

# Hybrid Professional Master's Degree

Data Science Management  
(DSO, Data Science Officer)



## Hybrid Professional Master's Degree Data Science Management (DSO, Data Science Officer)

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Global University

60 + 5 ECTS Credits

Website: [www.techtute.com/us/information-technology/hybrid-professional-master-degree/hybrid-professional-master-degree-data-science-management-dso-data-science-officer](http://www.techtute.com/us/information-technology/hybrid-professional-master-degree/hybrid-professional-master-degree-data-science-management-dso-data-science-officer)

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# 01

# Introduction

The current social and technological paradigm has transformed the business framework, to the point of complete digitization. Facebook is one of the successful examples working with Big Data. The massive data processing is not only in digital sectors, also in health have proven the great advantages of this tool. In this sense, the role of the Data Science Officer is crucial to develop data flow strategies and its study focused on the reorganization of business departments in order to maximize their benefits. TECH deals with this responsibility with the development of a theoretical-practical program with which, first of all, students will acquire knowledge in AI and data analysis, through a 100% online modality. During the development of the program they will also be able to put them into practice thanks to a 3-week internship in a company dedicated to Branding and Marketing.



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*Analyze the advantages of AI in the current technological paradigm, thanks to an online program that is complemented with a practical experience in an expert company in Marketing”*

Data Science is in constant growth. Such are its advantages, that the current labor market demands to a great extent the figure of the Data Science Officer (DSO). A professional who is capable and has updated knowledge to analyze in detail, the different algorithms, platforms and the most current tools for the exploration, visualization, manipulation, processing and analysis of data. However, the profile demanded by the companies is not only enough with theoretical foundations, it must master its practical application in a business environment in order to maximize the benefits related to productivity.

Data analysis makes it possible to record the interests of users from all over the world at high levels. This is a key tool in the development of the functional exercise of today's companies. Given that global digitalization is very close, this program's main objective is to provide the academic keys and practical tools for professionals to be able to master the basic knowledge about statistics.

TECH has designed a complete and rigorous program with a 100% online mode to provide students with reliable knowledge while they are on the go, and a second practical phase. For their qualification in the real scenario, TECH has the collaboration of a company at the forefront of Branding and Marketing based on Data. There, the students will be supported by an assistant tutor who, after the theoretical study, will follow the role of teachers to guide the specialists. This is a new form of practice-oriented study developed for professionals who are not satisfied with conventional programs.

All this will be feasible thanks to a Modeling, which adapts to the daily needs of its students. You will only need a device with an Internet connection to start developing a complete professional profile with international projection. It is also a direct way to demonstrate the specialist's skills in the company itself. Likewise, through its academic course, students will obtain rigorous content, which will advance their critical thinking, based on data, for strategic decision making.

This **Hybrid Professional Master's Degree in Data Science Management (DSO, Data Science Officer)** contains the most complete and up-to-date program on the market.

The most important features include:

- ♦ Development of more than 100 computer cases presented by professional experts in data analysis and interpretation and university professors with extensive experience in the digital sector
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ Development of on-site analytical skills to make quality decisions
- ♦ Testing of best practices for data management according to data types and uses
- ♦ Analysis of data management tools using programming languages
- ♦ Selection of the most appropriate tools and general methods for modeling each Dataset according to the preprocessing carried out
- ♦ Development and implementation of the algorithms used for data preprocessing
- ♦ All of this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Contents available from any fixed or portable device with internet connection
- ♦ In addition, you will be able to do an internship in one of the best advertising agencies

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*Enroll now in a Hybrid Professional Master's Degree that will provide you with the keys to understanding statistical interference as opposed to descriptive statistics and its benefits in the real-world setting"*

In this proposal for a Hybrid Professional Master's Degree, of a professionalizing nature and online format, the program is aimed at updating Marketing professionals who perform their functions in intensive care Agencies, and who require a high level of qualification New Technologies. The contents are based on data analysis and are oriented in a didactic way to integrate theoretical knowledge into professional practice.

Thanks to its multimedia content developed with the latest educational technology, they will allow the professional a situated and contextual learning, that is to say, a simulated environment that will provide an immersive learning programmed to prepare 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 throughout the program. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

*Expand your skills in massive data preprocessing and understand how the study of Big Data has evolved, compared to conventional data analysis methods.*

*Inquire into the basic properties of univariate time series models, thanks to a hands-on period that will broaden your skills in data analysis and AI.*



02

# Why Study this Hybrid Professional Master's Degree?

Students who access this Hybrid Professional Master's Degree will achieve a comprehensive mastery of classical and advanced modeling procedures through the course of a program designed exclusively for them to achieve it in just 12 months. This is a program through which graduates will be able to broaden their knowledge in an exhaustive manner with academic material of the highest quality. In addition, they will be able to fix them, a posteriori, through an unparalleled internship in which they will work side by side with the best professionals in the IT field.







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*The best program to become an expert in predictive and profitability models through the mastery of data processing, Machine Learning and process optimization"*

### 1. Updating from the Latest Technology Available

Graduates who choose this Hybrid Professional Master's Degree course will have access to the most innovative and specialized technological resources, both for the academic-theoretical section, as well as during the practical period. In this way, they will not only have access to a dynamic and enjoyable training, but will also be able to implement in their practice the most sophisticated and avant-garde computer equipment in the sector.

### 2. Gaining In-depth Knowledge from the Experience of Top Specialists

Students will be supported at all times by a team specialized in the area of Data Science Management, both in the theoretical section, as well as during the internship. TECH places special emphasis on this issue in order to ensure compliance with the purposes for which the Hybrid Professional Master's Degree was designed.

### 3. Entering first-class environments

The selection of centers for this program is done exhaustively, always thinking about the welfare of the student through the best companies for internships. In this way TECH guarantees access to an internship of the highest quality, where the graduate will be able to project their career towards the elite through active work in the areas corresponding to their specialty, in this case Machine Learning, process optimization, data processing, etc.





#### 4. Combining the Best Theory with State-of-the-Art Practice

The launch of an experience that combines the most advanced and innovative theory with the possibility of an internship in a prestigious clinical center is just another example of TECH's great commitment to professional progress. For this reason, its offer related to this type of program is becoming more and more extensive, increasing the possibilities of accessing experiences adapted to the needs of different professions.

#### 5. Expanding the Boundaries of Knowledge

TECH has a wide range of agreements with companies all over the world, thanks to which it is possible to offer international internships. In this way, it erases borders, providing graduates with the possibility of moving to different parts of the globe to update their practice according to the strategies and trends that are being used in those territories.



*You will have full practical immersion at the center of your choice"*

# 03

## Objectives

This program has a structure worthy of a Data Science Officer. In order to focus on the instruction of these professionals, TECH has designed a digital program that will not only increase their theoretical knowledge, but will also update their application and increase their practical skills thanks to the education. Likewise, the design of the program represents a unique opportunity for those students who are not satisfied with an orthodox study and who seek now more than ever, to approach the technological environment from the inside. Along these lines, the Hybrid Professional Master's Degree delves into the different techniques for analysis, data exploitation, visualization and interaction techniques, all closely linked to the role of the Data Scientist.



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*With this theoretical-practical program you will identify all the existing models of probabilistic reasoning, so that you will become a much more competitive professional in the market”*



## General Objective

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- This program aims to expand and update the knowledge of graduates in Computer Science and Marketing, among other disciplines, so that they can delve into the benefits of the application of data analytics techniques in different business departments. In addition, by taking this program, they will delve into the use of software tools for graphing and exploratory data analysis. All this, so that the specialist will be able to propose in the workplace, techniques and objectives to maximize the productivity of companies



*A program designed for specialists like you, who are looking to update their technical knowledge so as not to be left behind in conventional computing"*





## Specific Objectives

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### Module 1. Data Analysis in a Business Organization

- ◆ Develop analytical skills in order to make quality decisions
- ◆ Examine effective marketing and communication campaigns
- ◆ Determine the creation of scorecards and kpi's according to the department
- ◆ Generate specialized knowledge to develop predictive analytics
- ◆ Propose business and loyalty plans based on market research
- ◆ Develop the ability to listen to the customer
- ◆ Apply statistical, quantitative and technical knowledge in real situations

### Module 2. Data and Information Management and Manipulation in Data Science

- ◆ Perform data analyses
- ◆ Unify diverse data: Achieving consistency of information
- ◆ Producing relevant, effective information for decision making
- ◆ Determine the best practices for data management according to its typology and uses
- ◆ Establish data access and reuse policies
- ◆ Ensure security and availability: information availability, integrity and confidentiality
- ◆ Examine data management tools using programming languages

### Module 3. IoT Devices and Platforms as the Basis for Data Science

- ♦ Identify what is IoT (Internet of Things) and IIoT (Industrial Internet of Things)
- ♦ Review the Industrial Internet Consortium
- ♦ Analyze what is the IoT reference architecture
- ♦ Address IoT sensors and devices and their classification
- ♦ Identify communications protocols and technologies used in IoT
- ♦ Examine the different Cloud platforms in IoT: General Purpose, Industrial, Open Source
- ♦ Develop data exchange mechanisms
- ♦ Establish security requirements and strategies
- ♦ Present the different IoT and IIoT application fields

### Module 4. Graphical Representation of Data Analysis

- ♦ Generate specialized knowledge in data analysis and representation
- ♦ Examine the different types of grouped data
- ♦ Establish the most-used graphic representations in different fields
- ♦ Determine the design principles in data visualization
- ♦ Introduce graphic narrative as a tool
- ♦ Analyze the different software tools for graphing and exploratory data analysis

### Module 5. Data Science Tools

- ♦ Develop the skills to convert data into information from which knowledge can be extracted
- ♦ Determine the main features of a dataset, its structure, components and the implications of its distribution in the modeling
- ♦ Supporting decision making by performing comprehensive data analysis in advance
- ♦ Develop skills to solve practical cases using data science techniques
- ♦ Establish the most appropriate general tools and methods for modeling each Dataset based on the preprocessing performed
- ♦ Assess the results in an analytical way, understanding the impact of the chosen strategy on the various metrics
- ♦ Demonstrate critical analysis of the results obtained after applying preprocessing or modeling methods

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

- ♦ Generate specialized knowledge about the statistical prerequisites for any data analysis and evaluation
- ♦ Develop the necessary skills for data identification, preparation and transformation
- ♦ Asses the various methodologies presented and identify advantages and drawbacks
- ♦ Examine the problems in high dimensional data environments
- ♦ Implement algorithms used for data preprocessing
- ♦ Demonstrate the ability to interpret data visualization for descriptive analysis
- ♦ Develop advanced knowledge of the different existing data preparation techniques for data cleaning, normalization and transformation



**Module 7. Predictability and Analysis of Stochastic Phenomena**

- ♦ Analyze time series
- ♦ Develop the formulation and basic properties of univariate time series models
- ♦ Examine the methodology for modeling and prediction of real time series
- ♦ Assess univariate models including outliers
- ♦ Apply dynamic regression models and apply the methodology for the construction of such models from observed series
- ♦ Address the spectral analysis of univariate time series, as well as the fundamentals related to periodogram-based inference and interpretation
- ♦ Estimate the probability and trend in time series for a given time horizon

**Module 8. Design and Development of Intelligent Systems**

- ♦ Analyze the step from information to knowledge
- ♦ Develop the different types of machine learning
- ♦ Examine metrics and scores to quantify model quality
- ♦ Implement the different machine learning algorithms
- ♦ Identify probabilistic reasoning models
- ♦ Lay the foundations for deep learning
- ♦ Demonstrate the skills acquired to understand the various machine learning algorithms

**Module 9. Architecture and Systems for Intensive Use of Data**

- ♦ Determine the requirements for mass data usage systems
- ♦ Examine different data models and analyze databases
- ♦ Analyze the key functionalities for distributed systems and their importance in different types of systems
- ♦ Assess which widely used applications use the fundamentals of distributed systems to design their systems
- ♦ Analyze the way in which databases store and retrieve information
- ♦ Understand the different replication models and associated issues
- ♦ Develop partitioning and distributed transactions
- ♦ Assess batch systems and (near) real time systems

**Module 10. Practical Application of Data Science in Sectors of business activity**

- ♦ Analyze the state of the art of Artificial Intelligence (AI) and data analytics
- ♦ Develop specialized knowledge of the most widely used technologies
- ♦ Generate a better understanding of the technology through use cases
- ♦ Analyze the chosen strategies to select the best technologies to implement
- ♦ Determine the fields of application
- ♦ Examine the actual and potential risks of the technology used
- ♦ Propose benefits derived from the use
- ♦ Identify future trends in specific fields

# 04 Skills

Students will receive theoretical instruction combined with an internship, which will equip them with the knowledge to function in the business environment. In this way, after passing the program, the enrolled specialist will be prepared to develop analytical skills to make quality decisions; will be able to determine the best practices for data management according to its typology and uses and to establish the most appropriate tools and general methods to model each Dataset according to the preprocessing carried out. This will be possible thanks to the incorporation of pedagogical tools, such as the audiovisual resources that will be offered in multiple formats through the Virtual Campus, in addition to the IT tools that they will be able to use in the company during their practical phase.



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*Enroll in this program so that you will be able to develop the implementation of algorithms used for data preprocessing and improve your IT services”*

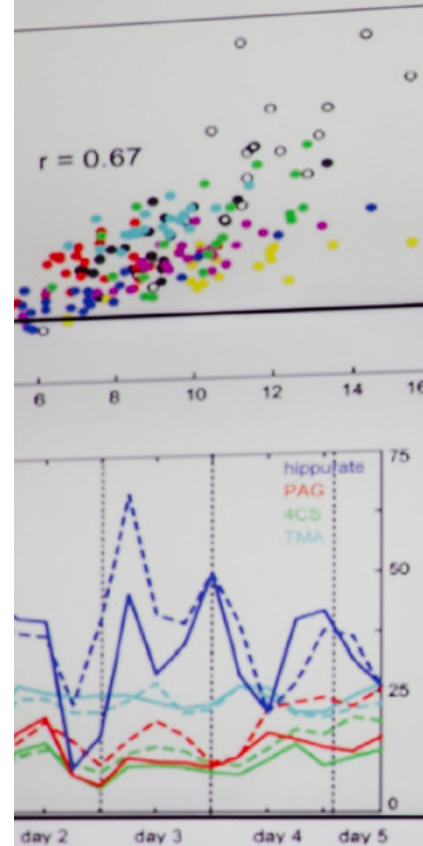


## General Skills

- ◆ Develop a technical and business perspective of data analysis
- ◆ Understand the most current algorithms, platforms and tools for data exploration, visualization, manipulation, processing, and analysis
- ◆ Implementing a business vision necessary for valorization as a key element for decision making
- ◆ Be able to address problems specific to data analysis

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*You will master data processing and manipulation through the knowledge and exhaustive handling of specific languages and libraries that you will acquire with this Hybrid Professional Master's Degree"*





## Specific Skills

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- ◆ Specialize in Data Science from a technical and business perspective
- ◆ Visualize data in the most appropriate way to favor data sharing and understanding for different profiles
- ◆ Address the key functional areas of the organization where data science can deliver the most value
- ◆ Develop the data life cycle, its typology and the technologies and phases necessary for its management
- ◆ Develop advanced knowledge in fundamental data mining techniques for data selection, preprocessing and transformation
- ◆ Specialize in the main Machine Learning algorithms for the extraction of hidden knowledge in data
- ◆ Generate specialized knowledge in the software architectures and systems required for intensive data use
- ◆ Determine how the IoT can be a source of data generation and key information on which to apply data science for knowledge extraction
- ◆ Analyze the different ways of applying data science in different industries or verticals by learning real-world examples

# 05

# Course Management

TECH has called on a team of teachers with a strong background in Artificial Intelligence and data management to teach this theoretical and practical program. This is a unique experience backed by the knowledge of the teaching team, whose figure will not only be present in the theoretical period 100% online. In addition, during the course of the practical training, students will have a tutor attached to the company for guidance. TECH wanted to enrich this Hybrid Professional Master's Degree Data Science Management (DSO, Data Science Officer) with the presence of professionals at the height of the requirements of the sector to transmit all their professional skills to the students enrolled.



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*Do not hesitate any longer, choose a program that has the guidance and academic support of experts in Big Data for you to master all the tools of this discipline"*

## International Guest Director

Dr. Tom Flowerdew is an internationally prominent personality 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 cybersecurity and finance space.

Similarly, for the company 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 more than 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, Doctor Tom Flowerdew has demonstrated his ability to build and lead high-performing teams throughout his career, most notably in his role as Data Scientist, both in Atlanta, where he has recruited and managed a group of experts in the field, and in Cambridge. In this way, 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

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



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

## Management



### Dr. Peralta Martín-Palomino, Arturo

- ♦ CEO and CTO at Prometheus 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 CastillaLa
- ♦ 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 University Isabel I
- ♦ Master's Degree in Sales and Marketing Management, I
- ♦ Master's Degree in Big Data by Hadoop Formation
- ♦ Master's Degree in Advanced Information Technologies from the University of Castilla - la Mancha
- ♦ Member of the Multidisciplinary Research Group SMILE

## Professors

### Mr. Peris Morillo, Luis Javier

- ♦ Capitole Consulting Technical Lead for Inditex
- ♦ Senior Technical Lead y Delivery Lead Support en HCL
- ♦ Technical Editor at Baeldung
- ♦ Agile Coach y director de Operaciones en Mirai Advisory
- ♦ Developer, Team Lead, Scrum Master, Agile Coach y Product
- ♦ Manager at DocPath
- ♦ ARCO Technologist
- ♦ Graduate in Computer Engineering from the University of Castilla-La Mancha
- ♦ Postgraduate in Project Management by the CEOE

### 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 Prometheus Global Solutions
- ♦ Vice President and Software Developer at CireBits
- ♦ PhD in Advanced Information Technology from the University of Castilla-La Mancha, Spain
- ♦ 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 Administration and Artificial Intelligence of 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 Centro de Estudios Europeos Luis Ortega Álvarez and Institut de Recerca TransJus. Conference entitled "Análisis de Sentimientos para la prevención de mensajes de odio en las redes sociales"

### Ms. Fernández Meléndez, Galina

- ♦ Big Data Specialist
- ♦ Data Analyst at Aresi Gestión de Fincas
- ♦ Data Analyst in ADN Mobile Solution
- ♦ Bachelor's Degree in Business Administration at Universidad Bicentenario Aragua.. Caracas, Venezuela
- ♦ Postgraduate Certificate 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 (Escuela De Negocios Europea De
- ♦ Master's Degree in Big Data and Business Intelligence from the European Business School of Barcelona

**Ms. Pedrajas Perabá, María Elena**

- ♦ New Technologies and Digital Transformation Consultant at Management Solutions
- ♦ Researcher in the Department of Computer Science and Numerical Analysis at the University of Cordoba
- ♦ 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 Advertising and Communication at the Pontificia Comillas University

**Ms. Martínez Cerrato, Yésica**

- ♦ Business Analytics and Information Systems Management Expert
- ♦ Product Manager in Electronic Security in Securitas Direct
- ♦ Project Manager of the Large Accounts Integration Area at Correos
- ♦ Business Intelligence Analyst at Ricopia Technologies
- ♦ Teacher in university and post-university studies
- ♦ Graduate in Telecommunications Engineering at Universidad de Alcalá

**Mr. Tato Sánchez, Rafael**

- ♦ Technical Director at Indra Sistemas SA
- ♦ Systems Engineer at ENA TRÁFICO SAU
- ♦ Master's Degree in Industry 4.0. from the Universidad en Internet
- ♦ Master's Degree in Industrial Engineering from Universidad Europea
- ♦ Degree in Industrial Electronics and Automation Engineering from the Universidad Europea
- ♦ Technical Industrial Engineer from the Universidad Politécnica de Madrid



**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
- ◆ Degree in Tourism from the University Haaga-Helia
- ◆ Degree in Human Resources and Labor Relations, UNIR
- ◆ Master's Degree in Protocol and External Relations from Camilo José Cela University
- ◆ Postgraduate Certificate in Human Resources Management by the Chartered Institute of Personnel and Development
- ◆ Instructor by the International Air Transport Association

**Mr. Armero Fernández, Rafael**

- ◆ Business Intelligence Consultant en SDG Group
- ◆ Digital Engineer en MI-GSO
- ◆ Logistic Engineer in Torrecid S.A
- ◆ 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

# 06

## Educational Plan

This Hybrid Professional Master's Degree in Data Science Management (DSO, Data Science Officer) has been developed with a team of experts who will transmit all their knowledge to the students, through a complete and rigorous syllabus. This is a teaching group that works in logistics engineering, software development and AI analysis. For this reason, the structure and content of the program have been designed in an efficient and dynamic way, in order to facilitate its study. From the first module, students will delve into the analysis of Big Data in the business organization, understanding its applications in marketing and communication, with the observation of the results of its benefits. It is a whole content based on the practice of experts that will instruct in a complete way the professional inclined towards Data Science Management.





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*Optimize representation design for data analysis and understand how visualization tools can increase your outreach”*

## Module 1. Data Analysis in a 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. Departmental Scorecards and KPIs
  - 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. HR
    - 1.2.3.7. Production
    - 1.2.3.8. IT
- 1.3. Marketing and Communication
  - 1.3.1. KPIs for Measurement, Applications and Benefits
  - 1.3.2. Marketing Systems and Data Warehouse
  - 1.3.3. Implementation of a Data Analytics Framework in Marketing
  - 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. HR 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. Data and Information Management and Manipulation in 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 Indices
  - 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/Safety

### Module 3. IoT Devices and Platforms as the Basis 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 IloT
  - 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 IloT
- 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, Lists 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. Division of the 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 Vs. Discrete
  - 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. Classic" preprocessing vs. Classic" preprocessing vs. Massive
  - 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. Trend Seasonality of ST
  - 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 Forecast Methods
  - 7.5.1. Media
  - 7.5.2. Naive
  - 7.5.3. Seasonal Naive
  - 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-Linear 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. Feed Forward Networks
- 8.10. Deep Learning
  - 8.10.1. Deep Feed Forward 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 Index
  - 9.3.2. Structured Log Storage
  - 9.3.3. Trees B
- 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. Processing of Offline Data
  - 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 Broker
  - 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 Sectors of business activity**

- 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 Health Sector
  - 10.2.1. Use in 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 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 Analytics for 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



*Haven't you mastered the practical applications of Big Data yet? Witness its application in various business sectors, such as advertising"*

# 07

# Internship

After having completed the theoretical period of the first phase of this program, students will carry out 120 hours of practical training in a recognized company. There, the specialist will have adjunct tutors, where they will deal with the current business and technological context, to integrate related tools and techniques that facilitate and optimize the management of Branding and Marketing, among other processes.





“

*Analyze strategies, forecasting and campaign management effectively through data management to make more confident career decisions”*

The Internship Program in Data Science Management is provided by a prestigious company with extensive experience in the sector. During the 3 weeks that the student will be instructed in practical issues of Data and will have a schedule of 8 hours from Monday to Friday, to acquire the necessary skills for their subsequent incorporation into the labor market. In this environment will deal in a comprehensive and deep way the data analysis in the business organization, as well as in the management and manipulation of IoT platforms focused on Data Science.

This practical proposal is a direct path for those professionals seeking to specialize in the real scenario and have complete knowledge in Data Science. In addition, by obtaining this multidisciplinary character you will become a competitive specialist in the labor market that is showing so much demand in recent years. It is, therefore, an opportunity for the management of Big Data, AI and Data Science Officer when it comes to reducing costs and maximizing the potential of the resources of an organization, whether public or private.

In this way, students will delve into the opportunities of Data, observing first-hand its advantages in the business environment. In addition, the specialists will be accompanied by a tutor attached to the internship center, in order to guide students in their decision making and give them the keys to good management in situ. The student will not only understand the use of technological tools to optimize services, but will also master graphic representation techniques for the dissemination of data studies, carry out data mining processes and transformation of results, as well as the prediction of future phenomena, among many other skills.

The practical part will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of teachers and other training partners that facilitate teamwork and multidisciplinary integration as transversal competencies for the praxis of physical therapy (learning to be and learning to relate).



*Do you know the structure of Big Data? Master the architecture and its influences on the effectiveness of data processing thanks to TECH"*

The procedures described below will be the basis of the practical part of the training, and their implementation will be subject to the center's own availability and workload, the proposed activities being the following:

Module	Practical Activity
<b>Managing IoT devices and platforms as a basis for data science</b>	Manage IoT sensors and devices
	Work with OSI model protocols
	Work with Cloud platforms for IoT and IIoT
	Delve into data management models using open data
	Implementing IIoT security strategies
	Develop IoRT protocols (Internet of Robotics Things)
<b>Use of data science tools</b>	Carry out data analysis in different contexts
	Learn in detail the types of analysis through practice
	Use the extraction of information from a Dataset
	Approach the Dataset from its base to its exhaustive handling
	Implement the balancing in the Dataset
<b>Design and development of intelligent systems and data-intensive systems and architectures</b>	Work in data processing and transformation
	Use classification algorithms
	Implement the main strategies of linear regression, logistic regression and nonlinear models
	Implement bagging algorithms
	Work in relational, document and network models
	Use databases for data storage and retrieval management
	Learn data coding formats in detail
	Practical application of data science in various business sectors
<b>Practical Application of Data Science in Sectors of business activity</b>	Approach to the various phases and elements of data analytics
	Development of data analytics applied to a department within the enterprise
	Approach to different cases through strategies, prediction and campaign management
	Mastering time series
	Learn in detail about time series schemes
	Apply basic forecast methods
	Understand residuals analysis

## Civil Liability Insurance

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.



## General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

**1. TUTOR:** During the Hybrid Professional Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

**2. DURATION:** The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

**3. ABSENCE:** If the students does not show up on the start date of the Hybrid Professional Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

**4. CERTIFICATION:** Professionals who pass the Hybrid Professional Master's Degree will receive a certificate accrediting their stay at the center.

**5. EMPLOYMENT RELATIONSHIP:** The Hybrid Professional Master's Degree shall not constitute an employment relationship of any kind.

**6. PRIOR EDUCATION:** Some centers may require a certificate of prior education for the Hybrid Professional Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

**7. DOES NOT INCLUDE:** The Hybrid Professional Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed.

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

# 08

## Where Can I Do the Internship?

This Hybrid Professional Master's Degree program includes an internship in one of the most recognized companies for its work in Branding and Results-Oriented Marketing. Therefore, this is a unique opportunity for those professionals who wish to apply all their knowledge in a real environment during 3 practical weeks. This is the way in which TECH seeks to approach the effective management of classic and advanced modeling procedures. In addition, in their practical education, students will have expert assistants to guide them in their decision making.



“

*Enter the world of Data Science Management with a program that will teach you not only in a theoretical way, but also in a practical way in a prestigious company”*

## tech 48 | Where Can I Do the Internship?



The student will be able to complete the practical part of this Hybrid Professional Master's Degree at the following centers:



Information Technology

### EPA Digital

Country	City
Mexico	Mexico City

Address: Avenida Ejército Nacional 418 piso 9  
Polanco V Sección CDMX C.P 11520

Digital Marketing and Communication Agency

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**Related internship programs:**

- Visual Analytics and Big Data
- MBA in Digital Marketing







Information Technology

### Grupo Fórmula

Country	City
Mexico	Mexico City

Address: Cda. San Isidro 44, Reforma Soc,  
Miguel Hidalgo, 11650 Ciudad de México, CDMX

Leading company in multimedia communication and  
content generation

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**Related internship programs:**

Graphic Design  
People Management

09

# 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"*

## 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”*



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



*The student will learn to solve complex situations in real business environments through collaborative activities and real cases.*

### A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. 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 professional reality is taken into account.

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

The case method has been the most widely used learning system among the world's leading Information Technology 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 that you are presented with in the case method, an action-oriented learning method. Throughout the course, students will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

## Relearning Methodology

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

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

*In 2019, we obtained the best learning results of all online universities in the world.*

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



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

This methodology has 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, and financial markets and 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 training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

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

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



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



### Study Material

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

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



### Classes

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

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



### Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### Additional Reading

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







#### Case Studies

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



# 10 Certificate

The Hybrid Professional Master's Degree in Data Science Management (DSO, Data Science Officer) guarantees, in addition to the most rigorous and up-to-date education, access to a Hybrid Professional Master's Degree issued by TECH Global University.



“

*Successfully complete this program  
and receive your university certification  
without traveling or complex paperwork”*

This program will allow you to obtain your **Hybrid Professional Master's Degree diploma in Data Science Management (DSO, 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** title 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.

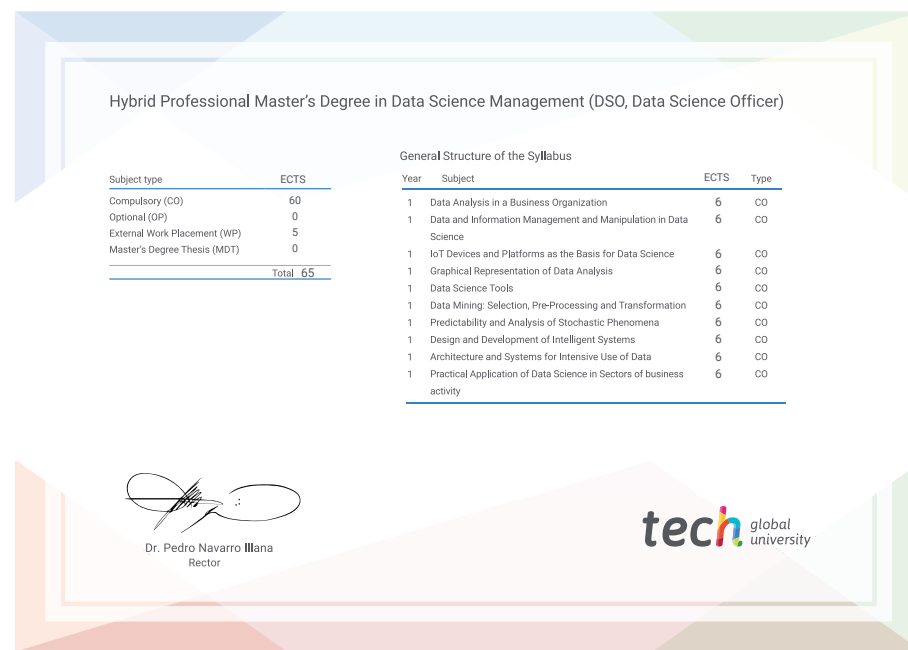
Title: **Hybrid Professional Master's Degree in Data Science Management (DSO, Data Science Officer)**

Course Modality: **Hybrid (Online + Clinical Internship)**

Duration: **12 months**

Certificate: **TECH Global University**

Recognition: **60 + 5 ECTS Credits**



\*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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# Hybrid Professional Master's Degree

Data Science Management  
(DSO, Data Science Officer)