Hybrid Professional Master's Degree
Corporate Technical Data Science Management

tech technological university

Hybrid Professional Master's Degree
Corporate Technical Data Science Management

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

Duration: **12 months**

Certificate: **TECH Technological University**

Teaching Hours: **1,620 h.**

Website: **www.techtitute.com/pk/information-technology/hybrid-professional-master-degree/hybrid-professional-master-degree-corporate-technical-data-science-management**

Index

01
Introduction

Companies are now much more effective thanks to the use of data science. In this way, they achieve an effective segmentation of potential customers, an exhaustive analysis of the viability and profitability of products or an improvement in monitoring and quality control. All this has led companies to make a firm commitment to this discipline and to incorporate IT professionals with advanced knowledge and team management skills into their teams. Faced with this reality, TECH has created this program that offers students a 100% theoretical education, in a flexible academic format, which is complemented by an excellent 3-week internship in a prestigious business-oriented company.

You are before a Hybrid Professional Master's Degree that will lead you to progress professionally in the area of Data Science and become part of the big companies in the sector"

Today, in a globalized world immersed in online commerce, information and data flow at high speed and in large quantities. That is why the collection of data and its application in business strategy has been an important boost to data science. This is why companies are betting on its use to be able to draw better business strategies, expand their knowledge about the consumer, detect the risk of losses or establish more effective marketing campaigns.

In this way, Data Science comprises a combination of mathematical methods, computer science, analysis skills and optimal communication of the results obtained. A specialty, therefore, that requires qualified professionals with team management skills. In this scenario, TECH offers this Hybrid Professional Master's Degree, which provides students with a quality education, with a theoretical framework 100% online, complemented by an internship in a leading company in this area.

A program that will lead over 12 months to delve into the main information management systems, the life cycle of data, machine learning and web analytics. All this, through multimedia teaching resources that can be accessed, comfortably whenever you want, from any electronic device with internet connection.

Likewise, the graduate will be able to apply all the concepts acquired during the 3 weeks of the internship. A period where students will be tutored by professionals of excellent level and experience in Data Science. This scenario will not only provide the student with first-hand knowledge of the current techniques and methodologies used in this area, but will also lead to a more complete learning process in an area of constant innovation.

This institution therefore offers an excellent opportunity for students who wish to advance professionally in a booming sector. All this, through a theoretical-practical approach, which brings you closer to the most current reality of Data Science, through a unique program in the current educational landscape.

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

- Development of more than 100 cases presented by Data Science professionals in companies
- 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 the activities and phases of the data protection impact assessment process
- With a special emphasis on data management regulations
- Knowledge of the most useful tools for the implementation of IaaS and PaaS models
- All of this will be complemented by 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
- In addition, you will be able to do an internship in one of the best Data Science centers in the world

With this program you will gain an advanced knowledge of web analytics and contribute to the successful development of online businesses"

Take an intensive 3-week internship in a prestigious center and acquire the skills you need to progress professionally with an excellent team of experts"

Thanks to this program, you will master the main tools for the implementation of IaaS and PaaS models in business.

With this program you will be able to establish the communication protocols and technologies used in the Internet of Things.

In this proposal for a Hybrid Professional Master's Degree, of a professionalizing nature and blended learning modality, the program is aimed at updating physical activity professionals who develop their functions in sports centers, and who require a high level of qualification. The contents are based on the latest scientific evidence, and oriented in a didactic way to integrate theoretical knowledge in the practice of Data Science technical management, and the theoretical-practical elements will facilitate the acquisition of knowledge and will allow the appropriate decision making in the technological field.

Thanks to multimedia content developed with the latest educational technology, professionals will enjoy a situated and contextual learning, i.e., a simulated environment that will provide immersive learning programmed to prepare professionals for real situations. This program is designed around Problem-Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02
Why Study this Hybrid Professional Master's Degree?

This Hybrid Professional Master's Degree responds to the current demand from IT professionals and companies, who wish to have highly qualified Data Science personnel in their teams. The trend in recent years towards this specialization has led to the creation of a program that goes beyond the theoretical concept and provides the necessary and essential practical phase. Therefore, this program combines intensive learning in Internet of Things, project management and information management systems with an internship in a leading company in the sector.

TECH provides you with a unique program in the academic panorama, with an excellent combination of theoretical framework and internship in a reference company in the Data Science sector"

1. 1. Update based on the latest technology available.

The professional path of a Data Scientist runs parallel to their mastery of the programming language and the different platforms and technologies used for data mining, modeling, clustering, data visualization or predictive analysis. For this reason, and with the aim of bringing graduates closer to these indispensable tools, TECH has created this Hybrid Professional Master's Degree, where you will not only get a solid theoretical knowledge, but where you can also apply this learning in a modern business environment, accessing the latest generation technology in Data Science.

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

In such a specialized area, excellent learning can only be obtained from the best professionals. That is why this institution carefully selects companies where students will carry out their internship. It is in this scenario and with experts in the field, where the graduate will be able to directly apply the acquired learning, developing in a real professional scenario.

3. Entering first-class environments

With the maxim of offering a high level and quality education, TECH carries out a rigorous selection of companies where students will be able to do their internship. In this way, the graduate will have guaranteed access to a relevant professional environment in the Data Science area. Therefore, they will be able to experience the day-to-day of a demanding area of work, applying the latest techniques, software and methodologies in this discipline.

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

TECH offers a new learning model that seeks a balance between the acquisition of theoretical concepts and their application in daily professional performance. That is why this program moves away from long hours of study, to focus on key concepts, cementing a consistent basis, which leads students to know how to develop it in an excellent practical phase. In this way, the graduate will boost their career towards the technical management of Data Science in the best companies in the world.

5. Expanding the Boundaries of Knowledge

This Hybrid Professional Master's Degree is oriented to students who wish to expand their professional possibilities in the best companies dedicated to Data Science. Considering that this specialty is booming, this program is an excellent opportunity for students who wish to fulfill their highest career aspirations. A unique pedagogical option that only TECH, the largest digital university in the world, could offer.

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

03
Objetivos

The syllabus of this Hybrid Professional Master's Degree is designed to guide students towards professional excellence. Therefore, this program is born with the main objective of providing the graduate with the most comprehensive and advanced knowledge in Corporate Technical Data Science Management. In this way, the student will be able to acquire the necessary learning to obtain the necessary capacity to solve problems based on data collection, develop effective communication and have a broad business vision.

With this program you will be able to design and select the most suitable ERP or CRM tool for each type of company"

General Objectives

- Analysing ERP and CRM systems, their contribution and benefits
- Design and select the right ERP or CRM tool for each company
- Developing each stage of the data lifecycle
- Establishing the regulatory framework related to data handling
- Examine the data mining process
- Analysing a web platform and optimising its operation
- Evaluating sessions and traffic to better understand the audience
- Analyze the regulatory framework for data protection and its relationship with the future regulation of artificial intelligence-based systems
- Develop specialised knowledge on maintainable, scalable and reliable systems
- Analyse different data models and their impact on applications
- Analyze classical system models and identify shortcomings for use in distributed applications
- Examine the distributed computing paradigm and establish the microservice model
- Develop the IoT Reference Architecture and technology framework
- Analyse the concept of Agile Methodology for Project Management and develop the elements and processes of the SCRUM framework
- Examine and develop the elements of the KANBAN method for Project Management
- Base our company's differentiation on intangible resources
- Identify opportunities for improvement through mindfulness

Specific Objectives

Module 1. Main Information Management Systems

- Developing a commercial strategy
- Generate specialised knowledge for commercial decision making
- Design a unified reporting system
- Determine how to establish communication and information exchange between the company's departments and customers
- Be able to transform information for decision making
- Develop a marketing plan for customer loyalty
- Design Marketing plans to increase sales

Module 2. Data Types and Data Life Cycle

- Generate specialized knowledge to perform data analysis
- Unify diverse data, Achieving consistency of information
- Produce relevant, effective information, for decision making
- Establish best practices for data management according to their typology and uses
- Develop the data access and reuse policies
- Ensure security and availability, integrity and confidentiality of information
- Use data management tools (with R)

Module 3. Number - Automated Learning

- Evaluate the skills acquired in the process of moving from information to knowledge
- Develop the different types of machine learning
- Analyze the metrics and validation methods of different machine learning algorithms

- Compile the different implementations of the various machine learning methods
- Determine the probabilistic reasoning models
- Examine the potential of deep learning
- Demonstrate knowledge of different machine learning algorithms

Module 4. Web Analytics

- Generate specialized knowledge in the use of Web Analytics
- Examine the evolution and development from its origin to the present day
- Establish an optimal configuration of Google Analytics, a fundamental work tool in online marketing
- Analyze web traffic to understand user behavior
- Develop basic and advanced metrics that will allow us to evaluate *hits* or interactions with websites
- Determine monitoring parameters: metrics and dimensions
- Configure the Google Analytics tool and the use of tracking tags on the website
- Differentiate between the two existing versions of Google Analytics: UA vs. GA4
- Identify the the organization and structure of Universal Analytics: accounts, properties and views
- Analyze user behavior by interpreting predefined and/or customized reports
- Assess traffic subsets of the total data we see in reports using segments
- Evaluate conversions by optimizing the marketing strategy and making decisions based on the results obtained

Module 5. Data Management Regulations

- Examine the data protection regulation and related regulations
- Analyze the different principles that govern personal data processing
- Establish the bases that legitimize the processing of personal data
- Introducing the rights of individuals in the field of data protection, their exercise and attention
- Assess risks in order to adequately develop a risk treatment plan
- Identify likely practices to be prohibited or that may be assessed as high risk derived from technologies using artificial intelligence
- Develop the activities and phases in which the data protection impact assessment process is structured
- Specify measures to provide compliance solutions
- Examine the responsibilities of controllers and processors
- Identify non-compliance violations and associated penalties

Module 6. Scalable and Reliable Massive Data Usage Systems

- Establish the concepts of reliability, scalability and maintainability
- Evaluate relational, document and network models
- Analyze structured storage in the form of log, B-trees and other structures used in data engines
- Examine consistency models and their relationship to the concept of replication
- Understand the different replication models and associated issues
- Develop the fundamental principles of distributed transactions
- Examine database partitioning and keys to ensure that they are balanced

Module 7. System Administration for Distributed Deployments

- Develop requirements for distributed applications
- Make use of the most advanced tools for the exploitation of distributed applications
- Analyze the use of tools for infrastructure management
- Examine the most useful tools for the implementation of IaaS and PaaS models
- Develop the PaaS model and some of the tools currently used in its implementation
- Assessing monitoring tools oriented to distributed systems
- Propose verification and testing techniques for distributed platforms
- Analyze the most used options in the implementation of Cloud platforms

Module 8. Internet of Things

- Determine what is IoT (Internet of Things) and IIoT (Industrial Internet of Things)
- Analyze the Industrial Internet Consortium
- Develop what is the IoT reference architecture
- Examine and classify IoT sensors and devices
- Establish the communications protocols and technologies used in IoT
- Analyze the different types of IoT platforms
- Develop the various data management mechanisms
- Establish security requirements for IoT data management
- Present the different IoT application areas

Module 9. Project Management and Agile Methodologies

- Present PMI methodology for project management
- Establish the difference between project, program and project portfolio
- Evaluate the evolution of organizations working with projects
- Analyze which are the assets of the processes in the organizations
- Examine the matrix of process groups and knowledge areas and analyze its component processes
- Introduce the PMI family of project management credentials
- Present the Typified Ceremonies in Scrum
- Assess the artifacts used by Scrum Teams
- Analyze Scrum Team agreements
- Examine the metrics for measuring the performance of a Scrum Team
- Present the Agile KANBAN Framework for Project Management
- Analyze the elements that make up the Kanban method: Values, principles and general practices
- Identify and define Kanban values
- Develop Kanban method principles
- Analyze the different general practices in the Kanban method
- Examine metrics for performance measurement in Kanban
- Identify and analyze the differences between the three methodologies: PMI, Scrum y Kanban

Module 10. Communication, Leadership and Team Management

- Present the management skills necessary to ensure success in the technology company
- Proposing a leadership model adapted to changec
- Establish emotional intelligence as a basic management tool in the company
- Analyze improvement opportunities through mentoring, coaching and their difference
- Promote a heightened state of consciousness about communication

This university education will lead you to develop negotiation and conflict resolution strategies in the technology sector"

04
Skills

Thanks to this university program, students will be able to broaden their competencies in the development of systems and mastery of specific programs in Data Scienc In addition, they will be able to enhance their communication and decision-making skills in the face of conflicts. To this end, they will be provided with case study simulations, which will bring them closer to real scenarios, whose methodology and technique they will be able to integrate in their daily professional performance.

This Hybrid Professional Master's Degree will lead you to improve your skills and competences for the management of teams in the Data Science technological environment"

General Skills

- Respond to current needs in the area of Advanced Information Technologies
- Enhance the satisfaction of people in the company and reduce stress levels, improving workers' relationships with superiors or employees, with customers and even in the personal environment
- Develop negotiation and conflict resolution strategies in the technology company
- Dynamize the company by using emotion management as a way to success
- Generating IoT expertise
- Evaluate the context of Agile methodologies for project management
- Develop the VUCA context (volatility, uncertainty, complexity and ambiguity
- Introduce the 12 principles of the Agile Manifesto
- Analyze the Agile SCRUM framework for project management
- Develop Scrum pillars
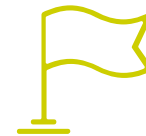
Specific Skills

- Specialize students in the most common information systems

- Use algorithms, tools and platforms to apply machine learning techniques

- Know the main regulations relating to the management and protection of corporate data

- Manage specific architectures for high-volume information processing for business exploitation

- Make use of the main IoT technologies and their applicability in real environments

- Carry out web analytics processes to better understand the potential client, as a key tool for the management of strategic actions

- Manage projects and people more effectively

This program will make you an expert analyst in data modeling and its impact on business strategy"

05
Course Management

TECH has brought together in this program a management and teaching team with a reputable knowledge in Computer Engineering, SEO, Digital Marketing, RRSS and Data Protection. A multidisciplinary faculty, knowledgeable in this specialty and team management. They will be responsible for guiding students throughout the course of this program, so that they can successfully achieve their professional goals.

You have at your disposal a multidisciplinary and specialized teaching team that will accompany you to achieve your professional goals as a Data Science technical director"

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 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: SMILE Research Group

Professors

Dr. Montoro Montarroso, Andrés

- Researcher in the SMILe Group at the University of Castilla(La Mancha.)
- Researcher at the University of Granada
- Data Scientist at Prometeus Global Solutions
- Vice President and Software Developer at CireBits
- PhD in Advanced Information 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"

Dr. Palomino Dávila, Cristina

- Data Protection and Information Security Consultant in Grupo Oesía
- Deputy Director of Auditing in the General Secretariat of Compañía Logística de Hidrocarburos CLH
- Consultant in the area of Corporate Legal Relations at Canal de Isabel II
- Consultant and Auditor at Helas Consultores SL
- Consultant and Auditor in Alaro Avant
- Lawyer in the area of New Technologies in Lorenzo Abogados
- Graduate 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, University of Alcalá and the Spanish Security and Crisis Alliance (AESYC)
- Member of: Spanish Professional Privacy Association (APEP), ISMS Forum

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

Ms. García La O, Marta
- Digital Marketing and Social Media Specialist
- 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
- Diploma in Business Studies from the University of Murcia
- Master's Degree in Sales and Marketing Management, Fundesem Business School

Mr. García Niño, Pedro
- SEO and Search Engine Optimization Specialist
- Sales Manager for IT services at Camuñase and Electrocamuñas
- Hardware and software technician at Camuñase and Electrocamuñas
- Google Ads Specialist (PPC and SEM)
- SEO On-Page and Off-Page Specialist
- Specialist in Digital Marketing Analytics and Performance Measurement

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

Mr. Díaz Díaz-Chirón, Tobías
- Expert consultant in Telecommunications
- Researcher in the Laboratory at 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
- Degree in Computer Engineering from the Castilla (la Mancha University.)
- Specialization in Computer Architecture and Networks
- Associate Professor at the University of Castilla (La Mancha)
- Speaker at Sepecam course on network administration

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

tech

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 Bicentenaria 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
- Master's Degree in Big Data and Business Intelligence from the European Business School of Barcelona

The closeness and human quality of the teaching team has been one of the factors taken into account by TECH for its integration in this program"

Educational Plan

The syllabus of this Hybrid Professional Master's Degree has been developed by a multidisciplinary teaching team, which has poured into this syllabus its extensive knowledge of Data Science. Therefore, students will be able to delve into the information management systems, the types of data and the main computer programs for their development and analysis. For this purpose, students will be provided with high quality multimedia teaching resources, available 24 hours a day. To complete this academic journey, students will have an internship in a prestigious technology company, where they will be able to deploy their technical and analytical skills in Data Science.

Video summaries, videos in detail, case studies... access them, whenever you want, from an electronic device with an internet connection"

Module 1. The Main Information Management Systems

1.1. ERP and CRM
    1.1.1. ERP
    1.1.2. CRM
    1.1.3. Differences between ERP and CRM Selling Point
    1.1.4. Business Success

1.2. ERP
    1.2.1. ERP
    1.2.2. Types of ERP
    1.2.3. Development of an ERP Implementation Project
    1.2.4. ERP Resource Optimiser
    1.2.5. Architecture of an ERP System

1.3. Information Provided by the ERP
    1.3.1. Information Provided by the ERP
    1.3.2. Advantages and Disadvantages
    1.3.3. The Information

1.4. ERP Systems
    1.4.1. Current ERP Systems and Tools
    1.4.2. Decision Making
    1.4.3. Day-to-Day with ERP

1.5. CRM: The Implementation Project
    1.5.1. The CRM The Implementation Project
    1.5.2. The CRM as a Commercial Tool
    1.5.3. Strategies for the Information System

1.6. CRM: Customer Loyalty
    1.6.1. Starting Point
    1.6.2. Sales or Loyalty
    1.6.3. Factors for Success in our Loyalty System
    1.6.4. Multi-Channel Strategies
    1.6.5. Design of Loyalty Actions
    1.6.6. E-Loyalty

1.7. CRM: Communication Campaigns
    1.7.1. Communication Actions and Plans
    1.7.2. Importance of the Informed Customer
    1.7.3. Listening to the Client

1.8. CRM: Dissatisfaction Prevention
    1.8.1. Customer Cancellations
    1.8.2. Detecting Errors in Time
    1.8.3. Improvement Processes
    1.8.4. Recovery of the Dissatisfied Customer

1.9. CRM: Special Communication Actions
    1.9.1. Objectives and Planning of a Company Event
    1.9.2. Design and Realisation of the Event
    1.9.3. Actions from the Department
    1.9.4. Analysis of Results

1.10. Relational Marketing
    1.10.1. Implantation. Errors
    1.10.2. Methodology, Segmentation and Processes
    1.10.3. Performance, According to the Department
    1.10.4. CRM Tools

Module 2. Data Types and Data Life Cycle

2.1. Statistics
    2.1.1. Statistics: Descriptive Statistics, Statistical Inferences
    2.1.2. Population, Sample, Individual
    2.1.3. Variables: Definition, Measurement Scales

2.2. Types of Data Statistics
    2.2.1. According to Type
        2.2.1.1. Quantitative: Continuous Data and Discrete Data
        2.2.1.2. Qualitative: Binomial Data, Nominal Data and Ordinal Data
    2.2.2. According to their Shape
        2.2.2.1. Numeric
        2.2.2.2. Text:
        2.2.2.3. Logical

Module 3. Number Machine Learning

3.7.	Multiclassifiers
	3.7.1.	"Bootstrap Aggregation" or "Bagging"
	3.7.2.	"Random Forests" Algorithm
	3.7.3.	"Boosting" Algorithm
3.8.	Probabilistic Reasoning Models
	3.8.1.	Probabilistic reasoning
	3.8.2.	Bayesian Networks or Belief Networks
	3.8.3.	"Hidden Markov Models"
3.9.	Multilayer Perceptron
	3.9.1.	Neural Network:
	3.9.2.	Machine Learning with Neural Networks
	3.9.3.	Gradient Descent, Backpropagation and Activation Functions
	3.9.4.	Implementation of an Artificial Neural Network
3.10	Deep Learning
	3.10.1.	Deep Neural Networks. Introduction
	3.10.2.	Convolutional Networks
	3.10.3.	Sequence Modelling
	3.10.4.	Tensorflow and Pytorch

Module 4. Web Analytics

4.1.	Web Analytics
	4.1.1.	Introduction
	4.1.2.	Evolution of Web Analytics
	4.1.3.	Analysis Process
4.2.	Google Analytics
	4.2.1.	Google Analytics
	4.2.2.	Use
	4.2.3.	Objetivos
4.3.	Hits. Interactions with the Website
	4.3.1.	Basic Metrics
	4.3.2.	KPI (Key Performance Indicators)
	4.3.3.	Adequate Conversion Rates

Module 5. Data Management Regulations

Module 6. Scalable and Reliable Mass Data Usage Systems

Module 7. System Administration for Distributed Deployments

7.1.   Classic Administration. The Monolithic Model

    7.1.1.   Classical Aplications. The Monolithic Model

    7.1.2.   System Requirements for Monolithic Applications

    7.1.3.   The Administration of Monolithic Systems

    7.1.4.   Automation

7.2.   Distributed Applications. The Microservice

    7.2.1.   Distributed Computing Paradigm

    7.2.2.   Microservices-Based Models

    7.2.3.   System Requirements for Distributed Models

    7.2.4.   Monolithic Applications vs. Distributed Applications

7.3.   Tools for Resource Exploitation

    7.3.1.   "Iron" Management

    7.3.2.   Virtualisation

    7.3.3.   Emulation

    7.3.4.   Paravirtualization

7.4.   IaaS, PaaS and SaaS Models

    7.4.1.   LaaS Model

    7.4.2.   PaaS Model

    7.4.3.   SaaS Model

    7.4.4.   Design Patterns

7.5.   Containerisation

    7.5.1.   Virtualisation with Cogroups

    7.5.2.   Containers

    7.5.3.   From Application to Container

    7.5.4.   Container Orchestration

7.6.   Clustering

    7.6.1.   High Performance and High Availability

    7.6.2.   High Availability Models

    7.6.3.   Cluster as SaaS Platform

    7.6.4.   Cluster Securitisation

7.7.   Cloud Computing

    7.7.1.   Clusters vs Clouds

    7.7.2.   Types of Clouds

    7.7.3.   Cloud Service Models

    7.7.4.   Oversubscription

7.8.   Monitoring and Testing

    7.8.1.   Types of Monitoring

    7.8.2.   Visualization

    7.8.3.   Infrastructure Tests

    7.8.4.   Chaos Engineering

7.9.   Study Case: Kubernetes

    7.9.1.   Structure

    7.9.2.   Administration

    7.9.3.   Deployment of Services

    7.9.4.   Development of Services for K8S

7.10.   Study Case: OpenStack

    7.10.1.   Structure

    7.10.2.   Administration

    7.10.3.   Deployment

    7.10.4.   Development of Services for OpenStack

Module 8. Internet of Things

8.1.   Internet of Things (IoT)

    8.1.1.   The Internet of the Future

    8.1.2.   Internet of Things and Industrial Internet of Things

    8.1.3.   The Industrial Internet Consortium

8.2.   Architecture of Reference

    8.2.1.   The Architecture of Reference

    8.2.2.   Layers and Components

8.3.   IoT Devices

    8.3.1.   Classification

    8.3.2.   Components

    8.3.3.   Sensors and Actuators

8.4. Communication Protocols

    8.4.1. Classification

    8.4.2. OSI Model

    8.4.3. Technologies

8.5. IoT and IIoT platforms

    8.5.1. The IoT Platform

    8.5.2. General Purpose Cloud Platforms

    8.5.3. Industrial Platforms

    8.5.4. Open Code Platforms

8.6. Data Management on IoT Platforms

    8.6.1. Management Mechanisms

    8.6.2. Open Data

    8.6.3. Exchange of Data

    8.6.4. Data Visualization

8.7. IoT Security

    8.7.1. Security Requirements

    8.7.2. Security Areas

    8.7.3. Security Strategies

    8.7.4. IIoT Security

8.8. IoT Systems Application Areas

    8.8.1. Intelligent Cities

    8.8.2. Health and Fitness

    8.8.3. Smart Home

    8.8.4. Other Applications

8.9. Application of IIoT to Different Industrial Sectors

    8.9.1. Fabrication

    8.9.2. Transport

    8.9.3. Energy

    8.9.4. Agriculture and Livestock

    8.9.5. Other Sectors

8.10. Integration of IIoT in the Industry 4.0 Model

    8.10.1. IoRT (Internet of Robotics Things)

    8.10.2. 3D Additive Manufacturing

    8.10.3. Big Data Analytics

Module 9. Project Management and Agile Methodologies

9.1. Project Management

    9.1.1. The Project

    9.1.2. Phases of a Project

    9.1.3. Project Management

9.2. PMI Methodology for Project Management

    9.2.1. PMI (Project Management Institute)

    9.2.2. PMBOK

    9.2.3. Difference between Project, Programme and Project Portfolio

    9.2.4. Evolution of Organisations Working with Projects

    9.2.5. Process Assets in Organisations

9.3. PMI Methodology for Project Management: Process

    9.3.1. Groups of Processes

    9.3.2. Knowledge Areas

    9.3.3. Process Matrix

9.4. Agile Methodologies for Project Management

    9.4.1. VUCA Context (Volatility, Uncertainty, Complexity and Ambiguity)

    9.4.2. Agile Values

    9.4.3. Principles of the Agile Manifesto

9.5. Agile SCRUM Framework for Project Management

    9.5.1. Scrum

    9.5.2. The Pillars of the Scrum Methodology

    9.5.3. The Values in Scrum

9.6. Agile SCRUM Framework for Project Management. Process

    9.6.1. The Scrum Process

    9.6.2. Typified Roles in a Scrum Process

    9.6.3. The Ceremonies of Scrum

9.7. Agile SCRUM Framework for Project Management. Artefacts

    9.7.1. Artefacts in the Scrum Process

    9.7.2. The Scrum Team

    9.7.3. Metrics for Evaluating the Performance of a Scrum Team

Module 10. Communication, Leadership and Team Management

Internship

Once the online theoretical period is completed, students will enter a practical period in a leading technology company. In this scenario, the graduate will have at their disposal the support of a professional from that company during the whole process. This will provide excellent preparation in a demanding and highly competitive work environment.

"TECH gives you the opportunity to do an internship in a leading technology company, so that you can develop the theoretical knowledge you have acquired"

The Internship Program in Data Science Technical Management in the Company consists of an internship in a leading technology company in this field. Therefore, during 3 weeks, from Monday to Friday with 8 consecutive hours, the students will be with a team of professionals of reference in this area. This will allow them to apply the procedures of selection, collection and analysis of data through the latest equipment and software.

With this practical proposal, students will be able to complete the learning cycle initiated in this program. In this way, they will obtain a broad vision of the Data Science area, as well as the different skills for the technical management of teams in a specialized business environment. In this process you will not be alone as you will have a professional from the company, who will tutor you, and, in addition, TECH's teaching team will provide everything you may need to properly complete the internship.

This practical experience is undoubtedly a unique opportunity to learn by working in an innovative environment, where monitoring, analytical and business vision come together to boost business. It is also an ideal scenario to enhance the competencies and skills of students, who seek to progress in a highly competitive professional environment.

Practical teaching 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 support and guidance of professors and other training partners that facilitate teamwork and multidisciplinary integration as Date (learning to be and learning to relate).

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
Selection and extraction data	Collaborate in the extraction of data from various sources to issue an analysis (data volume can be Small Data, Medium Data, Big Data)
	Support in the realization of data cleaning (preparation of information that, if used, transformation of if used, transformation of categorical variables to numerical)
Development of analytical vision	Assisting in the construction of an analysis model
	Support in the creation of a method or development of tools for data processing
Presentation of data	Contribute to the representation of data in various forms to make it understandable (data visualization)
	Collaborate in the treatment of the data obtained from the extraction by applying statistical approaches, analytical software, machine learning and predictive models

This practical phase will give you a direct insight into the work methodologies used in the technical management of teams in the Data Science area"

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.

Where Can I Do the Internship?

In its maxim of offering quality education within everyone's reach, TECH has made a careful selection of companies where students can develop their internship. It has also taken into account the professional and human team that integrate it, and that will be in this environment, a fundamental pillar for the graduate in their search for a direct and real vision of the professional performance in the Data Science area.

Complete your learning in Data Science Technical Management in the Enterprise with an excellent hands-on experience with industry professionals"

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

Information Technology

Liverpool

Country	City
Mexico	Mexico City

Address: Mario Pani No. 200 Col. Santa Fe Cuajimalpa C.P 05348 Cuajimalpa CDMX

Entity specialized in digital marketing and commercial strategies

Related internship programs:
- MBA in Digital Marketing
- Social Media Management: Community Manager

Delve into the most relevant theory in this field, subsequently applying it in a real work environment"

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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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

30%

Classes

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

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

10%

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.

8%

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.

20%

25%

4%

3%

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.

Certificate

The Hybrid Professional Master's Degree in Corporate Technical Data Science Management guarantees students, in addition to the most rigorous and up-to-date education, access to a Hybrid Professional Master's Degree issued by TECH Technological University.

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

This **Hybrid Professional Master's Degree in Corporate Technical Data Science Management** contains the most complete and up-to-date program on the professional and educational field.

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

In addition to the certificate, students will be able to obtain an academic transcript, as well as a certificate outlining the contents of the program. In order to do so, students should contact their academic advisor, who will provide them with all the necessary information.
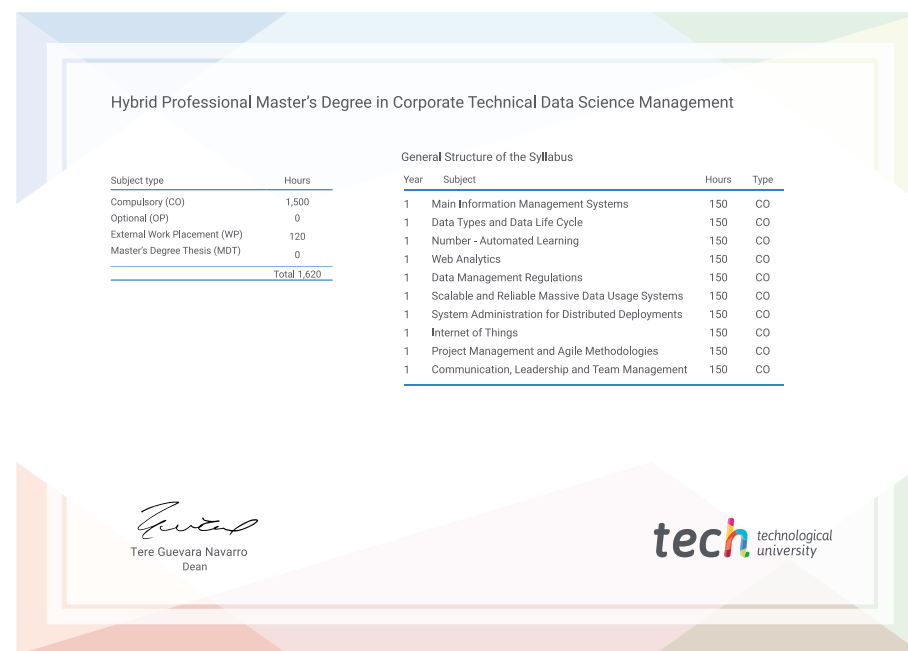
Title: **Hybrid Professional Master's Degree in Corporate Technical Data Science Management**

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

Duration: **12 months**

Certificate: **TECH Technological University**

Teaching Hours: **1,620 h.**

tech technological university

Awards the following
CERTIFICATE
to

Mr./Ms. _____, with identification number _____.
For having successfully passed and accredited the following program

HYBRID PROFESSIONAL MASTER'S DEGREE
in

Corporate Technical Data Science Management

This is a qualification awarded by this University, with a duration of 1,620 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

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

June 17, 2020

Tere Guevara Navarro
Dean

Unique TECH Code: AFWORD23S   techtitute.com/certificates

Hybrid Professional Master's Degree in Corporate Technical Data Science Management

Subject type	Hours
Compulsory (CO)	1,500
Optional (OP)	0
External Work Placement (WP)	120
Master's Degree Thesis (MDT)	0
Total	1,620

General Structure of the Syllabus

Year	Subject	Hours	Type
1	Main Information Management Systems	150	CO
1	Data Types and Data Life Cycle	150	CO
1	Number - Automated Learning	150	CO
1	Web Analytics	150	CO
1	Data Management Regulations	150	CO
1	Scalable and Reliable Massive Data Usage Systems	150	CO
1	System Administration for Distributed Deployments	150	CO
1	Internet of Things	150	CO
1	Project Management and Agile Methodologies	150	CO
1	Communication, Leadership and Team Management	150	CO

Tere Guevara Navarro
Dean

tech technological university

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

Hybrid Professional Master's Degree

Corporate Technical Data Science Management

Modality: **Hybrid (Online + Internship)**
Duration: **12 months**
Certificate: **TECH Technological University**
Teaching Hours: **1,620 h.**

Hybrid Professional Master's Degree
Corporate Technical Data
Science Management

tech technological university