International Master's Degree in DATA SCIENCE

The international Master's degree in Data Science is the second year specialty of Nantes Université's Master's degree in Computer Science. Through this programme, students will acquire the scientific and technological skills towards a data scientist profile within a computer science degree. With case studies and an internship, they will also gain methodological and practical experience in conducting a high-level innovative process in the field of data science.

Data science is a major scientific and technological area of computer sciences, founded on the fields of data analysis, machine learning and databases. It leads to produce methods and technologies to enable data-driven progress in these social, scientific and economic activities.

Syllabus

Third semester (30 ECTS)
(i.e. first semester of this second year of master)

• Deep learning - 3 ECTS

• Semantic AI - 3 ECTS

• Advanced graphs and networks - 3 ECTS

• Reinforcement learning and recommender systems - 3 ECTS

• Graphic models - 3 ECTS

• Visual analytics - 3 ECTS

• Pattern mining - 3 ECTS

• Ethics, data and AI - 3 ECTS

• Data intensive processing - 3 ECTS

• Research methodology and case study - 3 ECTS

Fourth semester (30 ECTS)
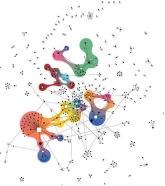(i.e second semester of this second year of master)

The second semester is dedicated to a fulltime scientific and technical internship (minimum 5 months) related to a research & development project conducted in academic labs or private companies.

Every student is guaranteed a paid internship within the research lab LS2N Laboratoire des Sciences du Numérique de Nantes. During the internship, students will contribute to one of the lab's research projects and work on bibliography, define an original scientific proposal, implement and conduct experimental evaluations and defend their thesis. Alternatively, students may also seek an R&D internship in industry.

Academic calendar

Courses start in early September.

Skills

> Develop core scientific competencies, practical and methodological skills on data usage

> Understand how data science applies to industry and be aware of its social, economic and scientific impact

> Conduct a research or development project in the data analysis domain

Career Opportunities

The goal of this Master's programme is to train students towards a data scientist profile. The master's environment should facilitate future involvement in Ph.D. positions in the field or an R&D data scientist position in a company.

Business sectors
> Data scientist
> R&D engineer
> Education and research

Hosting research lab

The laboratory of Digital Science of Nantes

https://www.ls2n.fr/?lang=en

POLYTECH NANTES

As the graduate school of engineering of Nantes Université, Polytech Nantes benefits from the scientific and educational environment of a university.

Polytech Nantes is the founding member of the Polytech group, a national network of 16 graduate engineering schools in France.

20% foreign students

+70 Partner schools

POLYTECH NANTES

Pôle Sciences et technologie
Nantes Université

Admission criteria

The Master's Degree is a two-year degree. At Polytech Nantes, only the second year is accessible, so applicants should hold a degree which is at least a 4-year degree in higher education (i.e. a 3-year Bachelor is not acceptable).
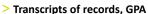
Applicants should be able to give evidence (from transcripts of their degrees) and show good knowledge in the following fields:

> software development (e.g Python, R, C++, software engineering)

> mathematics (statistics, probability and optimization)

> relational databases (theory and practice)

> report writing

Requirements

> **Transcripts of records, GPA**

> **Ranking in the promotion (position of student/number of students)**

> **87 TOEFL / 785 TOEIC / 5.0 IELTS / B2**

How to apply ?

> For students **coming from a Polytech Nantes partner university**, please contact your international coordinator who will deal with your enrolment.

> For students coming from a country that is **part of the Campus France procedure**, please enrol with Campus France *campusfrance.org/en/application-etudes-en-france-procedure*

> For students coming from a country that is **not part of the Campus France procedure**, please Complete the application form on our website (*univ-nantes.fr/polytech/internationalmasters*) and send us the following documents:

- a detailed CV in English (including the precise content of your studies, which topics were studied each year, obtained grades, international English test score, reports you may have written during your studies)
- a cover letter
- a complete transcript in English of all previous years of study at the University including your GPA and official ranking
- a copy of your passport

Cost

The price includes the education and the training costs, as well as the French courses for foreigners, some cultural outings and the student social security*.

It is included if you are less than 28 years old. If not, you will have to pay your own social security.

More information :
polytech.univ-nantes.fr/en/financial-and-practical-information

Accommodation

The rent for students' housing may vary between €350 and €450 per month (a one-month rent deposit is commonly agreed upon). The housing market is saturated in September. It is highly recommended to seek accommodation in June or July. A specific housing insurance will be required for any accommodation, as well as the housing tax for accommodation in town.

Location

The programme is held in Nantes, on the Chantrerie Campus which hosts several Graduate Schools, with over 4,000 students, two university restaurants, a as well as about 30 companies of advanced technology.

Greater Nantes (670,000 inhab.) is located close to the Atlantic Ocean and is regularly rated as one of the most pleasant French cities to live in. Thanks to its beautiful parks, efficient public transport and other policies for sustainable development, Nantes has been awarded the status of European Green Capital.

Language

The programme is entirely taught in English, thus, a good command of the English language is required (B2 score as defined by the Council of Europe). Please, note that French students also apply.

Contact

master-datascience@univ-nantes.fr

polytech.univ-nantes.fr

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Nantes Université