Course Title: Global Communicable and Noncommunicable Diseases

Course Number: GLPH 0515

Course Location: School of Public Health, Room 2B

Course Date & Time: Mondays, 6:00 – 8:00 pm (Spring 2018)

Course Instructor: Jun-Yan Hong, MD, PhD
Professor – Department of Environmental and Occupational Health
Rutgers School of Public Health, Room 385
Email: junyan.hong@sph.rutgers.edu

William Halperin, MD
Professor – Department of Epidemiology
Rutgers School of Public Health
Tel. 732-673-7026
Email: halperwe@sph.rutgers.edu

Office Hours: By Appointment

Recommended Course Text:

Part I. Non Communicable Diseases
Harris RE. Epidemiology of Chronic Disease. Global Perspectives
Jones & Bartlett Learning, Burlington MA, 2013

Part II. Infectious Diseases
Global Disease Elimination and Eradication as Public Health Strategies
www.cdc.gov/epo/mmwr/pdf/other/mm48su01.pdf

Center for Global Development (The Case Studies)
www.cgdev.gov/section/initiatives/_active/millionsaved/studeis/

Morbidity and Mortality Weekly Reports (CDC)
www.cdc.gov/mmwr/mmwr_wk.html

The Coming Plague – Laurie Garret
Refugee Health – Doctors Without Borders

Additional/Supplemental Readings/Resources: Additional reading material will be assigned in class.

Course Description: The course will be divided in two parts:

Part I. Noncommunicable Diseases: Topics central to global noncommunicable diseases (NCD) and risk factors are addressed. Attention is focused on NCDs that make major contributions to the global burden of disease.
Part II. Infectious Diseases: An overview will be given of critical topics related to the identification, control and prevention of newly emerging and as well as long recognized infectious diseases with public health importance. The emphasis will be on major infections that are prevalent in tropical and developing countries. The clinical presentation, modes of transmission, geographic distribution and prevention of these infections will be considered from an epidemiologic perspective. Selected global disease control programs and policies will be assessed for their strengths and weaknesses.

Selected Department Competencies Addressed: The competencies addressed in this course for the MPH in Global Public Health include:

- Demonstrate an understanding of the economic, educational, political, sociocultural, environmental, ecological and biological conditions that represent obstacles to attaining global health.
- Analyze root causes of morbidity and mortality in major regions of the world and how they are affected by demographic, sociocultural, biological, occupational and environmental factors.
- Apply fundamental principles of global standards for the protection of human subjects in diverse cultural settings.
- Apply the fundamental principles of global public health perspectives on global public health education, research, and practice.
- Exhibit skill sets required for global health practice including written and verbal communication skills, capacity for interprofessional teamwork, leadership, social awareness and cultural competency to enhance capacity strengthening and service delivery with compassion and integrity.

The competencies addressed in this course for the MPH from the Department of ENOH include:

- Describe the major environmental health problems to the general public as well as specific communities within that population;
- Describe the federal and state regulatory programs that relate to environmental (community) and worker (occupational) protection;
- Develop a testable model of environmental exposures (one or more agents) and adverse health outcomes (causing injury, disability, other measure of morbidity or mortality); and
- Specify current environmental risk assessment approaches and methods for a particular hazard or risk in a community.

All of the competencies listed below from the Department of Epidemiology will be addressed to some extent. These specific skill sets will be introduced, but not developed:

- Critique epidemiologic literature, assess its strengths and weaknesses and determine if conclusion(s) are supported;
- Use epidemiologic techniques to quantitatively assess patterns and changes in disease occurrence;
Course Objectives: By the completion of this course, students will be able to:

- Describe major noncommunicable diseases which significantly contribute to the global burden of disease
- Explain the regional differences in noncommunicable diseases around the world
- Use existing tools and database for further study on noncommunicable diseases
- Identify the key drivers of noncommunicable diseases in different regions in the world
- Critically evaluate the contributions of various environmental factors to noncommunicable diseases
- Analyze clinical presentation, modes of transmission, geographic distribution and prevention of infectious diseases from an epidemiologic perspective
- Describe and analyze programmatic approaches for controlling communicable diseases associated with major mortality or morbidity primarily in the developing world
- Critically examine contrasting visions of international health interventional initiatives via evaluation of cases studies for strength and weaknesses.

Course Requirements and Grading: Course requirements include attendance, participation in class discussions, assigned readings and a term project. The term project will consist of a written paper and oral presentation discussing the impact of a communicable disease and a noncommunicable disease in a given country and presenting professional suggestions to address these diseases. There will be an objective midterm and final exam prepared from class lectures and reading materials.

Grading will consist of:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Attendance and Participation</td>
<td>10%</td>
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<tr>
<td>Midterm Exam</td>
<td>35%</td>
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<td>Term Project</td>
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<td>Final Exam</td>
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Additional details about the course’s projects and assignments will be provided during the semester.
Grading scale:

- A (% ≥ 90)
- B+ (80 ≤ % < 90)
- B (70 ≤ % < 80)
- C (60 ≤ % < 65)
- C+ (65 ≤ % < 70)
- F (% ≤ 59)

Course Schedule: **(To be updated)**

**Part I. Noncommunicable Diseases**

<table>
<thead>
<tr>
<th>Lecture 1</th>
<th>Course Introduction (J.Y. Hong/S. Schwander)</th>
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<tbody>
<tr>
<td>1/22/2018</td>
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<tr>
<td></td>
<td>• Noncommunicable disease in the world</td>
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<td>• Trend of noncommunicable disease in developing and industrialized countries</td>
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<td>• Course logistics</td>
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<td>Reading material:</td>
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<td>1. Harris pp1-24</td>
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<tr>
<th>Lecture 2</th>
<th>Cancer (J.Y. Hong)</th>
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<td>1/29/2018</td>
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<td>• Cancer biology</td>
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<td>• Clinical approach to cancer</td>
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<td>• Cancer in the world</td>
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<td>• Environmental risk factors</td>
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<td>Reading Material:</td>
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<tr>
<th>Lecture 3</th>
<th>Cardiovascular Disease- A Growing Global Problem (G. Rhoads)</th>
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<td>2/5/2018</td>
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<td></td>
<td>• Atherosclerosis</td>
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<td>• Coronary heart disease</td>
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<td>• Hypertension</td>
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<td>Reading Material:</td>
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<td>1. Harris pp25-49</td>
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<tr>
<th>Lecture 4</th>
<th>Diabetes, obesity, and undernutrition (Shawna Downs)</th>
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<tr>
<td>2/12/2018</td>
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<td>• Nutrition requirements</td>
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<td>• Multiple burdens of malnutrition</td>
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<td>• Diabetes in the world</td>
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<td>• Risk factors of diabetes</td>
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<td>• The global obesity epidemic</td>
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</tbody>
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Lecture 5  
2/19/2018  
Globalization and Income Disparity (M. Gusmano)  
Reading Material:  
1. Harris  pp375-404, 417-443

Lecture 6  
2/26/2018  
Pulmonary Disease (K. Demissie)  
• Physiology of asthma  
• Clinical approach to asthma  
• Asthma in the world  
• Risk factors of asthma  
• COPD  
• Smoking  
Reading Material:  

3/5/2018  
MIDTERM EXAM  
Week of 3/12 -17/2018  
SPRING BREAK

Lecture 7  
3/19/2018  
Review of Exam  
Maternal and Child Health (B. West)

Part II: Infectious Diseases

Lecture 8  
3/26/2018  
Overview and Vector Borne Diseases (K. Feja)  
Reading Material:  
Harris  Chapter 46

Lecture 9  
4/2/2018  
Vaccine Preventable Diseases (B. Montana)  
• Role of vaccine in global health maintenance  
• Specific vaccines of use in the developing world  
• Next generation of vaccine prevention  
Reading Material:  
2. Epidemiology and Control of Vaccine Preventable Diseases” (the “Pink Book”)13th edition, U.S. Centers for Disease Control and Prevention
Lecture 10
4/9/2018
Infectious Respiratory Diseases (K. Feja/S. Schwander)
- Review of significant infectious diseases of man and the agents which spread them
- The interplay between economic development and these diseases
- Successes and failures of targeted control programs

Reading Material:
1. "The Coming Plague" by Laurie Garret
2. Harris Chapter 45

Lecture 11
4/16/2018
Tropical Diseases (S. Schwander)
- Historic review of "orphan" infections of importance in the developing world
- New and Emerging Infections
- Socio-economic impact

Reading Material:
1. World Health Organization
2. Carter Foundation
3. Bill and Melinda Gates Foundation

4/23/2018
Term Project: Student Presentations I
Final Paper Due

4/30/2018
Student Presentations II

5/7/2018
Final Exam
School of Public Health Honor Code: The School of Public Health Honor Code is found in the student bulletin (sph.rutgers.edu/academics/catalog/index.html). Each student bears a fundamental responsibility for maintaining academic integrity and intellectual honesty in his or her graduate work. For example, all students are expected to observe the generally accepted principles of scholarly work, to submit their own rather than another’s work, to refrain from falsifying data, and to refrain from receiving and/or giving aid on examinations or other assigned work requiring independent effort. In submitting written material, the writer takes full responsibility for the work as a whole and implies that, except as properly noted by use of quotation marks, footnotes, etc., both the ideas and the works used are his or her own. In addition to maintaining personal academic integrity, each student is expected to contribute to the academic integrity of the school community by not facilitating inappropriate use of her/his own work by others and by reporting acts of academic dishonesty by others to an appropriate school authority. It should be clearly understood that plagiarism, cheating, or other forms of academic dishonesty will not be tolerated and can lead to sanctions up to and including separation from the Rutgers School of Public Health.

Policy Concerning Use of Recording Devices and Other Electronic Communications Systems: When personally owned communication/recording devices are used by students to record lectures and/or classroom lessons, such use must be authorized by the faculty member or instructor who must give either oral or written permission prior to the start of the semester and identify restrictions, if any, on the use of mobile communications or recording devices.

Acknowledge (print name)  Signature and date

Contact email address and phone #