **online**

Website: **www.techtitute.com/us/school-of-business/advanced-master-degree/advanced-master-degree-mba-data-science-management-dso-chief-data-science-officer**

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01
Welcome

Data Science Management, led by key roles such as the Chief Data Science Officer (CDSO) or Data Science Officer (DSO), plays a critical role in the optimization and strategic direction of enterprise data science initiatives. These professionals not only oversee the effective implementation of advanced data analysis techniques, but also play a crucial role in business decision making. For this reason, TECH has developed a 100% online program, based on the innovative Relearning methodology. In addition, graduates will have the opportunity to participate in an exclusive set of 10 complementary Masterclasses, elaborated by an internationally renowned expert in the prestigious and sought-after field of Data Science.

MBA in Data Science Management (DSO, Chief Data Science Officer)
TECH Global University

Interested in specializing in Data Science? With TECH, you will have access to 10 unique and additional Masterclasses, taught by an internationally renowned faculty member."

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 Global 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 university program seeks to equip professionals with the skills and knowledge necessary to lead effectively in data management in the business context. Therefore, it will merge the understanding of the principles of data analysis and data science with strategic vision and business leadership skills. All so that graduates will acquire competencies in data-driven decision making, management of teams of data scientists, effective implementation of analytical solutions and the ability to align data strategy with organizational objectives.

"Meet emerging challenges in the business arena, where the ability to extract valuable information from large data sets has become essential"

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

The **MBA in Data Science Management (DSO, Chief Data Science Officer)** will enable students to:
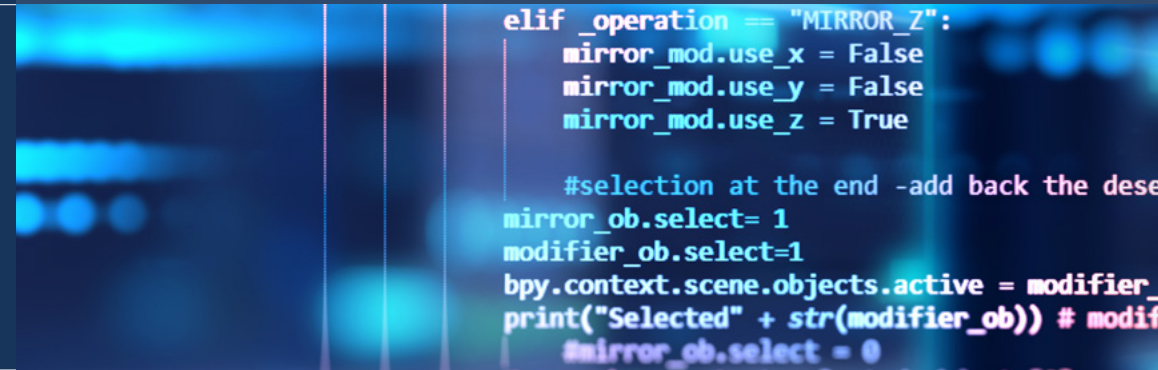
01 Define the latest trends in business management, taking into account the globalized environment that governs senior management criteria

04 Encourage the creation of corporate strategies that set the script for the company to follow in order to be more competitive and achieve its own objectives

02 Develop the key leadership skills that should define working professionals

```
elif _operation == "MIRROR_Z":
    mirror_mod.use_x = False
    mirror_mod.use_y = False
    mirror_mod.use_z = True

    #selection at the end -add back the dese
mirror_ob.select= 1
modifier_ob.select=1
bpy.context.scene.objects.active = modifier_
print("Selected" + str(modifier_ob)) # modif
    #mirror_ob.select = 0
```

03 Delve into the sustainability criteria set by international standards when developing a business plan

05 Differentiate the skills required to manage business activities strategically

06 Work more effectively, more agile and more aligned with today's new technologies and tools

08 Define the best way to manage the company's human resources, achieving a better performance of the same

09 Acquire the communication skills that a business leader needs in order to ensure that their message is heard and understood by the members of their community

07 Design innovative strategies and policies to improve management and business efficiency

10 Clarify the economic environment in which the company operates and develop appropriate strategies to anticipate changes

11 Be able to manage the company's economic and financial plan

14 Carry out the marketing strategy that allows to make the product known to potential clients and to generate an adequate image of the company

12 Understand the logistic operations that are necessary in the business environment, so as to manage them appropriately

13 Apply information and communication technologies to the different areas of the company

15 Be able to develop all the phases of a business idea: Design, Feasibility Plan, Execution, Follow-up

16 Establish the appropriate guidelines for the company's adaptation to the changing society

18 Build a plan for the development and improvement of personal and managerial skills

19 Analyze the benefits of applying data analytics techniques in each department of the company

17 Propose a dynamic business model that supports its growth in intangible resources

20 Propose techniques and objectives in order to be as productive as possible according to the department

21 Develop analytical skills in order to make quality decisions

24 Identify what are IoT () and IIoT ()

22 Unify diverse data: Achieve consistency of information

23 Produce relevant, effective information for decision making

25 Review the Industrial Internet Consortium

26 Develop the skills to convert data into information from which knowledge can be extracted

28 Generate specialized knowledge about the statistical prerequisites for any data analysis and evaluation

29 Examine metrics and scores to quantify model quality

27 Define the main characteristics of a dataset, its structure, components, and implications for its modeling distribution

30 Analyze the chosen strategies to select the best technologies to implement

05
Skills

Entrepreneurs will acquire advanced analytical skills, enabling them to understand, interpret and apply data science concepts in strategic decision making. In addition, they will develop leadership competencies, which will enable them to lead multidisciplinary teams of data scientists and business professionals. Likewise, the ability to effectively communicate findings and strategies derived from data analysis becomes another crucial competency, facilitating the alignment of data strategy with organizational objectives.

A 100% online program that will amplify your professional resume with a triple university program, if you meet the official entry requirements"

01 Resolve business conflicts and problems between workers

04 Exercise economic and financial control of a company

02 Apply Lean Management methodologies

03 Correctly manage teams to improve productivity and, therefore, the company's profits

05 Manage tools and methods for the manipulation and better utilization of data, for the delivery of understandable results to the final recipient

06 Control the company's logistics processes, as well as purchasing and procurement

08 Implement the keys to successful R+D+I management in organizations
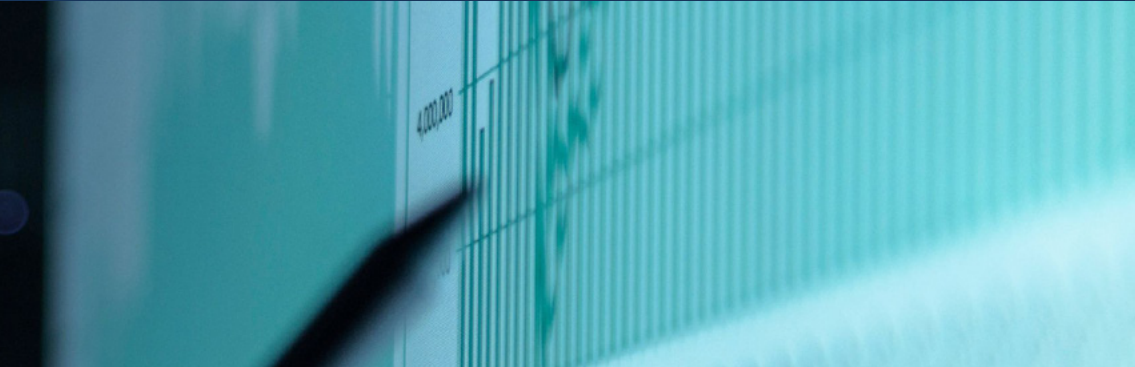
09 Apply the most appropriate strategies to support e-commerce of the company's products

07 Delve into the new business models associated with information systems

10 Develop and lead marketing plans

11 Develop metrics of goal achievement associated with a digital marketing strategy and analyze them in digital dashboards

12 Focus on innovation in all processes and areas of the company

13 Lead the different projects of the company, from defining when to prioritize and delay their development within an organization

14 Commit to sustainably developing the company, avoiding environmental impacts

15 Develop a technical and business perspective of data analysis

16 Understand the most current algorithms, platforms and tools for data exploration, visualization, manipulation, processing and analysis

17 Implement a business vision necessary for valorization as a key element for decision making

18 Be able to address problems specific to data analysis

19 Specialize in from a technical and business perspective

20 Visualize data in the most appropriate way to favor data sharing and understanding for different profiles

21 Address the key functional areas of the organization where data science can deliver the most value

22 Develop knowledge of the data life cycle, its typology and the technologies and phases necessary for its management

23 Process and manipulate data using specific languages and libraries

24 Develop advanced knowledge in fundamental data mining techniques for data selection, preprocessing and transformation

Structure and Content

This Advanced Master's Degree will cover a wide range of content, designed to provide professionals with a comprehensive understanding of the intersection between business management and data science. This will include fundamentals of data analytics, machine learning, data mining and advanced statistics. Graduates will also be immersed in topics related to data-driven decision making, data visualization strategies and predictive modeling methods. In addition, crucial aspects of management such as leadership, effective communication, ethics and alignment of data strategies with business objectives will be addressed.

"You will equip yourself with a comprehensive set of competencies, merging data science expertise with business management skills essential to lead in the information age"

Syllabus

This TECH Global University Advanced Master's Degree MBA in Data Science Management (DSO, Chief Data Science Officer) is an intense program that prepares students to face challenges and business decisions globally. Its content is designed to promote the development of managerial skills that enable more rigorous decision-making in uncertain environments.

Throughout 3,600 hours of study, students will analyze a multitude of practical cases through individual work, achieving high quality learning that can be applied to their daily practice. It is, therefore, an authentic immersion in real business situations.

This program deals in depth with the characteristics of data science to apply to each department of the company and is designed for managers to understand business management from a strategic, international and innovative perspective.

A plan designed for students, focused on their professional improvement and that prepares them to achieve excellence in the management of Data Science and business management. A program that understands their needs and those of their company through innovative content based on the latest trends, and supported by the best educational methodology and an exceptional faculty, which will provide them with the skills to solve critical situations in a creative and efficient way.

Module 1	Leadership, Ethics and Social Responsibility in Companies
Module 2	Strategic Management and Executive Management
Module 3	People and Talent Management
Module 4	Economic and Financial Management
Module 5	Operations and Logistics Management
Module 6	Information Systems Management
Module 7	Commercial Management, Strategic Marketing and Corporate Communications
Module 8	Market Research, Advertising and Commercial Management
Module 9	Innovation and Project Management
Module 10	Executive Management

Where, When and How is it Taught?

TECH offers the possibility of developing this Advanced Master's Degree MBA in Data Science Management (DSO, Chief Data Science Officer) completely online. Throughout the 24 months of the educational program, the students will be able to access all the contents of this program at any time, allowing them to self-manage their study time.

Module 11	Data Analysis in a Business Organization
Module 12	Data and Information Management and Manipulation in Data Science
Module 13	IoT Devices and Platforms as the Basis for Data Science
Module 14	Graphical Representation of Data Analysis
Module 15	Data Science Tools
Module 16	Data Mining: Selection, Pre-Processing and Transformation
Module 17	Predictability and Analysis of Stochastic Phenomena
Module 18	Design and Development of Intelligent Systems
Module 19	Architecture and Systems for Intensive Use of Data
Module 20	Practical Application of Data Science in Businessmen Sectors

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

Module 1. Leadership, Ethics and Social Responsibility in Companies

1.1. Globalization and Governance
1.1.1. Governance and Corporate Governance
1.1.2. The Fundamentals of Corporate Governance in Companies
1.1.3. The Role of the Board of Directors in the Corporate Governance Framework

1.2. Leadership
1.2.1. Leadership A Conceptual Approach
1.2.2. Leadership in Companies
1.2.3. The Importance of Leaders in Business Management

1.3. *Cross Cultural Management*
1.3.1. Cross Cultural Management Concept
1.3.2. Contributions to the Knowledge of National Cultures
1.3.3. Diversity Management

1.4. Management and Leadership Development
1.4.1. Concept of Management Development
1.4.2. Concept of Leadership
1.4.3. Leadership Theories
1.4.4. Leadership Styles
1.4.5. Intelligence in Leadership
1.4.6. The Challenges of Today's Leader

1.5. Business Ethics
1.5.1. Ethics and Morality
1.5.2. Business Ethics
1.5.3. Leadership and Ethics in Companies

1.6. Sustainability
1.6.1. Sustainability and Sustainable Development
1.6.2. The 2030 Agenda
1.6.3. Sustainable Companies

1.7. Corporate Social Responsibility
1.7.1. International Dimensions of Corporate Social Responsibility
1.7.2. Implementing Corporate Social Responsibility
1.7.3. The Impact and Measurement of Corporate Social Responsibility

1.8. Responsible Management Systems and Tools
1.8.1. CSR: Corporate Social Responsibility
1.8.2. Essential Aspects for Implementing a Responsible Management Strategy
1.8.3. Steps for the Implementation of a Corporate Social Responsibility Management System
1.8.4. CSR Tools and Standards

1.9. Multinationals and Human Rights
1.9.1. Globalization, Multinational Companies and Human Rights
1.9.2. Multinational Corporations and International Law
1.9.3. Legal Instruments for Multinationals in the Area of Human Rights

1.10. Legal Environment and Corporate Governance
1.10.1. International Rules on Importation and Exportation
1.10.2. Intellectual and Industrial Property
1.10.3. International Labor Law

Module 2. Strategic Management and Executive Management

2.1. Organizational Analysis and Design
2.1.1. Conceptual Framework
2.1.2. Key Elements in Organizational Design
2.1.3. Basic Organizational Models
2.1.4. Organizational Design: Typology

2.2. Corporate Strategy
2.2.1. Competitive Corporate Strategy
2.2.2. Growth Strategies: Typology
2.2.3. Conceptual Framework

2.3. Strategic Planning and Strategy Formulation
2.3.1. Conceptual Framework
2.3.2. Elements of Strategic Planning
2.3.3. Strategy Formulation: Strategic Planning Process

2.4. Strategic Thinking
2.4.1. The Company as a System
2.4.2. Organization Concept

2.5. Financial Diagnosis
2.5.1. Concept of Financial Diagnosis
2.5.2. Stages of Financial Diagnosis
2.5.3. Assessment Methods for Financial Diagnosis

2.6. Planning and Strategy
2.6.1. The Plan from a Strategy
2.6.2. Strategic Positioning
2.6.3. Strategy in Companies

2.7. Strategy Models and Patterns
2.7.1. Conceptual Framework
2.7.2. Strategic Models
2.7.3. Strategic Patterns: The Five P's of Strategy

2.8. Competitive Strategy
2.8.1. The Competitive Advantage
2.8.2. Choosing a Competitive Strategy
2.8.3. Strategies Based on the Strategic Clock Model
2.8.4. Types of Strategies According to the Industrial Sector Life Cycle

2.9. Strategic Management
2.9.1. The Concept of Strategy
2.9.2. The Process of Strategic Management
2.9.3. Approaches in Strategic Management

2.10. Strategy Implementation
2.10.1. Indicator Systems and Process Approach
2.10.2. Strategic Map
2.10.3. Strategic Alignment

2.11. Executive Management
2.11.1. Conceptual Framework of Executive Management
2.11.2. Executive Management The Role of the Board of Directors and Corporate Management Tools

2.12. Strategic Communication
2.12.1. Interpersonal Communication
2.12.2. Communication Skills and Influence
2.12.3. Internal Communication
2.12.4. Barriers to Business Communication

Module 3. People and Talent Management

3.1. Organizational Behavior
3.1.1. Organizational Behavior Conceptual Framework
3.1.2. Main Factors of Organizational Behavior

3.2. People in Organizations
3.2.1. Quality of Work Life and Psychological Well-Being
3.2.2. Work Teams and Meeting Management
3.2.3. Coaching and Team Management
3.2.4. Managing Equality and Diversity

3.3. Strategic People Management
3.3.1. Strategic Human Resources Management
3.3.2. Strategic People Management

3.4. Evolution of Resources An Integrated Vision
3.4.1. The Importance of HR
3.4.2. A New Environment for People Management and Leadership
3.4.3. Strategic HR Management

3.5. Selection, Group Dynamics and HR Recruitment
3.5.1. Approach to Recruitment and Selection
3.5.2. Recruitment
3.5.3. The Selection Process

3.6. Human Resources Management by Competencies
3.6.1. Analysis of the Potential
3.6.2. Remuneration Policy
3.6.3. Career/Succession Planning

3.7. Performance Evaluation and Compliance Management
3.7.1. Performance Management
3.7.2. Performance Management: Objectives and Process

3.8. Training Management
3.8.1. Learning Theories
3.8.2. Talent Detection and Retention
3.8.3. Gamification and Talent Management
3.8.4. Training and Professional Obsolescence

3.9. Talent Management
3.9.1. Keys for Positive Management
3.9.2. Conceptual Origin of Talent and Its Implication in the Company
3.9.3. Map of Talent in the Organization
3.9.4. Cost and Added Value

3.10. Innovation in Talent and People Management
3.10.1. Strategic Talent Management Models
3.10.2. Identification, Training and Development of Talent
3.10.3. Loyalty and Retention
3.10.4. Proactivity and Innovation

3.11. Motivation
3.11.1. The Nature of Motivation
3.11.2. Expectations Theory
3.11.3. Needs Theory
3.11.4. Motivation and Financial Compensation

3.12. Employer Branding
3.12.1. Employer Branding in HR
3.12.2. Personal Branding for HR Professionals

3.13. Developing High Performance Teams
3.13.1. High-Performance Teams: Self-Managed Teams
3.13.2. Methodologies for the Management of High Performance Self-Managed Teams

3.14. Management Skills Development
3.14.1. What are Manager Competencies?
3.14.2. Elements of Competencies
3.14.3. Knowledge
3.14.4. Management Skills
3.14.5. Attitudes and Values in Managers
3.14.6. Managerial Skills

3.15. Time Management
3.15.1. Benefits
3.15.2. What Can be the Causes of Poor Time Management?
3.15.3. Time
3.15.4. Time Illusions
3.15.5. Attention and Memory
3.15.6. State of Mind
3.15.7. Time Management
3.15.8. Being Proactive
3.15.9. Be Clear About the Objective
3.15.10. Order
3.15.11. Planning

3.16. Change Management
3.16.1. Change Management
3.16.2. Type of Change Management Processes
3.16.3. Stages or Phases in the Change Management Process

3.17. Negotiation and Conflict Management
3.17.1. Negotiation
3.17.2. Conflict Management
3.17.3. Crisis Management

3.18. Executive Communication
3.18.1. Internal and External Communication in the Corporate Environment
3.18.2. Communication Departments
3.18.3. The Person in Charge of Communication of the Company. The Profile of the Dircom

3.19. Human Resources Management and PRL Teams
3.19.1. Management of Human Resources and Teams
3.19.2. Prevention of Occupational Hazards

3.20. Productivity, Attraction, Retention and Activation of Talent
3.20.1. Productivity
3.20.2. Talent Attraction and Retention Levers

3.21. Monetary Compensation Vs. Non-Cash

3.21.1. Monetary Compensation Vs. Non-Cash
3.21.2. Wage Band Models
3.21.3. Non-Cash Compensation Models
3.21.4. Working Model
3.21.5. Corporate Community
3.21.6. Company Image
3.21.7. Emotional Salary

3.22. Innovation in Talent and People Management II

3.22.1. Innovation in Organizations
3.22.2. New Challenges in the Human Resources Department
3.22.3. New Challenges in the Human Resources Department
3.22.4. Management of Innovation
3.22.5. Tools for Innovation

3.23. Knowledge and Talent Management

3.23.1. Knowledge and Talent Management
3.23.2. Knowledge Management Implementation

3.24. Transforming Human Resources in the Digital Era

3.24.1. The Socioeconomic Context
3.24.2. New Forms of Corporate Organization
3.24.3. New Methodologies

Module 4. Economic and Financial Management

4.1. Economic Environment

4.1.1. Macroeconomic Environment and the National Financial System
4.1.2. Financial Institutions
4.1.3. Financial Markets
4.1.4. Financial Assets
4.1.5. Other Financial Sector Entities

4.2. Company Financing

4.2.1. Sources of Financing
4.2.2. Types of Financing Costs

4.3. Executive Accounting

4.3.1. Basic Concepts
4.3.2. The Company's Assets
4.3.3. The Company's Liabilities
4.3.4. The Company's Net Worth
4.3.5. The Income Statement

4.4. Management Accounting to Cost Accounting

4.4.1. Elements of Cost Calculation
4.4.2. Expenses in General Accounting and Cost Accounting
4.4.3. Costs Classification

4.5. Information Systems and

4.5.1. Fundamentals and Classification
4.5.2. Cost Allocation Phases and Methods
4.5.3. Choice of Cost Center and Impact

4.6. Budget and Management Control

4.6.1. The Budget Model
4.6.2. The Capital Budget
4.6.3. The Operating Budget
4.6.4. Treasury Budget
4.6.5. Budget Monitoring

4.7. Treasury Management

4.7.1. Accounting Working Capital and Necessary Working Capital
4.7.2. Calculation of Operating Cash Requirements
4.7.3. Credit Management

4.8. Corporate Tax Responsibility

4.8.1. Basic Tax Concepts
4.8.2. Corporate Income Tax
4.8.3. Value Added Tax
4.8.4. Other Taxes Related to Commercial Activity
4.8.5. The Company as a Facilitator of the Work of the of the State

4.9. Corporate Control Systems

4.9.1. Analysis of Financial Statements
4.9.2. The Company's Balance Sheet
4.9.3. The Profit and Loss Statement
4.9.4. The Statement of Cash Flows
4.9.5. Ratio Analysis

4.10. Financial Management

4.10.1. The Company's Financial Decisions
4.10.2. Financial Department
4.10.3. Cash Surpluses
4.10.4. Risks Associated with Financial Management
4.10.5. Financial Administration Risk Management

4.11. Financial Planning

4.11.1. Definition of Financial Planning
4.11.2. Actions to be Taken in Financial Planning
4.11.3. Creation and Establishment of the Business Strategy
4.11.4. The Cash Flow Table
4.11.5. The Working Capital Table

4.12. Corporate Financial Strategy

4.12.1. Corporate Strategy and Sources of Financing
4.12.2. Financial Products for Corporate Financing

4.13. Macroeconomic Context

4.13.1. Macroeconomic Context
4.13.2. Relevant Economic Indicators
4.13.3. Mechanisms for Monitoring of Macroeconomic Magnitudes
4.13.4. Economic Cycles

4.14. Strategic Financing

4.14.1. Self-Financing
4.14.2. Increase in Equity
4.14.3. Hybrid Resources
4.14.4. Financing Through Intermediaries

4.15. Money and Capital Markets

4.15.1. The Money Market
4.15.2. The Fixed Income Market
4.15.3. The Equity Market
4.15.4. The Foreign Exchange Market
4.15.5. The Derivatives Market

4.16. Financial Analysis and Planning

4.16.1. Analysis of the Balance Sheet
4.16.2. Analysis of the Income Statement
4.16.3. Profitability Analysis

4.17. Analyzing and Solving Cases/Problems

4.17.1. Financial Information on Industria de Diseño y Textil, S.A. (INDITEX)

Module 5. Operations and Logistics Management

5.1. Operations Direction and Management
5.1.1. The Role of Operations
5.1.2. The Impact of Operations on the Management of Companies
5.1.3. Introduction to Operations Strategy
5.1.4. Operations Management

5.2. Industrial Organization and Logistics
5.2.1. Industrial Organization Department
5.2.2. Logistics Department

5.3. Structure and Types of Production (MTS, MTO, ATO, ETO, etc)
5.3.1. Production System
5.3.2. Production Strategy
5.3.3. Inventory Management System
5.3.4. Production Indicators

5.4. Structure and Types of Procurement
5.4.1. Function of Procurement
5.4.2. Procurement Management
5.4.3. Types of Purchases
5.4.4. Efficient Purchasing Management of a Company
5.4.5. Stages of the Purchase Decision Process

5.5. Economic Control of Purchasing
5.5.1. Economic Influence of Purchases
5.5.2. Cost Centers
5.5.3. Budget
5.5.4. Budgeting vs. Actual Expenditure
5.5.5. Budgetary Control Tools

5.6. Warehouse Operations Control
5.6.1. Inventory Control
5.6.2. Location Systems
5.6.3. Stock Management Techniques
5.6.4. Storage Systems

5.7. Strategic Purchasing Management
5.7.1. Business Strategy
5.7.2. Strategic Planning
5.7.3. Purchasing Strategies

5.8. Supply Chain Typologies (SCM)
5.8.1. Supply Chain
5.8.2. Benefits of Supply Chain Management
5.8.3. Logistical Management in the Supply Chain

5.9. *Supply Chain Management*
5.9.1. The Concept of Management of the Supply Chain (SCM)
5.9.2. Costs and Efficiency of the Operations Chain
5.9.3. Demand Patterns
5.9.4. Operations Strategy and Change

5.10. Interactions Between the SCM and All Other Departments
5.10.1. Interaction of the Supply Chain
5.10.2. Interaction of the Supply Chain. Integration by Parts
5.10.3. Supply Chain Integration Issues
5.10.4. Supply Chain

5.11. Logistics Costs
5.11.1. Logistics Costs
5.11.2. Problems with Logistics Costs
5.11.3. Optimizing Logistic Costs

5.12. Profitability and Efficiency of Logistics Chains: KPIS
5.12.1. Logistics Chain
5.12.2. Profitability and Efficiency of the Logistics Chain
5.12.3. Indicators of Profitability and Efficiency of Logistics Chains

5.13. Process Management
5.13.1. Process Management
5.13.2. Process-Based Approach: Process Mapping
5.13.3. Improvements in Process Management

5.14. Distribution and Transportation and Logistics
5.14.1. Distribution in the Supply Chain
5.14.2. Transportation Logistics
5.14.3. Geographic Information Systems as a Support for Logistics

5.15. Logistics and Customers
5.15.1. Demand Analysis
5.15.2. Demand and Sales Forecast
5.15.3. Sales and Operations Planning
5.15.4. Participatory Planning, Forecasting and Replenishment Planning (CPFR)

5.16. International Logistics
5.16.1. Export and Import Processes
5.16.2. Customs
5.16.3. Methods and Means of International Payment
5.16.4. International Logistics Platforms

5.17. Outsourcing of Operations
5.17.1. Operations Management and Outsourcing
5.17.2. Outsourcing Implementation in Logistics Environments

5.18. Competitiveness in Operations
5.18.1. Operations Management
5.18.2. Operational Competitiveness
5.18.3. Operations Strategy and Competitive Advantages

5.19. Quality Management
5.19.1. Internal and External Customers
5.19.2. Quality Costs
5.19.3. Ongoing Improvement and the Deming Philosophy

Module 6. Information Systems Management

6.1. Technological Environment
6.1.1. Technology and Globalization
6.1.2. Economic Environment and Technology
6.1.3. Technological Environment and its Impact on Companies

6.2. Information Systems in Companies
6.2.1. The Evolution of the IT Model
6.2.2. Organization and IT Departments
6.2.3. Information Technology and Economic Environment

6.3. Corporate Strategy and Technology Strategy
6.3.1. Creating Value for Customers and Shareholders
6.3.2. Strategic IS/IT Decisions
6.3.3. Corporate Strategy vs Technological and Digital Strategy

6.4. Information Systems Management
6.4.1. Corporate Governance of Technology and Information Systems
6.4.2. Management of Information Systems in Companies
6.4.3. Expert Managers in Information Systems: Roles and Functions

6.5. Information Technology Strategic Planning
6.5.1. Information Systems and Corporate Strategy
6.5.2. Strategic Planning of Information Systems
6.5.3. Phases of Information Systems Strategic Planning

6.6. Information Systems for Decision-Making
6.6.1. Business Intelligence
6.6.2. Data Warehouse
6.6.3. BSC or Balanced Scorecard

6.7. Exploring the Information
6.7.1. SQL: Relational Databases Basic Concepts
6.7.2. Networks and Communications
6.7.3. Operational System: Standardized Data Models
6.7.4. Strategic System: OLAP, Multidimensional Model and Graphical Dashboards
6.7.5. Strategic DB Analysis and Report Composition

6.8. Enterprise Business Intelligence
6.8.1. The World of Data
6.8.2. Relevant Concepts
6.8.3. Main Characteristics
6.8.4. Solutions in Today's Market
6.8.5. Overall Architecture of a BI Solution
6.8.6. Cybersecurity in BI and Data Science

6.9. New Business Concept
6.9.1. Why BI
6.9.2. Obtaining Information
6.9.3. BI in the Different Departments of the Company
6.9.4. Reasons to Invest in BI

6.10. BI Tools and Solutions
6.10.1. How to Choose the Best Tool?
6.10.2. Microsoft Power BI, MicroStrategy and Tableau
6.10.3. SAP BI, SAS BI and Qlikview
6.10.4. Prometheus

6.11. BI Project Planning and Management
6.11.1. First Steps to Define a BI Project
6.11.2. BI Solution for the Company
6.11.3. Requirements and Objectives

6.12. Corporate Management Applications
6.12.1. Information Systems and Corporate Management
6.12.2. Applications for Corporate Management
6.12.3. Enterprise Resource Planning Systems or ERP

6.13. Digital Transformation
6.13.1. Conceptual Framework of Digital Transformation
6.13.2. Digital Transformation: Key Elements, Benefits and Drawbacks
6.13.3. Digital Transformation in Companies

6.14. Technology and Trends
6.14.1. Main Trends in the Field of Technology that are Changing Business Models
6.14.2. Analysis of the Main Emerging Technologies

6.15. IT Outsourcing
6.15.1. Conceptual Framework of Outsourcing
6.15.2. IT Outsourcing and its Impact on the Business
6.15.3. Keys to Implement Corporate IT Outsourcing Projects

Module 7. Commercial Management, Strategic Marketing and Corporate Communication

7.1. Commercial Management
7.1.1. Conceptual Framework of Commercial Management
7.1.2. Business Strategy and Planning
7.1.3. The Role of Sales Managers

7.2. Marketing
7.2.1. The Concept of Marketing
7.2.2. The Basic Elements of Marketing
7.2.3. Marketing Activities in Companies

7.3. Strategic Marketing Management
7.3.1. The Concept of Strategic Marketing
7.3.2. Concept of Strategic Marketing Planning
7.3.3. Stages in the Process of Strategic Marketing Planning

7.4. Digital Marketing and E-Commerce
7.4.1. Digital Marketing and E-Commerce Objectives
7.4.2. Digital Marketing and Media Used
7.4.3. E-Commerce General Context
7.4.4. Categories of E-Commerce
7.4.5. Advantages and Disadvantages of E-Commerce Versus Traditional Commerce

7.5. Managing Digital Business
7.5.1. Competitive Strategy in the Face of the Growing Digitalization of the Media
7.5.2. Design and Creation of a Digital Marketing Plan
7.5.3. ROI Analysis in a Digital Marketing Plan

7.6. Digital Marketing to Reinforce the Brand
7.6.1. Online Strategies to Improve Your Brand's Reputation
7.6.2. Branded Content and Storytelling

7.7. Digital Marketing Strategy
7.7.1. Defining the Digital Marketing Strategy
7.7.2. Digital Marketing Strategy Tools

7.8. Digital Marketing to Attract and Customer Loyalty
7.8.1. Loyalty and Engagement Strategies Through the Internet
7.8.2. Visitor Relationship Management
7.8.3. Hypersegmentation

7.9. Managing Digital Campaigns
7.9.1. What Is a Digital Advertising Campaign?
7.9.2. Steps to Launch an Online Marketing Campaign
7.9.3. Mistakes in Digital Advertising Campaigns

7.10. Online Marketing Plan
7.10.1. What Is an Online Marketing Plan?
7.10.2. Steps to Create an Online Marketing Plan
7.10.3. Advantages of Having an Online Marketing Plan

7.11. Blended Marketing
7.11.1. What Is Blended Marketing?
7.11.2. Differences Between Online and Offline Marketing
7.11.3. Aspects to be Taken into Account in the Blended Marketing Strategy
7.11.4. Features of a Blended Marketing Strategy
7.11.5. Recommendations in Blended Marketing
7.11.6. Benefits of Blended Marketing

7.12. Sales Strategy
7.12.1. Sales Strategy
7.12.2. Sales Methods

7.13. Corporate Communication
7.13.1. Concept
7.13.2. The Importance of Communication in the Organization
7.13.3. Type of Communication in the Organization
7.13.4. Functions of Communication in the Organization
7.13.5. Elements of Communication
7.13.6. Communication Problems
7.13.7. Communication Scenarios

7.14. Corporate Communication Strategy
7.14.1. Motivation, Social Action, Participation and Training Programs with HR
7.14.2. Internal Communication Tools and Supports
7.14.3. Internal Communication Plan

7.15. Digital Communication and Reputation
7.15.1. Online Reputation
7.15.2. How to Measure Digital Reputation?
7.15.3. Online Reputation Tools
7.15.4. Online Reputation Report
7.15.5. Online Branding

Module 8. Market Research, Advertising and Commercial Management

8.1. Market Research
8.1.1. Market Research: Historical Origin
8.1.2. Analysis and Evolution of the Conceptual Framework of Marketing Research
8.1.3. Key Elements and Value Contribution of Market Research

8.2. Quantitative Research Methods and Techniques
8.2.1. Sample Size
8.2.2. Sampling
8.2.3. Types of Quantitative Techniques

8.3. Qualitative Research Methods and Techniques
8.3.1. Types of Qualitative Research
8.3.2. Qualitative Research Techniques

8.4. Market Segmentation
8.4.1. Market Segmentation Concept
8.4.2. Utility and Segmentation Requirements
8.4.3. Consumer Market Segmentation
8.4.4. Industrial Market Segmentation
8.4.5. Segmentation Strategies
8.4.6. Segmentation Based on Marketing Mix Criteria
8.4.7. Market Segmentation Methodology

8.5. Research Project Management
8.5.1. Market Research as a Process
8.5.2. Planning Stages in Market Research
8.5.3. Stages of Market Research Implementation
8.5.4. Managing a Research Project

8.6. International Market Research
8.6.1. International Market Research
8.6.2. International Market Research Process
8.6.3. The Importance of Secondary Sources in International Market Research

8.7. Feasibility Studies
8.7.1. Concept and Usefulness
8.7.2. Outline of a Feasibility Study
8.7.3. Development of a Feasibility Study

8.8. Publicity
8.8.1. Historical Background of Advertising
8.8.2. Conceptual Framework of Advertising: Principles, Briefing Concept and Positioning
8.8.3. Advertising Agencies, Media Agencies and Advertising Professionals
8.8.4. Importance of Advertising in Business
8.8.5. Advertising Trends and Challenges

8.9. Developing the Marketing Plan
8.9.1. Marketing Plan Concept
8.9.2. Situation Analysis and Diagnosis
8.9.3. Strategic Marketing Decisions
8.9.4. Operational Marketing Decisions

8.10. Promotion and Strategies
8.10.1. Integrated Marketing Communication
8.10.2. Advertising Communication Plan
8.10.3. Merchandising as a Communication Technique

8.11. Media Planning
8.11.1. Origin and Evolution of Media Planning
8.11.2. Media
8.11.3. Media Plan

8.12. Fundamentals of Commercial Management
8.12.1. The Role of Commercial Management
8.12.2. Systems of Analysis of the Company/Market Commercial Competitive Situation
8.12.3. Commercial Planning Systems of the Company
8.12.4. Main Competitive Strategies

8.13. Commercial Negotiation
8.13.1. Commercial Negotiation
8.13.2. Psychological Factors in Negotiation
8.13.3. Main Negotiation Methods
8.13.4. The Negotiation Process

8.14. Decision-Making in Commercial Management
8.14.1. Commercial Strategy and Competitive Strategy
8.14.2. Decision Making Models
8.14.3. Decision-Making Analytics and Tools
8.14.4. Human Behavior in Decision Making

8.15. Leadership and Management of the Sales Network
8.15.1. Sales Management Sales Management
8.15.2. Networks Serving Commercial Activity
8.15.3. Salesperson Recruitment and Training Policies
8.15.4. Remuneration Systems for Own and External Commercial Networks
8.15.5. Management of the Commercial Process Control and Assistance to the Work of the Sales Representatives Based on the Information

8.16. Implementing the Commercial Function
8.16.1. Recruitment of Own Sales Representatives and Sales Agents
8.16.2. Controlling Commercial Activity
8.16.3. The Code of Ethics of Sales Personnel
8.16.4. Compliance with Legislation
8.16.5. Generally Accepted Standards of Business Conduct

8.17. Key Account Management
8.17.1. Concept of Key Account Management
8.17.2. The Key Account Manager
8.17.3. Key Account Management Strategy

8.18. Financial and Budgetary Management
8.18.1. The Break-Even Point
8.18.2. The Sales Budget Control of Management and of the Annual Sales Plan
8.18.3. Financial Impact of Strategic Sales Decisions
8.18.4. Cycle Management, Turnover, Profitability and Liquidity
8.18.5. Income Statement

Module 9. Innovation and Project Management

9.1. Innovation
9.1.1. Introduction to Innovation
9.1.2. Innovation in the Entrepreneurial Ecosystem
9.1.3. Instruments and Tools for the Business Innovation Process

9.2. Innovation Strategy
9.2.1. Strategic Intelligence and Innovation
9.2.2. Innovation from Strategy

9.3. Project Management para Startups
9.3.1. Startup Concept
9.3.2. Lean Startup Philosophy
9.3.3. Stages of Startup Development
9.3.4. The Role of a Project Manager in a Startup

9.4. Business Model Design and Validation
9.4.1. Conceptual Framework of a Business Model
9.4.2. Business Model Design and Validation

9.5. Project Management
9.5.1. Project Management and Direction: Identification of Opportunities to Develop Corporate Innovation Projects
9.5.2. Main Stages or Phases in the Direction and Management of Innovation Projects

9.6. Project Change Management: Training Management
9.6.1. Concept of Change Management
9.6.2. The Change Management Process
9.6.3. Change Implementation

9.7. Project Communication Management
9.7.1. Project Communications Management
9.7.2. Key Concepts for Project Communications Management
9.7.3. Emerging Trends
9.7.4. Adaptations to Equipment
9.7.5. Planning Communications Management
9.7.6. Manage Communications
9.7.7. Monitoring Communications

9.8. Traditional and Innovative Methodologies
9.8.1. Innovative Methodologies
9.8.2. Basic Principles of Scrum
9.8.3. Differences between the Main Aspects of Scrum and Traditional Methodologies

9.9. Creation of a Startup
9.9.1. Creation of a Startup
9.9.2. Organization and Culture
9.9.3. Top Ten Reasons Why Startups Fail
9.9.4. Legal Aspects

9.10. Project Risk Management Planning
9.10.1. Risk Planning
9.10.2. Elements for Creating a Risk Management Plan
9.10.3. Tools for Creating a Risk Management Plan
9.10.4. Content of the Risk Management Plan

Module 10. Executive Management

10.1. General Management
10.1.1. The Concept of General Management
10.1.2. The Role of the CEO
10.1.3. The CEO and Their Responsibilities
10.1.4. Transforming the Work of Management

10.2. Manager Functions: Organizational Culture and Approaches
10.2.1. Manager Functions: Organizational Culture and Approaches

10.3. Operations Management
10.3.1. The Importance of Management
10.3.2. Value Chain
10.3.3. Quality Management

10.4. Public Speaking and Spokesperson Education
10.4.1. Interpersonal Communication
10.4.2. Communication Skills and Influence
10.4.3. Communication Barriers

10.5. Personal and Organizational Communications Tools
10.5.1. Interpersonal Communication
10.5.2. Interpersonal Communication Tools
10.5.3. Communication in the Organization
10.5.4. Tools in the Organization

10.6. Communication in Crisis Situations
10.6.1. Crisis
10.6.2. Phases of the Crisis
10.6.3. Messages: Contents and Moments

10.7. Preparation of a Crisis Plan
10.7.1. Analysis of Possible Problems
10.7.2. Planning
10.7.3. Adequacy of Personnel

10.8. Emotional Intelligence
10.8.1. Emotional Intelligence and Communication
10.8.2. Assertiveness, Empathy, and Active Listening
10.8.3. Self-Esteem and Emotional Communication

10.9. Personal Branding
10.9.1. Strategies for Personal Brand Development
10.9.2. Personal Branding Laws
10.9.3. Tools for Creating Personal Brands

10.10. Leadership and Team Management
10.10.1. Leadership and Leadership Styles
10.10.2. Leader Capabilities and Challenges
10.10.3. Managing Change Processes
10.10.4. Managing Multicultural Teams

Module 11. Data Analysis in a Business Organization

11.1. Business Analysis
11.1.1. Business Analysis
11.1.2. Data Structure
11.1.3. Phases and Elements

11.2. Data Analysis in the Business
11.2.1. Scorecards and KPIs by Departments
11.2.2. Operational, Tactical and Strategic Reports
11.2.3. Data Analytics Applied to Each Department
    11.2.3.1. Marketing and Communication
    11.2.3.2. Commercial
    11.2.3.3. Customer Service
    11.2.3.4. Purchasing
    11.2.3.5. Administration
    11.2.3.6. HR
    11.2.3.7. Production
    11.2.3.8. IT

11.3. Marketing and Communication
11.3.1. KPIs to be Measured, Applications and Benefits
11.3.2. Marketing Systems and Data Warehouse
11.3.3. Implementation of a Data Analytics Marketing Framework
11.3.4. Marketing and Communication Plan
11.3.5. Strategies, Prediction and Campaign Management

11.4. Commerce and Sales
11.4.1. Contributions of Data Analytics in the Commercial Area
11.4.2. Needs of the Sales Department
11.4.3. Market Research

11.5. Customer Service
11.5.1. Loyalty
11.5.2. Personal Coaching and Emotional Intelligence
11.5.3. Customer Satisfaction

11.6. Purchasing
11.6.1. Data Analysis for Market Research
11.6.2. Data Analysis for Competency Research
11.6.3. Other Applications

11.7. Administration
11.7.1. Needs of the Administration Department
11.7.2. Data Warehouse and Financial Risk Analysis
11.7.3. Data Warehouse and Credit Risk Analysis

11.8. Human Resources
11.8.1. HR and the Benefits of Data Analysis
11.8.2. Data Analytics Tools for the HR Department
11.8.3. Data Analytics Applications for the HR Department

11.9. Production

11.9.1. Data Analysis in a Production Department
11.9.2. Applications
11.9.3. Benefits

11.10. IT

11.10.1. IT Department
11.10.2. Data Analysis and Digital Transformation
11.10.3. Innovation and Productivity

Module 12. Data and Information Management and Manipulation in Data Science

12.1. Statistics Variables, Indexes and Ratios

12.1.1. Statistics
12.1.2. Statistical Dimensions
12.1.3. Variables, Indexes and Ratios

12.2. Type of Data

12.2.1. Qualitative
12.2.2. Quantitative
12.2.3. Characterization and Categories

12.3. Data Knowledge from the Measurements

12.3.1. Centralization Measurements
12.3.2. Measures of Dispersion
12.3.3. Correlation

12.4. Data Knowledge from the Graphs

12.4.1. Visualization According to Type of Data
12.4.2. Interpretation of Graphic Information
12.4.3. Customization of Graphics with R

12.5. Probability

12.5.1. Probability
12.5.2. Function of Probability
12.5.3. Distributions

12.6. Data Collection

12.6.1. Methodology of Data Collection
12.6.2. Data Collection Tools
12.6.3. Data Collection Channels

12.7. Data Cleaning

12.7.1. Phases of Data Cleansing
12.7.2. Data Quality
12.7.3. Data Manipulation (with R)

12.8. Data Analysis, Interpretation and Evaluation of Results

12.8.1. Statistical Measures
12.8.2. Relationship Indexes
12.8.3. Data Mining

12.9. The Marketing Mix

12.9.1. Components
12.9.2. Design

12.10. Data Availability

12.10.1. Access
12.10.2. Uses
12.10.3. Security

Module 13. IoT Devices and Platforms as the Basis for Data Science

13.1. Internet of Things

13.1.1. Internet of the Future, Internet of Things
13.1.2. The Industrial Internet Consortium

13.2. Architecture of Reference

13.2.1. The Architecture of Reference
13.2.2. Layers
13.2.3. Components

13.3. Sensors and IoT Devices

13.3.1. Principal Components
13.3.2. Sensors and Actuators

13.4. Communications and Protocols

13.4.1. Protocols OSI Model
13.4.2. Communication Technologies

13.5. Cloud Platforms for IoT and IIoT

13.5.1. General Purpose Platforms
13.5.2. Industrial Platforms
13.5.3. Open Code Platforms

13.6. Data Management on IoT Platforms

13.6.1. Data Management Mechanisms Open Data
13.6.2. Data Exchange and Visualization

13.7. IoT Security

13.7.1. Requirements and Security Areas
13.7.2. Security Strategies in IIoT

13.8. Applications of IoT

13.8.1. Intelligent Cities
13.8.2. Health and Fitness
13.8.3. Smart Home
13.8.4. Other Applications

13.9. Applications of IIoT

13.9.1. Fabrication
13.9.2. Transport
13.9.3. Energy
13.9.4. Agriculture and Livestock
13.9.5. Other Sectors

13.10. Industry 4.0

13.10.1. IoRT (Internet of Robotics Things)
13.10.2. 3D Additive Manufacturing
13.10.3. Big Data Analytic

Module 14. Graphical Representation of Data Analysis

14.1. Exploratory Analysis
14.1.1. Representation for Information Analysis
14.1.2. The Value of Graphical Representation
14.1.3. New Paradigms of Graphical Representation

14.2. Optimization for Data Science
14.2.1. Color Range and Design
14.2.2. Gestalt in Graphic Representation
14.2.3. Errors to Avoid and Advice

14.3. Basic Data Sources
14.3.1. For Quality Representation
14.3.2. For Quantity Representation
14.3.3. For Time Representation

14.4. Complex Data Sources
14.4.1. Files, Lists and Databases
14.4.2. Open Data
14.4.3. Continuous Data Generation

14.5. Types of Graphs
14.5.1. Basic Representations
14.5.2. Block Representation
14.5.3. Representation for Dispersion Analysis
14.5.4. Circular Representations
14.5.5. Bubble Representations
14.5.6. Geographical Representations

14.6. Types of Visualization
14.6.1. Comparative and Relational
14.6.2. Distribution
14.6.3. Hierarchical

14.7. Report Design with Graphic Representation
14.7.1. Application of Graphs in Marketing Reports
14.7.2. Application of Graphs in Scorecards and KPI's
14.7.3. Application of Graphs in Strategic Plans
14.7.4. Other Uses: Science, Health, Business

14.8. Graphic Narration
14.8.1. Graphic Narration
14.8.2. Evolution
14.8.3. Uses

14.9. Tools Oriented Towards Visualization
14.9.1. Advanced Tools
14.9.2. Online Software
14.9.3. Open Source

14.10. New Technologies in Data Visualization
14.10.1. Systems for Virtualization of Reality
14.10.2. Reality Enhancement and Improvement Systems
14.10.3. Intelligent Systems

Module 15. Data Science Tools

15.1. Data Science
15.1.1. Data Science
15.1.2. Advanced Tools for the Data Scientist

15.2. Data, Information and Knowledge
15.2.1. Data, Information and Knowledge
15.2.2. Types of Data
15.2.3. Data Sources

15.3. From Data to Information
15.3.1. Data Analysis
15.3.2. Types of Analysis
15.3.3. Extraction of Information from a Dataset

15.4. Extraction of Information Through Visualization
15.4.1. Visualization as an Analysis Tool
15.4.2. Visualization Methods
15.4.3. Visualization of a Data Set

15.5. Data Quality
15.5.1. Quality Data
15.5.2. Data Cleaning
15.5.3. Basic Data Pre-Processing

15.6. Dataset
15.6.1. Dataset Enrichment
15.6.2. The Curse of Dimensionality
15.6.3. Modification of Our Data Set

15.7. Unbalance
15.7.1. Classes of Unbalance
15.7.2. Unbalance Mitigation Techniques
15.7.3. Balancing a Dataset

15.8. Unsupervised Models
15.8.1. Unsupervised Model
15.8.2. Methods
15.8.3. Classification with Unsupervised Models

15.9. Supervised Models
15.9.1. Supervised Model
15.9.2. Methods
15.9.3. Classification with Supervised Models

15.10. Tools and Good Practices
15.10.1. Good Practices for Data Scientists
15.10.2. The Best Model
15.10.3. Useful Tools

Module 16. Data Mining: Selection, Pre-Processing and Transformation

16.1. Statistical Inference
16.1.1. Descriptive Statistics vs. Statistical Inference
16.1.2. Parametric Procedures
16.1.3. Non-Parametric Procedures

16.2. Exploratory Analysis
16.2.1. Descriptive Analysis
16.2.2. Visualization
16.2.3. Data Preparation

16.3. Data Preparation
16.3.1. Integration and Data Cleaning
16.3.2. Normalization of Data
16.3.3. Transforming Attributes

16.4. Missing Values
16.4.1. Treatment of Missing Values
16.4.2. Maximum Likelihood Imputation Methods
16.4.3. Missing Value Imputation Using Machine Learning

16.5. Noise in the Data
16.5.1. Noise Classes and Attributes
16.5.2. Noise Filtering
16.5.3. The Effect of Noise

16.6. The Curse of Dimensionality
16.6.1. Oversampling
16.6.2. Undersampling
16.6.3. Multidimensional Data Reduction

16.7. From Continuous to Discrete Attributes
16.7.1. Continuous Data Vs. Discreet Data
16.7.2. Discretization Process

16.8. The Data
16.8.1. Data Selection
16.8.2. Prospects and Selection Criteria
16.8.3. Selection Methods

16.9. Instance Selection
16.9.1. Methods for Instance Selection
16.9.2. Prototype Selection
16.9.3. Advanced Methods for Instance Selection

16.10. Data Pre-Processing in Big Data Environments
16.10.1. Big Data
16.10.2. Classical Versus Massive Pre-Processing
16.10.3. Smart Data

Module 17. Predictability and Analysis of Stochastic Phenomena

17.1. Time Series
17.1.1. Time Series
17.1.2. Utility and Applicability
17.1.3. Related Case Studies

17.2. Time Series
17.2.1. Trend Seasonality of ST
17.2.2. Typical Variations
17.2.3. Waste Analysis

17.3. Typology
17.3.1. Stationary
17.3.2. Non-Stationary
17.3.3. Transformations and Settings

17.4. Time Series Schemes
17.4.1. Additive Scheme (Model)
17.4.2. Multiplicative Scheme (Model)
17.4.3. Procedures to Determine the Type of Model

17.5. Basic Forecasting Methods
17.5.1. Media
17.5.2. Naïve
17.5.3. Seasonal Naivety
17.5.4. Method Comparison

17.6. Waste Analysis
17.6.1. Autocorrelation
17.6.2. ACF of Waste
17.6.3. Correlation Test

17.7. Regression in the Context of Time Series
17.7.1. ANOVA
17.7.2. Fundamentals
17.7.3. Practical Applications

17.8. Predictive Methods of Time Series
17.8.1. ARIMA
17.8.2. Exponential Smoothing

17.9. Manipulation and Analysis of Time Series with R
17.9.1. Data Preparation
17.9.2. Identification of Patterns
17.9.3. Model Analysis
17.9.4. Prediction

17.10. Combined Graphical Analysis with R
17.10.1. Normal Situations
17.10.2. Practical Application for the Resolution of Simple Problems
17.10.3. Practical Application for the Resolution of Advanced Problems

Module 18. Design and Development of Intelligent Systems

18.1. Data Pre-Processing
18.1.1. Data Pre-Processing
18.1.2. Data Transformation
18.1.3. Data Mining

18.2. Machine Learning
18.2.1. Supervised and Unsupervised Learning
18.2.2. Reinforcement Learning
18.2.3. Other Learning Paradigms

18.3. Classification Algorithms
18.3.1. Inductive Machine Learning
18.3.2. SVM and KNN
18.3.3. Metrics and Scores for Ranking

18.4. Regression Algorithms
18.4.1. Lineal Regression, Logistical Regression and Non-Lineal Models
18.4.2. Time Series
18.4.3. Metrics and Scores for Regression

18.5. Clustering Algorithms
18.5.1. Hierarchical Clustering Techniques
18.5.2. Partitional Clustering Techniques
18.5.3. Metrics and Scores for Clustering

18.6. Association Rules Techniques
18.6.1. Methods for Rule Extraction
18.6.2. Metrics and Scores for Association Rule Algorithms

18.7. Advanced Classification Techniques. Multiclassifiers
18.7.1. Bagging Algorithms
18.7.2. Random "Forests Sorter"
18.7.3. "Boosting" for Decision Trees

18.8. Probabilistic Graphical Models
18.8.1. Probabilistic Models
18.8.2. Bayesian Networks Properties, Representation and Parameterization
18.8.3. Other Probabilistic Graphical Models

18.9. Neural Networks
18.9.1. Machine Learning with Artificial Neural Networks
18.9.2. Feedforward Networks

18.10. Deep Learning
18.10.1. Deep Feedforward Networks
18.10.2. Convolutional Neural Networks and Sequence Models
18.10.3. Tools for Implementing Deep Neural Networks

Module 19. Architecture and Systems for Intensive Use of Data

19.1. Non-Functional Requirements. Pillars of Big Data Applications
19.1.1. Reliability
19.1.2. Adaptation
19.1.3. Maintainability

19.2. Data Models
19.2.1. Relational Model
19.2.2. Document Model
19.2.3. Graph Type Data Model

19.3. Databases. Data Storage and Retrieval Management
19.3.1. Hash Indexes
19.3.2. Structured Log Storage
19.3.3. Trees B

19.4. Data Coding Formats
19.4.1. Language-Specific Formats
19.4.2. Standardized Formats
19.4.3. Binary Coding Formats
19.4.4. Data Stream Between Processes

19.5. Replication
19.5.1. Objectives of Replication
19.5.2. Replication Models
19.5.3. Problems with Replication

19.6. Distributed Transactions
19.6.1. Transaction
19.6.2. Protocols for Distributed Transactions
19.6.3. Serializable Transactions

19.7. Partitions
19.7.1. Forms of Partitioning
19.7.2. Secondary Index Interaction and Partitioning
19.7.3. Partition Rebalancing

19.8. Data Processing
19.8.1. Batch Processing
19.8.2. Distributed File Systems
19.8.3. MapReduce

19.9. Data Processing in Real Time
19.9.1. Types of Message Brokers
19.9.2. Representation of Databases as Data Streams
19.9.3. Data Stream Processing

19.10. Practical Applications in Business
19.10.1. Consistency in Readings
19.10.2. Holistic Focus of Data
19.10.3. Scaling of a Distributed Service

Module 20. Practical Application of Data Science in Business Sectors

20.1. Health Sector

20.1.1. Implications of AI and Data Analysis in the Health Sector
20.1.2. Opportunities and Challenges

20.2. Risks and Trends in the Health Sector

20.2.1. Use in the Health Sector
20.2.2. Potential Risks Related to the Use of AI

20.3. Financial Services

20.3.1. Implications of AI and Data Analysis in Financial Services Sector
20.3.2. Use in the Financial Services
20.3.3. Potential Risks Related to the Use of AI

20.4. Retail

20.4.1. Implications of AI and Data Analytics in the Retail Sector
20.4.2. Use in Retail
20.4.3. Potential Risks Related to the Use of AI

20.5. Industry 4.0

20.5.1. Implications of AI and Data Analysis in Industry 4.0
20.5.2. Use in the 4.0 Industry

20.6. Risks and Trends in Industry 4.0

20.6.1. Potential Risks Related to the Use of AI

20.7. Public Administration

20.7.1. Implications of AI and Data Analytics for Public Administration
20.7.2. Use in Public Administration
20.7.3. Potential Risks Related to the Use of AI

20.8. Educational

20.8.1. Implications of AI and Data Analysis in Education
20.8.2. Potential Risks Related to the Use of AI

20.9. Forestry and Agriculture

20.9.1. Implications of AI and Data Analysis in Forestry and Agriculture
20.9.2. Use in Forestry and Agriculture
20.9.3. Potential Risks Related to the Use of AI

20.10. Human Resources

20.10.1. Implications of AI and Data Analysis in Human Resources
20.10.2. Practical Applications in the Business World
20.10.3. Potential Risks Related to the use of AI

"

This Advanced Master's Degree MBA in Data Science Management will equip you to lead and manage effectively in data-driven business environments"

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.

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.

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

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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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.

30%

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.

10%

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.

8%

3%

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.

30%

15%

4%

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.

Our Students' Profiles

The profile of TECH Global University students is that of professionals with extensive specialization and experience, who understand the importance of continuing their studies during their working life. In this particular case, these are professionals with previous knowledge in business management, who want to broaden their scope of action towards data science and will achieve this through a high-quality syllabus.

This program is aimed at people interested in improving their employability thanks to first class study plan"

Average Age

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

Years of Experience

- More than 15 years **24%**
- Up to 5 years **17%**
- 5 to 10 years **30%**
- 10 -15 years **29%**

Training

- Tourism **30%**
- Administration **26%**
- Business **24%**
- Social Sciences **6%**
- Other **14 %**

Academic Profile

- Data Science **30%**
- Hotel Managers **21%**
- Marketing Managers **15%**
- Public Relations Managers **20%**
- Other **14 %**
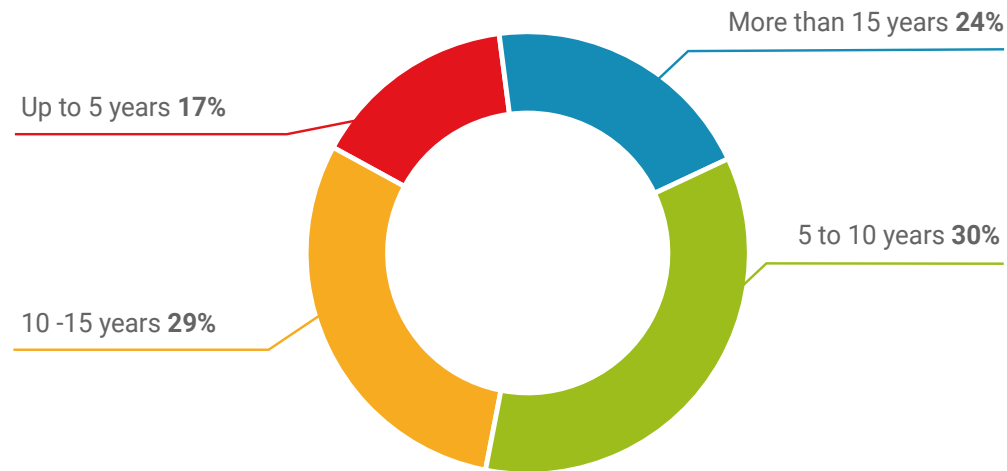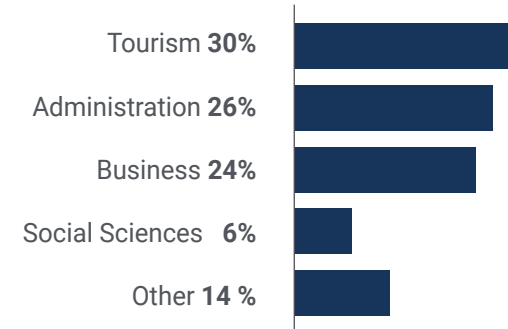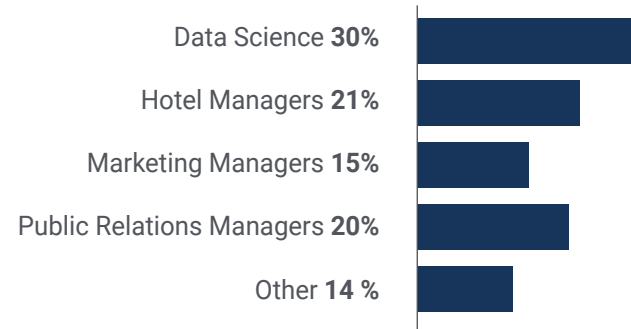
Geographical Distribution

USA **13%**	
Spain **37%**	
Mexico **19%**	
Colombia **7%**	
Argentina **8%**	
Chile **6%**	
Peru **3%**	
Other **7%**	
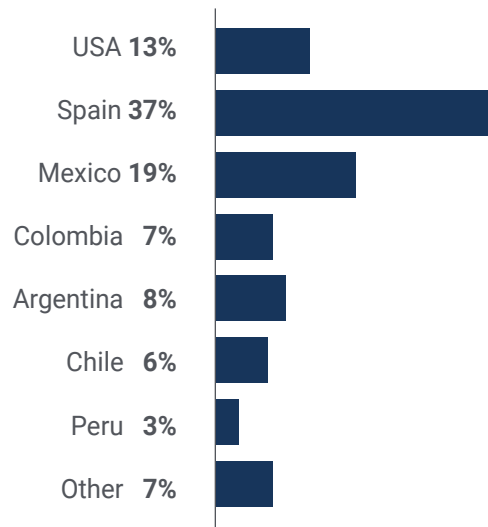
Raquel Medina

Chief Data Science Officer

"After successfully completing this Advanced Master's Degree, I have been promoted in my company to the position of Chief Data Science Officer, which I have been working towards for a long time. Thanks to TECH, and its excellent syllabus, it has strengthened my ability to make data-driven decisions and generate significant value for my organization. I am excited about my new role and look forward to continuing to lead in the application of the most advanced techniques in data science"

Course Management

The faculty are highly qualified experts with a strong academic background in data science and valuable experience applying this knowledge in diverse business environments. Their experience ranges from strategic data management to implementing analytical solutions in real-world situations. In addition, they stand out for their ability to teach in an accessible and understandable way, making it easier for graduates to assimilate concepts. In this way, they will foster critical thinking, problem solving and collaboration, preparing students to lead in the convergence between business management and data science.

The dedication and expertise of TECH faculty will ensure you acquire solid and applicable knowledge, standing out in the professional landscape of data science and business management"

International Guest Director

Dr. Tom Flowerdew is an internationally prominent figure in the field of **data science**. He has served as **Vice President** of **Data Science** at **MasterCard** in **London**. In this role, he has been responsible for the preparation, operation and strategy of a consolidated team in this area, with the mission to support a portfolio of **innovative products in payments**, fight against **money laundering (AML)** and analyze **cryptocurrency** use cases.

He has also been **Director** of **Data Science** in **Cyber Intelligence Solutions**, also at **MasterCard**, where he has led the integration of data to support revolutionary **cryptocurrency-based** products. In fact, his ability to handle complex **data** and develop **advanced solutions** has been instrumental to the success of multiple projects in the field of **cybersecurity** and **finance**.

Similarly, for **Featurespace**, he has held several crucial roles, including **Head** of **Standardized Product Delivery**, in **Cambridge**, leading a team and a transformation project that has reduced delivery time and effort by over 75%. In addition, as **Head** of **Delivery**, **U.S.** headquarters, he has managed all of the company's **North American** delivery functions, significantly improving **operational efficiency** and strengthening **customer relationships**.

Additionally, Dr. Tom Flowerdew has demonstrated his ability to build and lead high-performance teams throughout his career, most notably in his role as a **Data Scientist**, both in **Atlanta**, where he has recruited and managed a group of experts in the field, and in **Cambridge**. In doing so, his focus on **innovation** and **problem solving** has left an indelible mark on the organizations where he has worked, establishing himself as an **influential leader** in the field of **data science**.
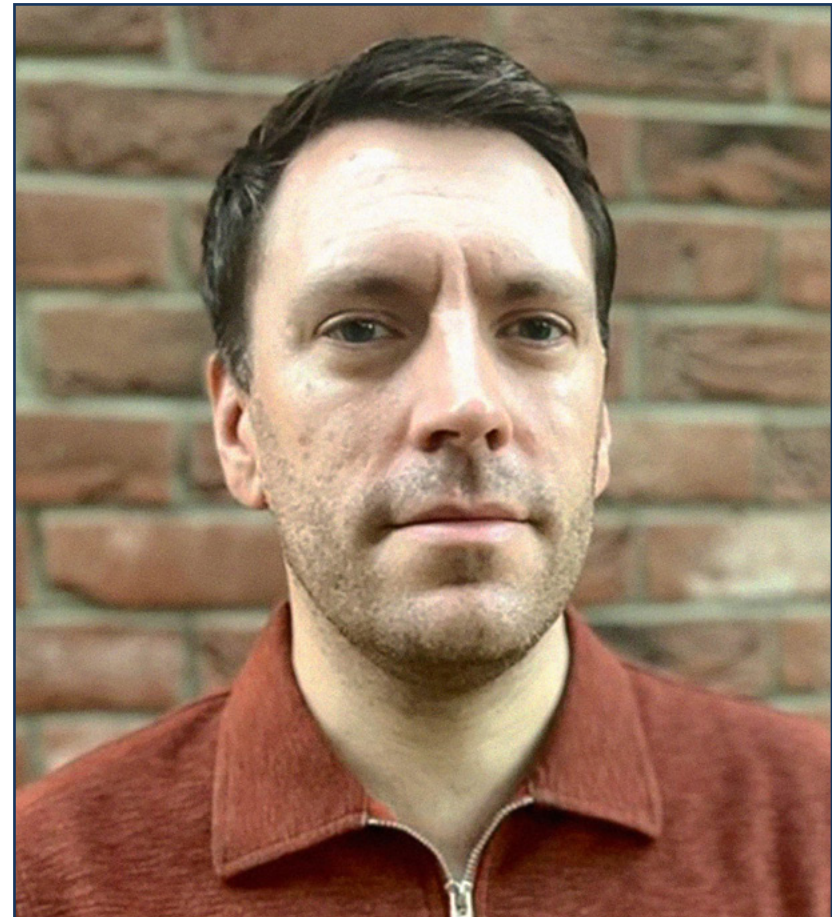
Dr. Flowerdew, Tom

- Vice President, Data Science, MasterCard, London, UK
- Director of Data Science, Cyber Intelligence Solutions, at MasterCard, London
- Head of Standardized Product Delivery at Featurespace, Cambridge, Cambridge
- Delivery Manager for U.S. at Featurespace, Cambridge,   Data Scientist at Featurespace, Atlanta, Georgia, USA
- Data Scientist at Featurespace, Cambridge
- Research Fellow in Statistics and Operations Research at Lancaster University
- Ph.D. in Operations Research from Lancaster University
- Degree in Systems Engineering from BAE Systems
- Degree in Mathematics from the University of York

"

Thanks to TECH you will be able to learn with the best professionals in the world"

International Guest Director

With over 20 years of experience in designing and leading global **talent acquisition teams,** Jennifer Dove is an expert in **technology recruitment** and **strategy**. Throughout her career, she has held senior positions in several technology organizations within *Fortune 50*, companies such as **NBCUniversal** and **Comcast**. Her track record has allowed her to excel in competitive, high-growth environments.

As **Vice President of Talent Acquisition** at**Mastercard,** she is responsible for overseeing talent onboarding strategy and execution, collaborating with business leaders and **HR managers** to meet operational and strategic hiring objectives. In particular, she aims to **build diverse**, **inclusive** and **high-perfoming teams** that drive innovation and growth of the company's products and services. In addition, she is adept at using tools to attract and retain the best people from around the world. She is also responsible for **amplifying** Mastercard's **employer brand** and **value proposition** through publications, events and social media.

Jennifer Dove has demonstrated her commitment to continuous professional development by actively participating in networks of **Human Resources** professionals and contributing to the onboarding of numerous employees at different companies. After earning her bachelor's degree in **Organizational Communication**from the University of Miami, she has held management positions in recruitment for companies in various areas.

On the other hand, it has been recognized for its ability to lead organizational transformations, **integrate technologies** into **recruitment processes** and develop leadership programs that prepare institutions for future challenges. She has also successfully implemented **wellness programs** that have significantly increased employee satisfaction and retention.

Ms. Dove, Jennifer

- Vice President of Talent Acquisition at Mastercard, New York, United States
- Director of Talent Acquisition at NBCUniversal Media, New York, USA
- Head of Recruitment at Comcast
- Director of Recruiting at Rite Hire Advisory, New York, USA
- Executive Vice President of the Sales Division at Ardor NY Real Estate
- Director of Recruitment at Valerie August & Associates
- Account Executive at BNC
- Account Executive at Vault
- Graduated in Organizational Communication from the University of Miami

" *TECH has a distinguished and specialized group of International Guest Directors, with important leadership roles in the leading companies in the global market"*

International Guest Director

A technology leader with decades of experience in **major technology multinationals**, Rick Gauthier has developed prominently in the field of **clouds**services **and** end-to-end process improvement. He has been recognized as a leader and manager of highly efficient teams, showing a natural talent for ensuring a high level of engagement among his employees.

He possesses innate gifts in strategy and executive innovation, developing new ideas and backing his success with quality data. His background at **Amazon** has allowed him to manage and integrate the company's IT services in the United States. At **Microsoft** he has led a team of 104 people, responsible for providing corporate-wide IT infrastructure and supporting product engineering departments across the company.

This experience has allowed him to stand out as a high-impact manager with remarkable abilities to increase efficiency, productivity and overall customer satisfaction.

Mr. Gauthier, Rick

- Regional IT Director at Amazon, Seattle, USA
- Senior Program Manager at Amazon
- Vice President of Wimmer Solutions
- Senior Director of Productive Engineering Services at Microsoft
- Degree in Cybersecurity from Western Governors University
- Technical Certificate in Commercial Diving from Divers Institute of Technology
- B.S. in Environmental Studies from The Evergreen State College

"*Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice*"

International Guest Director

Romi Arman is a renowned international expert with more than two decades of experience in **Digital Transformation**, **Marketing, Strategy** and **Consulting**. Through that extended trajectory, he has taken different risks and is a permanent **advocate** for **innovation** and **change** in the business environment. With that expertise, he has collaborated with CEOs and corporate organizations from all over the world, pushing them to move away from traditional business models. In this way, he has helped companies such as Shell Energy become **true market leaders,** focused on their **customers** and the **digital world.**

The strategies designed by Arman have a latent impact, as they have enabled several corporations **to improve the experiences of consumers, staff** and **shareholders** alike. The success of this expert is quantifiable through tangible metrics such as **CSAT**, **employee engagement** in the institutions where he has practiced and the growth of the **EBITDA financial indicator** in each of them.

Also, in his professional career, he has nurtured and **led high-performance teams** that have even received awards for their **transformational potential**. With Shell, specifically, the executive has always set out to overcome three challenges: meeting **customers'** complex **decarbonization** demands **supporting** a "**cost-effective decarbonization**" and **overhauling** a fragmented **data, digital and technology landscap**e. Thus, his efforts have shown that in order to achieve sustainable success, it is essential to start from the needs of consumers and lay the foundations for the transformation of processes, data, technology and culture.

In addition, the executive stands out for his mastery of the **business applications** of **Artificial Intelligence,** a subject in which he holds a postgraduate degree from the London Business School. At the same time, he has accumulated experience in **IoT** and **Salesforce.**

Mr. Arman, Romi

- Digital Transformation Director (CDO) at Shell Energy Corporation, London, UK
- Global Director of E-Commerce and Customer Service at Shell Energy Corporation
- National Key Account Manager (OEM and automotive retailers) for Shell in Kuala Lumpur, Malaysia
- Senior Management Consultant (Financial Services Sector) for Accenture based in Singapore
- Graduate of the University of Leeds
- Graduate Diploma in Business Applications of AI for Senior Executives from London Business School
- CCXP Customer Experience Professional Certification
- IMD Executive Digital Transformation Course

"

Do you want to update your knowledge with the highest educational quality? TECH offers you the most updated content in the academic market, designed by authentic experts of international prestige"

International Guest Director

Manuel Arens is an **experienced data management professional** and leader of a highly qualified team. In fact, Arens holds the position of **global purchasing manager** in Google's Technical Infrastructure and Data Center division, where he has spent most of his professional career. Based in Mountain View, California, he has provided solutions for the tech giant's operational challenges, such as master **data integrity, vendor data updates** and vendor **prioritization** . He has led data center supply chain planning and vendor risk assessment, generating improvements in vendor risk assessment, resulting in process improvements and workflow management that have resulted in significant cost savings.

With more than a decade of work providing digital solutions and leadership for companies in diverse industries, he has extensive experience in all aspects of strategic solution delivery, including **marketing, media analytics, measurement** and **attribution.** In fact, he has received a number of accolades for his work, including the **BIM Leadership Award**, the **Search Leadership Award**, the **Lead Generation Export Program Award** and the **Export Lead Generation Program Award and the EMEA Best Sales Model Award.**

Arens also served as **Sales Manager** in Dublin, Ireland. In this role, he built a team of 4 to 14 members over three years and led the sales team to achieve results and collaborate well with each other and cross-functional teams. He also served as **Senior Industry Analyst,** Hamburg, Germany, creating storylines for over 150 clients using internal and third party tools to support analysis. He developed and wrote in-depth reports to demonstrate his mastery of the subject matter, including understanding the **macroeconomic and political/regulatory factors** affecting technology adoption and diffusion.

He has also led teams at companies such as Eaton, Airbus and Siemens, where he gained valuable account management and supply chain experience. He is particularly noted for continually exceeding expectations by **building valuable customer relationships** and **working seamlessly with people at all levels of an organization**, including stakeholders, management, team members and customers. His data-driven approach and ability to develop innovative and scalable solutions to industry challenges have made him a prominent leader in his field.

Mr. Arens, Manuel

- Global Procurement Manager at Google, Mountain View, USA
- Senior Manager, B2B Analytics and Technology, Google, USA
- Sales Director - Google, Ireland
- Senior Industry Analyst at Google, Germany
- Accounts Manager - Google, Ireland
- Accounts Payable at Eaton, UK
- Supply Chain Manager at Airbus, Germany

" *Bet on TECH! You will have access to the best didactic materials, at the forefront of technology and education, implemented by internationally renowned specialists in the field"*

International Guest Director

Andrea La Sala is an **experienced Marketing executive** whose projects have had a **significant impact** on the **Fashion environment**. Throughout his successful career he has developed different tasks related to **Products**, **Merchandising** and **Communication**. All of this linked to with prestigious brands such as **Giorgio Armani**, **Dolce&Gabbana**, **Calvin Klein**, among others.

The results of this **high-profile international executive** have been linked to his proven ability to **synthesize information** in clear frameworks and execute **concrete actions** aligned to **specific business objectives**. In addition, he is recognized for his **proactivity** and **adaptability to fast-paced** work rhythms. To all this, this expert adds a **strong commercial awareness, market vision** and a **genuine passion** for **products**.

As **Global Brand and Merchandising Director** at **Giorgio Armani**, he has overseen a variety of **Marketing strategies** for **apparel** and **accesories**. His tactics have also focused on the **retail environment** and **consumer needs** and **behavior**. In this La Sala has also been responsible for shaping the commercialization of products in different markets, acting as **team leader** in the **Design**, **Communication** and **Sales departments.**

On the other hand, in companies such as **Calvin Klein** or **Gruppo Coin**, he has undertaken projects to boost the **structure**, and **development** of **different collections**. He has been in charge of creating **effective calendars** for buying and selling **campaings.** He has also been in charge of the **terms**, **costs**, **processes** and **delivery times** of different operations.

These experiences have made Andrea La Sala one of the main and most qualified   **corporate leaders** in **Fashion** and **Luxury**. A high managerial capacity with which he has managed to effectively **implement the positive positioning** of **different brands** and redefine their key performance indicators (KPIs).

Mr. La Sala, Andrea

- Global Brand & Merchandising Director Armani Exchange at Giorgio Armani, Milan, Italy
- Merchandising Director at Calvin Klein
- Brand Manager at Gruppo Coin
- Brand Manager at Dolce&Gabbana
- Brand Manager at Sergio Tacchini S.p.A
- Market Analyst at Fastweb
- Graduate of Business and Economics at Università degli Studi del Piemonte Orientale

"The most qualified and experienced professionals at international level are waiting for you at TECH to offer you a first class teaching, updated and based on the latest scientific evidence. What are you waiting for to enroll?"

International Guest Director

Mick Gram is synonymous with innovation and excellence in the field of **Business Intelligence** internationally. His successful career is linked to leadership positions in multinationals such as **Walmart** and **Red Bull.** Likewise, this expert stands out for his vision to **identify emerging technologies** that, in the long term, achieve an everlasting impact in the corporate environment.

On the other hand, the executive is considered a **pioneer** in the **use of data visualization techniques** that simplified complex sets, making them accessible and facilitating decision making. This ability became the pillar of his professional profile, transforming him into a desired asset for many organizations that bet on **gathering information** and **generating concrete actions** from them.

One of his most outstanding projects in recent years has been the **Walmart Data Cafe platform**, the largest of its kind in the world that is anchored in the **cloud** aimed at *Big Data* analysis. In addition, he has held the position of **Director** of **Business Intelligence** at **Red Bull,** covering areas such as **Sales, Distribution, Marketing and Supply Chain Operations**. His team was recently recognized for its constant innovation regarding the use of Walmart Luminate's new API for Shopper and Channel insights.

As for his training, the executive has several Masters and postgraduate studies at prestigious centers such as the **University of Berkeley,** in the United States, and the **University of Copenhagen,** in Denmark. Through this continuous updating, the expert has attained cutting-edge competencies. Thus, he has come to be considered a **born leader** of the **new global economy**, centered on the drive for data and its infinite possibilities.

Mr. Gram, Mick

- Director of Business Intelligence and Analytics at Red Bull, Los Angeles, United States
- Business Intelligence Solutions Architect for Walmart Data Cafe
- Independent Business Intelligence and Data Science Consultant
- Director of Business Intelligence at Capgemini
- Senior Analyst at Nordea
- Senior Business Intelligence Consultant at SAS
- Executive Education in AI and Machine Learning at UC Berkeley College of Engineering
- Executive MBA in e-commerce at the University of Copenhagen
- B.Sc. and M.Sc. in Mathematics and Statistics at the University of Copenhagen

"

Study at the best online university in the world according to Forbes! In this MBA you will have access to an extensive library of multimedia resources, developed by internationally renowned professors"

International Guest Director

Scott Stevenson is a distinguished expert in the **Digital Marketing** sector who, for more than 19 years, has been linked to one of the most powerful companies in the entertainment industry, **Warner Bros. Discovery.** In this role, he has played a fundamental role in **overseeing logistics** and **creative workflows** across various digital platforms, including social media, search, display and linear media.

This executive's leadership has been crucial in driving in **production strategies** in **paid media**, resulting in a **marked improvement** which has resulted in **company's conversion** rates. At the same time, he has assumed other roles, such as Director of Marketing Services and Traffic Manager at the same multinational during his former management.

Stevenson has also been involved in the global distribution of video games and **digital property campaigns**. He was also responsible for introducing operational strategies related to the formation, completion and delivery of sound and image content for t**elevision commercials** and *trailers.*

In addition, he holds a Bachelor's degree in Telecommunications from the University of Florida and a Master's Degree in Creative Writing from the University of California, which demonstrates his proficiency in **communication** and **storytelling**. In addition, he has participated at Harvard University's School of Professional Development in cutting-edge programs on the use of **Artificial Intelligence** in **business**.. Therefore, his professional profile stands as one of the most relevant in the current field of **Marketing** and **Digital Media.**

Mr. Stevenson, Scott

- Director of Digital Marketing at Warner Bros. Discovery, Burbank, United States
- Traffic Manager at Warner Bros. Entertainment
- M.A. in Creative Writing from the University of California
- B.S. in Telecommunications from the University of Florida

" *Achieve your academic and career goals with the best qualified experts in the world! The faculty of this MBA will guide you through the entire learning process"*

International Guest Director

Eric Nyquist is a leading **international sports professional**who has built an impressive career, noted for his **strategic leadership** and ability to drive change and **innovation** in **world-class** sports organizations.

In fact, he has held senior roles such as **Director of Communications and Impact** at **NASCAR,** based in **Florida, USA.** With many years of experience behind him at NASCAR, Mr. Nyquist has also held several leadership positions, including **Senior Vice President of Strategic Development** and **General Manager of Business Affairs,** managing more than a dozen disciplines ranging from **strategic development** to **entertainment marketing.**

Nyquist has also made a significant mark on **Chicago's top** sports franchises. As **Executive Vice President** of the **Chicago Bulls** and **Chicago White Sox** franchises, he has demonstrated his ability to drive **business** and **strategic success** in the world of **professional sports..**

Finally, it is worth noting that he began his career in **sports** while working in **New York** as a **senior strategic analyst** for **Roger Goodell** in the **National Football League (NFL)** and, prior to that, as a **Legal Intern** with the **United States Football Federation.**

Mr. Nyquist, Eric

- Director of Communications and Impact at NASCAR, Florida, USA
- Senior Vice President of Strategic Development at NASCAR, Florida, United States
- Vice President of Strategic Planning at NASCAR
- Senior Director of Business Affairs at NASCAR
- Executive Vice President at Chicago White Sox Franchises
- Executive Vice President at Chicago Bulls Franchises
- Manager of Business Planning at the National Football League (NFL)
- Business Affairs/Legal Intern with the United States Soccer Federation
- Law Degree from the University of Chicago
- Master's Degree in Business Administration-MBA from the University of Chicago Booth School of Business
- B.A. in International Economics from Carleton College

Thanks to this university program, 100% online, you will be able to combine your studies with your daily obligations, under the guidance of the leading international experts in the field of your interest. Enroll now!"

Management

Dr. Peralta Martín-Palomino, Arturo

- CEO and CTO at Prometeus Global Solutions
- CTO at Korporate Technologies
- CTO at AI Shepherds GmbH
- Consultant and Strategic Business Advisor at Alliance Medical
- Director of Design and Development at DocPath
- PhD in Psychology from the University of Castilla La Mancha
- PhD in Economics, Business and Finance from the Camilo José Cela University
- PhD in Psychology from University of Castilla La Mancha
- Master's Degree in Executive MBA from the Isabel I University
- Master's Degree in Sales and Marketing Management, Isabel I University
- Expert Master's Degree in Big Data by Hadoop Training
- Master's Degree in Advanced Information Technologies from the University of Castilla La Mancha
- Member of: SMILE Research Group

Professors

Dr. Montoro Montarroso, Andrés
- Researcher in the SMILe Group at the University of Castilla-La Mancha.
- Researcher at the University of Granada
- Data Scientist at Prometeus Global Solutions
- Vice President and Software Developer at CireBits
- PhD in Advanced Information Technologies from the University of Castilla La Mancha
- Graduate in Computer Engineering from the University of Castilla-La Mancha
- Master's Degree in Data Science and Computer Engineering from the University of Granada
- Guest lecturer in the subject of Knowledge-Based Systems at the Escuela Superior de Informática de Ciudad Real, Giving the Lecture: Advanced Artificial Intelligence Techniques: Search and Analysis of Potential Social Media Radicals
- Guest lecturer in the subject of Data Mining at the Escuela Superior de Informática de Ciudad Real, giving the lecture: Applications of Natural Language Processing: Fuzzy logic to the analysis of messages in social networks
- Speaker at the Seminar on Prevention of Corruption in Public Administrations and Artificial Intelligence at the Faculty of Law and Social Sciences of Toledo, giving the lecture: Artificial Intelligence Techniques
- Speaker at the first International Seminar on Administrative Law and Artificial Intelligence (DAIA). Organised by the Luis Ortega Álvarez Centre for European Studies and the TransJus Research Institute. Conference entitled "Sentiment Analysis for the prevention of hate speech on social media

Ms. Fernández Meléndez, Galina
- Specialist's Degree in Big Data
- Data Analyst at Aresi Gestión de Fincas
- Data Analyst in ADN Mobile Solution
- Bachelor's Degree in Business Administration at Universidad Bicentenaria Aragua Caracas, Venezuela
- Diploma in Planning and Public Finance from the Venezuelan School of Planning
- Master's Degree in Data Analysis and Business Intelligence from the University of Oviedo
- MBA in Business Administration and Management by the European Business School of Barcelona
- Master's Degree in Big Data and Business Intelligence from the European Business School of Barcelona

Ms. Martínez Cerrato, Yésica
- Education, Business and Marketing Specialist
- Responsible for Technical Training at Securitas Seguridad España
- Product Manager in Electronic Security at Securitas Direct
- Business Intelligence Analyst at Ricopia Technologies
- Computer Technician and Responsible for OTEC computer classrooms at the University of Alcalá de Henares
- Collaborator in the ASALUMA Association
- Degree in Electronic Communications Engineering at the Polytechnic School, University of Alcalá de Henares

Ms. Pedrajas Parabá, María Elena
- New Technologies and Digital Transformation Consultant en Management Solutions
- Researcher in the Department of Computer Science and Numerical Analysis at the University of Córdoba
- Researcher at the Singular Center for Research in Intelligent Technologies in Santiago de Compostela
- Degree in Computer Engineering from the University of Cordoba
- Master's Degree in Data Science and Computer Engineering from the University of Granada
- Master's Degree in Business Consulting at the Pontificia Comillas University

Ms. Rissanen, Karoliina
- EMEA Talent Acquisition Specialist at Hexagon Manufacturing Intelligence
- Human Resources Specialist at Oy Sinebrychoff Ab, Carlsberg Group
- Deputy Head of People, Performance and Development at IATA Global Delivery Center
- Customer Service Manager at IATA Global Delivery Center
- Diploma in Tourism from the University Haaga-Helia
- Degree in Human Resources and Labour Relations from the UNIR
- Master's Degree in Protocol and External Relations from Camilo José Cela University
- Diploma in Human Resources Management from the Chartered Institute of Personnel and Development
- Instructor by the International Air Transport Association

Mr. Tato Sánchez, Rafael
- Technical Director at Indra Sistemas SA
- Systems Engineer in ENA TRÁFICO SAU
- Master's Degree in Industry 4.0. by the Online University
- Master's Degree in Industrial Engineering from the University Europe
- Industrial Electronics and Automation Engineering Degree from the Universidad Europea
- Industrial Technical Engineer by Universidad Politécnica de Madrid

Mr. Peris Morillo, Luis Javier
- Technical Lead at Capitole Consulting for Inditex
- Senior Technical Lead and Delivery Lead Support at HCL Technologies
- Technical Editor at Baeldung
- Agile Coach and Operations Manager at Mirai Advisory
- Developer, Team Lead, Scrum Master, Agile Coach and Product Manager at DocPath
- Technologist at ARCO
- Graduate in Computer Science Engineering from the University of Castilla-La Mancha
- Master's Degree in Project Management from CEOE

Impact on Your Career

This TECH program is indispensable for business professionals who wish to turn their career around, specializing in a complex and very intense area such as data science. It is an Advanced Master's Degree that includes the most relevant aspects in this area and that will mark a plus of quality in the professionals' resume. Undoubtedly, this is the opportunity they were waiting for to improve their career.

"Thanks to this 100% online program, you will learn how to successfully manage your company by implementing Data Science Management"

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

This TECH Global University Advanced Master's Degree MBA in Data Science Management (DSO, Chief Data Science Officer) is an intense program that prepares students to face challenges and business decisions globally.
Its main objective is to promote personal and professional growth Helping them achieve success

Therefore, those who wish to improve themselves, achieve a positive change at a professional level and interact with the best, will find their place at TECH.

A unique program that will make your resume more competitive, with all the quality guarantees that characterize TECH.

You will get the job improvement you want thanks to the specialization that TECH offers you with this Advanced Master's Degree.

Time of Change

During the program	During the first year	After 2 years
21%	**53%**	**26%**

Type of change

Internal Promotion **18%**

Change of Company **44%**

Entrepreneurship **38%**
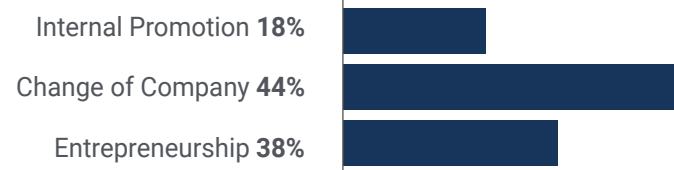
Salary increase

This program represents a salary increase of more than **25,22%** for our students

Salary before	A salary increase of	Salary after
57,900	**25.22%**	**$ 72,500**

Benefits for Your Company

This TECH program has been designed thinking about the qualification needs of business professionals in senior management and data science, but also about what graduates will be able to contribute to the companies in which they work. Therefore, it will not only be a competitive advantage for the students themselves, providing them with greater employability, but also for the companies, where they will be able to contribute all their value and knowledge.

You will bring to the companies in which you work a new model of leadership and management, more current, more competitive and based on data science for decision making"

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.

03

Building agents of change

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

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.

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.

Certificate

The MBA in Data Science Management (DSO, Chief Data Science Officer) guarantees students, in addition to the most rigorous and up-to-date education, access to an Advanced 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 an **MBA diploma in Data Science Management (DSO, Chief Data Science Officer)** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University, is an official European University publicly recognized by the Government of Andorra *(official bulletin)*. Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

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

Title: **Advanced Master's Degree MBA in Data Science Management (DSO, Chief Data Science Officer)**

Modality: **online**

Duration: **2 years**

Accreditation: **120 ECTS**

tech global university

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

**Advanced Master's Degree in MBA in Data Science Management
(DSO, Chief Data Science Officer)**

This is a private qualification of 3.600 hours of duration equivalent to 120 ECTS, with a start date of
dd/mm/yyyy and an end date of dd/mm/yyyy.

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

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

Dr. Pedro Navarro Illana
Dean

Unique TECH Code: AFWORD23S   techtitute.com/certificates

Advanced Master's Degree in MBA in Data Science Management (DSO, Chief Data Science Officer)

General Structure of the Syllabus

Year	Subject	ECTS	Type	Year	Subject	ECTS	Type
1º	Leadership, Ethics and Social Responsibility in Companies	6	CO	1º	Data Analysis in a Business Organization	6	CO
1º	Strategic Management and Executive Management	6	CO	1º	Data and Information Management and Manipulation in Data	6	CO
1º	People and Talent Management	6	CO				
1º	Economic and Financial Management	6	CO	1º	IoT Devices and Platforms as the Basis for Data Science	6	CO
1º	Operations and Logistics Management	6	CO	1º	Graphical Representation of Data Analysis	6	CO
1º	Information Systems Management	6	CO	1º	Data Science Tools	6	CO
1º	Commercial Management, Strategic Marketing and Corporate Communications	6	CO	1º	Data Mining: Selection, Pre-Processing and Transformation	6	CO
				1º	Predictability and Analysis of Stochastic Phenomena	6	CO
1º	Market Research, Advertising and Commercial Management	6	CO	1º	Design and Development of Intelligent Systems	6	CO
				1º	Architecture and Systems for Intensive Use of Data	6	CO
1º	Innovation and Project Management	6	CO	1º	Practical Application of Data Science in Businessmen Sectors	6	CO
1º	Executive Management	6	CO				

Dr. Pedro Navarro Illana
Dean

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

Advanced Master's Degree
MBA in Data Science Management (DSO, Chief Data Science Officer)

» Modality: **online**
» Duration: **2 years**
» Certificate: **TECH Global University**
» Accreditation: **120 ECTS**
» Schedule: **at your own pace**
» Exams: **online**

Advanced Master's Degree

MBA in Data Science Management
(DSO, Chief Data Science Officer)

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