

## Introduction to Global Health

### University of California, Irvine

## SYLLABUS

### Catalogue Description

**Introduction to Global Health (4).** Provides a foundational interdisciplinary understanding of global health issues and their importance to societal goals, including poverty reduction, sustainable development, and international contexts of wellness and disease prevention. Covers major communicable and non-communicable diseases and demographic patterns of disease burden.

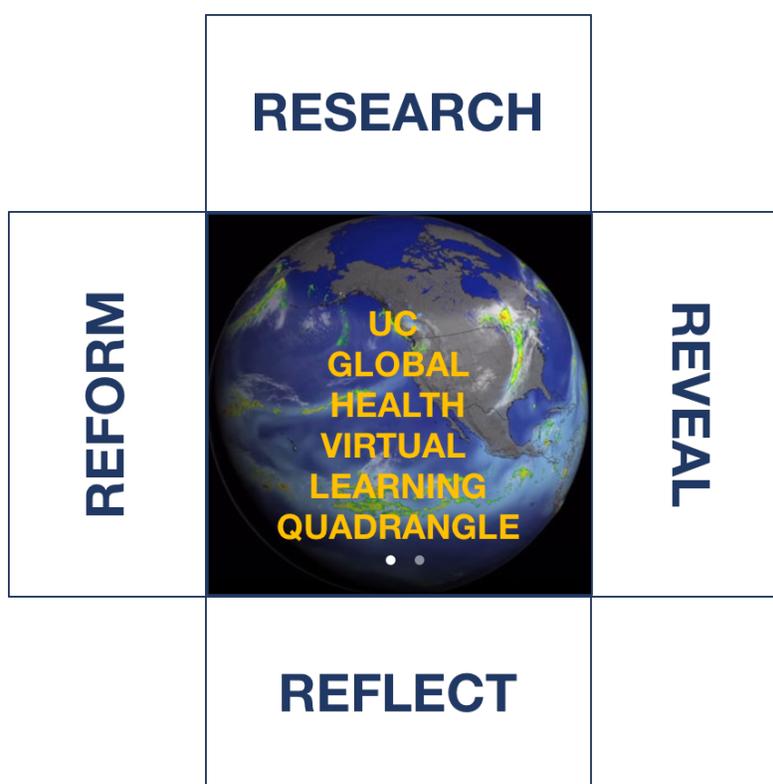
### Learning Objectives

By successfully completing the course, students will be enabled to:

1. Describe the features of the global burden of disease and disability, including the major causes of morbidity and mortality in different parts of the world, and how the risk factors for disease and vulnerable populations vary in the geographical and socioeconomic regions defined by the World Health Organization.
2. Explain the rationale, approach main methodologies, data gaps and assumptions underlying estimations of the global burden of disease for specific populations.
3. Describe the physical, socioeconomic, political, cultural, and environmental risk factors and their interactions that contribute to disparities in disease burden across different populations.
4. Describe various international belief systems, practices, and cultural factors that contribute to strategies for preventing and curing diseases in different parts of the world.
5. Describe major national and global action plans to reduce specific risk factors contributing to the global burden of disease.

## Methodology

This fully online course covers core concepts of global health and the translational and implementation science strategies to use fundamental discoveries for reducing disease burden globally. Each course module engages student participatory learning through the learning “**Quadrangle**” approach (Research, Reveal, Reflect, and Reform), whereby for each topic, students conduct independent, collaborative, and problem solving activities. Case studies, essential literature, video-taped presentations, and shared white-board documentaries are used throughout the course.



## Grading Criteria

ACTIVITIES	CONTRIBUTION TO FINAL GRADE
<b>EIGHT “Learning Quadrangle” Activities</b> Research (2 points each) Reflect (2 points each) Reveal (2 points each) Reform (4 points each)	80%
Final Examination	20%
<b>TOTAL</b>	<b>100%</b>

## WEEK 1

### UNIT: Introduction and Orientation

<b>LEARNING OBJECTIVES</b>	<b>LEARNING QUADRANGLE ACTIVITIES</b>  (PREPARATION)	<b>LEARNING QUADRANGLE ACTIVITIES</b>  (ASSESSMENT)  <b>Approximate – please see Canvas course website for details</b>
<p>1. Explain the rationale for global health as a discipline of study; the differences, similarities, and overlaps with “international health”, “public health”, “community health”, and “population health”.</p> <p>2. “Describe the contributions of major academic disciplines and topics under the rubric of global health and the structure of institutions that engage in global health”</p>	<p><b>RESEARCH</b> Overview video on rationale for global health and pertinent research and education programs in the UC System and beyond.</p> <p>Literature review – find one peer-reviewed article published in 2017 that you believe captures the essence of “global health”.</p> <p><b>REVEAL</b> Submit a 500-word summary of the article of the article that you identified onto the course’s “<b>virtual quadrangle</b>”. Find and also submit 10 images from the internet that reveal past or current situations anywhere in the world that tell a story about the topic described in the article.</p> <p><b>REFLECT</b> Review all the other students’ postings about their topic and images in the “<b>virtual learning quadrangle</b>”. Submit a 500-word article on your reflection about the breadth and depth of topics covered. Where are the gaps in knowledge? Why do these global health issues persist?</p> <p><b>REFORM</b> Identify through “Google Scholar” or other bibliographic databases on peer-reviewed research, one article each on your global health</p>	<p><b>Research</b> = 2 points for prompt submission and quality of literature review.</p> <p><b>Reveal</b> = 2 points for Whiteboard presentation of synthesis report on literature review.</p> <p><b>Reflect</b> = 2 points for reflection on cohort reports. What are the gaps in your own findings and understanding?</p> <p><b>Reform</b> = 4 points for case-study analysis and creative solution to global health question.</p>

	<p>topic that focus on basic science (e.g. laboratory), patient-oriented (clinical), and population-level findings. In 1,000 words, summarize the articles and offer an explanation for how the basic science results have contributed to disease prevention at the population level. If the disease has not been eradicated? What are your recommendations for reform?</p>	
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<b>WEEK 2</b>  <b>UNIT: The Global Burden of Disease</b>		
<b>LEARNING OBJECTIVE</b>	<b>LEARNING QUADRANGLE ACTIVITIES</b>  <b>(PREPARATION)</b>	<b>LEARNING QUADRANGLE ACTIVITIES</b>  <b>(ASSESSMENT)</b>
<p>Describe the features of the global burden of disease and disability, including the major causes of morbidity and mortality in different parts of the world, and how the risk factors for disease and vulnerable populations vary in the geographical and socioeconomic regions defined by the World Health Organization.</p>	<p><b>RESEARCH</b> Select a disease of significance to global health and find peer-reviewed publications that describe the prevalence of the disease in one high-economic resource country, one middle-resource, and one low-resource country.</p> <p><b>REVEAL</b> Write and submit into the “virtual quadrangle” a 500-word summary of the articles to highlight the differences. Find and submit 10 internet images of the conditions in each of the three countries to support your ideas on why the disease burden is different or similar in each of the countries.</p> <p><b>REFLECT</b> Visit the “<b>virtual learning quadrangle</b>” to review the submissions of other students enrolled in our course. Write a 500-word essay on how the disease and country combinations that you selected compared with the others. Which submission had more impact on you than the one you selected? Which submission had less impact?</p>	<p><b>Research</b> = 2 points for prompt submission and quality of literature review.</p> <p><b>Reveal</b> = 2 points for White-board presentation of synthesis report on literature review.</p> <p><b>Reflect</b> = 2 points for reflection on cohort reports. What are the gaps in your own findings and understanding?</p> <p><b>Reform</b> = 4 points for case-study analysis and creative solution to global health question.</p>

## WEEK 2

### UNIT: The Global Burden of Disease

LEARNING OBJECTIVE	LEARNING QUADRANGLE ACTIVITIES (PREPARATION)	LEARNING QUADRANGLE ACTIVITIES (ASSESSMENT)
	<b>REFORM</b> Write and submit a 1,000-word essay on your reform recommendations to bring the country with the highest disease burden to the level of the country with the lowest disease burden.	

## WEEK 3

### UNIT: Varieties of Health Beliefs and Practices

LEARNING OBJECTIVE	LEARNING QUADRANGLE ACTIVITIES (PREPARATION)	LEARNING QUADRANGLE ACTIVITIES (ASSESSMENT)
Describe the varieties of historical and current beliefs on the causes of disease and practices to prevent and cure diseases in different populations, religions, cultures, and countries.	<b>RESEARCH</b> Find one peer-reviewed article that describes a health believe or practice that is different from your own.  <b>REVEAL</b> Write a 500-word summary of the article and find and submit to the “ <b>virtual learning quadrangle</b> ”, 10 internet images of places, people, or icons that represent the health believe or practice that was described in the article.  <b>REFLECT</b> Visit the virtual learning	<b>Research</b> = 2 points for prompt submission and quality of literature review.  <b>Reveal</b> = 2 points for White-board presentation of synthesis report on literature review.  <b>Reflect</b> = 2 points for reflection on cohort reports. What are the gaps in your own findings and understanding?  <b>Reform</b> = 4 points for case-study analysis and creative solution to global

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	<p>quadrangle to review the information submitted by your course-mates. Write a 500-word summary on one health believe or practice that surprised you, or that you can explain.</p> <p><b>REFORM</b> Behavior change is one the most difficult implementation strategies in global health. Write a 1,000-word essay on how the health believe or practice that you identified affects the global burden of disease in a specific population or country.</p>	<p>health question.</p>

## WEEK 4

### UNIT: Pandemics

LEARNING OBJECTIVE	LEARNING QUADRANGLE ACTIVITIES (PREPARATION)	LEARNING QUADRANGLE ACTIVITIES (ASSESSMENT)
<p>1. Describe the conditions that must be met for the World Health Organization to declare a disease outbreak or an epidemic as a “pandemic”.</p> <p>2. Describe different forms of responses to control pandemics and the structure of institutions responsible for implementing responses</p>	<p><b>RESEARCH</b> Find 10 peer-reviewed articles published in the past 100 years on a specific pandemic.</p> <p><b>REVEAL</b> Write and submit a 500-word summary of the description of the pandemic. How did it originate? How many people were affected? In what parts of the world? How was the pandemic finally controlled? Find and submit 10 internet pictures about the pandemic that you selected.</p> <p><b>REFLECT</b> Visit the virtual learning quadrangle to review the work of other students on pandemics. Write a 500-word summary of your reflection on the various pandemics. What do they have in common? What are the differences?</p> <p><b>REFORM</b> Write a 1,000-word article on the conditions that must exist to prevent a specific pandemic.</p>	<p><b>Research</b> = 2 points for prompt submission and quality of literature review.</p> <p><b>Reveal</b> = 2 points for Whiteboard presentation of synthesis report on literature review.</p> <p><b>Reflect</b> = 2 points for reflection on cohort reports. What are the gaps in your own findings and understanding?</p> <p><b>Reform</b> = 4 points for case-study analysis and creative solution to global health question.</p>

## WEEK 5

### UNIT: Natural and Anthropogenic Disasters

<b>LEARNING OBJECTIVE</b>	<b>LEARNING QUADRANGLE ACTIVITIES</b> <b>(PREPARATION)</b>	<b>LEARNING QUADRANGLE ACTIVITIES</b> <b>(ASSESSMENT)</b>
<p>Describe the physical demographic, socioeconomic, and other risk factors leading to natural or anthropogenic disasters that stimulate global health response.</p> <p>2. Describe the features of humanitarian and global health professional responses to natural disasters, for examples tsunamis, earthquakes, fires, floods.</p>	<p><b>RESEARCH</b> Find 10 peer-reviewed articles published in the past 100 years on a specific natural disaster that is relevant to global health response.</p> <p><b>REVEAL</b> Write and submit a 500-word summary of the description of the natural or anthropogenic disaster. How did it originate? How many people were affected? In what parts of the world? How was the pandemic finally controlled? Find and submit 10 internet pictures about the pandemic that you selected.</p> <p><b>REFLECT</b> Visit the virtual learning quadrangle to review the work of other students on natural or anthropogenic disaster. Write a 500-word summary of your reflection on the various disasters. What do they have in common? What are the differences?</p> <p><b>REFORM</b> Write a 1,000-word article on the conditions that must exist to prevent a specific natural or anthropogenic disaster.</p>	<p><b>Research</b> = 2 points for prompt submission and quality of literature review.</p> <p><b>Reveal</b> = 2 points for White-board presentation of synthesis report on literature review.</p> <p><b>Reflect</b> = 2 points for reflection on cohort reports. What are the gaps in your own findings and understanding?</p> <p><b>Reform</b> = 4 points for case-study analysis and creative solution to global health question.</p>

## WEEK 6

### UNIT: Mental Health

<b>LEARNING OBJECTIVE</b>	<b>LEARNING QUADRANGLE ACTIVITIES (PREPARATION)</b>	<b>LEARNING QUADRANGLE ACTIVITIES (ASSESSMENT)</b>
<p>1. Describe the main features of the global burden of mental diseases (neuropsychiatric conditions).</p> <p>2. Explain why mental health issues are the highest sources of illness and disabilities worldwide.</p> <p>3. Describe current approaches for preventing and managing mental diseases globally and in specific countries.</p>	<p><b>RESEARCH</b> Find 10 peer-reviewed articles published in the past 10 years on a specific mental disease. Make sure to include some basic science research, clinical research, and population-level research articles among the 10 articles that you selected.</p> <p><b>REVEAL</b> Write a 500-word summary of the disease burden associated with the mental illness that you selected. Who is affected the most? In what part of the world or country?</p> <p><b>REFLECT</b> Visit the “<b>virtual learning quadrangle</b>” to review the work submitted by your course-mates. Write a 500-word essay on your reflection. Which disease had more impact on you than the one you selected? Which disease had less impact on you? Explain why.</p> <p><b>REFORM</b> Write a 1,000-word essay on the strategies currently used to prevent or manage the mental disease that you reviewed. What are the most difficult impediments against reducing the burden of the disease?</p>	<p><b>Research</b> = 2 points for prompt submission and quality of literature review.</p> <p><b>Reveal</b> = 2 points for White-board presentation of synthesis report on literature review.</p> <p><b>Reflect</b> = 2 points for reflection on cohort reports. What are the gaps in your own findings and understanding?</p> <p><b>Reform</b> = 4 points for case-study analysis and creative solution to global health question.</p>

## WEEK 7

### UNIT: Global Disease Prevention and Eradication (e.g. Smallpox, Polio, Global/National Action Plans on Mercury)

<http://www.unep.org/chemicalsandwaste/NationalActionPlan/tabid/53985/Default.aspx>

LEARNING OBJECTIVE	LEARNING QUADRANGLE ACTIVITIES (PREPARATION)	LEARNING QUADRANGLE ACTIVITIES (ASSESSMENT)
<p>1. Describe the basic science, translational science, and implementation science accomplishments that led to the eradication of smallpox.</p> <p>2. Explain why eradicating diseases are increasingly difficult, but not impossible, if certain conditions are fulfilled.</p> <p>3. Describe the features of the national and global action plans to prevent diseases such as mercury poisoning.</p>	<p><b>RESEARCH</b></p> <p>1. Find 10 peer-reviewed articles published in the past 10 years on a disease that is targeted for global eradication (for example, polio), or that you believe should be targeted for eradication.</p> <p>2. Find and read the national action on preventing a disease for a particular country. Find and read 10 peer-reviewed articles that expand understanding of the challenges and potential solutions</p> <p><b>REVEAL</b></p> <p>Write a 500-word summary of the disease burden associated with the disease targeted for prevention and/or eradication. Who is affected? Where are they? Why does the disease persist in the population? Find and submit 10 internet pictures about the disease. Find and submit 10 internet pictures about the people affected by the preventable disease and the conditions that support persistence of the disease.</p> <p><b>REFLECT</b></p> <p>Visit the “<b>virtual learning quadrangle</b>” and reflect on the submissions of your course-mates. Write a 500-word essay on your reflection. What are the gaps in knowledge regarding disease prevention and eradication, nationally and globally?</p> <p><b>REFORM</b></p> <p>Imagine that you have been appointed as the minister of health for a country to develop a national action plan to prevent or eradicate a disease. Write a 1,000-word essay describing the major components of the plan.</p>	<p><b>Research</b> = 2 points for prompt submission and quality of literature review.</p> <p><b>Reveal</b> = 2 points for White-board presentation of synthesis report on literature review.</p> <p><b>Reflect</b> = 2 points for reflection on cohort reports. What are the gaps in your own findings and understanding?</p> <p><b>Reform</b> = 4 points for case-study analysis and creative solution to global health question.</p>

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LEARNING OBJECTIVE	LEARNING QUADRANGLE ACTIVITIES (PREPARATION)	LEARNING QUADRANGLE ACTIVITIES (ASSESSMENT)

## WEEK 8

### UNIT: Global Clinical Care and Therapeutics (e.g. UN Global Action Plan on Antimicrobial Resistance) -

[http://www.wpro.who.int/entity/drug\\_resistance/resources/global\\_action\\_plan\\_eng.pdf](http://www.wpro.who.int/entity/drug_resistance/resources/global_action_plan_eng.pdf)

LEARNING OBJECTIVE	LEARNING QUADRANGLE ACTIVITIES (PREPARATION)	LEARNING QUADRANGLE ACTIVITIES (ASSESSMENT)
Describe the features of the national and global action plans to combat Antimicrobial Resistance.	<b>RESEARCH</b> Find and read the U.S. national and the WHO action plans to combat antimicrobial and antibiotic resistance (AMR/ABR). Find and read 10 peer-reviewed articles that expand understanding of the challenges and potential solutions.  <b>REVEAL</b> Write a 500-word summary of the articles and the challenges and opportunities facing AMR/ABR control. Find and submit 10 internet pictures about the people affected by AMR/ABR and the conditions that support the presence of the AMR/ABR in the population.	<b>Research</b> = 2 points for prompt submission and quality of literature review.  <b>Reveal</b> = 2 points for White-board presentation of synthesis report on literature review.  <b>Reflect</b> = 2 points for reflection on cohort reports.

## WEEK 8

### UNIT: Global Clinical Care and Therapeutics (e.g. UN Global Action Plan on Antimicrobial Resistance) -

[http://www.wpro.who.int/entity/drug\\_resistance/resources/global\\_action\\_plan\\_eng.pdf](http://www.wpro.who.int/entity/drug_resistance/resources/global_action_plan_eng.pdf)

LEARNING OBJECTIVE	LEARNING QUADRANGLE ACTIVITIES  (PREPARATION)	LEARNING QUADRANGLE ACTIVITIES  (ASSESSMENT)
	<p><b>REFLECT</b></p> <p>Visit the “<b>virtual learning quadrangle</b>” and reflect on the submissions of your course-mates. Write a 500-word essay on your reflection. What are the gaps in knowledge regarding AMR/ABR? What are the trade-offs that societies and countries must make to accomplish prevention? What are the international components?</p> <p><b>REFORM</b></p> <p>Imagine that you have been appointed as the minister of health for a country where the national action plan to combat AMR/ABR is being implemented. Write a 1,000-word essay on how you would ensure the success of the plan.</p>	<p>What are the gaps in your own findings and understanding?</p> <p><b>Reform</b> = 4 points for case-study analysis and creative solution to global health question.</p>

**WEEK 9****UNIT: Global Health Security Agenda (GHSA) - <https://www.ghsagenda.org>**

<b>LEARNING OBJECTIVE</b>	<b>LEARNING QUADRANGLE ACTIVITIES</b>  <b>(PREPARATION)</b>	<b>LEARNING QUADRANGLE ACTIVITIES</b>  <b>(ASSESSMENT)</b>
<p>Describe the main features of the Global Health Security Agenda, including the U.S. Executive Order and the implementation of the GHSA in different countries.</p>	<p><b>RESEARCH</b> Find and read the Global Health Security Agenda and the action plan for a particular country. Find and read 10 peer-reviewed articles that expand understanding of the challenges and potential solutions.</p> <p><b>REVEAL</b> Write a 500-word summary of the articles and the challenges and opportunities facing the GHSA. Find and submit 10 internet pictures about the difficulties of implementing GHSA in a particular country.</p> <p><b>REFLECT</b> Visit the “<b>virtual learning quadrangle</b>” and reflect on the submissions of your course-mates. Write a 500-word essay on your reflection. What are the gaps in knowledge regarding GHSA? What are the trade-offs that societies and countries must make to accomplish prevention? What are the international components?</p> <p><b>REFORM</b> Imagine that you have been appointed as the minister of health for a country where the national action plan for GHSA is being implemented. Write a 1,000-word essay on how you would ensure the success of the plan.</p>	<p><b>Research</b> = 2 points for prompt submission and quality of literature review.</p> <p><b>Reveal</b> = 2 points for White-board presentation of synthesis report on literature review.</p> <p><b>Reflect</b> = 2 points for reflection on cohort reports. What are the gaps in your own findings and understanding?</p> <p><b>Reform</b> = 4 points for case-study analysis and creative solution to global health question.</p>

## WEEK 10

### UNIT: Summary and Conclusion

<b>LEARNING OBJECTIVE</b>	<b>LEARNING QUADRANGLE ACTIVITIES (PREPARATION)</b>	<b>LEARNING QUADRANGLE ACTIVITIES (ASSESSMENT)</b>
<p>1. Describe the current challenges and future opportunities for global health.</p> <p>2. Explain the connection of global health to other societal sectors.</p> <p>3. Explain the determinants of disparities in global health, international, population, scientific, and across difference types of diseases.</p>	<p><b>RESEARCH</b> Select a disease and population combination that will be the target of your final global health report. Identify at least 20 peer-reviewed articles on the disease. One-third of the articles should deal with basic science, one-third on patient-oriented research, and one-third on population health.</p> <p><b>REVEAL</b> Write and submit a 2,500-word review article on the disease burden/population combination.</p> <p><b>REFLECT</b> Produce ten PowerPoint slides to introduce the disease to a panel of global health funders.</p> <p><b>REFORM</b> Write a 2,000-word proposal to conduct research or program implementation to reduce an aspect of the global burden of disease.</p>	<p><b>Research</b> = 2 points for prompt submission and quality of literature review.</p> <p><b>Reveal</b> = 3 points for White-board presentation of synthesis report on literature review.</p> <p><b>Reflect</b> = 5 points for reflection on cohort reports. What are the gaps in your own findings and understanding?</p> <p><b>Reform</b> = 10 points for case-study analysis and creative solution to global health question.</p>

## Resources

Murray et al. 2013. Comprehensive Systematic Analysis of Global Epidemiology: Definitions, Methods, Simplification of DALYs, and Comparative Results from the Global Burden of Disease Study 2010. Background to the Lancet special issue.

**Case Study in Global Health:** <http://www.casestudiesforglobalhealth.org>

## Policy on Academic Honesty

“The University is an institution of learning, research, and scholarship predicated on the existence of an environment of honesty and integrity... academic dishonesty is unacceptable and will not be tolerated at the University of California, Irvine. Cheating, forgery, dishonest conduct, plagiarism, and collusion in dishonest activities erode the University's educational, research, and social roles.”

“Students have responsibility for:

1. Refraining from cheating and plagiarism.
2. Refusing to aid or abet any form of academic dishonesty.
3. Notifying professors and/or appropriate administrative officials about observed incidents of academic misconduct. The anonymity of a student reporting an incident of academic dishonesty will be protected.”

Copying text from web sites or other papers without attribution is in an act of plagiarism. Plagiarism and other acts of academic dishonesty will be reported to the university, and students engaging in those acts may receive a failing grade for the course. More information is available at [http://www.senate.uci.edu/senateweb/9\\_IrvineManual/3ASMAppendices/Appendix08.ht](http://www.senate.uci.edu/senateweb/9_IrvineManual/3ASMAppendices/Appendix08.ht)

# Acknowledgement

## Principal Investigators

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## Course Development

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