

## Syllabus Module 216 Minor A. The control of environmental infectious diseases

<b>Module : 216</b>	<b>The control of environmental infectious diseases</b>
<b>UE coordinator</b>	Michèle Legeas, PhD, Professor, Environmental and Occupational Health Department, EHESP
<b>Dates</b>	November 12 to Nov 15 2019
<b>Credits/ECTS</b>	3 (1 ECTS = 30 h student's work)
<b>Duration</b>	Number of days: 4
<b>UE description</b>	<p>This course is designed to introduce students to major issues related to global health and epidemics.</p> <p>The course is recommended for students of whom interest consists of getting knowledge and tools of the global prevention and the control of wide epidemics/pandemics and of their two complementary approaches 1) epidemiology and dynamic of transmission of agents modeling and 2) definition of policies adapted to the prevention and control.</p> <p>The course will introduce students to some basis about the different plans, organizations and policies internationally adopted. This course will also provide students the opportunity to analyze the potential contribution of research to support decision makers in such issues.</p> <p>This minor is designed in relationship to the Major A of ISB track (modeling of infectious diseases) and to the Major B of EHOS track (Advanced planetary health)</p>
<b>Prerequisites</b>	Core curriculum in Environmental and Occupational Health Sciences of MPH1
<b>Course learning objectives</b>	<p>At the completion of the module, the students should be able to:</p> <ul style="list-style-type: none"> <li>- Understand the importance of fighting against epidemics and the differences between all infectious diseases and those having wide potential to spread inside a population and coming from human or animal or vegetal reservoirs;</li> <li>- Describe international bodies involved against epidemics: WHO, FAO, OIE, ECDC, CDC etc., and their interactions, plans, programs, directives, guidelines ...</li> <li>- Explain the different models used to fight against epidemics: defining vaccine programs, predicting the spread of cases, understanding links between environmental factors and the epidemic dynamics etc.</li> <li>- Discuss country preparedness to tackle epidemics, accounting their level of risks and the state of their health system.</li> </ul>
<b>UE Structure (details of sessions title/spaeker/date/duration )</b>	<p>Session 1: introduction to environmental infectious diseases, Michèle Legeas, Nov 12, 3Hrs            Session 2: International survey and alert, Julien Beaute, ECDC, Nov 12, 3Hrs            Session 3 : Zoonotic diseases and their increasing importance, Nadège Leboucq, OIE, Nov 13, 3Hrs            Session 4 : WHO strategy and tools : presentation of the GOARN and the IHR(2005), Nov 14, 3Hrs            Session 5: Working group restitutions, Nov 16, 6 Hours</p> <p>Days 2, 3 and 4, students will have to work on a study case, serving to grade the Minor.</p>
<b>Course requirement</b>	Students are expected to attend all lectures and make individual & group works. Students will be expected to participate actively and discuss some issues related to methods studies and their application.
<b>Grading and assessment</b>	<b>Working group grading:</b> at the end of the week.

	<p>Details assignments: groups of students will be required to prepare a communication for the last afternoon session. This communication will provide the students the opportunity to share the answers of the case study questions, with peers and experts. The committee of experts will consist of the UE coordinator and at least one external reviewer expert specialized in communicable diseases.</p> <p>Dedicated time slots are booked on the schedule for that work, under the coordinator's supervision. Students can also work from home.</p>
<b>Location</b>	EHESP Building 20 Avenue George Sand, 93210 La PLaine Saint Denis (Greater Paris)
<b>Course policy</b>	<p><b>Attendance &amp; punctuality</b>  <b>Regular and punctual class attendance is a prerequisite for receiving credit in a course.</b>  Students are expected to attend each class. Attendance will be taken at each class. The obligations of attendance and punctuality cover every aspect of the course: - lectures, conferences, group projects, assessments, examinations, as described in EHESP Academic Regulations <a href="http://mph.ehesp.fr">http://mph.ehesp.fr</a> EHESP Academic Regulation Article. 3).  If students are not able to make it to class, they are required to send an email to the instructor and to the MPH program coordinating team explaining their absence prior to the scheduled class date. All supporting documents are provided to the end-of-year panel.</p> <p>Students who miss class are responsible for content. Any student who misses a class has the responsibility for obtaining copies of notes, handouts and assignments. If additional assistance is still necessary, an appointment should be scheduled with the instructor. Class time is not to be used to go over material with students who have missed class.</p> <p><b>Lateness:</b> Students who are more than 10 minutes late may be denied access to a class. Repeated late arrivals may be counted as absences (See <a href="http://mph.ehesp.fr">http://mph.ehesp.fr</a> EHESP Academic Regulation Article. 3 Attendance &amp; Punctuality)</p> <p><b>Maximum absences authorized &amp; penalty otherwise</b>  Above 20% of absences will be designated a fail for a given class. The students will be entitled to be reassessed in any failed component(s). If they undertake a reassessment or they retake a module this means that they cannot normally obtain more than the minimum pass mark (i.e. 10 out of 20)</p> <p><b>Exceptional circumstances</b>  Absence from any examination or test, or late submission of assignments due to illness, psychological problems, or exceptional personal reasons must be justified; otherwise, students will be penalized, as above mentioned. Students must directly notify their professor or the MPH academic secretariat before the exam or before the assignment deadline. Before accepting the student's justification, the professor or the MPH academic secretariat has the right to request either a certificate from the attending physician or from a psychologist, or from any other relevant person (See <a href="http://mph.ehesp.fr">http://mph.ehesp.fr</a> EHESP Academic Regulation Article 4 Examinations).</p> <p><b>Courtesy:</b> <u>All cell phones/pages MUST be turned off during class time.</u>  Students are required to conduct themselves according to professional standards, eating during class time is not permitted during class time, such as course or group work.</p>
<b>Valuing diversity</b>	<p>Diversity enriches learning. It requires an atmosphere of inclusion and tolerance, which oftentimes challenges our own closely-held ideas, as well as our personal comfort zones. The results, however, create a sense of community and promote excellence in the learning environment. This class will follow principles of inclusion, respect, tolerance, and acceptance that support the values of diversity. Diversity includes consideration of: (1) life experiences, including type, variety, uniqueness, duration, personal values, political viewpoints, and intensity; and (2) factors related to "diversity of presence," including, among others, age, economic</p>

	circumstances, ethnic identification, family educational attainment, disability, gender, geographic origin, maturity, race, religion, sexual orientation and social position.
<b>Course evaluation</b>	EHESP requests that you complete a course evaluation at the end of the school year. Your responses will be anonymous, with feedback provided in the aggregate. Open-ended comments will be shared with instructors, but not identified with individual students. Your participation in course evaluation is an expectation, since providing constructive feedback is a professional obligation. Feedback is critical, moreover, to improving the quality of our courses, as well as for instructor assessment.

Session 1	<b>Introduction to environmental infectious diseases</b>
Speakers	Dr. Michèle Legeas, Professor, DSET&GS, EHESP <a href="mailto:michele.legeas@ehesp.fr">michele.legeas@ehesp.fr</a>
Session Outline	<p>The session introduces students to basic principles of health risks related to micro-organisms transmitted via environment.</p> <p>The first part of the session introduces the differences between individual risks and epidemic ones. The importance of the relationship between the different environmental compartments, i.e. water, air, soil, food, animals, nature, will be illustrated with different current examples.</p> <p>During the second part, the estimation of the burden of such diseases, after been quickly presented, is discussed as a tool to give public health priorities. Last, major ways to manage such risks (prevention and reduction of impact) will be discussed during the last part of this session, to introduce the next ones.</p>
Learning Objectives	<p>At the end of the sessions, students will be able to:</p> <ul style="list-style-type: none"> <li>- Discuss the difference between different kinds of microorganisms in terms of public health impact</li> <li>- Identify the different ways of disease control among the risk</li> <li>- Be part of a simplified process to formulate priorities in different country context.</li> </ul>
Duration	1 sessions of hours
Dates	Tuesday 12, 9:00 am – 12:00
Training methods	Lecture
Reading	<a href="http://www.who.int/topics/infectious_diseases/en/">http://www.who.int/topics/infectious_diseases/en/</a> <a href="https://wwwnc.cdc.gov/eid/">https://wwwnc.cdc.gov/eid/</a> <a href="https://www.cdc.gov/onehealth/basics/zoonotic-diseases.html">https://www.cdc.gov/onehealth/basics/zoonotic-diseases.html</a> <a href="http://www.health.nsw.gov.au/Infectious/Pages/a-to-z-infectious-diseases.aspx">http://www.health.nsw.gov.au/Infectious/Pages/a-to-z-infectious-diseases.aspx</a>

Session 2	<b>International survey and alert</b>
Speakers	Julien Beaute, ECDC
Session Outline	
Learning Objectives	

Duration	1 sessions of 3 hours
Dates	Tuesday 12 1:00 -4:00 pm
Training methods	Lectures alternate with in class applications/reading
Reading	
Validation	Global validation of all sessions of the Minor; working groups on case study

Session 3	<b>Zoonotic diseases and their increasing importance</b>
Speakers	Nadège Leboucq, OIE
Session Outline	The session introduces students with the growing importance of infectious diseases crossed between human and animals. Emergent infectious diseases and factors affecting the crossing between species: together biological, behavioral, environmental will be presented. The contribution of OIE as a symmetric international organization of WHO, for animal health and its organization to guarantee global health will be discussed and clarified.
Learning Objectives	At the end of the sessions, students will be able to: <ul style="list-style-type: none"> <li>- Understand the barriers between human and animals for infectious diseases, but also the recent proofs that this barriers are not total;</li> <li>- Illustrate some of major current concern for zoonotic diseases, according to the context (geographical, behavioral, cultural...);</li> <li>- Use data base and documentation portal of OIE when necessary to be part of prevention of human epidemic</li> </ul>
Duration	1 sessions of 3 hours
Dates	Wednesday 13 9:00 -12:00 pm
Training methods	Lectures alternate with in class applications/reading
Reading	<a href="http://www.oie.int/en/">http://www.oie.int/en/</a>
Validation	Global validation of all sessions of the Minor; working groups on case study

Session 4	WHO strategy and tools
Speakers	Margaux Manoua MATHIS, WHO
Session Outline	During this session, WHO politic to prevent pandemics occurrence or spread is described to the students. The International Health Regulation (IHR2005) and the Global Outbreak alert and response network (GOARN) are presented: objectives, organization, tools, implication for countries.
Learning Objectives	At the end of the sessions, students will be able to: <ul style="list-style-type: none"> <li>- Describe the content of the IHR(2005) and its implications for state members (countries capacities)</li> <li>- Use the decision instrument for the assessment and notification of Annexe2 of IHR</li> <li>- Identify the role of GOARN and its links with IHR</li> <li>- Analyze the crucial part of scientific knowledge about diseases, their survey and the detection of emergency, to limit extend of infectious epidemics.</li> </ul>
Duration	3 hours
Dates	Thursday 14, 9:00 am – 12:00
Training methods	Lectures
Reading	<a href="http://www.who.int/ihr/publications/9789241580496/en/">http://www.who.int/ihr/publications/9789241580496/en/</a> <a href="http://www.who.int/ihr/publications/annex_2_guidance/en/">http://www.who.int/ihr/publications/annex_2_guidance/en/</a> <a href="http://www.who.int/ihr/alert_and_response/outbreak-network/en/">http://www.who.int/ihr/alert_and_response/outbreak-network/en/</a>
Validation	Global validation of all sessions of the Minor; working groups on case study

Session 5	Case study
Speakers	Dr. Michèle Legeas, Professor, DSET&GS, EHESP <a href="mailto:michele.legeas@ehesp.fr">michele.legeas@ehesp.fr</a>  + X (lecturer involved in planetary health classes) (to confirm)
Session Outline	The case study is given the first day of the week and the groups are defined. 13 Nov, 1:30 pm – 2:30 : introduction to the case study 13 Nov, 2:30 pm – 5:00 : beginning of the work on case study 13 Nov, 14 Nov, 15 Nov: 1:30 pm – 5:00 : work on case study 15 Nov, 9:00 am- 12h : preparation of oral communication of the conclusions of the group 15 Nov, 1:00 pm – 4:00 : oral defense by group (used for final grading)
Learning Objectives	At the end of the case study, students will be able to: <ul style="list-style-type: none"> <li>- Clarify the features of the agent involved in a given epidemic,</li> <li>- Discuss the potential wide spread of this epidemic</li> <li>- Propose some ways to limit the spread of the epidemic and its impact on population</li> <li>- Taking clearly into account the context of the start of this epidemic</li> <li>- Discuss some needs in terms of research to prevent or reduce such epidemic in the future</li> </ul>
Duration	12 Hrs
Dates	All over the week, 13 to 15 <sup>th</sup> of November
Training methods	Students are free for organizing their work inside each group.  The coordinator of the module is present during all these periods of working group to monitor

	students and give them additional resources if necessary.
Reading	Initial documentary file given first day.
Validation	<p>Oral defenses are grading: 100% of the final grade  Each defense lasts between 0:30 to 1:00 Hr (accounting for the number of groups).  Judgment criteria include : contents on which presentations will be evaluated</p> <ul style="list-style-type: none"> <li>- Understanding of the disease and the epidemic (such as agent, way of contamination, morbidity, mortality ,clinical solutions ...)</li> <li>- Understanding of the specific context of the spread of this epidemic (geographical, economic, sanitarian, cultural ...)</li> <li>- Presenting some proposals to reduce the impact of this epidemic</li> <li>- Discussing research needs to tackle this problem in the future</li> </ul>