

European Master in Public Health EUROPUBHEALTH+

Specialisation: Health and Environment in a context of Climate Change

This document should be updated each year and is published on the specialisation presentation.



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The present document details the content of the second year specialization of the **Europubhealth+** program delivered in Rennes by the EHESP School of Public Health. For the first year of the Europubhealth+ program, 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.

Prerequisite: candidates for this specialisation should demonstrate they are comfortable with environmental health sciences.

I. PRESENTATION

The '**Health and Environment in the Context of Climate Change**' specialisation aims to integrate climate change considerations more comprehensively within the domain of environmental health, aligning closely with the discipline's priorities and the evolving needs of the labour market. In accordance with ASPHER's guidance (1), the specialisation will adopt **an interdisciplinary approach** (bringing together methods and tools from different public health and environmental disciplines) and will orient its programme, beside technical knowledge, on problem-solving skills, system thinking, change and implementation. The specialisation aims to prepare future specialists and consultants in environmental health to tackle the complexities of urban and territorial planning.

According to ASPHER, one of EPH+'s associated partners in a study coordinated by an EPH+ Alumni, "Due to the complexity of climate change, it is essential that future generations of public health professionals have the knowledge to be able to work on and address the uncertainties faced currently" (2). Within the curriculum, students will actively engage in proposing solutions to public health emergencies resulting from climate disruption as part of their assignments.

(1) ASPHER, "Climate and Health Competencies for Public Health Professionals in Europe", 2021

(2) Association of Schools of Public Health in the European Region (ASPHER), ASPHER Climate and Health Competencies for Public Health Professionals in Europe, 2021

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 EPH+ Joint 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 will prepare students to:

- Elaborate a diagnosis, produces environmental health baselines
- Assess the impacts of environmental factors (protective and risk factors) resulting from a policy, project or intervention on the health of populations, using appropriate tools,
- Promote and implement environmental health into policies, projects or interventions,
- Manage projects applied to environmental health policies, projects or actions,
- Communicate and disseminate environmental health information.

II. QUALIFICATIONS OF THE GRADUATE

The aim of the specialization is to train young professionals to identify 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 interdisciplinary approach, consisting in placing students in realistic problem contexts from which they utilize various professional skills and methodologies. The course encourages a degree of specialization according to the students' career objectives.

Positions held by students at the end of their training are all professions whose activity involves health impact assessment in environmental health at local, regional, national or international levels. More specifically:

- **In public sector:** Specialist in health impact assessment in an Environmental Health Department, Specialist in environmental health in environmental / health / planning institutions, Environmental Health policy expert,
- **In NGO:** Expert in environmental health, Environmental health project manager,
- **In private sector:** Consultant in environmental health, Environmental health engineer, environmental health project manager.

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 program in the partner university (Dublin, Sheffield, Granada or Liège) as well as both joint integration modules organized at EHESP in Rennes.

Study Plan

Health and Environment in a context of Climate Change

Name of the subject	Class form	M/F*	Credit form (Mark Pass/Fail)	Number of teaching hours	ECTS
Specialization Modules					57
Semester 3: Mandatory module					24
Module1: Fundamentals in environmental health and climate change	Lectures Tutorial Group work	M	Mark	30	3
Module 2: Identification and diagnosis of Environmental Health problems in a territory	Lectures Tutorial Group work	M	Mark	30	3
Module 3: GIS dedicated to Environmental Health	Lecture & lab Group work	M	Mark	30	3
Module 4: Assess the health impacts of environmental factors	Lectures Tutorial Group work	M	Mark	30	3
Module 5: Integration of environmental health in policies, projects and interventions	Lectures Tutorial Group work	M	Mark	30	3
Module 6: Monitoring and following Environmental Health actions	Lectures Tutorial Group work	M	Mark	15	1.5
Module 7: Case study	Tutorial Group work	M	Mark	45	4.5
Advanced Core module- Biostatistics https://mph.ehesp.fr/wp-content/uploads/2020/09/Syllabus_Core_ISB_204-2020.pdf	Lecture Exercise Project based learning	M	Mark	30	3
Semester 3: Elective module (2 modules to choose)					6
Introduction to R software for data sciences https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus_module-215-2023-2024.pdf	Lecture Lab	F	Mark	30	3
Modelling of infectious diseases module https://mph.ehesp.fr/wp-content/uploads/2024/04/Syllabus_module-229_23-24.pdf	Lecture Lab	F	Mark	30	3
HPM Managing community program implementation	Lecture Group Discussion	F	Mark	30	3

https://mph.ehesp.fr/wp-content/uploads/2023/08/HPM-228-syllabus-2023.pdf					
HPM Health Care Management https://mph.ehesp.fr/wp-content/uploads/2024/04/Syllabus-Module-226-23-24.pdf	Lecture Discussion Computer	F	Mark	30	3
Supra option modules					
Advanced Core module- Epidemiology https://mph.ehesp.fr/wp-content/uploads/2022/09/Syllabus_Module_203Epi_2022-2023.pdf Advanced core module in Prevention & Health promotion https://mph.ehesp.fr/wp-content/uploads/2022/09/Syllabus_PHP_Core202_2022-2023.pdf Advanced core module in Health Policy and Management https://mph.ehesp.fr/wp-content/uploads/2023/08/HPM-205-syllabus-2023.pdf					
In function of the overall planning: Introduction to R https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus_module-215-2023-2024.pdf EPI Analysis in Epidemiology (I) https://mph.ehesp.fr/wp-content/uploads/2022/12/Syllabus-modules-224-225_2022-23.pdf EPI Analysis in Epidemiology (II) https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus-modules-224-225_2023-24.pdf Perinatal and pediatric epidemiology https://mph.ehesp.fr/wp-content/uploads/2023/01/Syllabus_module238_janvier-2023.pdf ISB Spatial statistical analysis https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus_Module-231_23-24.pdf Introduction to Multi Level Analysis https://mph.ehesp.fr/wp-content/uploads/2023/12/Syllabus_Module_230_23-24.pdf					
Semester 4					27
Internship and thesis		M	Mark		27
Integration Module (at EHESP Rennes – France)	Seminar Group works	M	Mark	-	3

*F – Facultative (optional), M – mandatory

Syllabus

Health and Environment in a context of Climate Change

Module 1	Fundamentals in environmental health and climate change
ECTS	3
Class workload	30 Hours
Total workload	35 Hours
Teaching language	English
Duration of the course	5 days
Aim of the module	This module aims to introduce students to the key concepts of environmental health in the context of climate change, necessary for following the environmental health track.
Learning outcomes	<p>Learning outcomes:</p> <p>By the end of the unit, a candidate will be able to:</p> <ul style="list-style-type: none"> • Clarify definitions and key concepts related to health, environment and climate change • Know the major health-environment and climate change issues • Become familiar with the system approach • Understand the main impacts and mechanisms of climate change on health and the environment and the factors that can influence the severity and type of climate-related health risks • Explore the interactions between ecosystems, the environment and human health • Identify current challenges and opportunities for public health in the context of climate change
Content/topics	<p>Content will cover:</p> <ul style="list-style-type: none"> • Health impact assessment • The exposome • Planetary Health, Global Health, One health and Ecohealth • Focus on some issues: Air pollution, water quality and quantity, noise, chemical exposure, infectious disease • ...
Course leader	Aurore Gely-Pernot
Prerequisites	Year 1 in a Master of Public Health
Mandatory/Elective	M
Teaching methods	Lectures Group work
Assessment of student progress.	To be defined
Grading	Pass = minimum 10/20

Module 2	Identification and diagnosis of Environmental Health problems in a territory
ECTS	3
Class workload	30 Hours
Total workload	35 Hours
Teaching language	English
Duration of the course	5 days
Aim of the module	This module aims to equip students with the knowledge and skills necessary to elaborate environmental health diagnoses within a specific territory.
Learning outcomes	<p>Learning outcomes:</p> <p>By the end of the unit, a candidate will be able to:</p> <ul style="list-style-type: none"> • Identify environmental health issues within a territory • Detect health or environmental signals and take appropriate actions • Perform an inventory of environmental and health data, involving a wide range of sectors and stakeholders • Identify the different stakeholders and their interactions at the local level to produce a diagnosis • Elaborate a local diagnosis related to environmental health and to the population (environment quality, health, socio-economic factors...)
Content/topics	<p>Content will cover:</p> <ul style="list-style-type: none"> • Environmental and health data • The different stakeholders within the territory • Type of data • Indicators • ...
Course leader	Colleague to be defined
Prerequisites	Year 1 in a Master of Public Health & Module 1 of HECC track
Mandatory/Elective	M
Teaching methods	Lectures Group work
Assessment of student progress.	To be defined
Grading	Pass = minimum 10/20

Module 3	GIS dedicated to environmental health
ECTS	3
Class workload	30 Hours
Total workload	35 Hours
Teaching language	English
Duration of the course	5 days
Aim of the module	The module introduces the best practices regarding cartographic principles and manipulation of vector and raster layers to create powerful maps and visualizations. Students learn how to interpret and communicate results based on maps.
Learning outcomes	<p>Learning outcomes:</p> <p>By the end of the unit, a candidate will be able to:</p> <ul style="list-style-type: none"> • Investigate a public health issue using geographic information and spatial analysis • Create and manage geographic information • Design, create and interpret maps as well as basic spatial analysis results
Content/topics	<p>Content will cover:</p> <ul style="list-style-type: none"> • Introduction to QGIS: user interface, data management, creating spatial information, requests and selection tools • Mapping with QGIS: Symbology, cartography, exporting maps, interpreting maps • Exploring online geospatial resources for environmental health research • Basic spatial analysis tools: buffers, kriging, distance and density measures • ...
Course leader	Bertrand Lefebvre
Prerequisites	Year 1 in a Master of Public Health & Module 1 of HECC track
Mandatory/Elective	M
Teaching methods	Lectures Group work Lab
Assessment of student progress.	Assessment: 40% group work (Student's presentations) and 60% for a mini-atlas project to be submitted
Grading	Pass = minimum 10/20

Module 4	Assess the health impacts of environmental factors
ECTS	3
Class workload	30 Hours
Total workload	35 Hours
Teaching language	English
Duration of the course	5 days
Aim of the module	This module deals with Health Impact Assessment (HIA) approaches and methods in the domain of environmental health focusing on several exposures in a context of climate change. This module focuses on the application of quantitative and qualitative techniques for the impact assessment.
Learning outcomes	<p>Learning outcomes:</p> <p>By the end of the unit, a candidate will be able to:</p> <ul style="list-style-type: none"> • Identify the most appropriate HIA tools according to the situation to be assessed • Perform a health impact assessment (HIA) of a policy or a development project
Content/topics	<p>Content will cover:</p> <ul style="list-style-type: none"> • Introduction to environmental epidemiology • HIA Göteborg methodology • Introduction to quantitative impact assessment methods • Causality in environmental health • Introduction to qualitative impact assessment methods • Exposure modelling for health impact assessment • ...
Course leader	To be defined
Prerequisites	Year 1 in a Master of Public Health & Module 1&2 of HECC track Students will practice exercises in R or Stata software
Mandatory/Elective	M
Teaching methods	Lectures Group work Tutorials
Assessment of student progress.	To be defined
Grading	Pass = minimum 10/20

Module 5	Integration of environmental health in policies, projects and interventions
ECTS	3
Class workload	30 Hours
Total workload	35 Hours
Teaching language	English
Duration of the course	5 days
Aim of the module	The aim of this module is to give students knowledge and methods to integrate environmental health issues in local, regional and national policies, projects and intervention.
Learning outcomes	<p>Learning outcomes:</p> <p>By the end of the unit, a candidate will be able to:</p> <ul style="list-style-type: none"> • Question if and how environmental health issues are integrated into a policy, project, or intervention • Provide recommendations using appropriate methods & tools to better integrate health concerns into projects, plans and programs
Content/topics	Content will cover: To be defined
Course leader	To be defined
Prerequisites	Year 1 in a Master of Public Health & Module 1&2&4 of HECC track
Mandatory/Elective	M
Teaching methods	Lectures Case study
Assessment of student progress.	Assessment: to be defined
Grading	Pass = minimum 10/20

Module 6	Monitoring and following Environmental Health actions
ECTS	1.5
Class workload	15 Hours
Total workload	15 Hours
Teaching language	English
Duration of the course	2,5 days
Aim of the module	The module aims to give students the skills to be able to implement a monitoring and follow-up plan for actions supporting environmental health.
Learning outcomes	<p>Learning outcomes:</p> <p>By the end of the unit, a candidate will be able to:</p> <ul style="list-style-type: none"> • Contribute to set up a monitoring and follow-up of environmental and health indicators • Identify appropriate indicators

	<ul style="list-style-type: none"> Identify appropriate stakeholders to be involved in the monitoring and follow-up process
Content/topics	<p>Content will cover:</p> <ul style="list-style-type: none"> Biomonitoring Environmental and health Indicators identification Environmental and Health indicators monitoring ...
Course leader	To be defined
Prerequisites	Year 1 in a Master of Public Health & Module 1&2&4&5 of HECC track
Mandatory/Elective	M
Teaching methods	Lectures Case study
Assessment of student progress.	Assessment: to be defined
Grading	Pass = minimum 10/20

Module/Course	Case study
ECTS	4.5
Class workload	45 Hours
Total workload	45 Hours
Teaching language	English
Duration of the course	7.5 days
Aim of the module	The objective of the module is to remobilize and apply all the knowledge, skills, and tools acquired in the previous modules in order to conduct a health impact assessment through a practical exercise.
Learning outcomes	<ul style="list-style-type: none"> - Elaborate a diagnosis, produces environmental health baselines - Assess the impacts of environmental factors (protective and risk factors) resulting from a policy, project or intervention on the health of populations, using appropriate tools - Promote and implement environmental health into policies projects or interventions - Manage project applied to environmental health policies projects or actions - Communicate and disseminate environmental health information
Content/topics	Content will cover: Case study
Course leader	Anne Roué-Le Gall & Pauline Rousseau Gueutin & Aurore Gely-Pernot
Prerequisites	Year 1 in a Master of Public Health & Module of HECC track
Mandatory/Elective	M
Teaching methods	Group work
Assessment of student progress.	Report and group work presentation
Grading	Pass = minimum 10/20