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European Master in Public Health
EUROPUBHEALTH+

Specialisation:
Public Health Data Science

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Public health data science involves the collection, analysis, and integration of health-related information to enhance healthcare outcomes. This emerging field sits at the crossroads of biostatistics, medical informatics, and epidemiology, leveraging critical thinking and analytical skills to transform big data into actionable insights.

Prerequisites: Candidates should have a solid background in epidemiology, biostatistics, or medical informatics, and be proficient in data management, analysis, and interpretation. Familiarity with R and Python is highly recommended.

I. PRESENTATION

The specialisation course lasts two semesters and students get 36 ECTS for taught modules and 21 ECTS for the dissertation work and related placement (A minimum 4-month practical placement is mandatory during semester 2).

The programme 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. It 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.

The curriculum covers research methodologies from project design to data analysis and result presentation, and imparts multidisciplinary skills in epidemiology, medical informatics, and biostatistics. Additionally, students learn to understand the strengths and limitations of technologies and digital approaches in public health.

II. QUALIFICATIONS OF THE GRADUATE

The aim of the specialisation is to train professionals in applying data science to public health in both industry and public sectors. It provides essential skills, including scientific expertise, complex issue management, and data handling. Students develop abilities to manage data science projects and multidisciplinary programs with various partners.

Positions held by students at the end of their training are all professions whose activity involves, even partially or indirectly, data science in the healthcare field. More specifically:

- Researchers or engineers in university and private research teams.
- Technicians in medical companies, start-ups or contract research organisations (CROs).
- Digital health consultants or specialists in industry or government departments and agencies.
- Project managers in a public or private department specialised in data science.
- Students can also begin a PhD program.

III. REQUIREMENTS FOR GRADUATION

In order to graduate, students must get an overall average of at least 10/20 to obtain all mandatory credits of the second-year specialisation. Students must also pass all mandatory credits during the first year of the programme in the partner university (Dublin, Sheffield, Granada or Liège) as well as both joint integration modules organised at EHESP in Rennes.

Study Plan

Public Health Data Science

This document is provided for information purposes only and is subject to change

Total teaching hours: 306
Total of ECTS: 57

Name of the subject	Class form	M/F*	Credit form (Mark Pass/Fail)	Number of teaching hours	ECTS
Specialisation Modules					**57**
Semester 3					**30**
Basics	Lectures Tutorial work	M	Mark	76	6
Electronic health data	Lectures Tutorial work	M	Mark	57	6
Digital cohorts	Lectures Tutorial work	M	Mark	27	6
Web-based data	Lectures Tutorial work	M	Mark	60	6
Omics data	Lectures Tutorial work	M	Mark	60	6
Semester 4					**27**
Internship and thesis	Lectures Tutorial work	M	Mark	N/A	24
Value creation (online)	Tutorial work	M	Mark	24	3
Integration Module (at EHESP Rennes – France)	Seminar Group works	M	Mark	-	**3**

*F – Facultative (optional), M – mandatory

Organisation of the course

The schedule for the face-to-face courses of Semester 3 is equivalent of a full-time working week, with students expected to be on-campus Monday to Friday from 9am to 5pm. The course Value Creation of Semester 4 is online and asynchronous. Students can study at their pace while starting their internship.

The internship is mandatory and must be completed end of June (6 months). between January and June (from 16 to 24 weeks).

Syllabus

Public Health Data Science

No	*Name of the subject*	*Class form*	*M/F*	*Credit form (Mark/Pass/Fail)*	*Credits (ECTS)*
Core modules					
8THE 901	*Basics*	*Lectures; Group Presentations. In-class exercises; written exam*	*M*	*Mark*	*6*
8THE 902	*Electronic Health Data*	*Lectures; Group Presentations. In-class exercises*	*M*	*Mark*	*6*
8THE 903	*Web-Based Data*	*Lectures; Group Presentations. In-class exercises*	*M*	*Mark*	*6*
8THE 904	*Digital Cohorts*	*Lectures; Group Presentations. In-class exercises; written exam*	*M*	*Mark*	*6*
8THE 905	*Omics*	*Lectures; Group Presentations. In-class exercises*	*M*	*Mark*	*6*
8THE 001	*Value Creation*	*Online lectures; quizzes; written report*	*M*	*Mark*	*3*
8THE 002	*Practicum*	*Lectures; Group Presentations. In-class exercises; written exam*	*M*	*Mark*	*21*