



**CGH 314 - Emerging Chronic & Infectious Diseases Worldwide, 4 units**  
**Course Syllabus, Fall Semester 2019**

**Schedule**

Thursdays, 9:00 – 11:50 AM  
Location: ACB 119

**Instructor**

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**Office Hours**

Tues, 2-3pm, or by appointment

**Required Textbooks**

Chronic Disease Epidemiology and Control, 4th edition. Remington PL, Brownson RC, Wegner MV.  
Washington D.C. American Public Health Association, 2016 (ISBN: 978-0-8755-3277-6)

Infectious Disease Epidemiology: Theory and Practice. 3<sup>rd</sup> edition. Kenrad E. Nelson, Carolyn Masters  
Williams. Jones and Bartlett Publishers, LLC. 2007 (ISBN: 978-1-4496-8379-5).

Emerging Infectious Diseases: A Guide to Diseases, Causative Agents, and Surveillance. 1<sup>st</sup> edition. Lisa A.  
Beltz. Publisher: Jossey-Bass. 2011 (ISBN: 978-0-470-39803-6)

Texts are available for purchase at the CGU bookstore or on online marketplaces. I will provide additional published articles and supplementary readings electronically. Assigned readings including those from the texts and supplemental readings are required, and I assume that you have completed the readings for that week when I lecture in class.

**Course description**

This course provides an overview of the demographic distribution and causative factors of major infectious and chronic diseases that impact populations globally. Epidemiologic concepts, methods and research designs are emphasized. Necessary tools for applying epidemiologic approaches to chronic disease prevention are provided including understanding major risk factors. The course will cover topics in immunology, laboratory diagnosis, outbreak investigation, infectious disease diagnosis, control in populations and basic analytic methods. It provides students with exposure to local public health experts in various important contemporary topics such as emerging infections and chronic disease epidemics.

**Prerequisite**

CGH 302 – Epidemiology, or equivalent, or with consent from instructor

### **Learning objectives**

After taking this course, students should be able to:

- understand main epidemiologic characteristics of major infectious and chronic diseases and conditions;
- be familiar with the distribution and impact of the major infectious and chronic diseases and conditions;
- discuss contemporary approaches to the surveillance, prevention and control of epidemic or endemic transmission of major infectious diseases, and the surveillance, prevention and control of major chronic diseases and conditions from a public health perspective;
- understand common applications of basic epidemiologic concepts and methods to infectious and chronic disease prevention and control programs;
- read and critique epidemiologic studies addressing specific chronic and infectious diseases
- develop written communication and oral presentation skills

### **Foundational MPH Competencies**

This course addresses the following MPH foundational competencies:

1. Apply epidemiological methods to the breadth of settings and situations in public health practice
2. Select quantitative and qualitative data collection methods appropriate for a given public health context
4. Interpret results of data analysis for public health research, policy or practice
19. Communicate audience-appropriate public health content, both in writing and through oral presentation

### **Applied Biostatistics and Epidemiology (ABE) Concentration Competencies**

This course addresses the following applied biostatistics & epidemiology concentration-specific competencies:

1. Apply the basic public health sciences (including, but not limited to biostatistics, epidemiology, environmental health sciences, health services administration, and social and behavioral health sciences) to public health policies and programs.
2. Conduct a comprehensive review of scientific evidence related to a public health issue, concern or intervention.
3. Describe the roles that epidemiology and biostatistics serve in the discipline of public health, and be able to describe a public health problem in terms of magnitude, people, time, and place.
4. Apply proper terminology and definitions used in biostatistics and epidemiology.
5. Identify key sources of data for biostatistical and epidemiologic studies.
6. Interpret, articulate, and critique results of statistical and epidemiological analyses found in public health studies.
7. Explain the importance of biostatistics and epidemiology for informing scientific, ethical, economic and political discussion of health issues.

### **Class Structure**

Classes are comprised of lectures and interactive discussions.

## Instruction Schedule

Week	Date	Instructor	Lecture topics with Foundational Competency (MPH) or ABE Concentration Competency (ABE)	Text Reading	Discussion Paper
1	9/5	NM Gatto	Introduction to infectious disease epidemiology Review of Epi Methods (MPH1; ABE 3,4&5)	Nelson Chs. 1 & 2	-
2	9/12	NM Gatto	Immune system and host defense against infections (ABE 5) Critique of an epidemiologic study (MPH1&2; ABE 6) <b>Sign up for discussion papers</b>	Nelson Ch. 10	Wada NI et al. The effect of HAART-induced HIV suppression on circulating markers of inflammation and immune activation. AIDS 2015 Feb 20;29(4):463-7
3	9/19	S Davis	Outbreak epidemiology Ebola outbreak case study (MPH1&2; ABE 1,3,4&5) <b>Quiz#1</b>	Nelson Ch. 5	Baize S et al. Emergence of Zaire Ebola virus disease in Guinea. N Engl J Med 2014 Oct 9;371(15):1418-25
4	9/26	NM Gatto	Prevention of infectious diseases Vectorborne disease: West Nile (MPH 4&19; ABE3,4,5&6) <b>Final project topic due (review w/ instructor)</b>	Nelson Ch. 4 & 6 Nelson Ch. 25 Beltz Ch. 22	Samaan Z et al. Neuropsychological Impact of West Nile Virus Infection: An Extensive Neuropsychiatric Assessment of 49 Cases in Canada. PLoS One. 2016 Jun 28;11(6)
5	10/3	NM Gatto	Airborne disease transmission: Influenza (MPH 4&19; ABE3,4,5&6) <b>Quiz#2</b>	Nelson Ch. 15 Beltz Ch. 19	Cocoros et al. Obesity as a risk factor for severe influenza-like illness. Influenza Other Respir Viruses 2014 Jan;8(1):25-32.
6	10/10	P Ogata	Disease transmitted by blood and body fluid: HIV/AIDS (MPH1,2,4&19; ABE3,4,5&6)	Nelson Ch. 22 Beltz Ch. 16	Buchbinder SP et al. HIV pre-exposure prophylaxis in men who have sex with men and transgender women: a secondary analysis of a phase 3 randomised controlled efficacy trial. Lancet Infect Dis 2014 Jun;14(6):468-75.
7	10/17	NM Gatto R Sherman	Introduction to chronic disease epidemiology Overview of public health surveillance systems with a focus on cancer (MPH1&2; ABE1,5&7) <b>Quiz#3</b>	Remington Chs. 1-4	-

Week	Date	Instructor	Lecture topics with Foundational Competency (MPH) or ABE Concentration Competency (ABE)	Text Reading	Discussion Paper
8	10/24	NM Gatto	Major chronic conditions I: Diabetes (MPH 4&19; ABE3,4,5&6)	Remington Ch. 12	Hong et al. Hepatitis B and C virus infection and diabetes mellitus: A cohort study. <i>Sci Rep.</i> 2017 Jul 4;7(1):4606
9	10/31	NM Gatto	Major chronic conditions II: Obesity and Overweight (MPH1,2,4&19; ABE3,4,5&6) <b>Quiz#4</b>	Remington Ch. 11	Bernardi JR et al. Cesarean delivery and metabolic risk factors in young adults: a Brazilian birth cohort study. <i>Am J Clin Nutr</i> 2015 Aug;102(2):295-301.
10	11/7	<b>APHA Conference, No Class</b>			
11	11/14	NM Gatto	Selected chronic disease risk factors I: Tobacco use (MPH 4&19; ABE 4&6)	Remington Ch. 7	Auger N et al. Maternal use of illicit drugs, tobacco or alcohol and the risk of childhood cancer before 6 years of age. <i>Drug Alcohol Depend.</i> 2019 Jul 1;200:133-138
12	11/21	NM Gatto J Griffith	Selected chronic disease risk factors II: Physical Activity; Diet and Nutrition (MPH1,2,4&19; ABE 4&6) Research of chronic diseases <b>Quiz#5</b>	Remington Chs. 8 & 9	Amorim AB et al. Is occupational or leisure physical activity associated with low back pain? Insights from a cross-sectional study of 1059 participants. <i>Braz J Phys Ther.</i> 2019 May - Jun;23(3):257-265
13	11/28	<b>Thanksgiving holiday, No Class</b>			
14	12/5	NM Gatto	Major chronic diseases I: Cancer (MPH 4&19; ABE 3,4&6)	Remington Ch. 16	Papantoniou K et al. Shift work and colorectal cancer risk in the MCC-Spain case-control study. <i>Scand J Work Environ Health.</i> 2017 May 1;43(3):250-259.
15	12/12	J Morgan	Major chronic diseases II: Neurological diseases and mental disorders (MPH1,2,4&19; ABE 3,4&6) <b>Quiz#6</b>	Remington Ch. 18 & 19	Kendler KS et al. Smoking and Schizophrenia in Population Cohorts of Swedish Women and Men: A Prospective Co-Relative Control Study. <i>Am J Psychiatry.</i> 2015 November 1; 172(11): 1092–1100
16	12/19	<b>Paper Due</b> <b>Class Presentations (MPH 4&amp;19; ABE 1,2&amp;6)</b>			

Please note that I reserve the right to make modifications to this syllabus as necessary, depending on our pace and needs of the whole class.

### **Digital classroom**

I will use Canvas to provide you with lecture handouts and supplemental readings as well as for overall class communication. You are responsible for checking the course site periodically for changes to the syllabus or announcements. On days when lectures are presented in PowerPoint format, I will post lecture slides in note-taking format to Canvas in advance of class. I try very hard to post lecture slides the evening before lecture but can't always guarantee their availability during that timeframe or even prior to class, particularly for guest lecturers. The intention of the notes is to aid in learning, but not to replace note-taking or class attendance. They serve only as a structure for the lectures, and do not contain all the information you will be responsible for in the course.

### **Class rules/etiquette and use of electronic devices**

Please turn off cell phones and keep them off desks during class. Texting and emailing during class time are prohibited. Please use breaks provided during class accordingly. Laptops should be used for class-related note-taking only. I expect you to abide by these rules so that you do not become a source of disruption for the entire class. If you are unable to keep to these expectations, I will ask you to leave the class for the remainder of the class time.

Please use class time to ask questions that apply to course material and do not wait until the end of class to approach me or our TA with a question. All students benefit from questions and discussion, which also makes for a more interactive class.

### **Scientific and Professional Ethics**

The work you do in this course must be your own, including exams which must be completed independently. A career in the sciences will undoubtedly involve building on, reacting to, criticizing, and analyzing the work of others. When you do this in this course and elsewhere, make sure to credit those who originated the work. It is critical to explicitly acknowledge when your work builds on someone else's ideas, including ideas of classmates, professors, and authors you read. If you ever have questions about drawing the line between others' work and your own, please ask me or our TA to provide guidance.

### **CGU Official Statement on Academic Honesty**

All students at Claremont Graduate University are expected to adhere to the highest standards of academic honesty in the performance of all academic work. A student shall be subject to discipline for any form of academic dishonesty, including (but not limited to) cheating, plagiarism, forgery, and the use of materials prepared by another (whether published or not, including commercially prepared materials) without appropriately crediting the source. Exams must be completed independently and without using cell phones, tablets, or computers to search or retrieve material. Any collaboration on answers to exams, unless expressly permitted by the instructor, may result in an automatic failing grade and possible expulsion from the Program.

Additional information on CGU's Policy on Academic Honesty can be found at:

<https://cgu.policystat.com/policy/2194316/latest/>.

In addition, Honnold Mudd Library has a number of resources on academic honesty and integrity, including the following online tutorial: <http://libraries.claremont.edu/achontutorial/pages/>.

### **Class Requirements and Assessment**

Points from a combination of class participation, quizzes, a discussion paper, and a paper with a presentation will be used to determine the course grade.

<b>Requirement (points)</b>	<b>Percent of grade</b>
Quizzes (5 @ 40 points each)	40%
Discussion paper (100 points)	20%
Final paper (125 points)	25%
Final paper presentation (50 points)	10%
Class participation (25 points)	5%
<b>Total (500 points)</b>	<b>100%</b>

### **Quizzes**

Six quizzes will be administered during the semester; you may drop their lowest quiz score. Quizzes assess your comprehension of material from the lectures and readings, require you to apply epidemiologic methods to problems relevant to public health practice and to select appropriate qualitative and quantitative approaches for a given context. The quizzes will include multiple choice and short-answer questions and will be a closed book/note format. Each quiz will cover material presented since the previous quiz. There will be no make-up quizzes unless a valid reason is provided in advance and approved by me.

### **Discussion Papers**

Students will read and interpret results from published papers in the epidemiologic literature that are assigned as the supplemental reading for a given week. You will lead the class in a discussion of the articles, articulating your review and critique of the article following a format that I provide as part of the "Elements of a Study Critique". Each student will review one article, covering both the overview and critique (i.e., Part I and Part II of the "Elements of a Study Critique") and turn in written responses to the "Elements of a Study Critique" discussion questions. You should also prepare 3 questions to engage the class in discussion and that will accompany your presentation of the articles.

### **Final project; paper with presentation**

The final project will consist of a review and presentation of the epidemiology of an infectious disease or chronic condition/disease of interest. The project will build your knowledge in a topic area, increase proficiency in qualitative data collection methods and with synthesizing available literature, and provide an opportunity to develop audience-appropriate communication skills both in writing and through oral presentation formats.

Instructions: Select an infectious disease or chronic condition/disease of interest to you. Clear your topic with me on or before class on 9/26, and prior to beginning work on your project. Research your selected disease or condition, and present the following topics in your paper and presentation:

- Provide an introduction to your selected health problem.
- Describe the incidence and prevalence, morbidity and mortality in the United States.
- Describe trends in: population subgroups (person); geographical location (place, environment); time (time); biological, social (agent).
- Present what is known about the natural history of the disease, transmission and pathogenesis.

- What are some of the risk factors associated with the disease/condition? Present these based on the strength of evidence.
- What diagnostic and screening methods are available and being used?
- Describe the intervention/prevention methods applied historically and currently available.
- From your review of the literature and your understanding of the disease/condition, discuss one implication of the epidemiology of the health problem for public health professionals.

Suggested resources to identify a health condition/disease of interest:

- For communicable disease: Los Angeles County Department of Public Health: <http://publichealth.lacounty.gov/acd/Diseases.htm>
- For chronic disease: The Centers for Disease Control and Prevention: <http://www.cdc.gov/chronicdisease/>
- For cancer: The Surveillance, Epidemiology and End Results: [www.seer.cancer.gov](http://www.seer.cancer.gov)
- For environmental health topics: The US Environmental Protection Agency: [www.epa.gov](http://www.epa.gov)
- For occupational health topics: The Occupational Health and Safety Administration: [www.osha.gov](http://www.osha.gov)

**Paper**

Format: the paper should be approximately 12-15 pages (including tables, graphs, figures), double-spaced, with 1-inch margins, using either Arial or Georgia 11pt or Times New Roman 12pt font. The list of references/bibliography is not counted in the page limits. Cite a minimum of 10 peer-reviewed studies published in journals. Other sources (textbooks, news articles, websites, etc.) are also acceptable. References should be in AJP format. Please use a professional, scientific writing style, and make sure the writing is your own. The expectation for graduate work is that you gather original sources such as peer-reviewed journal articles and synthesize the information in your own words into new text with your unique understanding of the information. The paper should be submitted to Canvas as a Word document (not in PDF format) using the naming convention "student last name\_CGH 314 final paper". Late submissions will be given a grade of a 0.

**Presentation**

Present your final project to class using PowerPoint or similar format. Class presentations are limited to 15 minutes for the presentation and 5 minutes for question and answer/class discussion. Please submit a PDF of your presentation slides to Canvas using the naming convention "student last name\_CGH 314 final presentation".

**Class Participation:**

Students are expected to attend classes and actively participate in all class activities including discussion. Note: you cannot participate if you are absent from class! I take into consideration the quality and frequency of students' contributions to class discussions in my determination of the participation grade. Students who are unable to attend class must notify the professor to obtain an excused absence. Unexcused absences or late attendance for three or more classes may result in a grade being lowered grade or an "incomplete" for the course. If you do have to miss a class, it is advised that you arrange to get notes from a fellow student.

## Grading system

Total Number of Points Earned for the Semester	Percentage range	Interpretation
465 - 500	93 – 100%	A Excellent performance
450 - 464	90 – 92%	A- Very good performance
435 - 449	87 – 89%	B+ Good performance
415 - 434	83 – 86%	B Acceptable performance
400 - 414	80 – 82%	B- Marginally acceptable performance
385 - 399	77 – 79%	C+ Below marginally acceptable performance
365 - 384	73 – 76%	C Passing, but below expectations for graduate work
350 - 364	70 – 72%	C- Below expectations for graduate work

## Other Resources

### **Accommodations for Students with Disabilities**

If you would like to request academic accommodations due to temporary or permanent disability, contact the CGU Dean of Students and Coordinator for Student Disability Services at [DisabilityServices@cgu.edu](mailto:DisabilityServices@cgu.edu) or 909-607-9448. Appropriate accommodations are considered after you have conferred with the Office of Disability Services (ODS) and presented the required documentation of your disability to the ODS.

### **Center for Writing & Rhetoric**

CGU's Center for Writing & Rhetoric is committed to helping you achieve the next level of excellence in the written word. Their mission is to foster an intellectually stimulating and supportive environment during all phases of the writing process. They seek to make writing an integral, fulfilling part of graduate education. The Center supports students from all fields, at any stage of the writing process, through individual consultations, video-conferencing, online support, and campus-wide workshops. We seek to enhance the graduate experience by offering student-centered programs that encourage collaboration, communication, and education. <https://www.cgu.edu/student-life/resources-support/writing-rhetoric/>

### **Mental Health Resources**

Graduate school is a context where mental health struggles can arise or be exacerbated. If you ever find yourself struggling, please ask for help. If you wish to seek out campus resources, here is some basic information: <https://www.cuc.claremont.edu/mcaps/>

Monsour Counseling and Psychological Services (MCAPS) is committed to promoting psychological wellness for all students at the Claremont Colleges. Professional and well-trained psychologists, psychiatrists, and post-doctoral and intern therapists offer support for a range of psychological issues in a confidential and safe environment. MCAPS is located at the Tranquada Student Services Center, 1st floor, 757 College Way, Claremont, CA 91711; (909) 621-8202. After hours emergency (909) 607-2000.

### **Title IX**

If I learn of any potential violation of CGU's gender-based misconduct policy (e.g., rape, sexual assault, dating violence, domestic violence, or stalking) by any means, I am required to notify the CGU Title IX Coordinator at [Deanof.Students@cgu.edu](mailto:Deanof.Students@cgu.edu) or (909) 607-9448. Students can request confidentiality from the institution, which

I will communicate to the Title IX Coordinator. If students want to speak with someone confidentially, the following resources are available on and off campus: EmPOWER Center (909) 607-2689, Monsour Counseling and Psychological Services (909) 621-8202, and The Chaplains of the Claremont Colleges (909) 621-8685. Speaking with a confidential resource does not preclude students from making a formal report to the Title IX Coordinator if and when they are ready. Confidential resources can walk students through all of their reporting options. They can also provide students with information and assistance in accessing academic, medical, and other support services they may need.

**Campus Security**

Campus security can be reached 24 hours/day at (909) 607-2000.