



IMT Atlantique
Bretagne-Pays de la Loire
École Mines-Télécom

DATA SCIENCE MASTER OF SCIENCE

ACCREDITATION

The MSc in Information Technology (IT), track in Data Science (DS) is accredited by the Ministry of Higher Education, Research and Innovation.

National Accreditation Reference: 20171079-1702068Z.

Co-accredited with the University of Southern Brittany (Université de Bretagne Sud, UBS).

KEY WORDS

Data Science, Computer Science Artificial Intelligence, Business Intelligence, Data Warehouse, Knowledge Discovery, Data, Text, Web and Social Network Mining, Statistical Inference Knowledge Management, Knowledge-Based Systems, Information Systems Decision Support Systems, Decision Aiding.

SCHOOL PROPOSING THE MASTER

IMT Atlantique is a "Grande Ecole" ranked among the best French Graduate Engineering Schools, and recognized internationally as a leading Technological University in the world most prestigious rankings. It is a member of Institut Mines-Télécom (IMT), the largest group of public Engineering and Management Graduate Schools in France.

LOCATION

Classes are given in Brest located in Brittany, one of the most visited areas in France due to its breathtaking landscapes and seascapes as well as its numerous historical treasures. Brest campus is located in the centre of the Science Park overlooking the entrance to the Bay. It includes halls of residence and cafeteria.

STRONG POINTS OF THE PROGRAM

Besides being flagships of European institutes of higher education, IMT Atlantique and UBS are affiliated with many networks of alliances in France and abroad, as well as a pole for high-level research activities. Strong links with industry have made it possible to reach excellence in pedagogical methods, project-based teaching and corporate research. Almost half of the students come from outside France, with more than 50 nationalities on our campuses. This fact reflects a very high intercultural dimension and results in an interesting, enjoyable, multicultural everyday life experience. Furthermore, the teaching staff consists of internationally renowned specialists in Information Technologies and Engineering.

INDUSTRIAL PARTNERS (COURSES AND INTERNSHIP S)

Arkéa Crédit Mutuel de Bretagne, BNP Paribas Assurances, Dassault Aviation, Ifremer (French Research Institute for Exploration of the Sea), INSERM (National Health and Medical Research Institute) & Stat Life, Orange Labs/France Telecom R&D, SAS, SHOM (French Hydrographic and Oceanographic Institute), Thales Aerospace and Research & Technology...

LANGUAGE OF TEACHING

The first semester classes are taught in English. Over this period, students acquire sufficient skills in the French language to be able to follow second and subsequent semester lectures together with native speakers. Progressive immersion in the French language and culture, an educational challenge, is one of the special features of the curriculum.

ENVIRONMENT

In the last few decades, companies have accumulated overwhelming amounts of data, be it textual (reports, emails, phone call transcripts, etc.), numeric (sales figures, meteorological data, etc.) or binary (images, audio, sensor data, etc.). Using statistical "data mining" methods, one can detect tendencies, hidden patterns and knowledge nuggets, and use them to make strategic decisions. This process is of crucial importance in all sectors of activity, and in particular for business, science, politics, security, healthcare, etc.

COURSE AIMS

This MSc program is aimed at future experts in the design of high-performance support systems for data mining, knowledge extraction and decision aiding. This Masters program also offers a gateway to PhD studies.

PROGRAM

This is a full-time, two-year course divided into four semesters.

First semester

- > Basics of computer science
- > Mathematics & signal processing
- > Introduction to data science
- > Networking fundamentals
- > Bibliographical study
- > Intercultural workshops
- > French language (6 hours per week)

Second semester

- > Software & data engineering
- > Computer science fundamentals
- > Mathematics and Information theory
- > An engineering project in working groups of 5 or 6, focused on acquiring project management experience and applying knowledge acquired in coursework
- > French language (3 hours per week)

Third semester

- > Frequentist Statistics and Probabilistic
- > Graphical Networks
- > Information systems applied to decision support
- > Knowledge engineering
- > Data mining
- > Decision aiding
- > Project in decision support systems
- > French language (3 hours per week)
- > During the third semester the following state-of-the-art software tools are used: SAS, RapidMiner, R, Weka, Diviz, GATE, Python NLTK, and others

Fourth semester

This semester is spent carrying out a development or research project in an industrial or academic laboratory in France or abroad. Upon completion of the four semesters, students defend their Master Thesis.

ADMISSION REQUIREMENTS

The entry requirements include a first-class Bachelor's degree or a four-year degree in one of the academic topics offered by the Master's course. Candidates have to show an outstanding academic record for their application to be considered.

DATA SCIENCE

MASTER OF

LANGUAGE REQUIREMENTS

When applying, students must provide evidence of proficiency in the English language. This could include:

- > Having English as mother tongue
- > Bachelor degree taught in English
- > Acquisition of an official English language qualification such as:
 - > TOEFL: 79/120 (iBT) or 550/677 (PBT)
 - > IELTS: 6/9
 - > TOEIC: 750/990
 - > Cambridge: CAE (Certificate of Advanced English)

French

French test is not required for application. However, it is highly recommended to start learning the language before the start of the Master.

Some French language and culture classes are included into the program, and a 3-week intensive French language training is organized by IMT Atlantique in August.

APPLYING

Apply at:

<https://it.imt-atlantique.fr>

COMPETENCES ACQUIRED

Thanks to IMT Atlantique and UBS expertise in postgraduate education and research, high-level competencies are acquired not only in technical/scientific fields but also in team working, written and oral communication, innovation and project management.

Last but not least, French language is also one of the competencies acquired, beneficial for working in France and other French speaking countries or for French companies abroad.

TYPICAL JOBS

- > Data Miner/Analyst
- > Analytics Manager
- > R&D Engineer
- > Consulting Expert
- > Decision Support System Designer • Software developer
- > Business analyst
- > Researcher and Academic

COST

Participation cost for free movers:

> €5,100/year

SCHOLARSHIPS

Scholarships are available depending on academic record and country of origin (Special rate for European students from the Erasmus zone).

It should be mentioned that internships are paid and cover living expenses during the last semester.

CALENDAR

One intake per year in February.

> **Year 1:** Two academic semesters

> **Year 2:** One academic semester + 6-month Master thesis in industry or in a research lab.

LODGING

A large range of accommodation for admitted students is available in our students' residences called "Maisel". That is the best, easiest and cheapest solution we recommend. Different kinds of single bedrooms and some self-catering rooms are available, in comfortable halls of residences with fitted kitchens.

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CONTACT

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