European Master in Public Health
EUROPUBHEALTH+

Specialization:
Advanced Biostatistics and Epidemiology

Updated May 2024

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European Master in Public Health (Europubhealth+)
Advanced Biostatistics and Epidemiology

The present document details the content of the second year specialization of the **Europubhealth+** programme delivered in Paris by the EHESP School of Public Health. For the first year of the Europubhealth+ programme, a foundation course with the core competences in public health is delivered at the University College Dublin (Ireland) or the University of Sheffield (United Kingdom) in English, at the Andalusian School of Public Health - University of Granada (Spain) in Spanish, or at the University of Liège (Belgium) in French language.

I. PRESENTATION

The specialization course lasts two semesters and students get 30 ECTS for taught modules and 27 ECTS for the dissertation work and related placement ((A 4-month practical placement is mandatory during semester 2). A mandatory integration module worth 3 ECTS is organized by the EHESP School of Public Health in Rennes (France) at the end of the academic year.

The specialisation provides students and young professionals wishing to design their career in public health with high level of qualification which enhances intellectual approach to the subject. Its offers basic and advanced schemes of study involving knowledge, skills and techniques which can variously be applied to different public health issues and in the context of health services agencies or health & environmental organizations in the public or private sector, in developed or developing countries. The specialisation is both a professional qualification and a contributor to generic skills in research. It provides traditional core courses and options with an innovative approach to developing public health agendas in different contexts including crisis situations.

II. QUALIFICATIONS OF THE GRADUATE

The aim of the specialisation is to train young professionals to identify the health problems of a population, analyze the resources needed to preserve and improve population health, and progressively become a new generation of decision makers in health. To achieve this, the EHESP pedagogy stresses an inter-disciplinary approach, consisting in placing students in realistic problem contexts from which they utilize various professional skills and methodologies. The MPH encourages a degree of specialisation according to the students' career objectives.

Epidemiology is one of the pillars of public health. Epidemiologists study the distribution and determinants of disease in human populations; they also develop and test ways to prevent and control disease. The discipline covers the full range of disease occurrence, including genetic and environmental causes for both infectious and noninfectious diseases. Increasingly, epidemiologists view causation in the broadest sense, as extending from molecular factors at the one extreme, to social and cultural determinants at the other. This course introduces students to the theory, methods, and body of knowledge of epidemiology and provides an integrated approach to the disciplines of Epidemiology.

If not all students decide to become "biostatisticians", knowledge of biostatistics is required in almost every field of public health and its applications. Therefore, all students have to develop solid knowledge base in biostatistics.This course will present the most fundamental methods used in biostatistics including applied leaning exercises by means of computer-based live examples with STATA software® during all lectures, exercises within small working groups as well as project-based learning.

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 specialization. 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 organized at EHESP in Rennes.

STUDY PLAN
Advanced Biostatistics and Epidemiology

Option 1: Concentration in Epidemiology

Name of the subject	Class form	M/F	Credit form	Teaching hours	ECTS
Mandatory Modules					**18**
Advanced Core module Epidemiology (203) https://mph.ehesp.fr/wp-content/uploads/2022/09/Syllabus_Module_203Epi_2022-2023.pdf	Lecture & lab Homework	M	Mark	30	3
Advanced Core module Biostatistics (204) https://mph.ehesp.fr/wp-content/uploads/2020/09/Syllabus_Core_ISB_204-2020.pdf	Lecture & lab Project based learning	M	Mark	30	3
Advanced Core module –Environmental and occupational health sciences (206) https://mph.ehesp.fr/wp-content/uploads/2023/01/Syllabus-206-EOHS_2022-2023.pdf	Lecture Case study Homework	M	Mark	30	3
Analysis in Epidemiology (I) (224) https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus-modules-224-225_2023-24.pdf	Lecture & lab Homework	M	Mark	30	3
Analysis in Epidemiology (II) (225) https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus-modules-224-225_2023-24.pdf	Lecture & lab Homework	M	Mark	30	3
Design and Concepts in Epidemiology (223) https://mph.ehesp.fr/wp-content/uploads/2022/12/Syllabus_Module_230_22-23.pdf	Lecture & lab Reading	M	Mark	30	3
4 elective modules to be chosen among:					**12**
Infectious Disease Epidemiology (210) https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus-module-210-2023-24.pdf	Lecture Discussion Exercise		Mark	30	3
Chronic Disease Epidemiology (211) https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus-Chronic-disease-epidemiology-23-24.pdf	Lecture Discussion Exercise		Mark	30	3
Minor A ISB Multidimensional & multivariate statistical methods (214) https://mph.ehesp.fr/wp-content/uploads/2023/12/syllabus_214_2023_2024.pdf	Lecture Discussion Computer lab Conference		Mark	30	3
Introduction to R: computing, graphics for statistics & Epidemiology (215) https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus_module-215-2023-2024.pdf	Lecture & lab Exercise		Mark	30	3

Perinatal & Pediatric Epidemiology (238) https://mph.ehesp.fr/wp-content/uploads/2023/01/Syllabus_module238_janvier-2023.pdf	Lecture Project		Mark	30	3
Multi-level Analysis (230) https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus_Module_230_23-24.pdf	Lecture & lab Homework		Mark	30	3
SUPRA OPTIONAL modules:		**F**	Pass/Fail		**Not credited**
Modeling of infectious diseases (229) https://mph.ehesp.fr/wp-content/uploads/2024/04/Syllabus_module-229_23-24.pdf GIS & Environmental Health (233) https://mph.ehesp.fr/wp-content/uploads/2023/12/syllabus-module-233-23-24.pdf Spatial statistical analysis (231) https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus_Module-231_23-24.pdf					
Dissertation and placement	-	M	Mark	-	**27**
Integration Module (at EHESP in Rennes – France)	Seminar	M	Mark	30	**3**

Option 2: Concentration in Biostatistics

Name of the subject	**Class form**	**M/F**	**Credit form**	**Teaching hours**	**ECTS**
Mandatory Modules					**21**
Advanced Core module Epidemiology (203) https://mph.ehesp.fr/wp-content/uploads/2022/09/Syllabus_Module_203Epi_2022-2023.pdf	Lecture & lab Homework	M	Mark	30	3
Advanced Core module Biostatistics (204) https://mph.ehesp.fr/wp-content/uploads/2020/09/Syllabus_Core_ISB_204-2020.pdf	Lecture & lab Project based learning	M	Mark	30	3
Advanced Core module – Environmental and occupational health sciences (206) https://mph.ehesp.fr/wp-content/uploads/2023/01/Syllabus-206-EOHS_2022-2023.pdf	Lecture Homework Case study	M	Mark	30	3
Introduction to R: computing, graphics and statistics (215) https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus_module-215-2023-2024.pdf	Lecture & lab Exercise	M	Mark	30	3
Minor A ISB Multidimensional & multivariate statistical methods (214) https://mph.ehesp.fr/wp-content/uploads/2023/12/syllabus_214_2023_2024.pdf	Lecture Discussion Computer lab Conference	M	Mark	30	3
Modeling of infectious diseases (229) https://mph.ehesp.fr/wp-content/uploads/2024/04/Syllabus_module-229_23-24.pdf	Lecture Exercise Reading	M	Mark	30	3
Spatial statistical analysis (231) https://mph.ehesp.fr/wp-	Lecture Case study	M	Mark	30	3

content/uploads/2023/12/Syllabus_Module-231_23-24.pdf					
3 elective modules to be chosen among :					**9**
Design and Concepts in Epidemiology (223) https://mph.ehesp.fr/wp-content/uploads/2022/12/Syllabus_Module_230_22-23.pdf	Lecture & lab Reading		Mark	30	3
Analysis in Epidemiology (I) (224) https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus-modules-224-225_2023-24.pdf	Lecture & lab Homework		Mark	30	3
Analysis in Epidemiology (II) (225) https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus-modules-224-225_2023-24.pdf	Lecture & lab Homework		Mark	30	3
Multi-level Analysis (230) https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus_Module_230_23-24.pdf	Lecture & lab Homework		Mark	30	3
GIS & Environmental Health (233) https://mph.ehesp.fr/wp-content/uploads/2023/12/syllabus-module-233-23-24.pdf	Lecture & lab Group work		Mark	30	3
SUPRA OPTIONAL modules:		F	Pass/Fail		**Not credited**
Infectious Disease Epidemiology (210) https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus-module-210-2023-24.pdf Chronic Disease Epidemiology (211) https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus-Chronic-disease-epidemiology-23-24.pdf Perinatal and Pediatric Epidemiology (238) https://mph.ehesp.fr/wp-content/uploads/2023/01/Syllabus_module238_janvier-2023.pdf					
Dissertation and placement		M			**27**
Integration Module (at EHESP in Rennes – France)	Seminar	M	Mark	30	**3**

Total number of hours: 300
Total number of ECTS: 60

➔ For full description of each module and overall planning, please go to: https://mph.ehesp.fr/year-2/