

Máster online 100%

Master in Business Intelligence and Big Data + 60 ECTS Credits

Structuralia

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Master in Business Intelligence and Big Data + 60 ECTS Credits

Modality
Online

Languages
Español

Duration
1500 hours (60 ECTS)

No Limit
AI Assistant

Does it include practices?
NO

Educational Institutions

Structuralia Engineering eLearning

UNIVERSIDAD NEBRIJA

Summary

The Master in Business Intelligence and Big Data is the advanced specialization for professionals seeking to lead data strategy and business decision making. This program immerses you in the fundamentals and applications of business intelligence and the processing of large volumes of information, essential tools for agile and accurate decision-making in the current context. You will explore the state of the art of technology, from data governance to the implementation of transactional and informational systems, essential for any large data analysis project. You will develop the ability to design strategic plans and maps, applying advanced methodologies to extract value from massive volumes of information. You will delve into relational databases, master SQL and specialize in the design of a robust Data Warehouse, key elements to build scalable and efficient data infrastructures. This master's degree equips you to evaluate the impact of your analyses, optimize operations and anticipate market trends, consolidating your role as an information architect capable of driving innovation and efficiency in your organization. You will

acquire the ability to generate valuable information about the market and customers, a fundamental asset for any company seeking to differentiate itself and maintain its competitiveness.

Agenda

MODULE 1. THE NEW PARADIGMS. THE DIGITAL TRANSFORMATION. ELEMENTS TO TAKE INTO ACCOUNT IN DATA PROJECTS.

1. DIDACTIC UNIT 1. BIG DATA

1. Introduction to Big Data
2. Data as an asset
3. Technological enablers
4. Key concepts in Big Data
5. Big data vs. Business Intelligence

2. DIDACTIC UNIT 2. THE STATE OF THE ART OF TECHNOLOGY

1. Elements of a Big Data architecture
2. What are IaaS - PaaS - SaaS?
3. Open Source Technologies
4. Public Cloud and Private Cloud
5. Visualization tools

3. DIDACTIC UNIT 3. DIGITAL TRANSFORMATION

1. What digital transformation is and is not
2. The customer at the center
3. The role of technology as an enabler
4. Use case: User experience
5. Use case: People analytics

4. DIDACTIC UNIT 4. DATA GOVERNMENT

1. Data Governance and Data Quality
2. Data strategy
3. GDPR and privacy
4. How to be a Data-Driven company
5. Plan a data project

MODULE 2. INTRODUCTION TO BUSINESS INTELLIGENCE

1. DIDACTIC UNIT 1. BUSINESS INTELLIGENCE

1. Introduction
2. The need for a system Business Intelligence
3. Advantages of a system Business Intelligence
4. Data, information and knowledge
5. Data transformation model

2. DIDACTIC UNIT 2. TRANSACTIONAL AND INFORMATIONAL SYSTEMS

1. Introduction to business systems
2. Transactional systems and their characteristics in today's world

3. Information systems
4. Other information systems classification models
5. BI systems in companies

3. DIDACTIC UNIT 3. STRATEGIC PLANS AND MAPS

1. The need to establish a plan and its measurement
2. Director, Strategic and Operational Plan
3. Strategic maps
4. The balanced scorecard
5. Key business KPI indicators

4. DIDACTIC UNIT 4. METHODOLOGIES AND PROCESSES

1. Introduction to methodologies for the business plan
2. The 10 keys to creating a Business case
3. Canvas Methodology
4. SWOT analysis
5. The importance of data-oriented decision making

MODULE 3. RELATIONAL DATABASES. SQL. DESIGN OF A DATAWAREHOUSE (BIG DATA)

1. DIDACTIC UNIT 1. FIRST STEPS IN SQL

1. Introduction to SQL
2. Database manipulation
3. Data types
4. Normalization
5. Creating tables in SQL

2. DIDACTIC UNIT 2. SQL COMMANDS

1. Table manipulation
2. Table query in SQL
3. Joining tables in SQL
4. Table and view combinations
5. Other commands in SQL

3. DIDACTIC UNIT 3. SQL FUNCTIONS

1. Functions for strings and numerical functions (I)
2. Numerical functions (II)
3. Date and time functions
4. Other functions
5. Loops, conditionals and triggers in SQL

4. DIDACTIC UNIT 4. DESIGN OF A DATAWAREHOUSE

1. Introduction to datawarehousing
2. Databases in a data warehouse. stage
3. Databases in a data warehouse. SDG (I)
4. Data in a data warehouse. SDG (II)
5. Databases in a data warehouse. DDS

MODULE 4. NOSQL DATABASES (BIG DATA)

1. DIDACTIC UNIT 1. INTRODUCTION TO NOSQL DATABASES

1. Concept of NoSQL Databases
2. Advantages and disadvantages of NoSQL Databases
3. Main characteristics of NoSQL Databases

2. DIDACTIC UNIT 2. TYPES OF NOSQL DATABASES

1. Documentary Databases
2. Column Databases
3. Key-Value Databases
4. Database in graphs

3. DIDACTIC UNIT 3. MONGODB: A DOCUMENTARY DATABASE

1. Introduction to MongoDB
2. MongoDB Features and Architecture
3. Data modeling in MongoDB
4. Queries and operations in MongoDB
5. Scalability and performance in MongoDB

4. DIDACTIC UNIT 4. OTHER NOSQL DBMS

1. Apache Cassandra
2. CouchDB
3. Redis
4. Amazon DynamoDB
5. NeoJS

5. DIDACTIC UNIT 5. INSTALLATION, CONFIGURATION AND USE OF MONGODB

1. Data structure design
2. Development environment configuration
3. MongoDB installation and configuration
4. Creating and manipulating collections in MongoDB
5. Import and export data in MongoDB

6. DIDACTIC UNIT 6. ADVANCED QUERIES AND OPERATIONS IN MONGODB

1. Indexes and query optimization in MongoDB
2. Data Aggregation in MongoDB
3. Transactions in MongoDB
4. Replication and high availability in MongoDB
5. Backup and recovery in MongoDB

7. DIDACTIC UNIT 7. USE CASES OF NOSQL DATABASES

1. Web and mobile applications
2. Big Data and data analysis
3. Internet of Things (IoT)
4. Recommendation systems

5. Social media and social networks

8. DIDACTIC UNIT 8. INTEGRATION OF NOSQL DATABASES WITH EXTERNAL TECHNOLOGIES

1. Introduction to data integration
2. Integration with programming languages (Python, Java, etc.)
3. Integration with tools Business Intelligence (BI)
4. Integration with cloud storage systems

9. DIDACTIC UNIT 9. SECURITY AND PRIVACY IN NOSQL DATABASES

1. Security Concepts in NoSQL Databases
2. Authentication and authorization in MongoDB
3. Data encryption in NoSQL Databases
4. Auditing and access control in NoSQL Databases

MODULE 5. FUNDAMENTALS OF BUSINESS INTELLIGENCE

1. DIDACTIC UNIT 1. EVOLUTION OF THE USE OF INFORMATION

1. Information systems
2. BI Introduction
3. Phases business intelligence
4. Users business intelligence
5. History and future BI

2. DIDACTIC UNIT 2. REPORTING TOOLS

1. BI system exploitation
2. Qlik I tool management
3. Qlik II tool management
4. Power BI I tool management
5. Power BI II tool management

3. DIDACTIC UNIT 3. THEORY AND PRACTICE OF A DASHBOARD

1. Introduction to KPI'S and scorecard
2. Basic visualization theory
3. Advanced visualization theory
4. Complete BI Qlikview I project
5. Complete BI Qlikview II project

MODULE 6. DATA TRANSFORMATION AND ORGANIZATION. DATA WAREHOUSES, DATA MARTS AND ETL

1. DIDACTIC UNIT 1. ETL PROCESSES

1. ETL Introduction
2. ETL tools
3. ETL process elements
4. etl microsoft ssis
5. ETL tools comparison
6. References

2. DIDACTIC UNIT 2. DATA ORGANIZATION I

1. Introduction and evolution of data
2. Relational Databases
3. Relational Databases II
4. NOSQL DB
5. SQL-NOSQL comparison

3. DIDACTIC UNIT 3. DATA ORGANIZATION II

1. Data organization models
2. Columnar Databases
3. Optimize database queries
4. Optimize queries to BBDD II
5. Design of a relational database

4. DIDACTIC UNIT 4. DATA WAREHOUSE AND DATA MARTS

1. Data warehouse
2. Inmon vs kimbal
3. Exploit dwh data
4. data mart
5. Amazon redshift

MODULE 7. POWER BI

1. DIDACTIC UNIT 1. GETTING STARTED WITH POWER BI

1. Introduction to Power BI
2. Different types of Power BI: is it really free?
3. Let's dive into it: first simple report
4. Power Query: data source
5. Data transformation

2. DIDACTIC UNIT 2. DATA MODELING AND DAX

1. Data modeling
2. Getting started with DAX (I)
3. Getting started with DAX (II)
4. Mastering DAX (I)
5. Mastering DAX (II)

3. DIDACTIC UNIT 3. DATA VISUALIZATION

1. Table and matrix
2. Trends
3. How to filter your data properly
4. Bookmarks
5. Getting details

4. DIDACTIC UNIT 4. TAKING POWER BI TO THE NEXT LEVEL

1. Understanding Power BI Service

2. Sharing content in Power BI Service
3. Comparing Power BI Service and Power Report Service
4. Integrating Python and R in Power BI Desktop
5. Introducing Bravo for Power BI Desktop

MODULE 8. APPLIED MATHEMATICS AND STATISTICS FOR DATA ANALYSIS (WITH R)

1. DIDACTIC UNIT 1. BASIC STATISTICS AND DATA ANALYSIS

1. Probability distributions
2. Hypothesis tests and confidence intervals
3. Preparation and descriptive analysis of data
4. Analysis of missing values and abnormal cases
5. Practical case: Data preprocessing and statistical inference

2. DIDACTIC UNIT 2. REGRESSION MODELS

1. Simple linear regression
2. Multiple linear regression
3. Generalized Linear Models (GLM)
4. Regression trees
5. Practical case: Construction and evaluation of regression models

3. DIDACTIC UNIT 3. CLASSIFICATION MODELS

1. Binary logistic regression
2. Multinomial logistic regression
3. Classification trees
4. Random forest
5. Practical case: Construction and evaluation of classification models

4. DIDACTIC UNIT 4. CLUSTER ANALYSIS AND TIME SERIES

1. Principal Component Analysis (PCA)
2. Classification: Discriminant Analysis
3. Classification: K-means
4. Time series: smoothing and temporal decomposition methods
5. Time series: prediction methods

MODULE 9. SELF-SERVICE DATA PREPARATION

1. DIDACTIC UNIT 1. DATA PREPARATION

1. Introduction
2. Data Literacy
3. Work with data
4. Solutions and techniques for data processing
5. Data quality management

2. DIDACTIC UNIT 2. DATA PREPARATION WITH EXCEL

1. Work with data in Excel
2. Dataset (DATASET)

3. Data Cleasing with Excel
4. Data Wrangling with Excel
5. Data Blending in Excel

3. DIDACTIC UNIT 3. DATA PREPARATION WITH TALEND

1. Installing Talend Data Preparation Desktop
2. Working with data in Talend
3. Data Cleasing with Talend
4. Data Wrangling with Talend
5. Data Blending with Talend

4. DIDACTIC UNIT 4. DATA PREPARATION WITH DATAPREP BY TRIFACTA

1. Registration in dataprep by Trifacta
2. Working with data with Dataprep by Trifacta
3. Data Cleasing with Trifacta
4. Data Wrangling with Dataprep by Trifacta
5. Data Blending with Dataprep by Trifacta

MODULE 10. TFM. MASTER IN BUSINESS INTELLIGENCE AND BIG DATA

Qualification

University Degree in Master of Lifelong Training in Business Intelligence and Big Data issued by the Antonio de Nebrija University with 60 ECTS University Credits. Teachings not leading to obtaining an official qualification

Objectives

- • Lead the execution of data initiatives, from conceptualization to delivery, incorporating the principles of digital transformation. • Formulate information governance strategies that guarantee its quality, security and accessibility in complex environments. • Evaluate technological innovations in the processing of massive volumes of information and business intelligence for decision making. • Manage the architecture of transactional and informational systems, optimizing the collection and processing of corporate data. • Develop strategic plans and roadmaps based on advanced business intelligence methodologies to foster innovation. • Master the conception and construction of robust data warehouses, using relational databases and SQL for efficient management. • Analyze the impact of solutions Business Intelligence in operational optimization and anticipation of market trends. • Generate valuable information about the market and customers to drive differentiation and business growth.

What does it prepare you for?

This program prepares you to lead the management and analysis of business data, transforming information into tangible strategic value. You will design and implement advanced solutions Business Intelligence, applying methodologies and processes to optimize operational and strategic decision-making in various organizational contexts. You will evaluate the impact of emerging technologies on digital transformation, mastering data governance and data architecture of complex information systems. You will manage Big Data projects from start to finish, from conception to the implementation of robust Data Warehouses, using relational databases and SQL. You will integrate a global vision of the state of the technological art, which will allow you to anticipate trends and direct the evolution of business intelligence in your organization. You will acquire the ability to make informed and strategic decisions based on advanced data processing and analysis.

Who is it addressed to?

This program is aimed at professionals in the Information Technology sector, data analysts and managers seeking a high-level specialization in advanced data management and analysis. If you work in executive roles and need to update your knowledge to drive business data strategy, this master's degree offers you the necessary tools. It is for those who, from their current position, wish to master the methodologies and technologies of Business Intelligence and Big Data, transforming the way your organizations use information for innovation and growth. You seek a strategic vision to lead complex data projects and generate significant impact.

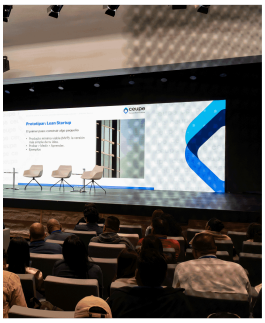
Official Character

This training is not included within the scope of official regulated training (Early Childhood Education, Primary Education, Secondary Education, Official Vocational Training FP, Baccalaureate, University Degree, Master University Officer and Doctorate). It is therefore a complementary and/or specialization training, aimed at the acquisition of certain competencies, skills or aptitudes of a professional nature, which can be assessed as merit in job boards and/or competitive examinations, always within the section of Complementary Training and/or Continuous Training. It is always essential to review the specific grading requirements of the specific public job boards to which we wish to apply.

Professional Outings

- The specialization in Business Intelligence and Big Data positions you to assume key roles in data management and strategy within organizations in various sectors. You will be able to lead teams as Director of Business Intelligence, designing and implementing solutions that transform business decision-making. You will be able to work as a Data Architect, structuring robust systems for the processing of large volumes of information. You will assume the responsibility of Strategic Data Consultant, advising organizations on their path towards digital transformation, or as Data Governance Manager, ensuring quality and applicable regulatory compliance. Your profile will be highly valued in the management of complex data projects, allowing you to direct Big Data and Data Warehousing initiatives, consolidating your experience in the application of advanced methodologies for business intelligence.







Live Madrid

Live the International Week

As an additional complement to your training, you can be part of the SIM: Week International in Madrid. A unique meeting that brings together students from all over the world. For seven days you can live an academic and cultural experience in the heart of Europe, culminating with the graduation ceremony in Madrid.

- Conferences and workshops with international experts
- Visits to companies and reference organizations
- Networking with students from different countries
- Cultural activities and discovery of Madrid
- graduation ceremony

Structural

Structuralia is a leading educational institution in postgraduate and highly specialized online training, focused on the fields of engineering, architecture, construction, energy, technology and digital transformation.

Founded in 2001 with a strong industrial DNA, the result of collaboration between large companies in the sector and the Universitat Politècnica de Catalunya (UPC), for more than 25 years we have accompanied technical professionals in their academic and professional development through practical, flexible training aligned with the reality of the labor market.

Our training proposal connects advanced technical knowledge, real employability and international projection, acting as key support in the professional evolution of those seeking to specialize, grow professionally and generate impact in their sector, with a firm commitment to the democratization of access to technical excellence.



+350.000

Students have gone through our virtual classrooms



+20 years

Experience in the training sector



5 stars

QS ranking in online education

EDUCA EDTECH
Group

Educa Edtech GROUP

When you enroll in a course or master's degree, you will get a free subscription to MyLXP while your training lasts. You will have access to more than 400 key courses (soft skills, languages, digital skills, etc.) and other surprises. Sign up and see how MyLXP improves your learning.

EDUCA LXP Methodology

The comprehensive tailored online education experience

EDUCA LXP is more than a methodology, it is a completely educational experience personalized thanks to all the possibilities offered by artificial intelligence. Now the content adapts to you, your needs and preferences, while offering you access to updated and practical content that really makes a difference in the labor market.

Flexibility

100% online learning adapted to your schedule: study from any device wherever, whenever and however you want.

Personalization

Contents and training itineraries adapted to your needs, thanks to AI.

Innovation

Constantly evolving technological developments driven by AI through the Learning Experience Platform.

Artificial intelligence

Discover PHIA, your learning assistant that will help you every step of the way.

Teaching support

Human empathy and academic guidance from a specialized teaching team.

Educational Experience

Didactic approach oriented to work by competencies, which favors practical and meaningful learning.

MY LXP

When you enroll in a course or master's degree, you will get a free subscription to MyLXP while your training lasts

You will have access to more than 400 key courses (soft skills, languages, competencies digital, etc.) and other surprises. Sign up and see how MyLXP improves your learning.

Meet PHIA, your personalized learning assistant

Use all the possibilities of artificial intelligence to get the most out of it match to your training

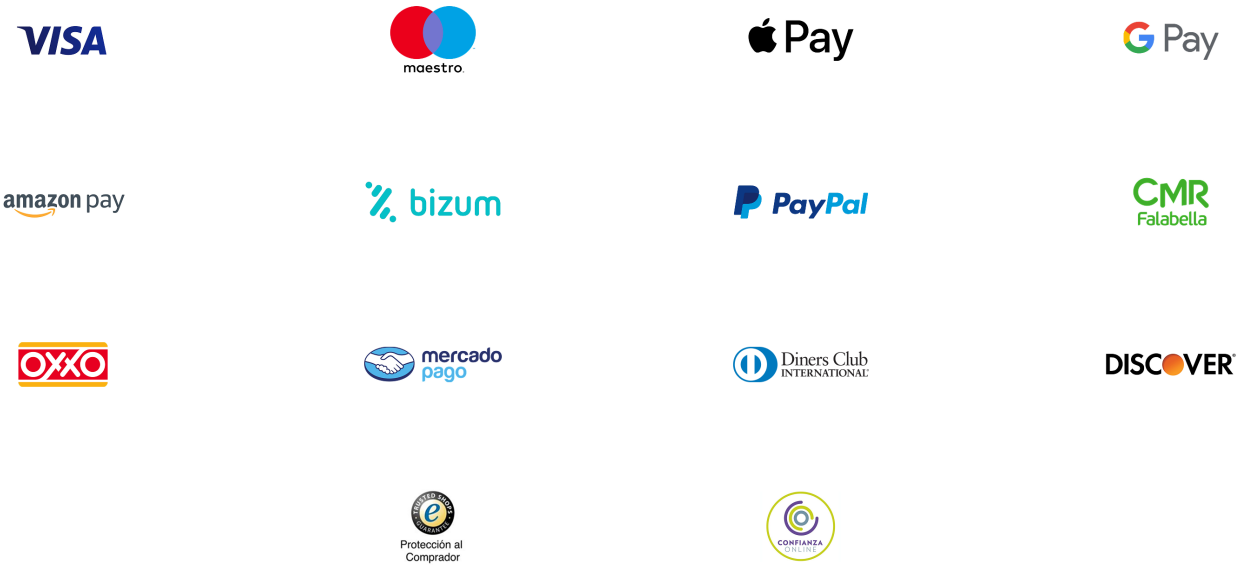
EDUCA EDTECH Group leads the digital revolution in education, promoting the continuous learning and technological transformation. The group is made up of recognized training institutions and its mission is to democratize access to education, promote the transfer of knowledge, technological development and research.

With the experience accumulated over more than 20 years, we have perfected our learning platform EDUCA LXP (Learning Experience Platform), the basis of our educational methodology, which provides students with online training practical and meaningful.



Discover all the payment facilities

We adapt to all international payment methods.



Funding and scholarships

Finance your course or master's degree and enjoy the available scholarships. Contact our expert team to know which one best suits your profile.

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Scholarship recommended

20%
Functional Diversity Scholarship

20%
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