

Public Health Data Science

Program Outline

- › The Master in Public Health Data Science provides a year of international research in public health data science, from project design to real life health data analysis and the communication of results.
- › Selected within the French "Investments for the Future" program as an "Initiative of Excellence", the program covers multidisciplinary skills in epidemiology, informatics and statistics, and ensures that students gain strong knowledge about the strengths and limits of digital technologies and their use in public health research.

Admission Requirements

Candidates must fulfill the following:

Hold at least a Master (year 1) degree with honors (minimum 240 ECTS or equivalent in terms of knowledge) in one (or more) of the following disciplines: statistics, medical informatics or epidemiology.

Academic Cooperation

The Master in Public Health Data Science is delivered by the University of Bordeaux along with the Bordeaux School of Public Health (ISPED) and the Bordeaux Population Health Research Center (BPH).

Program duration

1 year, including an internship (60 ECTS).

Language Requirements

This program is taught entirely in English. Excellent proficiency in English is therefore required. Non-native English-speaking students have to provide a TOEFL or IELTS certification (TOEFL score of 550/213/79-80 or IELTS score of 6.0).

Fees and scholarships

- › 243 € in 2021-2022 for French and EU students, 3770 € foreign students except EU.

*** Submitted to the vote of University authorities.*

- › Financial aid may be granted to selected applicants according to criteria of excellence.
- › Adults having interrupted their studies -> Training costs : 4100€

Strengths

- › Our MSc program ensures that students gain strong knowledge about the strengths and limits of digital technologies and their use in public health research.
- › Multidisciplinary skills:
 - 1) Epidemiology:** Translation of a public health / clinical problem into a research question, including the design of research plans. For surveillance systems,

observational and experimental studies (i.e. clinical trials), evaluation of validity and causality of an association.

2) Statistics: Methods for supervised and unsupervised statistical analysis and modelling of biomedical data (including highdimensional and time-to-event data), statistical learning, data mining, data integration, advanced computational statistics.

3) Medical Informatics:

Architecture of data integration (i2b2, Transmart), interoperability, knowledge representation (terminologies, ontologies), natural language processing, data visualization, programming, cloud computing and Hadoop, linked open data, security, confidentiality and integrity of data.

- › Multidisciplinary training involving the teaching teams of the Bordeaux School of Public Health as well as French and international researchers.
- › Possibility of a double degree between France (University of Bordeaux) and Canada (McGill).
- › Innovating training with flipped classrooms focused on data handling and e-learning courses.
- › Individual support for each student assured by the teaching team.

Year 2

Semester 1

- › **Basics (3 ECTS):** Focus on basic knowledge and the functional capabilities of the tools used in health data analytics.
- › **Electronic Health Data (6 ECTS):** Focus on the skills required to conceptualize, manage, analyze and communicate via health research carried out by Electronic Health Records (HER) and medicoadministrative databases (MA-DBs).
- › **Digital Cohorts (3 ECTS):** Focus on the skills required to conceptualize, manage, analyze and communicate via cohort studies that integrate digital tools.
- › **Web Based Data (6 ECTS):** Focus on the abilities needed to prepare Public Health studies which integrate data from social networks and web forums, linked open data and mobile data. Practice is carried out via a dedicated case study that involves the processing of large mobile dataset (call details records).

- › **Omics Data (6 ECTS):** Focus on the abilities needed to conceptualize, manage, analyze and communicate using clinical studies that integrate high dimensional data.

Semester 2

- › **Value creation (3 ECTS):** This final e-learning course prepares students so that as graduates, they are capable of becoming immediate contributors in the workplace whether it be in the academic or the industrial sector. Students learn to develop their entrepreneurial skills and also acquire an understanding of the societal and economic value created by digital public health data research.
- › **Internship (30 ECTS):** Students complete their internship either with the research team that generated a project case study during the Public Health Data Science Master program or else with a team from the extensive research network of the Graduate Program.

How to apply?

Students may apply online

And after?

Upon completion of this Master in Public Health Data Science, students may continue with further studies and research via a PhD in Digital Public Health or they may enter the working world with strong qualifications for a career in public health.

Graduates not only have a global vision of data science issues in relation to epidemiology and public health, they also master the research and leadership skills that are necessary for chief data officer jobs. They are thus well prepared to become future leaders of the digital public health domain within the public and / or private sector.

Website



Contact

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