

Syllabus of the MPH1 Modules 2011-2012

Module #	Module title	Coordinator	Contents	ECTS	Teaching Week/year
118	Inter-disciplinary Module 3 "Introduction to life sciences"	Elifsu Sabuncu & Colin Tinsley	<p>"Introduction to life sciences"</p> <p>The module consists of 4 days of intensive courses delivered by experts from different fields of biological science. The aim is to introduce the students to the key concepts related to biology and to the more important of the techniques used in biology and in medical research. An understanding of these concepts is important in the analysis of epidemiological and other scientific data related to biology and for subsequent decision-making in public health policy. Target audience: The course is intended both for MPH students who don't have initial training in biology and for those who would like to update their knowledge of biological concepts important in health sciences.</p> <p>Learning objectives: at the end of the module, the students should be able to:</p> <ol style="list-style-type: none"> 1. Identify main concepts of life sciences and their use in epidemiologic study related to public health issues 2. Apply techniques of life sciences 3. Recognize the importance of the cell, its structure, function, and role for living organisms 4. Discuss the diversity of living organisms and their environment 5. Integrate relationships between public health issues and life sciences: cancer, or other chronic conditions 6. Critically read articles related to basic life sciences <p>Course format: The course consists of 4 days of lectures, and team based learning approach/working groups and group presentation</p> <p>Prerequisite: none</p>	3	35, 2011
101	Interdisciplinary module1 "Introduction to Global health"	Philippe GUERIN	<p>This module aims to introduce students with basic knowledge in global health. The module will cover the concept of burden of disease, with a particular focus on HIV/AIDS, tuberculosis and malaria. It will also provide basic concepts in health economics in order to understand the main challenges faced by public health and health systems in developing countries.</p>	3	37, 2011

102, 103 & 104	Social and behavioral sciences in public health	Jocelyn RAUDE	<p>Social and behavioral sciences in public health (SBSPH)</p> <p>The modules devoted to behavioral and social sciences in public health address the cognitive, behavioral, social and cultural factors related to individual and population health and health disparities. Research and practice in this area contributes to the development, administration and evaluation of programs and policies in public health and health services to promote and sustain healthy environments and healthy lives for individuals and populations.</p> <p>Learning objectives: at the end of the module, the students should be able to:</p> <ol style="list-style-type: none"> 1. Identify basic theories, concepts and models from a range of social and behavioural disciplines that are used in public health research and practice. 2. Recognize the causes and nature of social and behavioral factors that affect health of individuals and populations. 3. Identify critical stakeholders (individuals, organizations and community), steps and procedures for the planning, implementation and evaluation of public health programs, policies and interventions. <p>Course format</p> <p>Sessions will be alternatively lecture and small group discussion and activities/computer labs, reading. In some sessions, students are asked for discussing one or two of the key readings for the week. During small group learning activities students are required to integrating materials from sessions or previous readings or works made during weeks with no face to face courses.</p>	3	38-42, 2011
105, 105 & 107	Epidemiology A primer in Epidemiology	Denis Bard	<p>Epidemiology (EPI)</p> <p>The modules will cover the variety of epidemiologic approaches, address the summary measures of disease frequency and will introduce useful concepts for epidemiological literature critical reading as well for designing an epidemiological study, e.g. exposure assessment, case ascertainment, bias and confounding;</p> <p>Learning objectives: at the end of the module, the students should be able to:</p> <ol style="list-style-type: none"> 1. Identify key concepts in epidemiology 2. Discuss the appropriate design for investigating an epidemiologic question 3. Read critically an epidemiologic paper <p>Course format</p> <p>Students will manipulate epidemiologic data for two days and will spend significant amount of time in working groups. Students will be provided with material to read prior to each lecture, e.g. abstracted from the Center for the Disease Control "Principles of Epidemiology".</p> <p>Conferences will be given by invited scientist at least once a week during lunch break</p>	3	44-48, 2011

111 to 113	Information Sciences and biostatistics	S��verine DEGUEN	<p>Information Sciences and biostatistics</p> <p>The main objective of this program is to give methodological keys to comprehend quantitatively a public health problem. More precisely, this course covers the basic tools for the collection, analysis, and presentation of data.</p> <p>Topics covered include:</p> <ul style="list-style-type: none"> • Statistical descriptive analysis • Hypothesis testing: methods for comparison of categorical, discrete and continuous data including ANOVA, t-test, chi-Squares • Three regression models are studied in detail: linear, logistic and Cox models, which are the most basic models used in public health <p>Learning objectives: at the end of the module, the students should be able to:</p> <ol style="list-style-type: none"> 1. Conduct preliminary/simple statistical analysis 2. Apply statistical methods and tools to public health issues 3. Read critically an article/report dealing with biostatistical notions 4. Exchange with scientific persons including biostatisticians <p>Course format</p> <p>Each methodological course is followed by an application including exercises, cases study, articles/report discussion and data analysis on computers. Those applications cover different public health topics. The data analysis is carried out using the STATA Software. Each week is ended by a conference that illustrates the usefulness of biostatistics methodology.</p>	3 x 3	50, 2010, 2 and 4, 2010
114, 115, 116	Environmental and occupational health sciences	Olivier Blanchard	<p>Environmental and occupational health sciences (EOHS) Module 206</p> <p>The impact of some environmental factors on public health is known since the Minamata disaster or Rachel Carlson's book on pesticides ("Silent spring"). From the early 60's up to now, the interrelations between environmental or occupational problems and politics and health of populations have been increasing. They are often complex and unforeseeable. The aim of this module is to analyse and understand (i) the interdisciplinary context of public health challenges of environmental or occupational origin, (ii) the main environmental or occupational risk factors for public health and the corresponding issues (iii) the weight of related uncertainty in a changing context (climate, spatiotemporal variability, globalization, threats...).</p> <p>Learning objectives: at the end of the module, the students should be able to:</p> <ol style="list-style-type: none"> 1. Understand the processes of environmental contamination, pollution transfers and exposures 2. Critically assess papers on environmental epidemiology and risk assessment 3. Acquire the knowledge and skills to identify and treat health problems with an environmental and occupational exposures component 4. consider the most critical health effects associated with globalization and climate change 	3x3	6 – 10 2012

			<p>Course Format</p> <p>Lectures, case studies and group works are proposed during the modules (9ECTS) where students will be in contact with researchers of high professional experience, a conference closing each period.</p>		
108, 109, 110	Management and health policy sciences	Karine CHEVREUL & Sue HOBBS	<p>Management and health policy sciences (MHPS)</p> <p>The modules "management and health policy" provides students with an understanding of the issues of managing health system and organizations.</p> <p>The health policy part examines health care systems and the policy process, with an emphasis on the role of the different stakeholders (the state, the medical profession, patient organizations). It uses a comparative approach and presents several examples of health care systems to illustrate the health policy process.</p> <p>The second part of this module will provide basic understanding of health care management and organizational dynamics, including how organization relates to their environment, organization design, the managerial role, leadership, communication and power and strategy</p> <p><i>"Learning objectives: at the end of the module, the students should be able to:</i></p> <ol style="list-style-type: none"> 1. Identify the main components and issues of the organization & management of health systems in developed and developing countries 2. Critically assess changes and reforms currently implemented in the systems 3. Differentiate stakeholders at the national, regional and local levels and describe their role 4. Analyse different types of management for health care organizations 5. Measure the impact of health organizations on health outcomes 6. Develop program action through logic models 		
OPTION	Biostatistics	Stanley Lemeshow	<p>Biostats</p> <p>The aim of this course is to provide theoretical and practical training for epidemiologists and professionals of related disciplines in statistical modeling with particular emphasis on linear, multiple and logistic regression. The increasingly popular logistic regression model has become the standard method for regression analysis of binary data in the health sciences</p> <ul style="list-style-type: none"> • Review of Straight Line Regression • Review of Correlation • The ANOVA Table for Straight Line Regression • Assessing the Appropriateness of the Straight Line Model • Polynomial Regression • Multiple Regression Analysis • The Partial F-test • Dummy (or indicator) Variables • Statistical Interaction • Comparing Two Straight-line Regressions • The Analysis of Covariance • The Logistic Regression Model 		One week in late march Or April

			<ul style="list-style-type: none"> • Estimating the Coefficients in the Logistic Model • Interpretation of Coefficients • The Multivariate Case: Statistical Adjustment • Interaction and Confounding • Stratified Analysis via Logistic Regression <ul style="list-style-type: none"> • Summary Measures of Goodness-of-Fit • Area Under the ROC Curve • Numerical Problems • Example: Estimating the Probability of Mortality of ICU Patients <p>Learning objectives: at the end of the module, the students should be able to:</p> <ol style="list-style-type: none"> 1. Conduct data analysis for different type of studies, in epidemiology, social sciences.. 2. Identify the different statistical methods to be applied for different research studies 3. Conduct linear and logistic regressions 4. Assess how the regression model fit the data 5. Be familiar with STATA software package for computing descriptive statistics and different regression models <p>Course format</p> <p>Every morning sessions, lectures are given from 9:00 to 1:00 pm and computer lab sessions with applications are organized from 2:00 to 5:00 pm.</p> <p>Computer Software: STATA VII, Stata Corporation, College Station, Texas (fax: 409-696-4601)</p> <p>Texts: <i>Applied Regression Analysis and Multivariable Methods (3rd Ed)</i> by Kleinbaum, Kupper, Muller and Nizam <i>Applied Logistic Regression (2nd Ed)</i> by Hosmer and Lemeshow <i>Solutions Manual to Accompany Applied Logistic Regression 2nd</i> by Cook, Hosmer and Lemeshow</p>		
	Maternal and Child Health (MCH)	Cheri Pies	<p>Maternal and Child Health (MCH)</p> <p>This one-week intensive course on Maternal and Child Health (MCH) will provide students with an overview and introduction to selected MCH-related topics. The course includes a focus on the ways in which poverty, politics, and racial and ethnic disparities affect the health of families, women, children and adolescents. Students will be given the opportunity to discuss and examine current issues central to maternal and child health, review the latest literature on new directions in the field, analyze existing data sources and the uses of data to improve maternal and child health, and discuss the ways in which the political context in a given nation affects the health and well-being of families. This course is designed to be a rigorous and engaging undertaking that includes lecture, interactive activities, shared experiences, and a culminating project for each student. Some of the assigned readings will be discussed in class, student participation will be a vital part of the course, and lively and intellectually stimulating discussions will be the hallmark of the class.</p> <p>Learning objectives: at the end of the module, the students should be able to:</p>	3	19-21 2012

			<ol style="list-style-type: none"> 1. Describe at least six central components to the field of Maternal and Child Health, including pregnancy/prenatal care, infancy, childhood, adolescence and men's health, preconception/interconception health, and the life course perspective. 2. Discuss the ways that politics, poverty, and racial and ethnic disparities affect the health of families, women, children and adolescents. 3. Describe at least three key health issues that have been demonstrated to be central to improving maternal and child health globally 4. Identify and utilize key data sources for maternal and child health measures. <p>Course Format</p> <p>Each day of this one-week class will provide students with an opportunity to discuss the key issues identified for that day. Morning sessions will be lecture and small group discussion and activities. Some mornings we will discuss one or two of the key readings for the week. Afternoons will be interactive with small group learning activities designed to assist students in integrating the didactic materials from the morning session. Some class sessions will be a combination of lecture and discussion; others may be structured for small and large group discussions</p>		
117	Interdisciplinary module 2 "Emerging and re-emerging diseases"	Antoine FLAHAULT	<p>An introduction to "Emerging and re-emerging diseases"</p> <p>The introduction to emerging infectious diseases will focus on studying a contemporary case study of emergence of vector-borne epidemic. The objective is to provide students and professionals with the main contributions of the interdisciplinary approach to face this emergence (epidemiology, virology, immunology, social and behavioural sciences, entomology, clinical research and animal health) and on the process of public intervention. The case study will be the chikungunya outbreak and the course will be provided by Professors Patrick Zylberman et Antoine Flahault.</p>		One day in May btc, 2012
119	Langage	Sarah Sasson Severine Martin Holly Pouquet (Tbc)	<p>This course will be offered to international students who are not familiar with French and, conversely, to French speaking students who want to have a better master of English as the international language of communication. Personal work will complement the class lessons.</p>	3	All along the year, Monday Morning