

## ***Course Syllabus – Spatial Dimensions of Health and Diseases***

### **Course Information**

Course number – GEOG 3357

Course title – Spatial Dimensions of Health and Diseases

Term – Fall 2014

Section – 001

Classroom – ATC 2.101

Time – Tuesday/Thursday 11:30 am – 12:45 pm

### **Professor Contact Information**

Name – Dr. Irina Vakulenko

Phone number – 972-883-6718

Email – [ivakulenko@utdallas.edu](mailto:ivakulenko@utdallas.edu) (best way to contact me)

Office location – GR 3.213

Office hours – Tuesday/Thursday 1:00 pm - 2:00 pm; by appointment

### **Course Pre-requisites, Co-requisites, and/or Other Restrictions**

There are no formal prerequisites for this course. General academic skills of analytical thinking, comparison, essay writing, working with reference sources as well as map reading will be helpful. Course topics require at least a general understanding of human biology, ecology, demographics, and statistics.

### **Course Description**

This course provides a broad introduction to medical geography, a sub-discipline which deals with human-environment interactions and the influence these interactions have on public health. It focuses on the topics of disease diffusion and human ecology, role of geographical information systems (GIS) for public health, health and healthcare disparities and various methods for analyzing health/disease data. Medical geography has a close disciplinary tie with epidemiology, biostatistics, and medical anthropology, but is differentiated by its focus on the spatial distributions of health related events. It allows determining health outcomes based on geographic variability due to economics, environmental influences, culture, race, policy, and history and the role of 'place'.

### **Student Learning Objectives/Outcomes**

Students will learn fundamentals of how health and disease happen and spread in environment and society. The students will utilize maps to examine the spatial patterns of disease and risk factors that may contribute to disease. The students will appreciate the effects of changes in global economy health and disease proliferation. They will acquire understanding and skill of how to spatially analyze and socially explain patterns in cause of death and etiology of health or disease. Good command of terminology of medical and health care professionals will help to open the door for future studies. Students will improve their skills in public speaking, argumentation of contentious issues and live debate.

***This class will fulfill your C3 oral communication course requirement, should you choose to apply for the Certificate*** (<http://oue.utdallas.edu/home/c3/>). See more info on e-learning course page.

### **Required Textbooks and Materials**

Medical Geography, 3rd Edition by Melinda S. Meade and Michael Emch, The Guilford Press, 2010. ISBN 978-1-60623-016-9. Additional reading will be required for the projects.

### **Suggested Course Materials**

Students are expected to take notes during PowerPoint presentations and complete assignments before due dates. Lecture material shall be complimented by reading the appropriate chapters in the book. It is important to complete the readings BEFORE class so that you may participate in the class discussions. This will help provide better understanding of class material.

### **3357 Assignments & Academic Calendar**

#	Class Date	Topic	Chapter
1	8/26/14	Introduction to Medical Geography.	Chapter 1
2	8/28/14	Human Ecology of Disease. Definition of health. The triangle of human ecology: habitat, population, behavior.	Chapter 1, 2
3	9/2/14	Human Ecology of Disease. Transmission and creation of infectious disease. Biological classifications of importance to health. Direct transmission, water-borne and water-based disease.	Chapter 2, Vignette 2.1
4	9/4/14	Human Ecology of Disease. Ecologies of deficiencies, nutritional needs and sources. Regional variations.	Chapter 2
5	9/9/14	Maps and Geographic Information Systems (GIS) in medical geography. Micro spatial exposure analysis. Population potential. Ecological fallacy. Visualizing and summarizing disease distribution.	Quiz 1 – 5% Chapter 1, 3, 12 Vignettes 11, 12.
6	9/11/14	Landscape Epidemiology. Transmissible disease systems: transmission chains and vector ecology.	Chapter 4
7	9/16/14	Landscape Epidemiology. Multi-factor zones and doctrine of natural nidality. Cultural ecology of water-based disease transmission.	Chapter 4
8	9/18/14	Landscape Epidemiology. Cultural ecology of tick-borne disease. Ecological Complications.	Quiz 2 – 5% Ch 4, Vignette 4
9	9/23/14	Test 1 – 15%	
10	9/25/14	Transitions and Development. Changes in population mortality, natural increase, mobility, and nutrition.	Chapter 5
11	9/30/14	Transitions and Development. Impact of population change on health in rural areas.	Chapter 5
12	10/2/14	Discussion 1. Nutrition and Health. Role of organically grown foods and supplements in the diet. Causes and consequences of abnormal weight in various	20% for panelists. The rest get a chance for a bonus pt!

		categories of people. Balanced diet and dieting. Cultural and religious diet preferences and health.	
13	10/7/14	Climate and Weather: Influence on Health. Direct bio-meteorological influences on health: radiation, light, temperature, humidity, and air movement. Acclimatization and adaptability.	Chapter 6
14	10/9/14	Climate and Weather: Influence on Health. Seasonality of death and birth. Affect of nutrition and hazards.	Chapter 6, Vignette 6.
15	10/14/14	The Pollution Syndrome. Toxic hazards of natural and economic origin. Environmental pollutants and health effects. Air pollution: outdoor and indoor.	Chapter 7
16	10/16/14	The Pollution Syndrome. Water and radio-active pollution. Risk assessment and prevention. Globalization and perception of health hazards.	Chapter 7
17	10/21/14	Test 2 – 15%	
18	10/23/14	Political Ecology of Non-Communicable Diseases. Poverty syndrome, race and gender health risks.	Chapter 8
19	10/28/14	Political Ecology of Non-Communicable Diseases. Disease ecology for cancer, cardiovascular disease, other unknown etiology.	Chapter 8
20	10/30/14	Discussion 2. Case studies for cancer, CVD, and hormonal imbalances such as diabetes, obesity, thyroid condition, growth disorders, etc.	20% for panelists. The rest get a chance for a bonus pt!
21	11/4/14	Neighborhood and Health. Analyzing the effects of neighborhoods.	Chapter 9
22	11/6/14	Disease Diffusion in Space. Terminology, types of diffusion, networks and barriers.	Chapter 10
23	11/11/14	Disease Diffusion in Space. Influenzas and other pandemics.	Chapter 10
24	11/13/14	Healthcare and Promotion. Global inequalities in health and healthcare . Healthcare accessibility and utilization.	Chapter 11
25	11/18/14	Healthcare and Promotion. Healthcare system in the United States today. Locational analysis.	Chapter 11
26	11/20/14	Discussion 3. Healthcare systems worldwide. Cases of recently reformed HC in the USA, Canada, Japan, Russia, Switzerland, France.	20% for panelists. The rest get a chance for a bonus pt!
27	12/2/14	Healthcare and Promotion. Cultural alternatives and medical pluralism. Health Promotion. Therapeutic landscapes.	Chapter 11
28	12/4/14	Test 3 – 15%.	
29	12/9/14	Review. Bring your notes and participation tags to claim up to 3 bonus points!!!	Glossary is due – 10%.
30	TBA	Final Exam is on TBA	

### Grading Policy

You are required to complete all the assignments. Average of Test 1 and two Quizzes will make your Midterm Grade to be posted on **October 18, 2014**. Each of 3 tests is 15% of total grade. The Quizzes make up 5% each of the final grade. A complete list of terms in a glossary format is due on **December 9, 2014** (10% of total grade). The terms need to be in alphabetical order either by chapters or through the entire course. There are **three discussions** that are going to be held in the panel presentation format. Every student is to participate once as a presenter on a topic in one panel. A 5-7 page paper, complete with proper reference (MLA) is to be turned in on the day of the presentation. The entire project is 20% of the final grade. Textbook may provide the initial idea about the problem to discuss but independent review of scholarly literature and conclusions will be assessed. Students may work in small groups and present together, in this case the paper should consist of chapters written individually by each student. The students who are not participating in the panel are encouraged to ask questions and provide comments during two other discussion sessions. The total of 2 **participation points** (my initials on your participation tag) for contribution to the discussion equal **1 bonus point** to the final grade. The Final Exam on **TBA** will make other 15% of your grade. All graded material will be assigned a numerical value on a scale of 100. Letter Grades are given as follows: 97% and over A+; 93% to 96% A ; 90% to 92% A- ; 87% to 89% B+; 83% to 86% B; 80% to 82% B- ; 77% to 79% C+; 73% to 76% C ; 70% to 72% C- ; 67% to 69% D+ ; 63% to 66% D ; 60% to 62% D; Less than 60% F.

### **Course & Instructor Policies**

Attendance is crucial for the successful learning and will be taken each class period. Many of my lectures and our discussions will include materials not found in the text. As a result a good set of class notes will be extremely helpful if you plan excelling in this course. To claim **another bonus point** for perfect attendance you need to have a set of notes covering EVERY topic discussed. If you missed a class (maximum 2 class absences may qualify you for a bonus point toward your final grade) the notes should be made as you **read the assigned chapter in the book**.

No makeup tests. (Individual consideration may be given in case of overwhelming circumstances). Although extra help may be provided to students, the professor will not hold alternate lectures or release lecture notes to students. Respectful discussions of the topics being studied are encouraged.

If you wish to look at the ancillary syllabus material, a link to that material is as follows  
<http://go.utdallas.edu/syllabus-policies>.

***These descriptions and timelines are subject to change at the discretion of the Professor.***