

Course Title: Global Communicable and Non-Communicable Diseases,
2023 Spring

Course Number: UGPH 0515-030

Course Location: Rutgers School of Public Health, Newark
Room 1601, 1 RFP

Course Website: canvas.rutgers.edu

Course Date & Time: 6:00 – 8:00 pm, Mondays, *January 23 to May 8, 2023*

Course Instructor: Jun-Yan Hong, PhD
Professor – Department of Environmental and Occupational Health
Rutgers School of Public Health
EOHSI Room 422, 848-445-6146,
Email: hongju@sph.rutgers.edu;
<https://rutgers.webex.com/meet/hongju>

Course Assistant: Sara Bailey: ssb137@scarletmail.rutgers.edu

Office Hours: 9 am to 5 pm. Students may schedule individual meetings by phone or WebEx- Appointment is required.

Recommended Text and Readings:

Part I. Non-Communicable Diseases

Randall E. Harris: Epidemiology of Chronic Disease. Global Perspectives, 2nd Edition, 2019, Jones & Bartlett Learning, Burlington MA, ISBN 978-1-284-15101-5

Part II. Infectious Diseases

Randall E. Harris: Epidemiology of Chronic Disease. Global Perspectives

Global Disease Elimination and Eradication as Public Health Strategies

<https://www.cdc.gov/mmwr/pdf/other/mm48SU01.pdf>

Center for Global Development (The Case Studies)

<https://www.cgdev.org/page/case-studies>

Morbidity and Mortality Weekly Reports (CDC)

<https://www.cdc.gov/media/mmwrnews/index.html>

The Coming Plague – Laurie Garret

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2551275/pdf/bmj00619-0070.pdf>

Refugee Health – Doctors Without Borders
<https://www.doctorswithoutborders.org/refugees>

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

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

Part I. Non-Communicable Diseases: Topics central to global non-communicable 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 inter-professional 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 Environmental and Occupational Health 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 Biostatistics and 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;
- Formulate a specific hypothesis and determine an appropriate study design and analysis plan;
- Design, implement and assess ordinary data collection systems for public health research;
- Appropriately analyze and interpret epidemiologic data, including large national and state level datasets; and
- Communicate and present study findings to professional audiences.

Please visit the Department webpages on the School of Public Health's website at <http://sph.rutgers.edu/> for additional competencies addressed by this course for other degrees and departments.

Course Objectives: By the completion of this course, students will be able to:

- Describe major non-communicable diseases that significantly contribute to the global burden of disease.
- Explain the regional differences in non-communicable diseases around the world.
- Use existing tools and database for further study on non-communicable diseases.
- Identify the key drivers of non-communicable diseases in different regions in the world.
- Critically evaluate the contributions of various environmental factors to non-communicable 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.

Special Circumstances During COVID-19 (For Spring 2022)

Please follow up the latest Rutgers and School of Public Health policies

For In-Person and Hybrid Courses:

To keep our on-campus communities safe, compliance with all current guidance and policies as set forth in the [Guide to Returning to Rutgers](#) is required at all times and without exception. Students, faculty, staff, or visitors who do not comply with these policies will not be permitted to remain on-site. The use of face-coverings indoors *IS* required in classrooms and offices as well as shared spaces (such as hallways and bathrooms). Rutgers employees and students must use the [My Campus Pass](#) symptom checker, a self-screening application, each day when traveling to campus or entering a Rutgers building. Please remember to wash your hands, wear a mask while indoors, particularly in crowded spaces and groups, and stay up-to-date on university guidance by consulting the [Guide to Returning to Rutgers](#) and the university's [COVID-19 website](#).

In addition, the School of Public Health recognizes that students may experience challenges or be negatively impacted due to the COVID-19 pandemic, mental and emotional health toll from systemic racism, altered personal and professional obligations, and other crises existing at the moment in our local, national, and global communities. Students are encouraged to discuss these challenges and circumstances with their instructor, if they feel they may need additional support or temporary accommodations at the beginning or during this course. The course instructor may consider making reasonable temporary adjustments depending on the student's situation. If additional support is needed, students may reach out to the Office of Student Affairs (studentaffairs@sph.rutgers.edu) or any of the appropriate referral resources listed on the [SPH Student Connect](#) Canvas page.

Course Requirements and Grading: Course requirements include attendance, participation in class discussions, assigned readings **and weekly homework**, group presentations, and a term project. The term project will consist of a written paper and oral presentation discussing the impact of a communicable disease or a non-communicable 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:

Attendance and Participation	05%
Weekly Homework Assignments	15%
Midterm Exam	25%
Group Project	10%
Term Project	20%
Final Exam	25%

Additional details about the course's projects and assignments will be provided during the semester.

Grading scale:

A (94-100)
B (84-87)
C (70-77)

A- (90-94)
B- (80-84)
F (<70)

B+ (87- 90)
C+ (77-80)

Course Schedule:

Part I. Non-Communicable Diseases

1/23/2023

Course Introduction

(Hong)

Course logistics

Trend of non-communicable disease in developing and industrialized countries-The Epidemiological Transition

WHO: Ten threats to global health in 2019, March, 2019

WHO: Urgent health challenges for the next decade, January, 2020

Reading material:

Harris, Chapter 1
Ten threats to global health in 2019

<https://www.who.int/news-room/spotlight/ten-threats-to-global-health-in-2019>

Urgent health challenges for the next decade

<https://www.who.int/news-room/photo-story/photo-story-detail/urgent-health-challenges-for-the-next-decade>

1/30/2023

Cancer

(Hong)

Cancer biology
Environmental risk factors
Clinical approach to cancer
Cancer in the world

Reading Material:

Harris, Chapter 11 and 12

2/06/2023

Chronic Respiratory Diseases

(Hong)

Asthma: Physiology, Risk factors, and Clinical approach
COPD
Smoking

Reading Material:

Harris, Chapter 39 and 40

2/13/2023

Cardiovascular Diseases

(Hong)

Atherosclerosis
Coronary heart disease
Stroke
Hypertension

Reading Material:

Harris, Chapter 2 to 7, and 10

2/20/2023

Diabetes, Obesity and Malnutrition

(Hong)

Nutrition requirements
Multiple burdens of malnutrition
Diabetes in the world
The global obesity epidemic

Reading Material:

Harris, Chapter 41 and 42

2/27/2023

Group Project Presentation I

(Hong)

3/06/2023

MIDTERM EXAM

(Hong)

3/13/2023

SPRING BREAK (3/11 -3/19)

Part II: Infectious Diseases

3/20/2023 **Overview and Vector Borne Diseases**

(Hong)

Reading Material:
Harris, Chapter 55

3/27/2023 **Vaccine Preventable Diseases**

(Hong)

Role of vaccine in global health maintenance
Specific vaccines of use in the developing world
Next generation of vaccine prevention

Reading Material:
Epidemiology and Control of Vaccine Preventable Diseases” (The “Pink Book”)13th
edition, U.S. Centers for Disease Control and Prevention
<https://www.cdc.gov/vaccines/pubs/pinkbook/chapters.html>

4/03/2023 **Tuberculosis and other Infectious Respiratory Diseases**

(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:
“The Coming Plague” by Laurie Garret
Harris, Chapter 54

4/10/2023 **Tropical Diseases**

(Schwander)

Historic review of “orphan” infections of importance in the developing world
New and Emerging Infections
Socio-economic impact

Reading Material:
World Health Organization
Carter Foundation
Bill and Melinda Gates Foundation

4/17/2023 Group Project Presentation II

(Hong)

4/24/2023 FINAL EXAM

(Hong)

5/01/2023 Term Project Presentations I
Final Paper Due (both I and II groups)

(Hong)

5/08/2023 Term Project Presentations II

(Hong)

Learning Management System: Canvas will be used extensively throughout the semester for course syllabus, assignments, announcements, communication and/or other course-related activities. It is the student's responsibility to familiarize themselves with Canvas and check it regularly. If you have difficulties accessing Canvas, please inform the instructor and Canvas Support (help@canvas.rutgers.edu). Canvas is accessible at canvas.rutgers.edu.

School of Public Health Honor Code: The School of Public Health Honor Code is found in the School Catalog (sph.rutgers.edu/academics/catalog.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.

Students with Disabilities: Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a

student must Apply for Services by first completing a Registration Form with the Rutgers Office of Disability Services (ODS) at ods.rutgers.edu. The student will also be required to participate in an ODS intake interview and provide documentation. If reasonable accommodations are granted, ODS will provide you with a Letter of Accommodations which should be shared with your instructors as early in your courses as possible.

Graduate Student Computer Policy: Students are required to possess a personal laptop, no older than approximately two years, that must meet minimum requirements which may be found online at: sph.rutgers.edu/student-life/computer-support.html.

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.

Policy Concerning Use of Turnitin: Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com (directly or via learning management system, i.e. Canvas) for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site. Students who do not agree should contact the course instructor immediately.

Withdrawal/Refund Schedule: Students who stop attending their course(s) without submitting a completed [Add/Drop Course](https://sph.rutgers.edu/academics/school-calendar.html) form will receive a failing grade. Furthermore, students dropping to zero credits for the semester are considered withdrawn and must submit a completed [Leave of Absence](https://sph.rutgers.edu/academics/school-calendar.html) form from the School of Public Health's Office of Student Affairs. The School of Public Health refunds tuition only. Administrative and technology fees are non-refundable. You may find the Withdrawal/Refund Schedule on the School of Public Health website at: sph.rutgers.edu/academics/school-calendar.html

=====

Special Circumstances During COVID-19 (starting from Fall 2020)

The School of Public Health recognizes that students may experience challenges or be negatively impacted due to the COVID-19 pandemic, mental and emotional health toll from systemic racism, altered personal and professional obligations, and other crises existing at the moment in our local, national, and global communities. Students are encouraged to discuss these challenges and circumstances with their instructor, if they feel they may need additional support or temporary accommodations at the beginning or during this course. The course instructor may consider making reasonable temporary adjustments depending on the student's situation. If additional support is needed, students may reach out to the [Office of Student Affairs \(studentaffairs@sph.rutgers.edu\)](mailto:studentaffairs@sph.rutgers.edu) or any of the appropriate referral resources listed on the [Student Connect Canvas page](#).

Remote Learning Policies

As you know, we are engaged in this course under extraordinary circumstances. Not only are we now conducting the class remotely, but we are all working under the repercussions of the COVID-19 pandemic. The following are class policies for our class sessions with Zoom. Please read carefully; these policies apply to the Fall 2020 semester. All students are expected to adhere to the policies.

General: Log into Zoom using your Rutgers NetID and sign-in with your full first name and last name as listed on the class roster. (If you use a different name than what is listed on the class roster, please email

the instructor in advance of the class or send a private Chat message.) Using your full name allows the instructor to know who is in attendance and to quickly sort students into their groups when needed. Users who do not log into Zoom using their Rutgers NetID may have trouble accessing the Zoom classroom.

Video: Please turn on your video when possible. We recognize that this isn't always easy but this will help to build our class community. Seeing the faces of your classmates more closely duplicates the typical in-person learning experience and may shift your mindset into more focus and attention. Seeing each other can also provide each of us with positive social interactions.

- If you're unable to find an environment without a lot of visual distractions or prefer to not show your living space as a background, feel free to use a virtual background (several virtual background images created by the School of Public Health are available in the [Student Connect Canvas page](#)).
- To save bandwidth, there may be times during class when the instructor asks students to turn off videos.
- Add a photo to your Zoom profile. (Then in times when videos are off, we'll see photos of everyone rather than an empty box.)
- If you have limited internet bandwidth or other issues impacting your video use, please inform the instructor.

Audio: Mute your microphone when you are not talking. This helps eliminate background noise.

- Use a headset, if possible. If you own headphones with a microphone, please use them. This improves audio quality.
- Be in a quiet place, if possible. Turn off any music, videos, etc. in the background.

Chat: Stay on topic and be respectful. Use the chat window for questions and comments that are relevant to class.

NOTE: Class meetings on Zoom will be recorded and made available for students in the course on Canvas only