Health and Medical Geography (GEOG 222)

Spring 2019 Class meets:
Tuesdays and Thursdays 12:30-1:45pm
Carolina Hall Room 220

Instructor: Michael Emch
Email: emch@unc.edu

Course Objectives

This course is a survey of health and medical geography, a field that focuses on geographic aspects of health and disease. The field deals with human-environment interactions and the influence these interactions have on public health. What distinguishes health and medical geography from the discipline of geography as a whole is simply its thematic focus, not its methods or theoretical grounding. Throughout the semester we will use the concepts and techniques of the discipline of geography to investigate a variety of health-related topics. This course covers three major approaches to health and medical geographic scholarship: ecological approaches, which systematically analyze relationships between people and their environments; social approaches, including political economy and socio-behavioral approaches; and spatial approaches, which employ maps and spatial analysis to identify patterns of spatial distributions. Students are encouraged to view these three approaches as complimentary. Health and medical geography is integrative and interdisciplinary, incorporating contributions from a wide range of specialties. Specific course objectives include:

1. Facilitate a critical understanding of health, disease, illness, and society;
2. Introduce major contemporary issues in global health;
3. Promote an understanding of how geography as a discipline contributes to understanding health;
4. Understand the impact of ecological and population change on health;
5. Explain how social and economic context impacts health;
6. Utilize maps to examine the spatial patterns of disease and risk factors that may contribute to disease

Readings

The course text is "Health and Medical Geography Fourth Edition. New York: The Guilford Press." By Michael Emch, Elisabeth Root, and Margaret Carrel. 2017. ISBN 9781462520060

Grading

The course grade is based on the following activities:

- Midterm 20%

- Mapping Lab 10%
- Project 20%
- Final 20%
- Writing Assignments (20-30 pages total): Weekly reading/podcast reflections, classroom discussion outputs, and participation 30% (Note: sometimes you'll be required to turn things in on Sakai that you produce during the classroom activities and discussions. So you need to attend class.)

The grading scale is: A 90-100, B 80-90, C 70-80, D 60-70, F below 60

Portfolio

Everything you produce in the class will be part of your class portfolio. All of your portfolio items should be put in your Sakai Drop Box each week **before** class the day they are due. These items are described below and include weekly reading reflections, outputs based on classroom activities, and a project.

Classroom Activities, Reading Reflections, and Writing Assignments

Life is one messy group project and a university is a good place to learn to work with others. Class time will be composed of different activities including lectures, discussions of readings and working in groups on exercises focused on health and medical geography. You will hand in reading reflections each week **before** class on Sakai Dropbox. The general rule in this class is that whenever you read something or do something you will write something and hand it in. The reflections should be one page typed and single-spaced describing the 3-5 most useful things you learned from the readings for that week. Submit the reading reflections for a particular week before class on Tuesday. The reflections should be put in your Dropbox portfolio each week based on the schedule below (even if we get behind). Each item in your portfolio should have the week number and description e.g. ReadingReflectionWeek2.doc. When you work on a group exercise in class you should also put the output in your Sakai DropBox portfolio with an appropriate title e.g. InClassExerciseWeek3.doc. Each person in the group will need to upload it separately to your Sakai Dropbox.

Class time is for discussion and activities. Unless otherwise instructed, please **put your devices away** (i.e., computers, phones, tablets) and **silence them** before you store them. The lecture slides will be available on Sakai so you can print them before class and take notes with a pen if you like.

Project

A project is required for all students. It is intended to provide a deeper understanding of a health and geography problem. The deliverable is a digital poster presentation that you will present to the class. You should use the knowledge you acquire in the class discussion, book, podcasts, and other materials and activities of the course. It should be put on your Sakai Drop Box portfolio by the due date listed on the schedule below. At the end of the semester you will present your

digital poster at the RENCI Social Computing Room (SCR) located in the ITS Manning Building. You should also submit it to your Sakai Drop Box site.

Schedule (ERC Book is the Emch, Root, Carrel book)

Week: Dates	**Topics and Readings**
Week 1:	**INTRODUCTION** What is Health and Medical Geography? Introduction to Medical and Health Geography, Concepts of Health and Disease, Epidemiological Terminology • What is health and medical geography? • How do we define health? • Some epidemiological terminology that will help you throughout the semester Readings ERC Book, Preface ERC Book, Chapter 1
Week 2:	**ECOLOGICAL APPROACHES** Ecology of Health and Disease • Disease Agents and Transmission Processes • The Triangle of Human Ecology • Landscape Epidemiology and Vectored Diseases Readings and Podcasts ERC Book, Chapter 2 Online article: Cholera 101 NY Times article on cholera vaccine Podcast on Haiti cholera vaccine campaign
Week 3:	Expanding Disease Ecology: Politics, Economics, and Gender • Political Ecology • The Poverty Syndrome

	• Race in the Study of Health Risks • Gender and Sex: Women's Health • Causal Reasoning and Epidemiological Design • HIV and AIDS: Gender, Mobility, and Political Ecology • The Precautionary Principle and Some Political Ecology of Research <u>Readings</u> ERC Book, Chapter 3
Week 4:	<u>Transitions and Development</u> • Ecologies of Population Change: Multiple Transitions • Major Impacts of Population Change • Environmental Exposures, the Mobility Transition, and Time–Space Geography • Disease Ecologies of the Agricultural Frontier • Other Development Impacts on Rural Ecologies • Globalization of Movements <u>Readings</u> ERC Book, Chapter 4
Week 5:	**MAPS and METHODS** <u>Maps, GIS, and Spatial Analysis (Part 1 on Tuesday Sept 19th)</u> • Cartography of Health and Disease • Geographic Information Systems • Spatial Statistics <u>Readings</u> ERC Book, Chapter 5 Lab on Health Mapping
Week 6: Sep 26 & 28	<u>Disease Diffusion</u> • Diffusion Background

	• Epidemiological Background • Types of Diffusion Readings and Podcasts ERC Book, Chapter 6 Podcast (Paul Ewald)
Week 7:	Catch-up and Review **Midterm Exam**
Week 8:	Disease Diffusion • Networks and Barriers • Modeling Disease Diffusion • Influenzas
Week 9:	Emerging Infectious Diseases and Landscape Genetics • What's in a Name? Emerging, Reemerging, or Always There • Why Do Diseases Emerge, Reemerge, or Persist? • Where Can We Expect These Diseases to Emerge/Reemerge? • How Will These Diseases Behave? • Landscape Genetics Readings ERC Book, Chapter 7 Podcast, Patient Zero: The Origin of AIDS

Week 10:	**WHAT WE EAT and WHERE WE LIVE** Food, Diet, and the Nutrition Transition • From Hunter–Gatherers to Farmers • The Columbian Exchange • Modern Agricultural Systems • The Green Revolution • The Nutrition Transition • Commercial Agriculture and the Nutrition Transition • Direct and Indirect Health Effects of Agricultural and Dietary Changes <u>Readings</u> ERC Book, Chapter 8
Week 11:	<u>Neighborhoods and Health</u> • The Concept of Neighborhood Health • Social Context and Health • Effects of the Built Environment on Health • Opportunities and Challenges in Neighborhood Effects Studies <u>Readings</u> ERC Book, Chapter 9
Week 12:	<u>Urban Health</u> • Cities and Urbanization • A Brief History of Cities • Large Cities in the Modern Era • Developing World Cities: Dickens or a Dream? • Traffic • Disappearing Cities? <u>Readings</u> ERC Book, Chapter 10
Week 13:	**ENVIRONMENTS and CLIMATES**

	Environment and Health • Toxic Hazards • Outdoor Air Pollution • Indoor Air Pollution • Water Pollution • Sources and Health Effects of Lead • Risk Assessment and Prevention • Globalization and the Perception of Health Hazards • Hazards, Power, Policy, and Environmental Justice • Healthy Environments Readings ERC Book, Chapter 11
	Climate and Health • Direct Biometeorological Influences • The Influences of the Weather • Seasonality of Death and Birth • Physical Zonation of Climates and Biomes • Climate Change and Health Readings ERC Book, Chapter 12
Week 15:	Health Services and Access to Care • What Is Access? • The Provision of Medical Care • Cultural Alternatives and Perceptions • Transforming the Health Service Landscape Readings ERC Book, Chapter 13 Take home final distributed on Thursday

Week 16:	Class Project Presentations at RENCI Social Computing Room (SCR) located in the ITS Manning Building
Exam Time:	Final Exam

Honor Code: Students must follow the UNC Honor Code- https://advising.unc.edu/for-faculty/academic-policies-and-procedures/unc-honor-code/.