

Syllabus MPH2 Minors and Majors of the EPI track (EPI)

Module ≠	Module title	Coordinator	Contents	ECTS	Teaching Week/year
210	Minor A d'Epidémiologie : « Infectious Disease Epidemiology »	Andrea Howard	<p>Minor A « Infectious Disease Epidemiology »</p> <p>Infectious disease epidemiology monitors the occurrence of infectious diseases and develops strategies for preventing and controlling disease. It requires the use of traditional epidemiologic methods as well as methods that cannot be applied to non-infectious diseases, such as mathematical modeling. In addition to knowing epidemiologic methods, infectious disease epidemiologists need to be familiar with the clinical and biological features of important infectious diseases as well as laboratory techniques for the identification and quantification of infectious agents. This course is designed to provide an introduction to infectious disease epidemiology. It will focus on the tools and methods used in identifying, preventing, and controlling infectious diseases to improve public health. Case studies based on the literature and the work of faculty members will be used to illustrate the real-world application of these tools and methods to address public health problems.</p> <p>Learning objectives: <i>at the end of the module, the students should be able to:</i></p> <ol style="list-style-type: none"> 1. Discuss the key concepts of infectious disease transmission and control, and the differences with non-infectious diseases 2. Apply biological principles to development and implementation of disease prevention, control or management programs 3. Specify the role of the immune system in population health 4. Apply epidemiologic tools and methodologies to understand the transmission dynamics and control of infectious diseases 5. Critically appraise and interpret the findings of infectious disease epidemiology papers <p>Course structure Specific learning objectives are noted for each session. At the end of each course session, students should know and be able to accomplish the session's learning objectives.</p>	3	43, 2011
211	Minor B of the Epidemiology track : « Epidemiology of chronic disease »	Ryan Demmer	<p>Minor B « Epidemiology of chronic disease »</p> <p>This minor will provide a more detailed overview of design, method, substantive and analytical issues pertaining to infectious disease epidemiology. It will cover:</p> <ol style="list-style-type: none"> 1. Infectious causes versus chronic slow causes 2. Implications for causal thinking and analysis 3. Issues of time 4. The epidemiology of risk factors <p>It will also cover specific issues such as:</p> <ol style="list-style-type: none"> 1. Epidemiology of cancer: breast cancer risk among women; computation of risk; population versus individual risk; cancers in the western world; cancers and diet; trends in cancer; risk factors for cancer; 2. Epidemiology of Cardiovascular diseases (CVD); CVD trends ; CVD in the world; CVD and diet; risk factors 	3	44-45, 2011

			<p>Learning objectives: at the end of the module, the students should be able to:</p> <ol style="list-style-type: none"> 1. Discuss the key concepts of chronic diseases and identify their related risk factors 2. Specify the role of the genetic approach for chronic diseases 3. Apply epidemiologic tools and methodologies for chronic diseases, such as cancers and CVD 4. Identify key steps for implementing meta analysis and systematic reviews 5. Apply pharmaco epidemiology tools to chronic conditions and treatment 6. Critically assess and interpret the findings of chronic disease epidemiology papers 		
223	<p>Major A of the Epidemiology track : « Concepts, methods and design in Epidemiology »</p>	<p>Sharon Schwartz</p>	<p>Major A « Concepts, methods and design in Epidemiology »</p> <p>As a basic science of public health, epidemiology is responsible for the identification of causes of disease that can guide the development of rational public health policies. The accuracy of the information provided by epidemiologic studies is therefore of central concern. Epidemiologic methods are the tools we use to make valid causal arguments. The primary objective is to provide students with the basic tools necessary to design, carry out, and interpret the results from observational epidemiologic studies</p> <p>Learning objectives: at the end of the module, the students should be able to:</p> <ol style="list-style-type: none"> 1. Students who successfully complete this course will be able to: 2. Develop testable research hypotheses 3. Write a principled argument supporting research hypotheses 4. Operationalize hypotheses into statistically testable statements 5. Articulate the principles of basic observational study designs 6. Choose study designs that can test research hypotheses 7. Recognize and explain the effects of confounding and bias 8. Conduct basic sample size and power calculations <p>Major A will cover:</p> <ol style="list-style-type: none"> 1- causal inference in Epidemiology 2- Practical framework: developing hypothesis 3- Designs: experimental and Cohort 4- Design: Case control, nested case-control and case-cohort studies 5- Design: Ecological, cross-sectional 6- Operationalization of hypotheses 7- When to act? When is enough enough? <p>Prerequisite: Students entering this course are assumed to be are able to:</p> <ol style="list-style-type: none"> 1. Calculate basic measures of association between exposures and disease 2. Interpret data in 2 by 2 tables 3. Identify major epidemiologic study designs 4. Define confounding, selection bias and misclassification 5. Explain the concept of causality in epidemiology 	3	50, 2011
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	<p>Major B of the Epidemiology track: « Analysis and measurement in Epidemiology »</p>	<p>Mary Beth Terry</p>	<p>Major B « Analysis and measurement in Epidemiology »</p> <p>Major B will be analytical and will bridge biostatistics and epidemiology. In other words, it will provide the epidemiological explanation and rationale as well as the tools behind certain analytical decisions.</p> <p>Major B will cover</p> <ol style="list-style-type: none"> 1. Analytical approaches: Equal observation periods 2. Analytical approaches: Unequal observation periods 3. Sampling and Power 4. Measurement error in Epidemiology and its impact 5. Matched designs and analysis 6. Life table and survival analysis 7. Proportional hazards in epidemiology 8. Age cohort period effect and Poisson regression <p>Prerequisite: Major A « Concepts, methods and design in Epidemiology »</p>	<p>3</p>	<p>1, 2012</p>
<p>225</p>	<p>Major C of the Epidemiology track : To be defined</p>	<p>Moise Desvarieux</p>	<p>To be completed</p>	<p>3</p>	<p>2, 2012</p>