

DEPARTMENT OF GLOBAL HEALTH
COLLEGE OF PUBLIC HEALTH
UNIVERSITY OF SOUTH FLORIDA

ECOLOGY AND HEALTH

PHC 6934 (3 Credit Hours)

Course Syllabus - Summer Session (May 15 to July 14, 2006)

Day/Time and Class Location TBA

Instructor:

Alfonso Ruiz DVM, MS, PhD
Global Health Department
USF College of Public Health
13201 Bruce B. Downs Blvd.
Tampa, Florida, 33612
e-mail: aruiz@hsc.usf.edu
ruizalfo@hotmail.com

Instructor Office Hours:

By appointment (Office location: TBA)

I- Course Description:

Human health is determined by a wide variety of factors resulting from the multiple interactions of the human being with its surrounding environment: physical, biological, economical and social. Knowledge of these interactions in a specific locality provides important information for preventive measures and timely actions. This course addresses selected knowledge and concepts from different sciences to enable the participant to analyze the ecosystems where humans live, identifying health determinants and their impact on health. The concepts and hypotheses discussed during the course would be base for the development of local or regional interdisciplinary research aimed to solve health issues which depends of the information generated from other sciences. It will describe the variety of mechanisms of the population dynamics, social disparities, climate change, economic development, and animal migrations in the countries, regions and around the world, and will explain how these factors impact local and global health. The course will guide the student on the use of basic indicators and data to analyze health situation in a predictive manner of health events. It guides the participant to use properly ecological and health information in order to influence policy and decision making for local, regional and global health.

II- Course Objectives:

- To provide the student with diverse knowledge, concepts, models and hypothesis on different sciences to enable him/her to understand and identify the multiple relations between human ecological systems and their impact on local and/or global health.
- To guide the student on the adequate use of environmental, ecological and health indicators and knowledge needed for research and to influence policy and decision making.

III- Learning Outcomes

At the end of the course, the student will be able to:

- describe the phenomena of demographic dynamics, migration, urbanization, tourism, and animal displacement and their relation with human vulnerability to disease incidence and prevalence in the world;
- discuss diverse climate and environmental mechanisms causing change on living organisms and their ecosystems and explain how these changes affect public health; .
- discuss global concerns and global response strategies related to land use; energy and transportation; air, soil and water contamination; wildlife adaptation and migration and their relevance on the incidence of emerging and re-emerging diseases
- apply environmental and health indicators for use in policy and decision making;
- use multidisciplinary scientific knowledge for local, regional and global planning and development of surveillance systems, disease prevention and control programs and global response for sustainable development;
- use multidisciplinary scientific knowledge and information for the preparation of research proposals aimed to prevent or/and solve specific local, regional and global health issues related with climate and ecological changes;
- analyze the impact of national development projects (roads, dams, agricultural development etc) to local and regional ecosystems and future effects on health..

IV- Attendance policy:

This course meets once per week. Students are expected to attend all class sessions and participate actively in discussions. Assigned materials should be read before

coming to class. Any student anticipating an absence for a religious observance or other known conflicts with the course schedule should inform the instructor in advance as soon as possible in writing or via e-mail. In the event that the absence corresponds with an in-class assignment or examination, students will have one-week to make-up the missed assignment unless negotiated otherwise, in advance, with the instructor.

V- Grading components

The final grade will be determined by the following:

- 5% class attendance and general participation
- 5% readings assignments for class discussions
- 30%, for a midterm exam
- 20% for home essay and class presentation,
- 40% for a final exam.

Grading will follow the standard used by the university

90 -100	A
80 – 89	B
70 – 79	C
60 – 69	D
Below 60	F

Essays and presentations: A list of essay topics will be distributed the first day of class. Grading will be based on the complexity and quality of the essay and presentation. Essays and/or presentation can be assigned by group or individually.

Reading and reviews assignments will be included for comments and class discussions.

A field trip may be programmed depending upon class discussion and availability, with the possibility of extra-credit earning. (Pendant)

VI- Academic Integrity:

Students are expected to uphold the highest standards of the academy. Please read Section 6, Academic Policies in the Graduate Catalogue found at <http://catalog.grad.usf.edu/>

Students are encouraged to take notes and may tape my lectures, but may not sell class notes or tapes.

VII- Disability:

Any student with a disability requesting accommodations should schedule a private meeting with the instructor within the first two weeks of class. Please see Section 1, of the Graduate Catalogue for more detailed information. <http://catalog.grad.usf.edu/>

VII- Content of the course

Session 1

- Introduction: Overview on ecology, ecosystems, human health determinants. Concepts and definitions.
- Climatic change: Factors governing climate changes. Effects of global warming. Natural and man-made disasters.
- Distribution of assignments for essays and presentations.

Session 2

- Population dynamics: Characteristics of world demographic growth, rural displacement, international migration flows, causes and consequences.
- Urbanization phenomena: Characteristics. Housing, sanitation and overcrowding.
Tourism: an approach to assess health risks.

Session 3

- Soil and land use: deforestation, land degradation and soil erosion. Food security. Famine and malnutrition.
- Water resources: Water quality, Monitoring water quality. The ecology of food safety: General concepts and epidemiology. Main water and food- born pathogens in the Americas.

Session 4

- Air pollution. Indoor and outdoor pollution. Solid waste disposal and hazardous wastes. Impact s on environment and health .
- STUDENT PRESENTATION

Session 5

- Economic and social determinants on health. Poverty. Psychosocial disorders. Alcohol and drug abuse. Social and cultural translocation on borders populations and their impact on health. (The US-Mexico border Model)
- STUDENT PRESENTATION

Session 6

- Energy and transportation: Radiation. Magnetic fields. Motor vehicle injuries.
- Midterm exam (30%)

Session 7

Ecosystem adaptation and Emerging Diseases: Animal reservoirs, vector biology, invasive species. Emerging and re-emerging zoonoses: Plague, Leptospirosis, Lyme disease, Ebola, Anthrax, BSE, Yellow fever, Influenza, SARS, Equine encephalitis, West Nile fever.

Session 8

Environmental health indicators: a global initiative to improve decision making on health. Global Political Commitments: Sustainable development: The Rio declaration. UN Millennium Development Goals (MDG). World Summits on sustainable development, poverty and children health.

Session 9

Final exam (40%)

There is no required textbook

Recommended Textbooks and Documents:

- Aron J.L & Jonathan P (ed). (2004). Ecosystem change and public health. A global perspective.
- Beaty B. J. & Marquardt W.C. (ed). 1996. The biology of disease vector. University Press of Colorado.
- International Organization for Migration (IOM). (2005). World Migration: Costs and benefits of international migration. IOM, Geneva.
- IOM, WHO, CDC (2005) Health and Migration: Bridging the gap. IOM. Migration Policy and Research Programs. Geneva.
- McMichael A.J. et al. (2003). Climate change and human health. Risks and responses. WHO. Geneva
- OPS. (1996). Biodiversidad, biotecnología y desarrollo sostenible en salud y agricultura: conexiones emergentes. OPS, Pub. Científica No.560. Washington DC.
- Selinus O et al. (ed) (2005) Essentials of Medical Geology. Elsevier Academic Press.
- WHO. (2003). Climate change and human health. Risks and responses. Summary. WHO, Geneva