

NASE-318: GLOBAL HEALTH CHALLENGES
-IN A CHANGING WORLD-
(GHANA EDITION)

Syllabus and Course Information

Spring 2020

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Course Description:

Health, the environment and prosperity are inextricably entwined, and their entanglement can ensnare entire countries in cycles of poverty and disease. This course will explore the environmental and institutional determinants of public health at the community level, emphasizing the Ghanaian experience. We will study how disease keeps people poor and how poverty affects disease risk. Environmental stewardship is key to maintaining healthy living conditions and sustaining development without destroying resources and ecosystem services essential to the livelihood and well-being of communities. We will examine the diverse forces effecting changes in climate, landscape and society, and how they in turn affect public health and development, as well as practical solutions to these problems involving both existing and emerging technologies. Each topic will be illustrated with specific examples from Ghana and we will get to experience firsthand the issues we discuss during one week of travel in Ghana during Spring break.

Course Prerequisites: None

Course Goals:

That students come to understand how most of the world's population lives, how Ghana is representative of much of the developing world, the challenges to health and well-being from living in a developing country, how important health is to the economic well-being of individuals, communities and nations and what can be done to improve community health with existing and emerging technologies.

Learning Objectives:**Knowledge**

Students will be able to list, prioritize and describe the major forces of change at large in the world today that influence health in Ghana and other developing countries.

Students will be able to delineate the trends and trajectories of diverse agents of global change and discuss potential solutions to the consequences they pose to human health.

Given a specific disease threat of global importance, the student will be able to identify its root causes, influences and consequences in directly-affected populations.

Given a particular issue in global health, the student will be able to describe how their own lives might be affected both directly and indirectly by that issue.

Given a specific natural or anthropogenic trend that affects environments and/or populations, the student will be able to predict how particular health issues are impacted.

Given a particular industry with global exposure, the student will be able to describe how such industries are affected by specific issues in global health, and how they, in turn, affect the health of their workers and the communities in which they operate.

Given a particular health issue of public importance, the student will be able to describe the measures currently used to remedy a particular problem, the relative effectiveness of such remedies and what obstacles prevent such remedies from having a greater effect.

Given a particular emerging technology, the student will be able to describe how such technologies can be employed against particular health issues, and what risks and limitations affect the ultimate success of such technologies.

Skills

From a given set of starting conditions, students will be able to accurately project population trends, epidemic curves and other dynamic processes related to global changes and health.

Students will be able to interpret current events, including natural disasters and complex emergencies and attribute the factors that led up to or complicated the adverse event, predict the health consequences of the event and describe ways that the adverse event could have been prevented or could be remedied.

Given a case study describing a particular health issue and a particular set of environmental and political conditions, the student will be able to describe a set of appropriate technical and political solutions to the problem posed.

Perspectives

Students will come to appreciate other students' direct personal experiences in global health or share their own experiences.

Students will understand the implications of their own decisions and behavior (lifestyle choices, votes, investment decisions) on the lives of others around the world, now and in the future.

CLASSROOM: All cell phones must be turned off during lectures. Laptops are permitted for note taking.

EXPECTATIONS

Students are expected to make every effort to arrive at class on time and to attend all scheduled classes. Repeated absences due to illness must be verified with a note or e-mail from a clinician. Students should notify the instructor in advance regarding planned absences due to interviews, religious observances or other college-approved activities. Multiple, unexcused absences will cause points to be deducted from the attendance and participation grade. Chronic tardiness can also affect this grade adversely. Students will remain responsible for timely completion of assignments given while absent.

STATEMENT ON ACADEMIC INTEGRITY

Students are expected to act ethically in the classroom. They will maintain academic honesty in performing their own work or attributing it properly. They shall promote ethical practices among their fellow students and faculty and take responsible action when they have reason to suspect dishonesty or unethical practices.

I value your perspective and opinions. I often overlook certain deficiencies in writing style and execution as long as a student is able to clearly communicate their own thoughts and perspectives in a paper or assignment. Assignments should always be prepared and presented using each student's own words. It is never acceptable to present the work of others as your own without attribution. Evidence of misattribution or plagiarism will be disciplined according to standard institutional policy.

Disabilities:

Bentley University abides by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 which stipulate no students shall be denied the benefits of an education solely by reason of a disability. Disabilities covered by law include, but are not limited to, learning disabilities, visual, hearing, and mobility impairments, medical conditions, psychiatric disorders, and temporary disabilities. If you have a documented disability that may have some impact on your work in this course and for which you may require academic accommodations, please call as soon as possible to make an appointment with Stephanie Brodeur, Coordinator of Disability Services, in

LaCava 166 (Office of Counseling and Student Development, 781.891.2274) within the first four weeks of the semester so that such accommodations may be arranged.

ESOL (English for Speakers of Other Languages)

The ESOL Center has faculty who specialize in teaching English to speakers of other languages (ESOL) and can provide support for helping students achieve success in their courses across the curriculum. Students can make appointments online (<http://www.bentley.edu/english/esol.cfm>), call x2021 for an appointment, or just drop in the center to see if a faculty tutor is available. The ESOL Center is located on the ground floor of the Bentley Library and has hours available Monday through Friday.

Assigned Readings:

Mandatory readings will occasionally be provided in class from published articles. Optional readings reinforcing the lectures can be obtained from the following textbook:

Skolnik, Richard. 2015. Global Health 101 (Essential Public Health) 3rd Edition. Jones and Bartlett Learning. Sudbury Massachusetts. Series Editor: Richard Riegelman. ISBN-10: 07763797510, ISBN-13: 978-0763797515, 576 pp. \$96.60

Case Studies:

Students may sometimes be assigned a set of readings in support of a particular ‘case study’ for which a set of short, essay-like questions may be provided. These ‘cases’ will investigate a specific or local example of the broader concepts covered in lecture.

Grading:

- 5% - Attendance
- 15% - Participation (including daily journals, reflection sessions, field exercises, and group projects in Ghana)
- 10% - Homework assignments (5 total, each graded P/F)
- 50% - Two Examinations
- 25% - Final Essay

Field Activities in Ghana

- Water Testing
 - 1. Coliform
 - 2. Chlorine

- Air Pollution
 - 1. Ozone

Soil Testing

1. Nitrogen, Potassium and Phosphorus content of improved and unimproved soils.

Mosquito Sampling and Identification

1. Larvae
2. Adults (using CDC traps)
3. Ovitrap

Formal Lectures:**Session 1. Course Introduction / Ghana Orientation**

Reading: Chapter 1 (Skolnik)

Discussion of course outline and expectations.

Ghana travel orientation and logistics

Part I: Dominant issues in global health**Session 2. Infectious Disease - The Big Three: (1) HIV/AIDS and (2) Tuberculosis**

Reading: Chapter 11 (Skolnik)

History and progression of HIV/AIDS across the globe. Interactions between HIV and tuberculosis. Complications of prevention and treatment.

Session 3. Infectious Disease - The Big Three: (3) Malaria

Reading: Chapter 11 (Skolnik)

The biology, ecology and epidemiology of malaria transmission

Session 4. Infectious Disease – Zika and other Vector-borne infections

Reading: Article to be Provided

Zika, Dengue, Chikungunya and other vector-borne threats. Epidemiology and control.

Session 5. Infectious Disease - The Neglected Tropical Diseases (NTDs)

Reading: None

Debilitating parasitic tropical diseases that afflict developing countries.

Session 6. Maternal and Child Health and Population Growth

Reading: Chapters 9 and 10

Health hazards of pregnancy and early childhood including pneumonia and water-borne illnesses.

Session 7. FIRST EXAM / Orientation Session**Session 8. Poverty and Disease**

Reading: Chapter 3 (Skolnik)

How do poverty and education affect health? What is the cost of illness? How cost effective are public health interventions?

Session 9. Pollution, Sanitation and Health

Reading: Chapter 7 (Skolnik)

How does environmental contamination and degradation affect health? What remedies exist for polluted water, air and soil?

Session 10. Changing Landscapes, Climates and Biodiversity

Reading: (Article to be provided)

How can development affect exposure to disease? What are the effects of deforestation (and reforestation) on disease? What diseases are promoted by urbanization? What diseases are promoted by global trade and human movement?

Session 11. Malnutrition, Food Insecurity and “Complex Emergencies”

Reading: Chapter 8 (Skolnik)

How do market forces and crop choice affect nutrition? What is the importance and status of nutrition in developing countries? How can food security be increased? How does agriculture affect the spread of infectious disease?

Session 12. Sustainable and Appropriate Technologies for Developing Countries

Reading: Chapter 16 (Skolnik)

What factors inhibits the development of new products and technologies against global health problems? What policies might promote the development of such technologies?

Session 13. SECOND EXAM

6-15 March – Spring Break Travel to Ghana

Session 14. (2 weeks after return) Group Project Presentation: Photo Journal

Three groups present and narrate photo journal depicting at least ten health challenges and/or coping strategies observed during visits to urban and rural locations in Ghana

Final Exam Period (TBD) – Turn in Final Essays