Master in Data Science and Business Analytics

CEDEU UNIVERSITY

MADRID, SPAIN
ONSITE



cedeu.es

WHY CEDEU?

1. QUALITY EDUCATION
2. TRAINING OF LEADERS
3. STRONG PROFESSIONAL FUTURE
4. NATIONAL AND INTERNATIONAL AGREEMENTS
5. INNOVATIVE METHODOLOGIES
6. EXTRACURRICULAR TRAINING
7. LOCATED IN THE HEART OF MADRID
8. INTERNSHIP OPPORTUNITIES
9. VIRTUAL LEARNING RESOURCES
10. PERSONALISED CAREER DEVELOPMENT
11. SMALL GROUPS AND TUTORING SUPPORT
12. PERSONALISED CURRICULUM
13. FOSTERING TEAMWORK AND CREATIVITY
14. PARTICIPATION IN REAL DATA PROJECTS
15. INTERNSHIPS WITH A HIGH SUCCESS RATE







COURSE DETAILS

Data has become the language of modern business. Companies of every size and sector need professionals who can collect, analyse and model data, and translate the results into decisions.

An international master's experience in Madrid, taught entirely in English, adds a strong differentiator to your curriculum vitae: it shows prospective employers your motivation, independence and ability to work in global, data-driven environments.



IN WHICH LANGUAGE IS THE COURSE DELIVERED?

The whole course is taught in English and, as part of the course, Spanish language lessons are offered for non-Spanish speakers.

WHAT IS THE STUDY MODE?

Onsite, at CEDEU Madrid Centre Campus, in the Salamanca district of Madrid.

HOW LONG DOES THE COURSE TAKE?

The length of the course is one academic year (60 ECTS).

WHICH INTAKES DOES THE COURSE HAVE?

The course has two intakes every academic year: it begins in October and in March.



OBJECTIVES OF THE PROGRAMME

The objectives of the **CEDEU Master in Data Science and Business Analytics** are to train professionals able to collect, manage, analyse and model data, and to turn the results into business value.

Students develop a solid command of programming, statistics and databases, and progress to machine learning, deep learning and big data technologies, always with a clear business perspective.

The participant will learn to work with the tools and methodologies used by companies today, from business intelligence dashboards to predictive models deployed in production.

The **Master in Data Science and Business Analytics** is ideally suited to meet the challenge of taking on analytical and technical roles in data-driven organisations, in Spain and internationally.

The **Master in Data Science** turns data into decisions and analysts into data professionals.



CEDEU





Madrid Centre Campus

The CEDEU University Study Centre was created in accordance with current legislation and is attached to Rey Juan Carlos University. It is a higher education institution whose academic policies articulate teaching, research, dissemination and creation of culture and links, through a modern academic and administrative organisation, based on high-level academics and educational programmes of excellence, in accordance with the needs for the comprehensive formation of university students, whom, as professionals, are competent in the labour market and socially responsible.

The University Centre CEDEU was created with the aim of giving a response to the training needs and requirements of individuals and society, which is why it is committed to inclusion, innovation and excellence in the generation, transmission, preservation and application of knowledge for the benefit of society.

The CEDEU University Centre aims to respond to social demand. In order to achieve its objectives, priorities have been established for people and society. CEDEU is authorized to offer official university studies, undergraduate and postgraduate degrees, both face-to-face and online.

- CEDEU LEARNING LAB
- LIBRARY AND SPECIALISED ROOMS
- 24x7 VIRTUAL CAMPUS
- CEDEU START-UP EXPERIENCE
- CAREER CENTER
- MENTORING, ENTREPRENEURSHIP AND NETWORKING
- E-LEARNING CAPSULES
- MULTITASK SPACES
- GLOBAL WIFI ACCESS
- #CEDEU MASTERCLASS





FACULTY

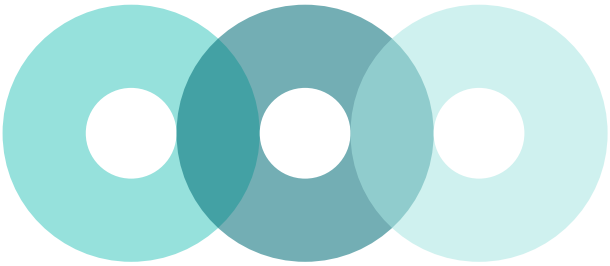
CEDEU's teaching staff is made up of a team of specialized PhDs and professionals with extensive teaching and professional experience in data science, analytics and technology.

The course management team combines academic experts and practitioners who work with data every day in companies and consultancies.

Classes are built around real datasets, practical cases and projects, so that students learn the way data teams work in industry.

The important thing is to make the most of the opportunities and discussions that arise during the development of the course.

- Innovative methodologies: Just in Time Teaching, case studies and simulators, all of them to enhance our students' learning in class.
- Teaching staff of highly qualified PhDs and professionals, linked to business and the data industry.



- Excellent connections between teachers and students to find the best opportunities in Spanish and international companies.
- Innovative online learning tools thanks to the integration of the virtual campus in the training process.

Every year, we prepare the participants of the **Master** to occupy analytical and technical positions at companies, organizations and institutions at national and international level.

MINIMUM COMPUTER REQUIREMENTS

Every student needs their own laptop for classes and projects. Minimum and recommended specifications:

Component	Minimum	Recommended
Operating system	Windows 10, macOS 12 or Linux	Windows 11 or latest macOS
Processor	Intel Core i5 / AMD Ryzen 5 / Apple M1	Intel Core i7 / AMD Ryzen 7 / Apple M2 or newer
RAM memory	8 GB	16 GB
Storage	256 GB SSD (50 GB free)	512 GB SSD
Screen	13"	14–15", Full HD
Other	Wi-Fi, webcam and microphone	Administrator rights to install software

No dedicated graphics card (GPU) is required: deep learning and big data practice runs on cloud platforms. All the software used in the program is free or provided by CEDEU.

PROFESSIONAL WARRANTY 10 CEDEU

Commitment

1 CEDEU supports the formation of leaders with the capacity to develop positive excellence, equity, social commitment, ethics and civic responsibility. Its development is inspired by respect for freedom of thought and personal and social humanist values.

Experience

2 The experience of the CEDEU Board and the Universidad Rey Juan Carlos in high-level studies allows us to ensure the optimum levels of quality required by current university legislation.

Network

3 CEDEU maintains institutional relations with numerous ethical and international associations. Companies and professionals can make their contributions with the certainty that our institution will apply their recommendations for the benefit of our students.

Flexibility

4 Decentralized learning favours students with just-in-time learning methods. CEDEU adapts to fulfil the requirements of the participants in its university programs.

Discipline

5 CEDEU's learning methodology demands a high level of commitment, responsibility and organization, intrinsic qualities in today's professionals.

Methodology

6 CEDEU has developed a teaching methodology in which all the formative activities are designed to meet the needs of students and of the professional world.

Cost

7 CEDEU offers a flexible financing system perfectly adapted to the reality of the environment to which our programs are directed.

Excellence

8 CEDEU's official university programs are approved by ANECA, and all its programs share the same institutional commitment to quality.

Personalization

9 The professor controls the level of the student's participation at all times, and can detect his/her particular needs thanks to a much more personalized attention.



Interactivity

10 CEDEU is committed to the exchange of ideas, experiences and opinions by providing forums, chats, social networks and other participation and interaction tools for professionals.

WHY MADRID?

Madrid is the ideal city for university studies. CEDEU is located in the heart of the Salamanca district of Madrid, at Calle José Picón, number 7, with modern facilities.

The Community of Madrid has more than six and a half million inhabitants, with Madrid being an extensive city in continuous growth. It is located in the centre of the Iberian Peninsula, with extraordinary communication networks, and is connected to all national and international points thanks to its high-speed trains and international airport.

Madrid is the only city in the world that has nine World Heritage Sites less than two hours away. It is one of the most important centres of art and culture in Europe and has one of the most active events schedules in the world.

It is important to note the sporting activities that are concentrated in the capital and its famous gastronomy, with the best of all the regions of Spain.

It is impossible to talk about Madrid without mentioning its Art Walk, which includes the Prado Museum, the Thyssen, the Reina Sofía, CaixaForum and much more. Other places to visit include Plaza Mayor, the Royal Palace, the Cibeles Fountain, Puerta del Sol, Puerta de Alcalá, the Rastro or the Retiro.

Madrid is nowadays home to the largest corporate, business and technology centre in the country, and one of the most dynamic European hubs for data, analytics and digital innovation.

City links

Finally, a great benefit of living in Madrid is that you can get to know other interesting and magical nearby regions and cities, such as Seville, San Sebastian, Valencia, Palma de Mallorca, Toledo, Santiago de Compostela, Santander and Granada.

Whether for its great beaches, monuments, cuisine or cultural heritage, each city has its own charm.



10 KEY ASPECTS: CEDEU MASTER IN DATA SCIENCE

The CEDEU Master in Data Science and Business Analytics is a one-year postgraduate programme that combines the technical skills of data science with a clear business perspective.

It equips students with the knowledge, tools and practical experience to work in analytics, data science and data engineering. Here are the key aspects of our programme:

1

Solid Programming Foundations

Students start with Python from the basics and progress to advanced programming, building the technical base that every data professional needs.

2

Statistics and Predictive Modelling

Statistics, data mining and predictive modelling give students the analytical rigour to understand data and anticipate business outcomes.

3

Machine Learning and Deep Learning

The programme covers the main machine learning algorithms and deep learning architectures, from classic models to neural networks.

4

Databases and Big Data

SQL and NoSQL databases, big data technologies and Apache Spark prepare students to work with large volumes of data in real environments.

5

Business Intelligence and Visualization

Students learn to design dashboards and data stories that communicate insights clearly to managers and decision-makers.





6

From Model to Business

Students learn how to put models into production and turn them into value for companies, with real cases of how data generates revenue.

7

Text, Social and Open Data

Text mining, social network analysis and open data broaden the range of data sources that students can analyse and exploit.

8

Case Studies and Practical Learning

Real datasets, practical cases and a Master's Thesis applied to a real business problem, fostering critical thinking and problem-solving.

9

Internships and Practical Experience

Students can carry out internships that give them the chance to apply their knowledge in real business settings and enhance their resumes.

10

Career Support

Career services and resources, including job placement assistance, interview coaching and networking events, to help graduates secure promising job opportunities.

TOOLS AND TECHNOLOGIES YOU WILL MASTER

This Postgraduate Master's programme is a complete training programme of one academic year, whose curriculum, delivery and evaluation meet the academic quality criteria of the European Higher Education Area (EHEA).

Throughout the programme, students work with the languages, platforms and libraries used by data teams in companies today:

Python · Pandas · SQL · NoSQL · MongoDB · Power BI · Tableau · scikit-learn · TensorFlow · Keras · NLP · Apache Spark · Hadoop · Git · APIs · Cloud

MASTER IN DATA SCIENCE AND BUSINESS ANALYTICS PROGRAMME

SEMESTER 1	ECTS
• Python Fundamentals	3,0
• Advanced Python	3,0
• Statistics for Data Science	3,0
• SQL Databases	3,0
• NoSQL Databases	3,0
• Business Intelligence	3,0
• Advanced Data Visualization	3,0
• Open Data	3,0
• Master's Thesis I	6,0
TOTAL	**30**

SEMESTER 2	ECTS
• Data Mining and Predictive Modelling	3,0
• Machine Learning	3,0
• Deep Learning	3,0
• Text Mining	3,0
• Big Data Technologies	3,0
• Apache Spark	3,0
• Social Network Analysis	3,0
• Productizing Models: from Model to Business	3,0
• Master's Thesis II	6,0
TOTAL	**30**

TWO SEMESTERS – 1 YEAR **TOTAL ECTS - 60**

INTERNSHIPS AND COLLABORATING ENTITIES

CEDEU facilitates the incorporation of its students into the professional world through internship and job offers adapted to the professional profile of each student. The internship department advises and guides each student individually, locating the best offer among the proposals presented by companies and entities.

All students on this programme can carry out internships during the course of the programme.

Data and analytics profiles are in demand across every sector: consulting, banking and insurance, technology, retail, telecommunications, energy and the public sector.

Students can apply what they learn in the Master's Thesis and the internship to real business problems, building a professional portfolio before they finish the programme.



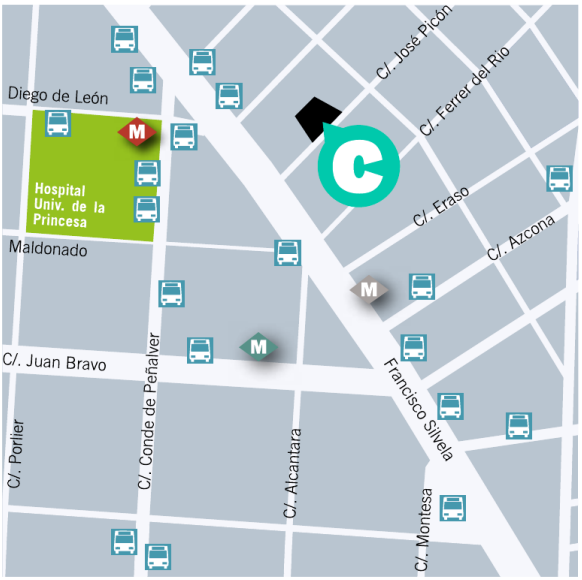


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STUDENTS FROM ALL OVER THE WORLD TRUST US

Since its foundation, CEDEU has been teaching students of more than 50 nationalities.



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