Advanced Master's Degree

MBA in Data Science Management

tech global university

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Advanced Master's Degree

MBA in Data Science Management

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

Website: www.techtitute.com/us/information-technology/advanced-master-degree/advanced-master-degree-mba-data-science-management

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Introduction

With the growing volume of information available, companies are increasingly looking to become more efficient in the management, analysis and use of large amounts of data. This process is crucial to obtain valuable insights that support strategic decisions, optimizing operations and improving organizational performance. In this context, the Advanced Master's Degree MBA in Data Science Management becomes a key tool, designed to structure highly trained professionals who can help companies make informed decisions and improve their processes. In addition, the demand for data science experts continues to increase, as organizations recognize its value as a key factor for innovation and long-term success. Accordingly, with this program, TECH seeks to provide students with the skills and abilities necessary to successfully meet the challenges of senior positions, preparing them to lead change.

Data analysis is not just a technical skill, it is the strategic skill that will make the difference in your professional career"

In this field, Data Science Management professionals must combine technical knowledge, such as data analysis and machine learning, with strategic management and leadership skills. This allows them not only to lead projects, but also to ensure the success of companies in the digital era. In this way, effective data management becomes a key tool for improving organizational efficiency and gaining a competitive advantage.

With an advanced program that merges business management with data science, the professional is prepared to be able to lead projects involving large volumes of data and emerging technologies for strategic decision making. The technical part of the program is equally outstanding, covering areas such as programming, which allows students to develop practical skills to implement real projects. The curriculum also integrates elements of business management and leadership, which provides participants with the necessary training to lead multidisciplinary teams and make strategic decisions based on data. This combination of technical and managerial skills provides a unique opportunity for those seeking to position themselves as leaders in the digital era.

Through a structured curriculum, students will learn to manage large volumes of information, using advanced tools and the latest and most up-to-date research. For this reason, the program is designed to be flexible, allowing students to adapt their learning pace to their personal and professional needs, making it easier for them to combine their studies with other responsibilities. The 100% online methodology guarantees a complete and accessible training, which prepares participants to lead Data Science projects in the business environment.

This **Advanced Master's Degree MBA in Data Science Management** contains the most complete and up-to-date program on the market. The most important features include:

- Practical cases presented by experts in IT
- The graphic, schematic and eminently practical content of the book provides scientific and practical information on those disciplines that are essential for professional practice
- Practical exercises where the process of self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection

If you want to lead the future, TECH teaches you how data drives innovation and competitiveness in business"

TECH's learning methodology will give you access to the most up-to-date and relevant Data Science Management knowledge"

Start developing key skills in Data Science with TECH, the leading university in employability.

A 100% online program available for you to start structuring your professional future.

The program's teaching staff includes professionals from the sector who contribute their work experience to this specializing program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

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

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Why Study at TECH?

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

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

The world's best online university, according to FORBES

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

The best top international faculty

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

The world's largest online university

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

The most complete syllabuses on the university scene

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

A unique learning method

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

The official online university of the NBA

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

Leaders in employability

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

Google Premier Partner

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

The top-rated university by its students

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

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Syllabus

The Advanced Master's Degree MBA in Data Science Management curriculum has been designed by a team of experts in data science and business management. This multidisciplinary approach ensures that students acquire a solid understanding of the tools necessary for their development and application in the workplace. As such, the program will address the most advanced methodologies in current areas, such as artificial intelligence, and best practices in project management and team leadership.

In an increasingly digital world, position yourself as the person in charge of transforming data into business opportunities”

Module 1. Data Analysis in the Business Organization

1.1. Business Analysis
- 1.1.1. Business Analysis
- 1.1.2. Data Structure
- 1.1.3. Phases and Elements

1.2. Data Analysis in the Business
- 1.2.1. Scorecards and KPIs by Departments
- 1.2.2. Operational, Tactical and Strategic Reports
- 1.2.3. Data Analytics Applied to Each Department
  - 1.2.3.1. Marketing and Communication
  - 1.2.3.2. Commercial
  - 1.2.3.3. Customer Service
  - 1.2.3.4. Purchasing
  - 1.2.3.5. Administration
  - 1.2.3.6. Human Resources
  - 1.2.3.7. Production
  - 1.2.3.8. IT

1.3. Marketing and Communication
- 1.3.1. KPIs to Be Measured, Applications and Benefits
- 1.3.2. Marketing Systems and Data Warehouse
- 1.3.3. Implementation of a Data Analytics Marketing Framework
- 1.3.4. Marketing and Communication Plan
- 1.3.5. Strategies, Prediction and Campaign Management

1.4. Commerce and Sales
- 1.4.1. Contributions of Data Analytics in the Commercial Area
- 1.4.2. Needs of the Sales Department
- 1.4.3. Market Research

1.5. Customer Service
- 1.5.1. Loyalty
- 1.5.2. Personal Coaching and Emotional Intelligence
- 1.5.3. Customer Satisfaction

1.6. Purchasing
- 1.6.1. Data Analysis for Market Research
- 1.6.2. Data Analysis for Competency Research
- 1.6.3. Other Applications

1.7. Administration
- 1.7.1. Needs of the Administration Department
- 1.7.2. Data Warehouse and Financial Risk Analysis
- 1.7.3. Data Warehouse and Credit Risk Analysis

1.8. Human Resources
- 1.8.1. Human Resources and the Benefits of Data Analysis
- 1.8.2. Data Analytics Tools in the HR Department
- 1.8.3. Data Analytics Applications in the HR Department

1.9. Production
- 1.9.1. Data Analysis in a Production Department
- 1.9.2. Applications
- 1.9.3. Benefits

1.10. IT
- 1.10.1. IT Department
- 1.10.2. Data Analysis and Digital Transformation
- 1.10.3. Innovation and Productivity

Module 2. Management, Manipulation of Data and Information for Data Science

2.1. Statistics. Variables, Indices and Ratios
- 2.1.1. Statistics
- 2.1.2. Statistical Dimensions
- 2.1.3. Variables, Indices and Ratios

2.2. Type of Data
- 2.2.1. Qualitative
- 2.2.2. Quantitative
- 2.2.3. Characterization and Categories

2.3. Data Knowledge from the Measurements
- 2.3.1. Centralization Measurements
- 2.3.2. Measures of Dispersion
- 2.3.3. Correlation

2.4. Data Knowledge from the Graphs
- 2.4.1. Visualization According to Type of Data
- 2.4.2. Interpretation of Graphic Information
- 2.4.3. Customization of Graphics with R

2.5. Probability
- 2.5.1. Probability
- 2.5.2. Function of Probability
- 2.5.3. Distributions

2.6. Data Collection
- 2.6.1. Methodology of Data Collection
- 2.6.2. Data Collection Tools
- 2.6.3. Data Collection Channels

2.7. Data Cleaning
- 2.7.1. Phases of Data Cleansing
- 2.7.2. Data Quality
- 2.7.3. Data Manipulation (with R)

2.8. Data Analysis, Interpretation and Evaluation of Results
- 2.8.1. Statistical Measures
- 2.8.2. Relationship Indexes
- 2.8.3. Data Mining

2.9. Data Warehouse
- 2.9.1. Components
- 2.9.2. Design

2.10. Data Availability
- 2.10.1. Access
- 2.10.2. Uses
- 2.10.3. Security

Module 3. IoT Devices and Platforms as a Base for Data Science

3.1. Internet of Things
- 3.1.1. Internet of the Future, Internet of Things
- 3.1.2. The Industrial Internet Consortium

3.2. Architecture of Reference
- 3.2.1. The Architecture of Reference
- 3.2.2. Layers
- 3.2.3. Components

3.3. Sensors and IoT Devices
- 3.3.1. Principal Components
- 3.3.2. Sensors and Actuators

3.4. Communications and Protocols
- 3.4.1. Protocols. OSI Model
- 3.4.2. Communication Technologies

3.5. Cloud Platforms for IoT and IIoT
- 3.5.1. General Purpose Platforms
- 3.5.2. Industrial Platforms
- 3.5.3. Open Code Platforms

3.6. Data Management on IoT Platforms
- 3.6.1. Data Management Mechanisms. Open Data
- 3.6.2. Data Exchange and Visualization

3.7. IoT Security
- 3.7.1. Requirements and Security Areas
- 3.7.2. Security Strategies in IIoT

3.8. Applications of IoT
- 3.8.1. Intelligent Cities
- 3.8.2. Health and Fitness
- 3.8.3. Smart Home
- 3.8.4. Other Applications

3.9. Applications of IIoT
- 3.9.1. Fabrication
- 3.9.2. Transport
- 3.9.3. Energy
- 3.9.4. Agriculture and Livestock
- 3.9.5. Other Sectors

3.10. Industry 4.0
- 3.10.1. IoRT (Internet of Robotics Things)
- 3.10.2. 3D Additive Manufacturing
- 3.10.3. Big Data Analytics

Module 4. Graphical Representation of Data Analysis

4.1. Exploratory Analysis
- 4.1.1. Representation for Information Analysis
- 4.1.2. The Value of Graphical Representation
- 4.1.3. New Paradigms of Graphical Representation

4.2. Optimization for Data Science
- 4.2.1. Color Range and Design
- 4.2.2. Gestalt in Graphic Representation
- 4.2.3. Errors to Avoid and Advice

4.3. Basic Data Sources
- 4.3.1. For Quality Representation
- 4.3.2. For Quantity Representation
- 4.3.3. For Time Representation

4.4. Complex Data Sources
- 4.4.1. Files, Listings and Databases
- 4.4.2. Open Data
- 4.4.3. Continuous Data Generation

4.5. Types of Graphs
- 4.5.1. Basic Representations
- 4.5.2. Block Representation
- 4.5.3. Representation for Dispersion Analysis
- 4.5.4. Circular Representations
- 4.5.5. Bubble Representations
- 4.5.6. Geographical Representations

4.6. Types of Visualization
- 4.6.1. Comparative and Relational
- 4.6.2. Distribution
- 4.6.3. Hierarchical

4.7. Report Design with Graphic Representation
- 4.7.1. Application of Graphs in Marketing Reports
- 4.7.2. Application of Graphs in Scorecards and KPIs
- 4.7.3. Application of Graphs in Strategic Plans
- 4.7.4. Other Uses: Science, Health, Business

4.8. Graphic Narration
- 4.8.1. Graphic Narration
- 4.8.2. Evolution
- 4.8.3. Uses

4.9. Tools Oriented Towards Visualization
- 4.9.1. Advanced Tools
- 4.9.2. Online Software
- 4.9.3. Open Source

4.10. New Technologies in Data Visualization
- 4.10.1. Systems for Virtualization of Reality
- 4.10.2. Reality Enhancement and Improvement Systems
- 4.10.3. Intelligent Systems

Module 5. Data Science Tools

5.1. Data Science
- 5.1.1. Data Science
- 5.1.2. Advanced Tools for Data Scientists

5.2. Data, Information and Knowledge
- 5.2.1. Data, Information and Knowledge
- 5.2.2. Types of Data
- 5.2.3. Data Sources

5.3. From Data to Information
- 5.3.1. Data Analysis
- 5.3.2. Types of Analysis
- 5.3.3. Extraction of Information from a Dataset

5.4. Extraction of Information Through Visualization
- 5.4.1. Visualization as an Analysis Tool
- 5.4.2. Visualization Methods
- 5.4.3. Visualization of a Data Set

5.5. Data Quality
- 5.5.1. Quality Data
- 5.5.2. Data Cleaning
- 5.5.3. Basic Data Pre-Processing

5.6. *Dataset*
- 5.6.1. Dataset Enrichment
- 5.6.2. *The Curse of Dimensionality*
- 5.6.3. *Modification of Our Data Set*

5.7. Unbalance
- 5.7.1. Classes of Unbalance
- 5.7.2. Unbalance Mitigation Techniques
- 5.7.3. Balancing a Dataset

5.8. Unsupervised Models
- 5.8.1. Unsupervised Model
- 5.8.2. Methods
- 5.8.3. Classification with Unsupervised Models

5.9. Supervised Models
- 5.9.1. Supervised Model
- 5.9.2. Methods
- 5.9.3. Classification with Supervised Models

5.10. Tools and Good Practices
- 5.10.1. Good Practices for Data Scientists
- 5.10.2. The Best Model
- 5.10.3. Useful Tools

Module 6. Data Mining. Selection, Pre-Processing and Transformation

6.1. Statistical Inference
- 6.1.1. Descriptive Statistics vs. Statistical Inference
- 6.1.2. Parametric Procedures
- 6.1.3. Non-Parametric Procedures

6.2. Exploratory Analysis
- 6.2.1. Descriptive Analysis
- 6.2.2. Visualization
- 6.2.3. Data Preparation

6.3. Data Preparation
- 6.3.1. Integration and Data Cleaning
- 6.3.2. Normalization of Data
- 6.3.3. Transforming Attributes

6.4. Missing Values
- 6.4.1. Treatment of Missing Values
- 6.4.2. Maximum Likelihood Imputation Methods
- 6.4.3. Missing Value Imputation Using Machine Learning

6.5. Noise in the Data
- 6.5.1. Noise Classes and Attributes
- 6.5.2. Noise Filtering
- 6.5.3. The Effect of Noise

6.6. The Curse of Dimensionality
- 6.6.1. Oversampling
- 6.6.2. Undersampling
- 6.6.3. Multidimensional Data Reduction

6.7. From Continuous to Discrete Attributes
- 6.7.1. Continuous Data vs. Discreet Data
- 6.7.2. Discretization Process

6.8. The Data
- 6.8.1. Data Selection
- 6.8.2. Prospects and Selection Criteria
- 6.8.3. Selection Methods

6.9. Instance Selection
- 6.9.1. Methods for Instance Selection
- 6.9.2. Prototype Selection
- 6.9.3. Advanced Methods for Instance Selection

6.10. Data Pre-Processing in Big Data Environments
- 6.10.1. Big Data
- 6.10.2. Classical Versus Massive Pre-Processing
- 6.10.3. Smart Data

Module 7. Predictability and Analysis of Stochastic Phenomena

7.1. Time Series
- 7.1.1. Time Series
- 7.1.2. Utility and Applicability
- 7.1.3. Related Case Studies

7.2. Time Series
- 7.2.1. Seasonal Trend of TS
- 7.2.2. Typical Variations
- 7.2.3. Waste Analysis

7.3. Typology
- 7.3.1. Stationary
- 7.3.2. Non-Stationary
- 7.3.3. Transformations and Settings

7.4. Time Series Schemes
- 7.4.1. Additive Scheme (Model)
- 7.4.2. Multiplicative Scheme (Model)
- 7.4.3. Procedures to Determine the Type of Model

7.5. Basic Forecasting Methods
- 7.5.1. Media
- 7.5.2. Naïve
- 7.5.3. Seasonal Naivety
- 7.5.4. Method Comparison

7.6. Waste Analysis
- 7.6.1. Autocorrelation
- 7.6.2. ACF of Waste
- 7.6.3. Correlation Test

7.7. Regression in the Context of Time Series
- 7.7.1. ANOVA
- 7.7.2. Fundamentals
- 7.7.3. Practical Applications

7.8. Predictive Methods of Time Series
- 7.8.1. ARIMA
- 7.8.2. Exponential Smoothing

7.9. Manipulation and Analysis of Time Series with R
- 7.9.1. Data Preparation
- 7.9.2. Identification of Patterns
- 7.9.3. Model Analysis
- 7.9.4. Prediction

7.10. Combined Graphical Analysis with R
- 7.10.1. Normal Situations
- 7.10.2. Practical Application for the Resolution of Simple Problems
- 7.10.3. Practical Application for the Resolution of Advanced Problems

Module 8. Design and Development of Intelligent Systems

8.1. Data Pre-Processing
- 8.1.1. Data Pre-Processing
- 8.1.2. Data Transformation
- 8.1.3. Data Mining

8.2. Machine Learning
- 8.2.1. Supervised and Unsupervised Learning
- 8.2.2. Reinforcement Learning
- 8.2.3. Other Learning Paradigms

8.3. Classification Algorithms
- 8.3.1. Inductive Machine Learning
- 8.3.2. SVM and KNN
- 8.3.3. Metrics and Scores for Ranking

8.4. Regression Algorithms
- 8.4.1. Lineal Regression, Logistical Regression and Non-Lineal Models
- 8.4.2. Time Series
- 8.4.3. Metrics and Scores for Regression

8.5. Clustering Algorithms
- 8.5.1. Hierarchical Clustering Techniques
- 8.5.2. Partitional Clustering Techniques
- 8.5.3. Metrics and Scores for Clustering

8.6. Association Rules Techniques
- 8.6.1. Methods for Rule Extraction
- 8.6.2. Metrics and Scores for Association Rule Algorithms

8.7. Advanced Classification Techniques. Multiclassifiers
- 8.7.1. Bagging Algorithms
- 8.7.2. Random Forests Sorter
- 8.7.3. Boosting for Decision Trees

8.8. Probabilistic Graphical Models
- 8.8.1. Probabilistic Models
- 8.8.2. Bayesian Networks. Properties, Representation and Parameterization
- 8.8.3. Other Probabilistic Graphical Models

8.9. Neural Networks
- 8.9.1. Machine Learning with Artificial Neural Networks
- 8.9.2. Feedforward Networks

8.10. Deep Learning
- 8.10.1. Deep Feedforward Networks
- 8.10.2. Convolutional Neural Networks and Sequence Models
- 8.10.3. Tools for Implementing Deep Neural Networks

Module 9. Architecture and Systems for Intensive Use of Data

9.1. Non-Functional Requirements. Pillars of Big Data Applications
- 9.1.1. Reliability
- 9.1.2. Adaptation
- 9.1.3. Maintainability

9.2. Data Models
- 9.2.1. Relational Model
- 9.2.2. Document Model
- 9.2.3. Graph Type Data Model

9.3. Databases. Storage Management and Data Recovery
- 9.3.1. Hash Indexes
- 9.3.2. Structured Log Storage
- 9.3.3. B Trees

9.4. Data Coding Formats
- 9.4.1. Language-Specific Formats
- 9.4.2. Standardized Formats
- 9.4.3. Binary Coding Formats
- 9.4.4. Data Stream Between Processes

9.5. Replication
- 9.5.1. Objectives of Replication
- 9.5.2. Replication Models
- 9.5.3. Problems with Replication

9.6. Distributed Transactions
- 9.6.1. Transaction
- 9.6.2. Protocols for Distributed Transactions
- 9.6.3. Serializable Transactions

9.7. Partitions
- 9.7.1. Forms of Partitioning
- 9.7.2. Secondary Index Interaction and Partitioning
- 9.7.3. Partition Rebalancing

9.8. Offline Data Processing
- 9.8.1. Batch Processing
- 9.8.2. Distributed File Systems
- 9.8.3. MapReduce

9.9. Data Processing in Real Time
- 9.9.1. Types of Message Brokers
- 9.9.2. Representation of Databases as Data Streams
- 9.9.3. Data Stream Processing

9.10. Practical Applications in Business
- 9.10.1. Consistency in Readings
- 9.10.2. Holistic Focus of Data
- 9.10.3. Scaling of a Distributed Service

Module 10. Practical Application of Data Science in Business Sectors

10.1. Health Sector
- 10.1.1. Implications of AI and Data Analysis in the Health Sector
- 10.1.2. Opportunities and Challenges

10.2. Risks and Trends in the Healthcare Sector
- 10.2.1. Use of the Health Sector
- 10.2.2. Potential Risks Related to the Use of AI

10.3. Financial Services
- 10.3.1. Implications of AI and Data Analytics in the Financial Services Industry
- 10.3.2. Use in the Financial Services
- 10.3.3. Potential Risks Related to the Use of AI

10.4. *Retail*
- 10.4.1. Implications of AI and Data Analysis in the Retail Sector
- 10.4.2. Use in Retail
- 10.4.3. Potential Risks Related to the Use of AI

10.5. Industry 4.0
- 10.5.1. Implications of AI and Data Analysis in Industry 4.0
- 10.5.2. Use in the 4.0 Industry

10.6. Risks and Trends in the Industry 4.0
- 10.6.1. Potential Risks Related to the Use of AI

10.7. Public Administration
- 10.7.1. Implications of AI and Data Analysis in Public Administration
- 10.7.2. Use in Public Administration
- 10.7.3. Potential Risks Related to the Use of AI

10.8. Educational
- 10.8.1. Implications of AI and Data Analysis in Education
- 10.8.2. Potential Risks Related to the Use of AI

10.9. Forestry and Agriculture
- 10.9.1. Implications of AI and Data Analysis in Forestry and Agriculture
- 10.9.2. Use in Forestry and Agriculture
- 10.9.3. Potential Risks Related to the Use of AI

10.10. Human Resources
- 10.10.1. Implications of AI and Data Analysis in Human Resources
- 10.10.2. Practical Applications in the Business World
- 10.10.3. Potential Risks Related to the Use of AI

Module 11. Main Information Management Systems

11.1. ERP and CRM
- 11.1.1. ERP
- 11.1.2. CRM
- 11.1.3. Differences between ERP and CRM Selling Point
- 11.1.4. Business Success

11.2. ERP
- 11.2.1. ERP
- 11.2.2. Types of ERPs
- 11.2.3. Development of an ERP Implementation Project
- 11.2.4. ERP Resource Optimizer
- 11.2.5. Architecture of an ERP System

11.3. Information Provided by the ERP
- 11.3.1. Information Provided by the ERP
- 11.3.2. Advantages and Disadvantages
- 11.3.3. The Information

11.4. ERP Systems
- 11.4.1. Current ERP Systems and Tools
- 11.4.2. Decision Making
- 11.4.3. Day-to-Day with ERP

11.5. CRM: The Implementation Project
- 11.5.1. The CRM. The Implementation Project
- 11.5.2. The CRM as a Commercial Tool
- 11.5.3. Strategies for the Information System

11.6. CRM: Customer Loyalty
- 11.6.1. Starting Point
- 11.6.2. Sell or Loyalty
- 11.6.3. Factors for Success in our Loyalty System
- 11.6.4. Multi-Channel Strategies
- 11.6.5. Design of Loyalty Actions
- 11.6.6. E-Loyalty

11.7. CRM: Communication Campaigns
- 11.7.1. Communication Actions and Plans
- 11.7.2. Importance of the Informed Customer
- 11.7.3. Listening to the Client

11.8. CRM: Preventing Dissatisfaction
- 11.8.1. Customer Cancellations
- 11.8.2. Detecting Errors in Time
- 11.8.3. Improvement Processes
- 11.8.4. Recovery of the Dissatisfied Customer

11.9. CRM: Special Communication Actions
- 11.9.1. Objectives and Planning of a Company Event
- 11.9.2. Design and Realization of the Event
- 11.9.3. Actions from the Department
- 11.9.4. Result Analysis

11.10. Relational Marketing
- 11.10.1. Implantation. Errors
- 11.10.2. Methodology, Segmentation and Processes
- 11.10.3. Performance, According to the Department
- 11.10.4. CRM Tools

Module 12. Data Types and Life Cycle

12.1. Statistics
- 12.1.1. Statistics: Descriptive Statistics, Statistical Inferences
- 12.1.2. Population, Sample, Individual
- 12.1.3. Variables: Definition, Measurement Scales

12.2. Types of Data Statistics
- 12.2.1. According to Type
  - 12.2.1.1. Quantitative: Continuous Data and Discrete Data
  - 12.2.1.2. Qualitative: Binomial Data, Nominal Data and Ordinal Data
- 12.2.2. According to Its Shape
  - 12.2.2.1. Numeric
  - 12.2.2.2. Text
  - 12.2.2.3. Logical
- 12.2.3. According to Its Source
  - 12.2.3.1. Primary
  - 12.2.3.2. Secondary

12.3. Life Cycle of Data
- 12.3.1. Stages of the Cycle
- 12.3.2. Milestones of the Cycle
- 12.3.3. FAIR Principles

12.4. Initial Stages of the Cycle
- 12.4.1. Definition of Goals
- 12.4.2. Determination of Resource Requirements
- 12.4.3. Gantt Chart
- 12.4.4. Data Structure

12.5. Data Collection
- 12.5.1. Methodology of Data Collection
- 12.5.2. Data Collection Tools
- 12.5.3. Data Collection Channels

12.6. Data Cleaning
- 12.6.1. Phases of Data Cleansing
- 12.6.2. Data Quality
- 12.6.3. Data Manipulation (with R)

12.7. Data Analysis, Interpretation and Evaluation of Results
- 12.7.1. Statistical Measures
- 12.7.2. Relationship Indexes
- 12.7.3. Data Mining

12.8. Data Warehouse
- 12.8.1. Elements that Comprise It
- 12.8.2. Design
- 12.8.3. Aspects to Consider

12.9. Data Availability
- 12.9.1. Access
- 12.9.2. Uses
- 12.9.3. Security

12.10. Regulatory Aspects
- 12.10.1. Data Protection Law
- 12.10.2. Good Practices
- 12.10.3. Other Regulatory Aspects

Module 13. Number Machine Learning

13.1. Knowledge in Databases
- 13.1.1. Data Pre-Processing
- 13.1.2. Analysis
- 13.1.3. Interpretation and Evaluation of the Results

13.2. *Machine Learning*
- 13.2.1. Supervised and Unsupervised Learning
- 13.2.2. Reinforcement Learning
- 13.2.3. Semi-Supervised Learning. Other Learning Models

13.3. Classification
- 13.3.1. Decision Trees and Rule-Based Learning.
- 13.3.2. Support Vector Machines (SVM) and K-Nearest Neighbor (KNN) Algorithms
- 13.3.3. Metrics for Sorting Algorithms

13.4. Regression
- 13.4.1. Linear and Logistic Regression
- 13.4.2. Non-Linear Regression Models.
- 13.4.3. Time Series Analysis
- 13.4.4. Metrics for Regression Algorithms

13.5. Clustering
- 13.5.1. Hierarchical Grouping
- 13.5.2. Partitional Grouping
- 13.5.3. Metrics for Clustering Algorithms

13.6. Association Rules
- 13.6.1. Measures of Interest
- 13.6.2. Rule Extraction Methods
- 13.6.3. Metrics for Association Rule Algorithms

13.7. Multiclassifiers
- 13.7.1. Bootstrap Aggregation or Bagging
- 13.7.2. "Random Forests" Algorithm
- 13.7.3. "Boosting" Algorithm

13.8. Probabilistic Reasoning Models
- 13.8.1. Probabilistic Reasoning
- 13.8.2. Bayesian Networks or Belief Networks
- 13.8.3. *Hidden Markov Models*

13.9. Multilayer Perceptron
- 13.9.1. Neural Network:
- 13.9.2. Machine Learning with Neural Networks
- 13.9.3. Gradient Descent, Backpropagation and Activation Functions
- 13.9.4. Implementation of an Artificial Neural Network

13.10. Deep Learning
- 13.10.1. Deep Neural Networks. Introduction
- 13.10.2. Convolutional Networks
- 13.10.3. *Sequence Modeling*
- 13.10.4. TensorFlow and Pytorch

Module 14. Web Analytics

14.1. Web Analytics
- 14.1.1. Introduction
- 14.1.2. Evolution of Web Analytics
- 14.1.3. Analysis Process

14.2. Google Analytics
- 14.2.1. Google Analytics
- 14.2.2. Use
- 14.2.3. Objectives

14.3. Hits. Interactions with the Website
- 14.3.1. Basic Metrics
- 14.3.2. KPI (Key Performance Indicators)
- 14.3.3. Adequate Conversion Rates

14.4. Frequent Dimensions
- 14.4.1. Source
- 14.4.2. Medium
- 14.4.3. *Keyword*
- 14.4.4. Campaign
- 14.4.5. Personalized Labeling

14.5. Setting up Google Analytics
- 14.5.1. Installation. Creating the Account
- 14.5.2. Versions of the Tool: UA/GA4
- 14.5.3. Tracking Label
- 14.5.4. Conversion Objectives

14.6. Organization of Google Analytics
- 14.6.1. Account
- 14.6.2. Property
- 14.6.3. View

14.7. Google Analytics Reports
- 14.7.1. In Real Time
- 14.7.2. Audience
- 14.7.3. Acquisition
- 14.7.4. Behavior
- 14.7.5. Conversions
- 14.7.6. E-Commerce

14.8. Google Analytics Advanced Reports
- 14.8.1. Personalized Reports
- 14.8.2. Panels
- 14.8.3. APIs

14.9. Filters and Segments
- 14.9.1. Filter
- 14.9.2. Segment
- 14.9.3. Types of Segments: Predefined / Customized
- 14.9.4. Remarketing Lists

14.10. Digital Analytics Plan
- 14.10.1. Measurement
- 14.10.2. Implementation in the Technological Environment
- 14.10.3. Conclusions

Module 15. Data Management Regulations

15.1. Regulatory Framework
- 15.1.1. Regulatory Framework and Definitions
- 15.1.2. Data Controllers, Joint Controllers and Data Processors
- 15.1.3. Forthcoming Regulatory Framework for Artificial Intelligence

15.2. Principles Relating to the Processing of Personal Data
- 15.2.1. Lawfulness, Fairness and Transparency and Purpose Limitation
- 15.2.2. Data Minimization, Accuracy and Retention Time Limitation
- 15.2.3. Integrity and Confidentiality
- 15.2.4. Proactive Responsibility

15.3. Legitimacy and Enabling Treatment
- 15.3.1. Basis of Legitimacy
- 15.3.2. Enabling the Treatment of Special Categories of Data
- 15.3.3. Data Communications

15.4. Rights of Individuals
- 15.4.1. Transparency and Information
- 15.4.2. Access
- 15.4.3. Rectification and Deletion (Right to Be Forgotten), Limitation and Portability
- 15.4.4. Opposition and Automated Individual Decisions
- 15.4.5. Limits to Rights

15.5. Risk Analysis and Management
- 15.5.1. Identification of Risks and Threats to Individuals' Rights and Freedoms
- 15.5.2. Risk Assessment
- 15.5.3. Risk Treatment Plan

15.6. Proactive Liability Measures
- 15.6.1. Identification of Techniques to Ensure and Demonstrate Compliance
- 15.6.2. Organizational Measures
- 15.6.3. Technical Measures
- 15.6.4. Management of Personal Data Security Breaches
- 15.6.5. Recording of Processing Activities

15.7. The Data Protection Impact Assessment (DPIA)
- 15.7.1. Activities Requiring DPIA
- 15.7.2. Evaluation Methodology
- 15.7.3. Identification of Risks, Threats and Consultation with the Control Authority

15.8. Contractual Regulation: Persons Responsible, Persons in Charge and Other Subjects
- 15.8.1. Data Protection Contracts
- 15.8.2. Attribution of Responsibilities
- 15.8.3. Contracts between Co-Responsible Parties

15.9. International Data Transfers
- 15.9.1. Definition and Safeguards to Be Adopted
- 15.9.2. Standard Contractual Clauses
- 15.9.3. Other Instruments for Regulating Transfers

15.10. Infractions and Penalties
- 15.10.1. Infractions and Penalties
- 15.10.2. Graduation Criteria in Penalty Matters
- 15.10.3. The Data Protection Delegate
- 15.10.4. Functions of the Supervisory Authorities

Module 16. Scalable and Reliable Mass Data Usage Systems

16.1. Scalability, Reliability and Maintainability
- 16.1.1. Scales
- 16.1.2. Reliability
- 16.1.3. Maintainability

16.2. Data Models
- 16.2.1. Evolution of Data Models
- 16.2.2. Comparison of Relational Model with Document-Based NoSQL Model
- 16.2.3. Network Model

16.3. Data Storage and Retrieval Engines
- 16.3.1. Structured Log Storage
- 16.3.2. Storage in Segment Tables
- 16.3.3. B Trees

16.4. Services, Message Passing and Data Encoding Formats
- 16.4.1. Data Flow in REST Services
- 16.4.2. Data Flow in Message Passing
- 16.4.3. Message Sending Formats

16.5. Replication
- 16.5.1. CAP Theorem
- 16.5.2. Consistency Models
- 16.5.3. Models of Replication Based on Leader and Follower Concepts

16.6. Distributed Transactions
- 16.6.1. Atomic Operations
- 16.6.2. Distributed Transactions from Different Approaches Calvin, Spanner
- 16.6.3. Serializability

16.7. Partitions
- 16.7.1. Types of Partitions
- 16.7.2. Indexes in Partitions
- 16.7.3. Partition Rebalancing

16.8. Batch Processing
- 16.8.1. Batch Processing
- 16.8.2. MapReduce
- 16.8.3. Post-MapReduce Approaches

16.9. Data Stream Processing
- 16.9.1. Messaging Systems
- 16.9.2. Persistence of Data Flows
- 16.9.3. Uses and Operations with Data Flows

16.10. Case Uses. Twitter, Facebook, Uber
- 16.10.1. Twitter: The Use of Caches
- 16.10.2. Facebook: Non-Relational Models
- 16.10.3. Uber: Different Models for Different Purposes

Module 17. System Administration for Distributed Deployments

17.1. Classic Administration. The Monolithic Model
- 17.1.1. Classical Applications. The Monolithic Model
- 17.1.2. System Requirements for Monolithic Applications
- 17.1.3. The Administration of Monolithic Systems
- 17.1.4. Automation

17.2. Distributed Applications. The Microservice
- 17.2.1. Distributed Computing Paradigm
- 17.2.2. Microservices-Based Models
- 17.2.3. System Requirements for Distributed Models
- 17.2.4. Monolithic vs. Distributed Applications

17.3. Tools for Resource Exploitation
- 17.3.1. "Iron" Management
- 17.3.2. Virtualization
- 17.3.3. Emulation
- 17.3.4. Paravirtualization

17.4. IaaS, PaaS and SaaS Models
- 17.4.1. LaaS Model
- 17.4.2. PaaS Model
- 17.4.3. SaaS Model
- 17.4.4. Design Patterns

17.5. Containerization
- 17.5.1. Virtualization with Cogroups
- 17.5.2. *Containers*
- 17.5.3. From Application to Container
- 17.5.4. Container Orchestration

17.6. Clustering
- 17.6.1. High Performance and High Availability
- 17.6.2. High Availability Models
- 17.6.3. Cluster as SaaS Platform
- 17.6.4. Cluster Securitization

17.7. *Cloud Computing*
- 17.7.1. Clusters vs. *Clouds*
- 17.7.2. Types of Clouds
- 17.7.3. Cloud Service Models
- 17.7.4. Oversubscription

17.8. Monitoring and Testing
- 17.8.1. Types of Monitoring
- 17.8.2. Visualization
- 17.8.3. Infrastructure Tests
- 17.8.4. Chaos Engineering

17.9. Study Case: Kubernetes
- 17.9.1. Structure
- 17.9.2. Administration
- 17.9.3. Deployment of Services
- 17.9.4. Development of Services for K8S

17.10. Study Case: OpenStack
- 17.10.1. Structure
- 17.10.2. Administration
- 17.10.3. Deployment
- 17.10.4. Development of Services for OpenStack

Module 18. Project Management and Agile Methodologies

18.1. Project Direction and Management
- 18.1.1. The Project
- 18.1.2. Phases of a Project
- 18.1.3. Project Direction and Management

18.2. PMI Methodology for Project Management
- 18.2.1. PMI (Project Management Institute)
- 18.2.2. PMBOK
- 18.2.3. Difference between Project, Program and Project Portfolio
- 18.2.4. Evolution of Organizations Working with Projects
- 18.2.5. Process Assets in Organizations

18.3. PMI Methodology for Project Management: Processes
- 18.3.1. Groups of Processes
- 18.3.2. Knowledge Areas
- 18.3.3. Process Matrix

18.4. Agile Methodologies for Project Management
- 18.4.1. VUCA context (Volatility, Uncertainty, Complexity and Ambiguity)
- 18.4.2. Agile Values
- 18.4.3. Principles of the Agile Manifesto

18.5. Agile SCRUM Framework for Project Management
- 18.5.1. Scrum
- 18.5.2. The Pillars of the Scrum Methodology
- 18.5.3. The Values in Scrum

18.6. Agile SCRUM Framework for Project Management. Process
- 18.6.1. The Scrum Process
- 18.6.2. Typified Roles in a Scrum Process
- 18.6.3. The Ceremonies of Scrum

18.7. Agile SCRUM Framework for Project Management. Artifacts
- 18.7.1. Artefacts in the Scrum Process
- 18.7.2. The Scrum Team
- 18.7.3. Metrics for Evaluating the Performance of a Scrum Team

18.8. Agile KANBAN Framework for Project Management. Kanban Method
- 18.8.1. Kanban
- 18.8.2. Benefits of Kanban
- 18.8.3. Kanban Method. Components

18.9. Agile KANBAN Framework for Project Management. Kanban Method Practices
- 18.9.1. The Values of Kanban
- 18.9.2. Principles of the Kanban Method
- 18.9.3. General Practices of the Kanban Method
- 18.9.4. Metrics for Kanban Performance Evaluation

18.10. Comparison: PMI, SCRUM y KANBAN
- 18.10.1. PMI – SCRUM
- 18.10.2. PMI – KANBAN
- 18.10.3. SCRUM – KANBAN

Module 19. Communication, Leadership and Team Management

19.1. Organizational Development in Business
- 19.1.1. Climate, Culture and Organizational Development in the Company
- 19.1.2. Human Capital Management

19.2. Direction Models. Decision Making
- 19.2.1. Paradigm Shift in Management Models
- 19.2.2. Management Process of the Technology Company
- 19.2.3. Decision Making. Planning Instruments

19.3. Leadership. Delegation and Empowerment
- 19.3.1. Leadership
- 19.3.2. Delegation and Empowerment
- 19.3.3. Performance Evaluation

19.4. Leadership. Knowledge and Talent Management
- 19.4.1. Talent Management in the Company
- 19.4.2. Engagement Management in the Company
- 19.4.3. Improving Communication in the Company

19.5. Coaching Applied to Business
- 19.5.1. Executive Coaching
- 19.5.2. Team Coaching

19.6. Mentoring Applied to Business
- 19.6.1. Mentor Profile
- 19.6.2. The 4 Processes of a Mentoring Program
- 19.6.3. Tools and Techniques in a Mentoring Process
- 19.6.4. Benefits of Mentoring in the Business Environment

19.7. Team Management I. Interpersonal Relations
- 19.7.1. Interpersonal Relationships
- 19.7.2. Relational Styles: Approach
- 19.7.3. Effective Meetings and Agreements in Difficult Situations

19.8. Team Management II. The Conflicts
- 19.8.1. The Conflicts
- 19.8.2. Preventing, Addressing and Resolving Conflict
  - 19.8.2.1. Strategies to Prevent Conflict
  - 19.8.2.2. Conflict Management. Basic Principles
- 19.8.3. Conflict Resolution Strategies
- 19.8.4. Stress and Work Motivation

19.9. Team Management III. Negotiation
- 19.9.1. Negotiation at the Managerial Level in Technology Companies
- 19.9.2. Styles of Negotiation
- 19.9.3. Negotiation Phases
  - 19.9.3.1. Barriers to Overcome in Negotiations

19.10. Team Management IV. Negotiation Techniques
- 19.10.1. Negotiation Techniques and Strategies
  - 19.10.1.1. Strategies and Main Types of Negotiation
  - 19.10.1.2. Negotiation Tactics and Practical Issues
- 19.10.2. The Figure of the Negotiating Subject

04

Teaching Objectives

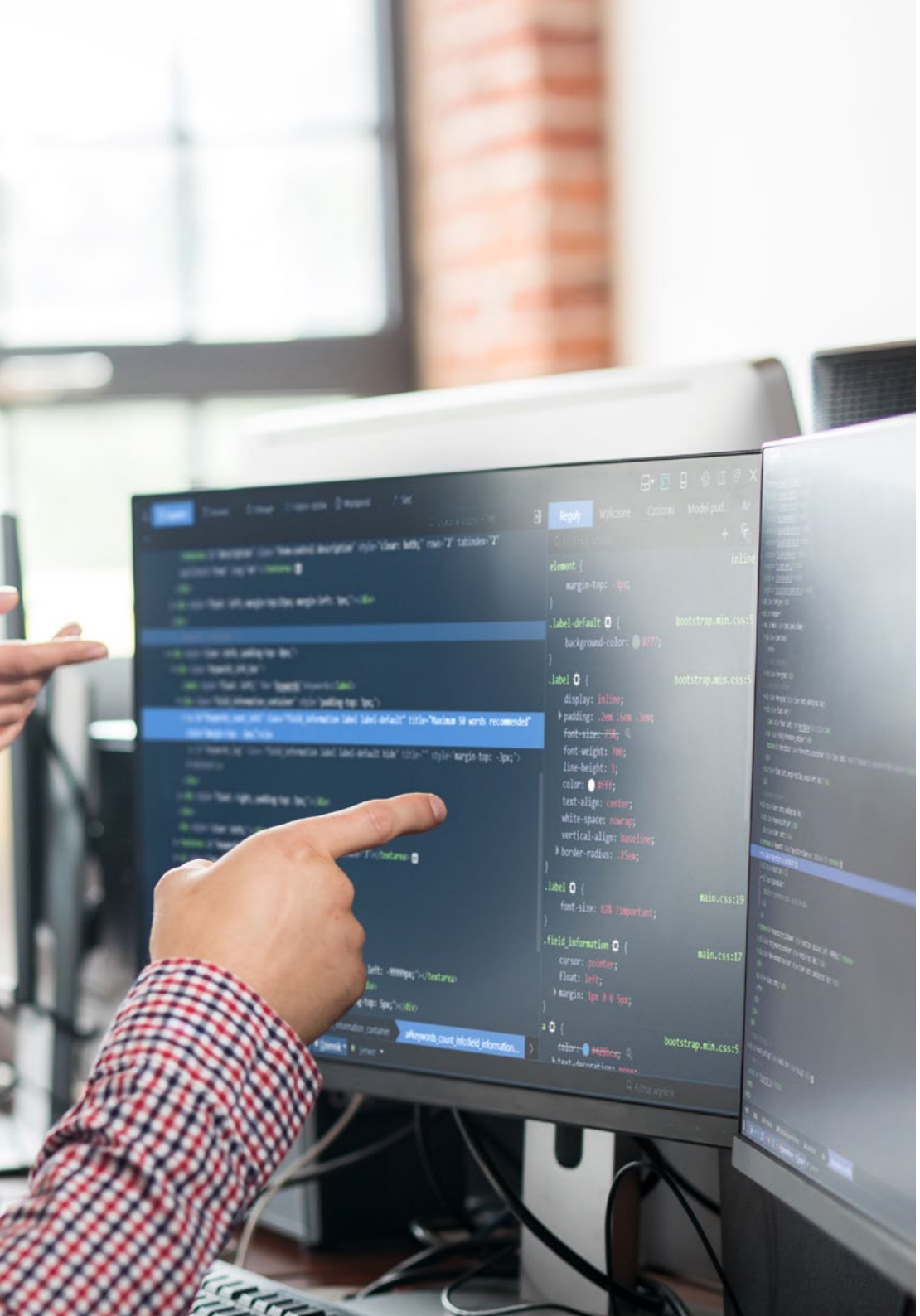
The teaching objectives of the Advanced Master's Degree MBA in Data Science Management have a solid understanding of both data science and strategic management in the business environment. The program aims to provide graduates with the skills necessary to manage, analyze and interpret large volumes of data. Together, these objectives seek to ensure that graduates can bring significant value to organizations, optimizing their performance and competitiveness through the strategic use of data.

TECH's methodology is based on constant interaction with industry experts, making you grow in real scenarios"

General Objectives

- Strengthen leadership capabilities in data-driven strategic decision making, preparing them to lead Data Science teams in an enterprise environment
- Provide an advanced understanding of data management and the implementation of technological solutions, optimizing the use of information to improve organizational competitiveness
- Broaden knowledge about the impact of data science on business management, with a focus on how data can transform different areas of the organization
- Develop practical skills in Data Science project management, ensuring that students are able to design, implement and oversee data analytics initiatives in a professional context

Prepare to become the bridge between data science and business success, guiding organizations into a digital future"



Specific Objectives

Module 1. Data Analysis in the Business Organization

- Develop skills to analyze large volumes of data in the business context
- Generate valuable insights for strategic decision making to improve organizational competitiveness and efficiency

Module 2. Management, Manipulation of Data and Information for Data Science

- Train in best practices for data management, manipulation and transformation in data science
- Handle the necessary tools to work with large datasets and obtain actionable information

Module 3. Devices and IoT Platforms as a Base for Data Science

- Provide knowledge on the use of IoT devices and platforms in the context of data science
- Delve into the collection, processing, and analysis of data generated by Internet-connected objects

Module 4. Graphical Representation of Data Analysis

- Use data visualization tools and techniques
- Facilitate the interpretation of large volumes of information through clear and effective graphical representations that enable informed decision-making

Module 5. Data Science Tools

- Train in the use of various data science specific tools and technologies, such as Python
- Perform data analysis and modeling to provide value in different business contexts

Module 6. Data Mining. Selection, Pre-Processing and Transformation

- Provide the necessary skills to apply data mining techniques
- Analyze the process of data selection, preprocessing and transformation in order to extract meaningful patterns and trends

Module 7. Predictability and Analysis of Stochastic Phenomena

- Train in the use of stochastic models to predict future phenomena and behavior
- Apply advanced statistical methods to model uncertainty and make predictions in dynamic environments

Module 8. Design and Development of Intelligent Systems

- Develop skills in the design and creation of intelligent systems using artificial intelligence and machine learning techniques
- Analyze process automation and informed decision making

Module 9. Architecture and Systems for Intensive Use of Data

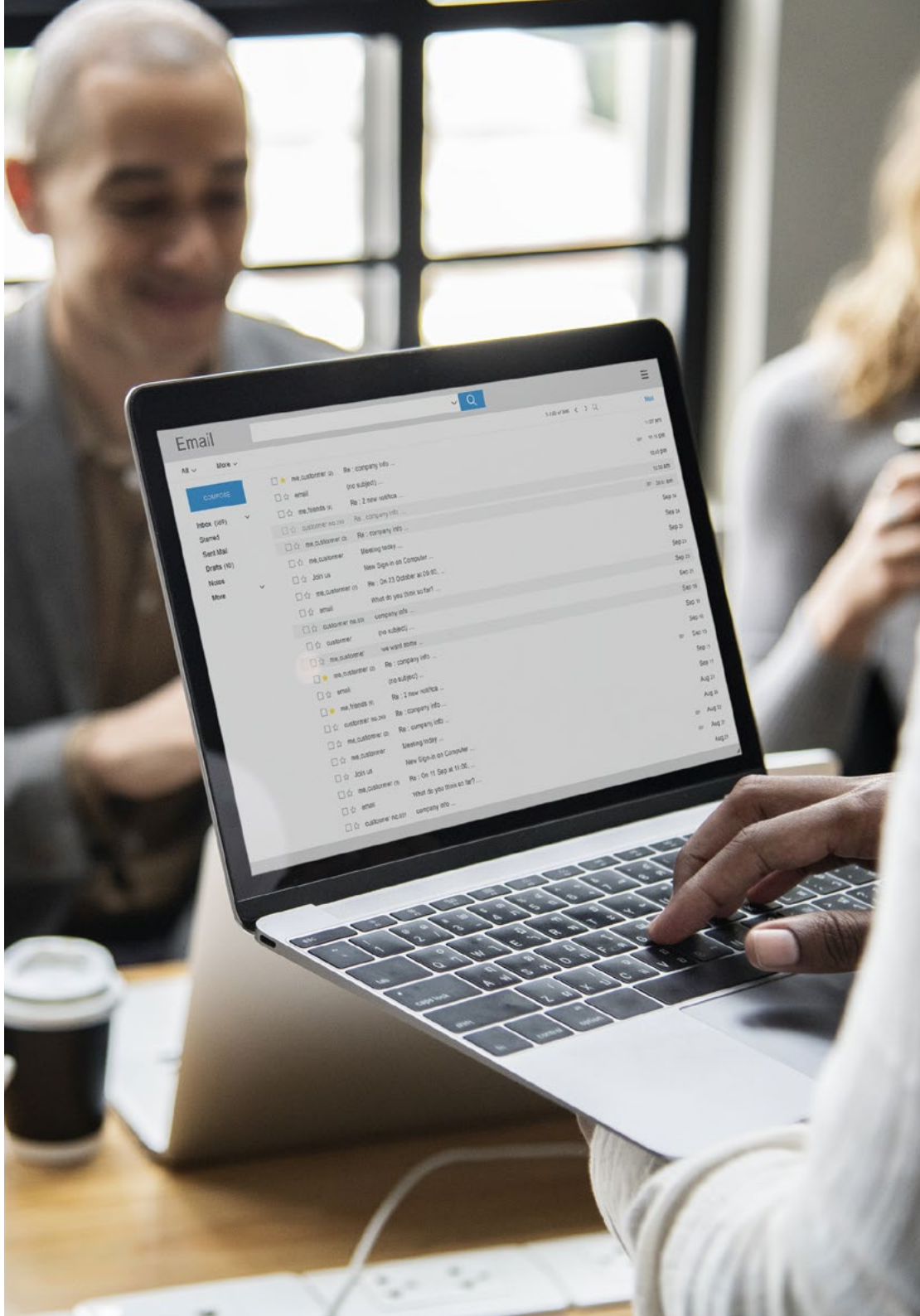
- Train in the creation of robust and efficient architectures for handling large volumes of data
- Implement systems that support large-scale processing and storage for enterprise applications

Module 10. Practical Application of Data Science in Sectors of Business Activity

- Apply the principles and tools of data science in different business sectors
- Improve decision making and operational processes by analyzing relevant data

Module 11. Main Information Management Systems

- Provide an in-depth understanding of information management systems
- Efficiently manage data within organizations, ensuring its availability and accessibility



Module 12. Data Types and Life Cycle
- Train in the classification of different types of data and their life cycle, from collection and storage to analysis, processing and archiving
- Optimize its use and ensure its integrity

Module 13. Number Machine Learning
- Introduce the fundamental concepts of machine learning
- Develop predictive models that help organizations identify patterns and make predictions

Module 14. Web Analytics
- Train in web analytics tools and techniques
- Understand user behavior on websites and apps to optimize user experience and digital marketing strategies

Module 15. Data Management Regulations
- Provide knowledge on regulations and laws related to data management
- Delve into privacy and personal data protection, ensuring regulatory compliance in the handling of sensitive information

Module 16. Scalable and Reliable Mass Data Usage Systems
- Design and manage scalable, reliable systems capable of handling large volumes of data
- Ensure system availability, integrity, and performance in environments with high data processing demands

Module 17. System Administration for Distributed Deployments
- Train in the administration of distributed systems
- Manage architectures that distribute data processing across multiple nodes and locations multiple nodes and locations

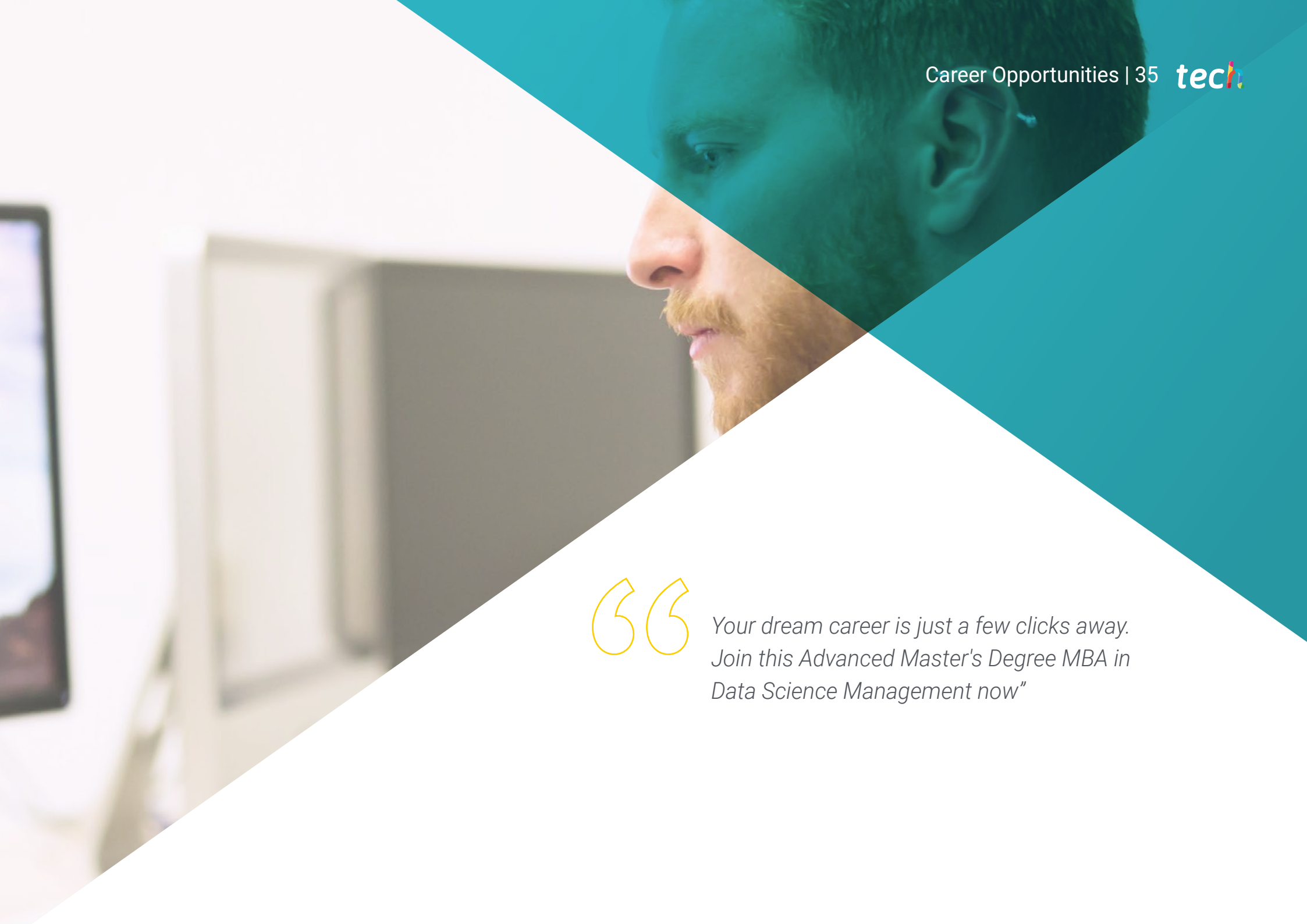
Module 18. Project Management and Agile Methodologies
- Provide the necessary skills to manage projects in an agile way, using methodologies such as Scrum and Kanban
- Increase efficiency in the delivery of projects in dynamic and constantly changing environments

Module 19. Communication, Leadership and Team Management
- Develop effective communication and leadership skills in the management of work teams
- Create collaborative and motivational environments that optimize group performance and cohesion

05

Career Opportunities

This Advanced Master's Degree MBA in Data Science Management prepares graduates to perform in a wide range of key roles within the business sector, such as Data Scientist or Chief Data Officer (CDO), among other areas of Data Science. Thanks to their comprehensive training in advanced techniques and agile methodologies, professionals are able to lead data science teams and design solutions, making them essential professionals for organizations seeking to maximize the value of their data.



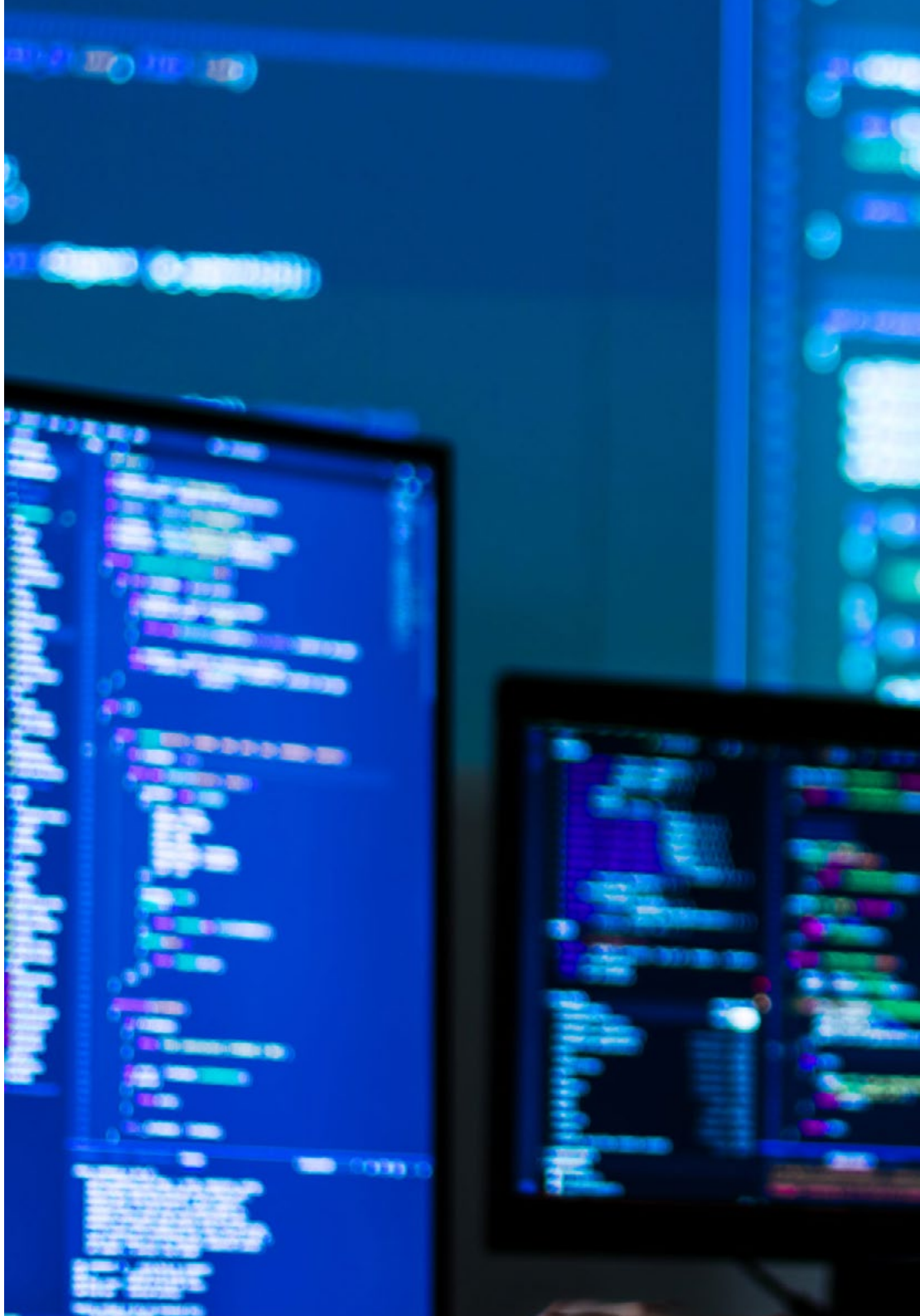
Your dream career is just a few clicks away. Join this Advanced Master's Degree MBA in Data Science Management now"

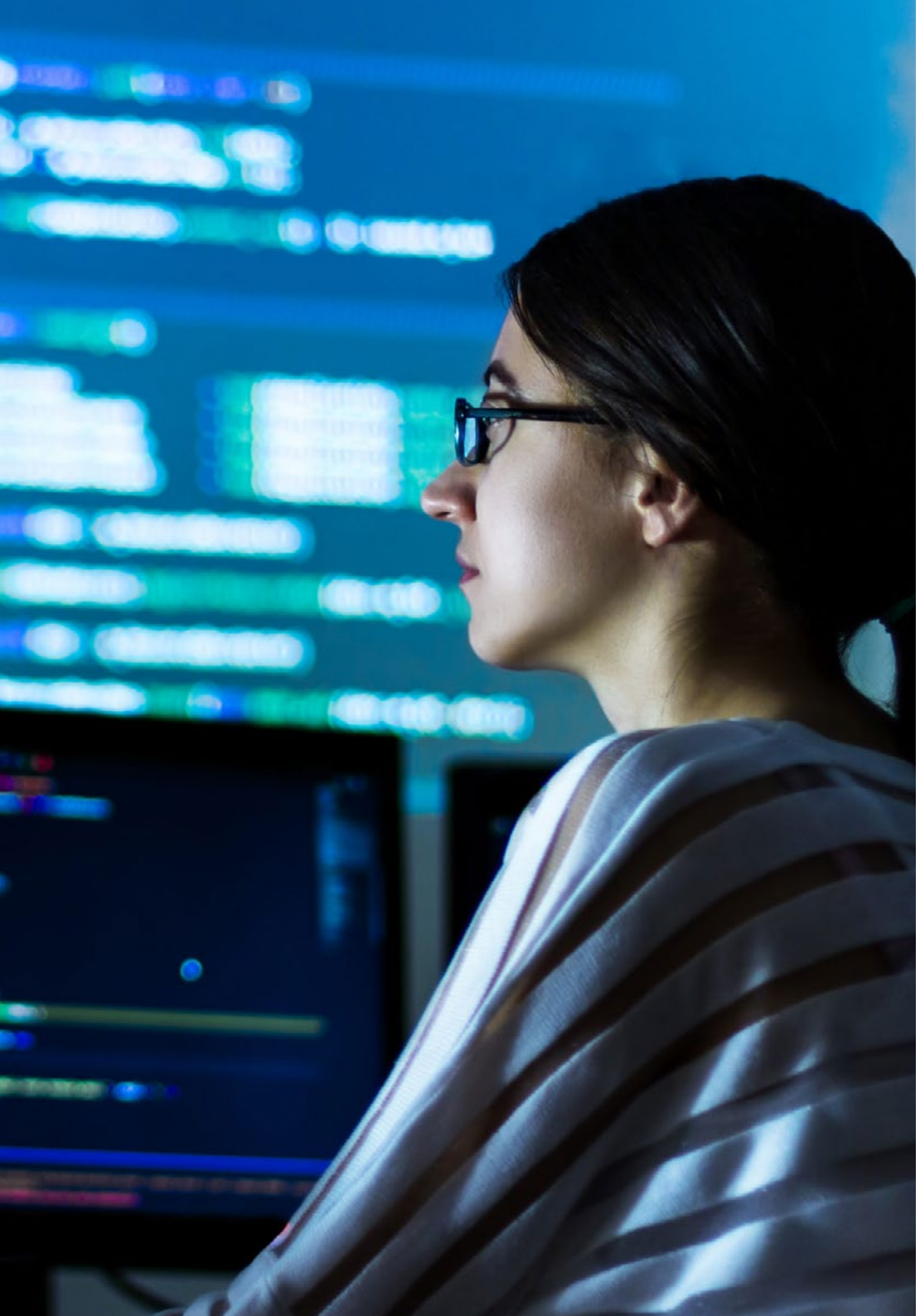
Graduate Profile

Graduates of the Advanced Master's Degree MBA in Data Science Management will be highly qualified to lead data science projects in business environments. They will have a solid specialization in advanced data analysis techniques as well as in the tools and methodologies necessary for strategic decision making. In addition, you will be an expert in the implementation of scalable technology solutions, in the application of agile methodologies and in regulatory compliance. Your ability to integrate emerging technologies, such as IoT and web analytics, will make you a key professional for organizations looking to adapt and excel in the digital era.

Become a visionary by entering one of the TECH programs that boasts an employability rate above 90%.

- **Leadership and Management of Multidisciplinary Teams:** Ability to lead data science projects and coordinate diverse teams, fostering collaboration across technical and strategic areas
- **Advanced Data Analytics and Machine Learning:** Proficient in tools and techniques to analyze large volumes of data, create predictive models and generate key insights for business decision making
- **Data-Driven Strategic Decision Making:** Ability to use data and analytical models as a basis for informed decisions aligned with business goals
- **Regulatory Compliance and Data Ethics:** Knowledge in responsible data management, ensuring compliance with regulations and maintaining high standards of ethics and security





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

1. **Chief Data Officer (CDO):** In charge of defining the organization's data strategy, ensuring its alignment with business objectives.
2. **Data Scientist:** Specialist in analyzing complex data and designing predictive models that generate value for the company.
3. **Business Intelligence Manager:** Responsible for overseeing data analysis and reporting to improve strategic decision making.
4. **Big Data Project Manager:** Leader of projects focused on the implementation and management of Big Data solutions within the organization.
5. **Innovation and Technology Director:** Leader in the adoption of new technologies, driving the development and implementation of data-driven strategies.
6. **IoT Data Strategist:** Expert in leveraging data generated by IoT devices to optimize operations and develop new business opportunities.

"TECH's learning method will allow you to specialize 100% online and from any device with an Internet connection"

06

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.

TECH will prepare you to face new challenges in uncertain environments and achieve success in your career"

The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.
The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

"At TECH you will NOT have live classes (which you might not be able to attend)"

The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want"

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.

Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

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

A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

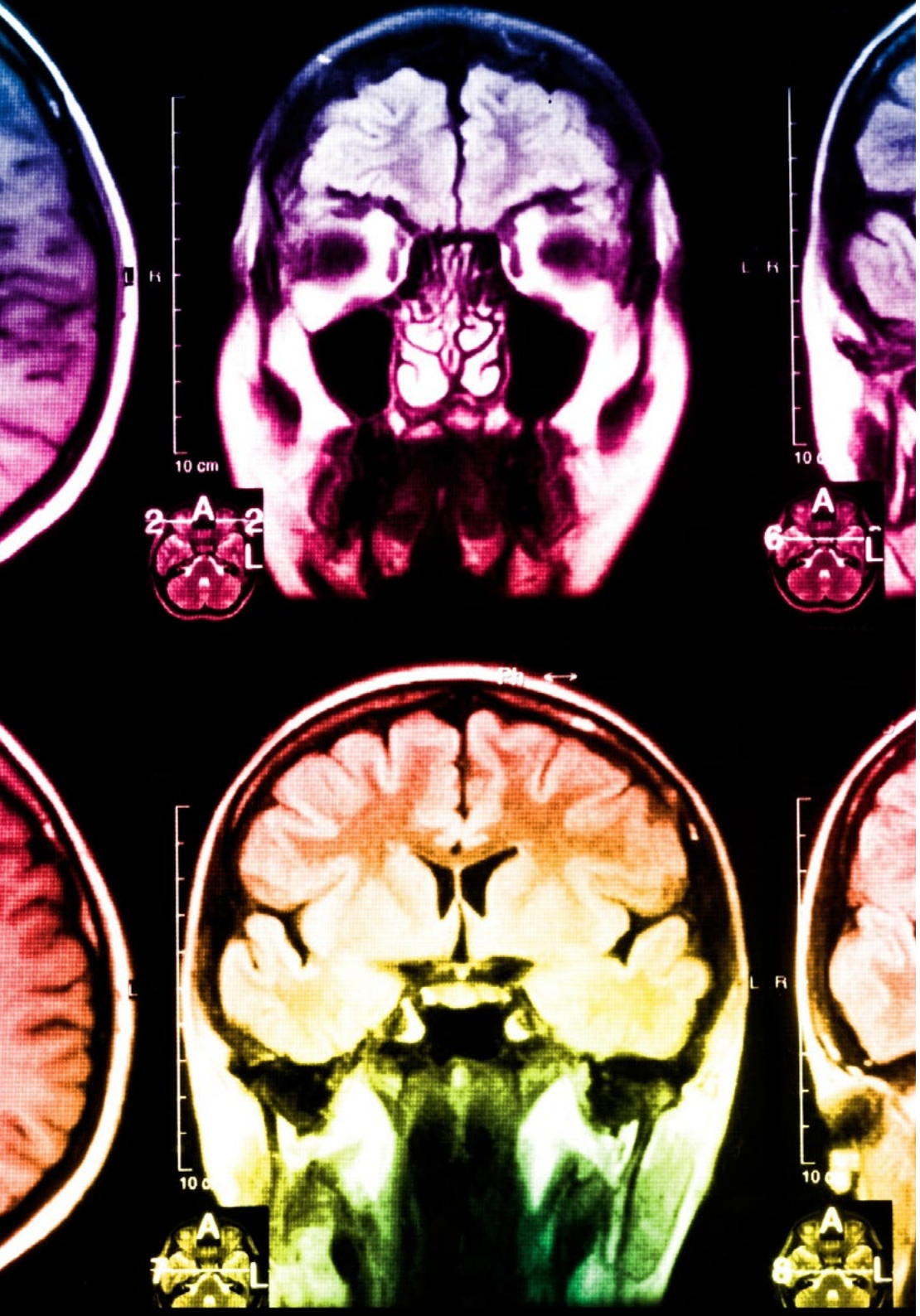
In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.

"The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule"

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



The university methodology top-rated by its students

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

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.

As such, the best educational materials, thoroughly prepared, will be available in this program:

Study Material

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

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.

Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.

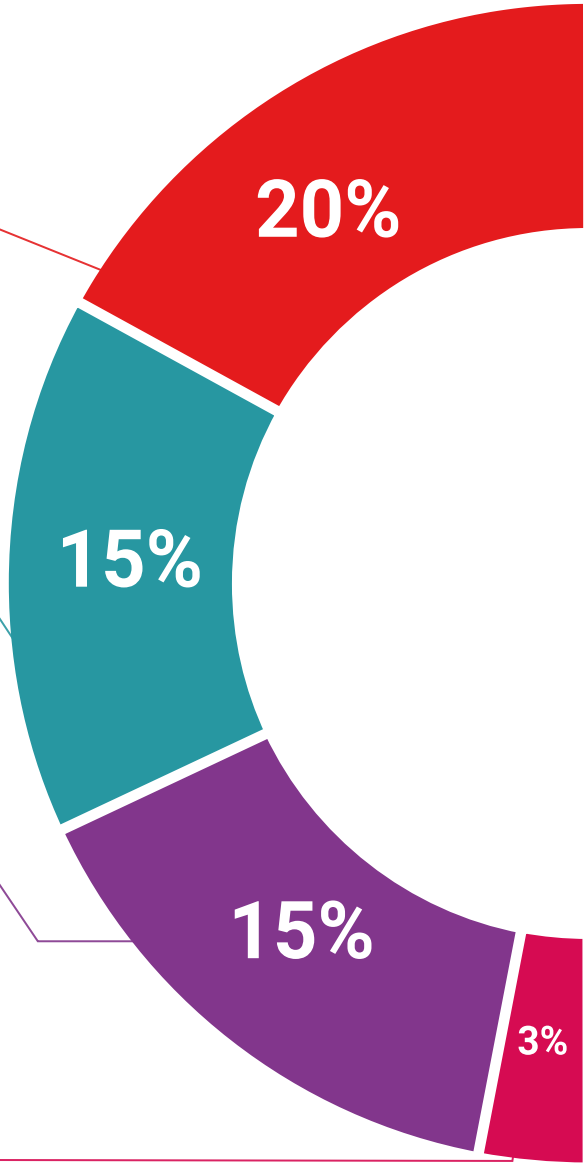
Interactive Summaries

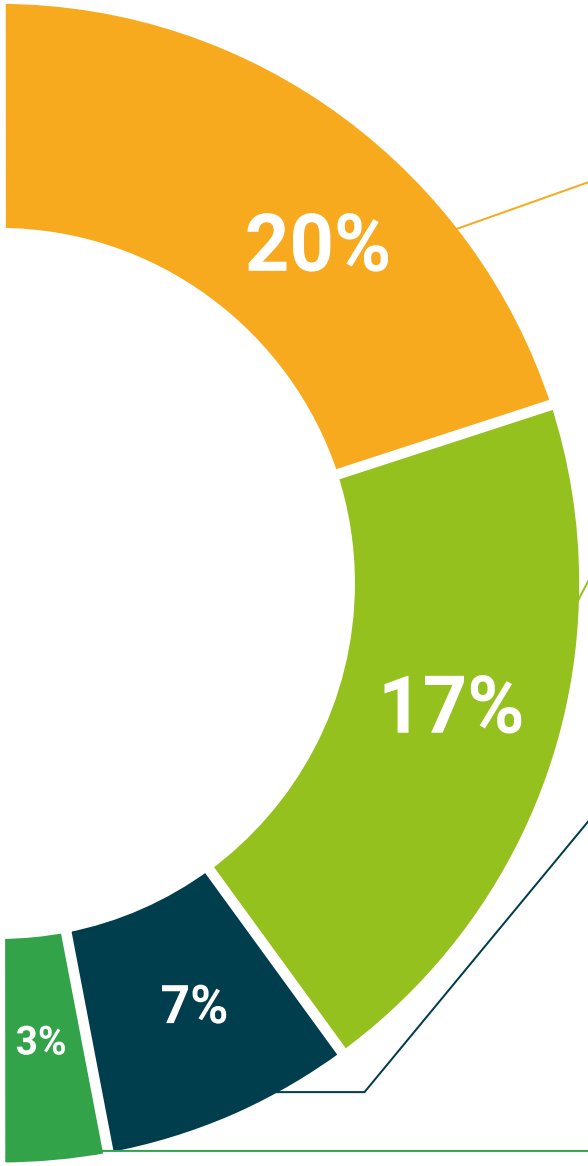
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

Additional Reading

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





Case Studies

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Testing & Retesting

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.

Classes

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

Learning from an expert strengthens knowledge and memory, and generates confidence for future difficult decisions.

Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.

07

Teaching Staff

TECH has developed the following Advanced Master's Degree MBA in Data Science Management with the collaboration of the best possible team of professionals. Experts from different branches of business management, data analysis, IT and development have joined forces to develop a useful, up-to-date and market-driven syllabus. All this makes it possible for the student to have the certainty of acquiring the best possible knowledge from the best professionals.

The best-prepared faculty so that you can go out into the world of work with informed knowledge and real-world experience"

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
- Doctorate in Psychology from the University of Castilla La Mancha
- Doctorate in Economics, Business and Finance from the Camilo José Cela University
- Doctorate 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 from the 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

Mr. Armero Fernández, Rafael

- Business Intelligence Consultant en SDG Group
- Digital Engineer at MI-GSO
- Logistic Engineer at Torrecid SA
- Quality Intern at INDRA
- Degree in Aerospace Engineering from the Polytechnic University of Valencia
- Master's Degree in Professional Development 4.0 from the University of Alcalá

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
- Degree in Computer Science Engineering from the University of Castilla-La Mancha
- Master's Degree in Project Management from CEOE

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

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
- Degree 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 Ciudad Real Higher School of Computer Science, 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). Organized 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*

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 European University
- Industrial Electronics and Automation Engineering Degree from the European University
- Industrial Technical Engineer by the Polytechnic University of Madrid

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

Mr. García Niño, Pedro
- Specialist in Web Positioning and SEO
- Sales Manager for IT services at Camuñase and Electrocamuñas
- Hardware and software technician at Camuñase and Electrocamuñas
- Specialist in e Google Ads(, PPC, and SEM)
- SEO On-Page and OffPage Specialist
- Specialist in Google Analytics/Digital Marketing Analytics and Performance Measurement

Ms. Martínez Cerrato, Yésica
- Responsible for Technical Training at Securitas Seguridad España
- Education, Business and Marketing Specialist
- Product Manager in Electronic Security at Securitas Seguridad España
- 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

Mr. Fondón Alcalde, Rubén
- Analyst EMEA at Amazon Web Services
- Business Analyst in Customer Value Management at Vodafone Spain
- Head of Service Integration at Entelgy for Telefónica Global Solutions
- Online Account Manager for Clone Servers at EDM Electronics
- International Services Implementation Manager at Vodafone Global Enterprise
- Solutions Consultant for Spain and Portugal at Telvent Global Services
- Business Analyst for Southern Europe at Vodafone Global Enterprise
- Telecommunications Engineer from the European University of Madrid
- Master's Degree in Big Data and Data Science from the International University of Valencia.

Mr. Díaz Díaz-Chirón, Tobías

- Researcher in the ArCO laboratory of the University of Castilla-La Mancha
- Consultant at Blue Telecom
- Freelance mainly dedicated to the telecommunications sector, specialising in 4G/5G networks.
- OpenStack: deploy and administration
- Computer Engineer from the University of Castilla - la Mancha
- Specialization in Architecture and computer network
- Associate Professor at the University of Castilla-La Mancha
- Speaker at Sepecam course on network administration

Ms. Palomino Dávila, Cristina

- Data Protection and Information Security Consultant in Grupo Oesía
- Deputy Director of Auditing at the General Secretariat of the Compañía Logística de Hidrocarburos CLH.
- Consultant in the Area of Corporate Legal Relations at Canal de Isabel II
- Consultant and Auditor at Helas Consultores S.L.
- Consultant and Auditor in Alaro Avant
- Lawyer in the area of New Technologies at Lorenzo Abogados.
- Degree in Law from the University of Castilla-La Mancha
- Master's Degree in Legal Consultancy for Businesses from the Instituto de Empresa
- Advanced Course in Digital Security and Crisis Management by the University of Alcalá and the Spanish Security and Crisis Alliance(AESYC)
- Member of: Spanish Professional Privacy Association (APEP) and ISMS Forum

Ms. García La O, Marta

- Specialist in Digital Marketing and Social Networks
- Management, Administration and Account management at Think Planning and Development SI
- Senior Management Training Instructor at Think Planning and Development SI
- Marketing Specialist at Versas Consultores
- Postgraduate Certificate in Business Studies from the University of Murcia.
- Master's Degree in Sales and Marketing Management, Fundesem Business School

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

08

Certificate

The MBA in Data Science Management guarantees students, in addition to the most rigorous and up-to-date education, access to an Advanced Master's Degree diploma 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** 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**

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

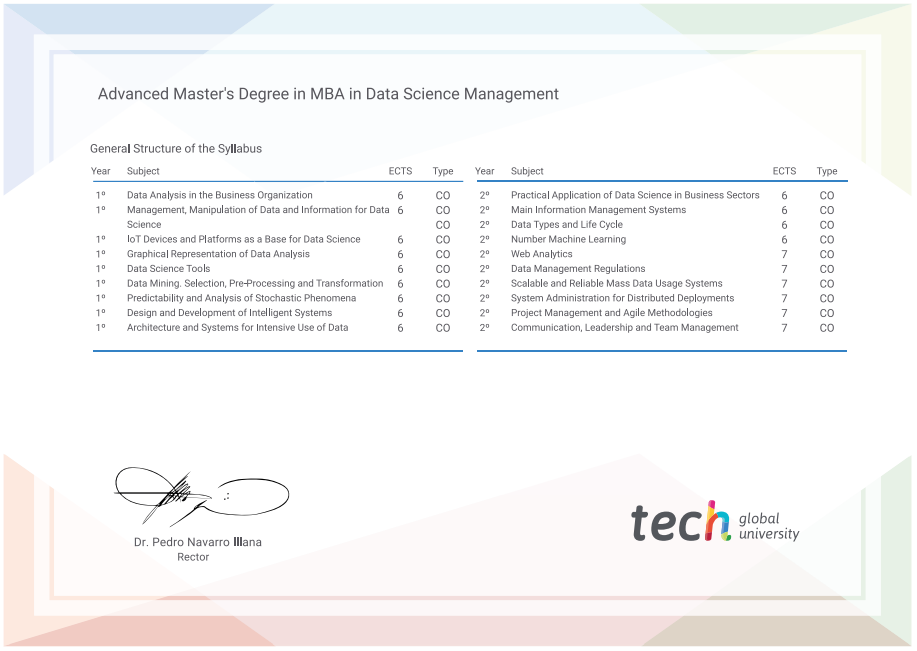
This is a private qualification of 3,600 hours of duration equivalent to 120 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

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

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	Data Analysis in the Business Organization	6	CO
1º	Management, Manipulation of Data and Information for Data Science	6	CO
1º	IoT Devices and Platforms as a Base for Data Science	6	CO
1º	Graphical Representation of Data Analysis	6	CO
1º	Data Science Tools	6	CO
1º	Data Mining. Selection, Pre-Processing and Transformation	6	CO
1º	Predictability and Analysis of Stochastic Phenomena	6	CO
1º	Design and Development of Intelligent Systems	6	CO
1º	Architecture and Systems for Intensive Use of Data	6	CO

Year	Subject	ECTS	Type
2º	Practical Application of Data Science in Business Sectors	6	CO
2º	Main Information Management Systems	6	CO
2º	Data Types and Life Cycle	6	CO
2º	Number Machine Learning	6	CO
2º	Web Analytics	7	CO
2º	Data Management Regulations	7	CO
2º	Scalable and Reliable Mass Data Usage Systems	7	CO
2º	System Administration for Distributed Deployments	7	CO
2º	Project Management and Agile Methodologies	7	CO
2º	Communication, Leadership and Team Management	7	CO

Dr. Pedro Navarro Illana
Rector

tech global university

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

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Advanced Master's Degree
MBA in Data Science Management

- 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

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