



# **European Master in Public Health EUROPUBHEALTH+**

## **Specialization: Advanced Biostatistics and Epidemiology**

2018-2021



**EHESP School of Public Health**

## TEACHING PROGRAMME

### **European Master in Public Health (Europubhealth+)** **SPECIALIZATION: Advanced Biostatistics and Epidemiology**

The present document details the content of the second year specialisation 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 School of Health and Related Research - University of Sheffield (United Kingdom) in English or at the Andalusian School of Public Health - University of Granada (Spain) in Spanish.

#### **I. PRESENTATION**

The specialization course lasts two semesters and students get 30 ECTS for mandatory modules and 27 ECTS for the dissertation work and related placement. 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. It 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.

The international teaching staff comprises outstanding lecturers from European & North American universities and from research institutions.

#### **II. QUALIFICATIONS OF THE GRADUATE**

The goal 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 MPH 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 learning 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 AND OBTAINING PROFESSIONAL TITLE**

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 (Sheffield or Granada) as well as both integration modules organized at EHESP in Rennes.

#### **IV. PRACTICAL PLACEMENT**

A 4-month practical placement is mandatory and linked to the Master dissertation work.

## STUDY PLAN

**Specialization:** Advanced Biostatistics and Epidemiology

### Option 1: Concentration in Epidemiology

| Name of the subject   | Class form | M/F | Credit form (Mark or Pass/Fail) | Number of teaching hours | ECTS         |
|---|------------|-----|---------------------------------|--------------------------|--------------|
| Upgrading Biostatistics   | Seminar    | M   | Mark                            | -                        | Not credited |
| <a href="#">Advanced Core module Epidemiology</a>   | Seminar    | M   | Mark                            | 30                       | 3            |
| <a href="#">Advanced Core module Biostatistics</a>  | Seminar    | M   | Mark                            | 30                       | 3            |
| <a href="#">Advanced Core module –Environmental and occupational health sciences</a>  | Seminar    | M   | Mark                            | 30                       | 3            |
| <a href="#">Analysis in Epidemiology (I)</a>  | Seminar    | M   | Mark                            | 30                       | 3            |
| <a href="#">Analysis in Epidemiology (II)</a>   | Seminar    | M   | Mark                            | 30                       | 3            |
| <a href="#">Concepts, methods and design in Epidemiology</a>  | Seminar    | M   | Mark                            | 30                       | 3            |
| <b>4 electives</b> to be chosen among:<br><ul style="list-style-type: none"> <li>• <a href="#">Infectious Disease Epidemiology</a></li> <li>• <a href="#">Chronic Disease Epidemiology</a></li> <li>• <a href="#">Minor A ISB Multidimensional &amp; multivariate statistical methods</a></li> <li>• <a href="#">Intro to R: computing, graphics for statistics &amp; Epidemiology</a></li> <li>• <a href="#">Perinatal &amp; Pediatric Epidemiology</a></li> <li>• <a href="#">Multi-level Analysis</a></li> </ul> | Seminar    | M   | Mark                            | 60                       | 12           |
| SUPRA OPTIONAL, <a href="#">Modelling of infectious diseases</a> ; <a href="#">GIS &amp; Environmental Health</a> & <a href="#">Spatial statistical analysis</a>  | Seminar    | F   | Pass/Fail                       | -                        | Not credited |
| <a href="#">Dissertation and placement</a>  | -          | M   | Mark                            | -                        | 27           |
| <a href="#">Integration Module (at EHESP in Rennes – France)</a>  | Seminar    | M   | Mark                            | 30                       | 3            |

F – facultative, M – mandatory to graduate

Total number of teaching hours: 300

Total number of ECTS: 60

→ For full description of each module and overall planning, please click on each title in the table above or go to: <https://mph.ehesp.fr/year-2/>

## Option 2: Concentration in Biostatistics

| Name of the subject   | Class form | M/F | Credit form (Mark or Pass/Fail) | Number of teaching hours | ECTS         |
|---|------------|-----|---------------------------------|--------------------------|--------------|
| Upgrading Biostatistics   | Seminar    | M   | Mark                            | -                        | Not credited |
| <a href="#">Advanced Core module Epidemiology</a>   | Seminar    | M   | Mark                            | 30                       | 3            |
| <a href="#">Advanced Core module Information sciences and biostatistics</a>   | Seminar    | M   | Mark                            | 30                       | 3            |
| <a href="#">Advanced Core module – Environmental and occupational health sciences</a>   | Seminar    | M   | Mark                            | 30                       | 3            |
| <a href="#">Intro to R: computing, graphics and statistics</a>  | Seminar    | M   | Mark                            | 30                       | 3            |
| <a href="#">Minor A ISB Multidimensional &amp; multivariate statistical methods</a>   | Seminar    | M   | Mark                            | 30                       | 3            |
| <a href="#">Modelling of infectious diseases</a>  |            | M   | Mark                            | 30                       | 3            |
| <a href="#">Spatial statistical analysis</a>  | Seminar    | M   | Mark                            | 30                       | 3            |
| <b>3 electives</b> to be chosen among:<br><a href="#">Concepts, methods and design in Epidemiology</a><br><a href="#">Analysis in Epidemiology (I)</a><br><a href="#">Analysis in Epidemiology (II)</a><br><a href="#">Multi-level Analysis</a><br><a href="#">GIS &amp; Environmental Health</a> | Seminar    | M   | Mark                            | 60                       | 9            |
| SUPRA OPTIONAL<br><a href="#">Infectious Disease Epidemiology</a><br><a href="#">Chronic Disease Epidemiology</a><br><a href="#">Perinatal and Pediatric Epidemiology</a>   | Seminar    | M   | Pass/Fail                       | -                        | Not credited |
| <a href="#">Dissertation and placement</a>  | -          | M   | Mark                            | -                        | 27           |
| <a href="#">Integration Module (at EHESP in Rennes – France)</a>  | Seminar    | M   | Mark                            | 30                       | 3            |

Total number of teaching hours: 300

Total number of ECTS: 60

→ For full description of each module and overall planning, please click on each title in the table above or go to: <https://mph.ehesp.fr/year-2/>