CEE-93 Course Syllabus
Global Health Crises: Epidemics, the Environment, and Public Policy
Summer, 2019
Version 1.0

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Course Location: Talloires, FRANCE


Course Reader. Selected peer-reviewed articles and gray literature material (Hard copy reader and uploaded to Box).

Course Description:

Find out why the control of global disease requires not only solid science but also effective public policy and politics. This course examines the growing health challenges posed by emerging and reemerging diseases associated with environmental degradation, global climate change, and changes in host factors. We probe the pathologic basis of diseases such as HIV/AIDS, malaria, anthrax, Ebola, small pox, “Mad Cow” disease, avian flu, and the drug-resistant strains of diseases such as tuberculosis, and review how they are transmitted and distributed globally by person, time and place. Students utilize the resources of the many international health and environmental organizations in Geneva to gain a more “hands on” appreciation of how global intervention strategies are conceived and implemented.

Course Objectives:

• To instruct participants in what constitutes emerging and re-emerging disease on a global basis.

• To familiarize participants with the microbiology of infectious diseases, particularly being able to distinguish the unique attributes of viruses, bacteria and other microbes of importance to human health.

• To acquaint participants with the mechanisms by which microbes cause human disease.

• To identify environmental influences of note which may influence the epidemiology of infectious disease in the near and long-term future. Of growing interest is the influence of Climate Change on the distribution of both human disease but also for the vectors of importance to selected diseases.
• To have participants become familiar with the biological basis for the level of protection conferred by antimicrobial agents and selected public health strategies such as vaccination.

• For participants to gain exposure to the current and future infectious disease control strategies employed by a variety of international organizations including the World Health Organization (WHO) and the International Committee of the Red Cross (ICRC).

• To provide participants with examples of different infectious disease control strategies which are appropriate for different global regions.

• To provide participants the opportunity to integrate the science of infectious disease control with the realities of implementing such activities around the globe. This integration will form the basis of the written project.

• To provide participants an understanding of how adaptive responses to concerns about security, i.e. the willful introduction of infectious agents in populations, will be implemented and assessed.

• The written project and poster will focus on a particular disease agent and seek to identify policy responses that are appropriate for a given global region or country in terms of surveillance and control. This will benefit from epidemiologic data available from both international and country-specific health agencies.

Evaluation Criteria: 1. Mid-term examination 30%
2. Written project 35%
3. Poster session + participation 20%
4. Homework (3 sets) 15%

Course Requirements:

No prerequisites are required for the course. The course is approved for the natural science distribution requirement and fulfills International Relations major requirements (Thematic Concentration 3 –Global Health, Nutrition, and the Environment). For Community Health majors, the course has been approved as fulfilling Bio-Medical cluster credit.

Course logistics
• 1st half of course is focused on understanding microbes and their relationship to the etiology of human disease.
• Three sets of homework are due on a weekly basis during the first half of the course.
• The second half of course will be spent on researching and developing a public health intervention, which targets emerging or re-emerging diseases in a region of the world where there is demonstrable elevation in risk.
• Examples of paper topics from pervious classes include:

• Brucellosis: An Analysis of the Biology, Epidemiology, and Economics in the United States
• The Prospect of Polio Eradication
• The AIDS Pandemic in Thailand
• The Fight Against Malaria in Africa
• A Critique of AIDS Control Strategies in the Indian Subcontinent

Evaluation criteria

• 3 sets of homework (15%)
The homework will clarify concepts encountered in the class text.

• Mid-term (30%)
The mid-term will assess mastery of the material covered in the class text, discussions in class, and papers assigned from the course reader.

• Written project (35%)
The written project shall concern an emerging or re-emerging disease selected by the student in conjunction with the instructor. A critique of existing public health interventions is provided based upon a thorough review of past disease control activities. The contextual factors dictated by place and global region will be thoroughly explored. Participants are encouraged to recommend new strategies for their selected disease.

• Class room participation and poster session (20%)
Discussion will be encouraged. Keeping pace with the assigned reading is critical. The final session of CEE-93 will comprise a poster session summarizing the work conducted for the written project. Designing and implementing the poster has been successfully performed in Talloires by formatting the poster for display on personal laptops.