Course Description and Objectives:
This course examines the geographical dimensions of health and disease, emphasizing global and domestic public health issues. Key approaches and themes include the human ecology approach to health; epidemiological mapping and spatial analysis; environmental health; the relationship among demographic change, economic development, and population health; the spatial diffusion of infectious diseases; the disease ecology approach to infectious and vector-borne diseases; and the challenges of "global health" in the 21st century, with special emphasis on "emerging infectious diseases."

Required Readings:
Books
All other readings for this course will be available electronically on Moodle.

Course Policies:
1. Attendance and Participation. In this class, 10 percent of your grade derives from attendance and participation. Consistent attendance is necessary to fully comprehend the course material, and there will be plenty of opportunities to participate in this class. In general, "participation" means speaking up, sharing your thoughts, and making yourself noticed in positive, productive, and supportive ways. It also means listening carefully and respectfully to your fellow students. Any small assignments not otherwise noted in the syllabus will be counted towards your participation grade.

2. Late work. You must turn in your work on time. I will indicate due dates for every assignment, and you must respect them. I will penalize you 10 percent of your grade (or a full letter grade) for a given assignment for every day that it is late. If there are extenuating circumstances (e.g. illness, accident, bereavement, etc.) and you contact me before the due date, I will consider granting an extension.

3. Turning in written work. Unless I specify otherwise, I will be using electronic submission for assignments and exams. Specifically, for each assignment or exam, I will create a "dropbox" on Moodle that has a specific time that work is due (and the dropbox then "closes"). Please do not submit assignments via email or as "shared" documents in Google Docs.
4. **Reaction papers on campus events.** As mentioned above, you can improve your attendance and participation grade by attending campus events and turning in reaction papers about them. In addition to events that might already be noted on the syllabus, I will notify you when I think there are things happening on campus that are relevant to our class. The reaction papers should be 1-2 pages long, and include a summary and critique of the lecture, film showing, or whatever the event may be. I am interested in a clear summary and a thoughtful critique, ideally one that connects the event to course themes. Please turn in these papers in a Moodle dropbox I will create specifically for this purpose, within a week after the event takes place. As a general rule of thumb, satisfactorily completing three of these reaction papers during the semester would raise your course participation grade by one letter grade (e.g. from a C to a B).

5. **Academic integrity.** As in every course, you will be expected to follow the college's policies on academic honesty: specifically, "Students are expected to maintain the highest standards of honesty in their college work. Forgery, cheating and plagiarism are serious offenses and students found guilty of any form of academic dishonesty are subject to disciplinary action." For more details, see the college's guidelines on Academic Integrity at [http://www.macalester.edu/academicprograms/academicpolicies/academicintegrity/](http://www.macalester.edu/academicprograms/academicpolicies/academicintegrity/).

6. **Special accommodations.** If you have a physical or learning disability that will require special accommodations, please contact me to discuss arrangements. All conversations will be confidential. You will also need to meet with a representative from Disability Services, which determines accommodations. They can be contacted here: disabilityservices@macalester.edu.

7. **Communication.** You are welcome to come see me during my scheduled office hours. If you can't meet during those times, please send me an email or call my office and we'll schedule an appointment. In general, I answer emails within 24 hours. But I always prefer to discuss important matters in person, not electronically or by phone. Also, make sure that you check your email frequently, because I do send email messages – either from my own email address or via Moodle – frequently to individual students and to the whole class. Do not send me Google Calendar invites; I don't really pay attention to these.

8. **Use of Electronic Devices in Class.** Laptops are permitted in class but only for note-taking and for activities in class when specifically indicated. When we are having a lecture, discussion, student project presentation, or similar activity, I expect everyone's eyes and attention to be focused on that activity. You definitely should not be browsing the web, checking email, doing your homework, and so on during these class activities. The use of cell phones is strictly prohibited: no calling, texting or other uses of your cell phone during class time.

**Course Assignments:**

- **Attendance and Participation:** see above
- **Exercises.** There will be three brief homework exercises on different topics that allow you to apply theory and concepts using interactive maps, databases, and data visualization tools.
- **Exams.** There will be two exams, both take-home format: a midterm and a final. I am including a "flex" component for your exam grades, so that whichever of the two exams you score higher on will be worth 25% of your grade and the other will be worth 20%.
- **Research project.** This assignment will allow you to expand on a topic in medical/health geography that interests you. There will be some preliminary components due before the paper itself, including required oral presentations in the final weeks of the semester. All the components, not just the final paper, will be considered in determining your grade on the project. The final paper will be around 10-12 pages (i.e. 2500-3000 words) in length.
Grading:

- Attendance and Participation: 10%
- Exercises (3 x 5%): 15%
- Exam 1 (take-home): 20%
- Exam 2 (take-home): 20%
- Exam flex: 5%
- Research Project: 30%
- TOTAL: 100%

"Exam flex" means that 5% of your total course grade will go towards either the midterm or the final exam, whichever you score higher on. In effect, either your midterm or your final will be worth 25%, and the other exam, 20%. If necessary, I will use a curve to decide final course grades.

COURSE SCHEDULE (Detailed):
Notes: The schedule is subject to change, with fair warning. Check on Moodle for updates about which readings are "required" (REQ), which should be skimmed (SKIM), and which are merely "recommended" (RCM). Generally, try to do the readings for the day they are assigned, even if a more in-depth discussion is not scheduled until a few days later. Rest assured that every week I will give you details about the reading assignment and plan for discussion.

Week 0. What is Medical Geography?
- Fri. (Jan. 24): What is Medical Geography?

Week 1. Introduction / International Health and Development
- Mon. (Jan. 27): Introductions and Course Business
- Wed. (Jan. 29): Demographic Transition Theory
  - Montgomery, K. (n.d.) The Demographic Transition (online resource).
- Fri. (Jan. 31): Health and Development
  - IHME (2015). Rethinking Development and Health Findings from the Global Burden of Disease Study (skim)

Week 2. International Health (cont'd) and Disease Ecology
- Mon. (Feb. 3): Health and Development: Lessons from Latin America
- Tues. (Feb. 4): Exercise 1: Demographic and Health Indicators DUE
• Wed. (Feb. 5): Introduction to Disease Ecology
  o Anthamatten and Hazen (2011). Ecological Approaches. In *An Introduction to the Geography of Health*.

• Fri. (Feb. 7) Political Ecology of Vector-Borne Disease

**Week 3. Malaria**

• Mon. (Feb. 10): Malaria and Development in Historical Perspective
  o SHAH, *The Fever* (begin)

• Wed. (Feb. 12): Malaria
  o SHAH, *The Fever* (continue)

• Fri. (Feb. 14): Malaria
  o SHAH, *The Fever* (finish)

**Week 4. Emerging Infectious Diseases**

• Mon. (Feb. 17): Emerging Infectious Diseases 1: Emergence

• Wed. (Feb. 19): Emerging Infectious Diseases 2: Diffusion

• Fri. (Feb. 21): Emerging Infectious Diseases 3: Response
  o Watch (outside of class): Frontline documentary on 2014 West African Ebola epidemic

**Week 5. Climate Change and Health**

• Mon. (Feb. 24): Climate Change and Health: an Introduction
  o APHA (American Public Health Association) reports on climate change and health.
  o *New England Journal of Medicine* climate change and health issues page.

• Tues. (Feb. 25): Exercise 2: Disease Diffusion DUE

• Wed. (Feb. 26): Climate Change and Vector-Borne Disease

• Fri. (Feb. 28): Climate Change and Health discussion
Week 6. Spatial Approaches
- Mon. (March 2): Spatial Approaches: Mapping Patterns
- Wed. (March 4): Spatial Approaches: Thinking Spatially About Health
  - Anthamatten and Hazen (2011). Health and GIS. In *An Introduction to the Geography of Health*.
  - Other readings TBA
- Fri. (March 6): Spatial Approaches: GIS Lab Activity
  - Meet in GIS Lab – hands-on GIS lab activity
  - Exam 1 will be available (covers through week 5 topics)

Week 7. Midterm and Social Determinants of Health
- Mon. (March 9): NO CLASS: Work on Take-Home Exam
- Tues. (March 10): EXAM 1 DUE
- Wed. (March 11): Social Determinants: Health Inequalities
- Fri. (March 13): Place Effects

SPRING BREAK, March 16-20

Week 8. Social Determinants of Health and Place and Health Continued
- Mon. (March 23): Deaths of Despair
- Tues. (March 24): Research Project Topic Statement Due
- Wed. (March 25): Documentary Showing, "Unnatural Causes"
- Fri. (March 27): Guest Lecture, Kelsey McDonald, "Green Spaces and Health"

Week 9. Environmental Health
- Mon. (March 30): Environmental Health Issues
• Wed. (April 1): Epidemiology of Cancer Clusters  
  o Readings on Twin Cities East Metro cancer cluster research  
  o Cape Cod Breast Cancer Study (skim)
• Fri (April 3): Discussion on environmental health issues

Week 10. Environmental Justice
• Mon. (April 6): NO CLASS: Work on Research Project and Exercise 3
• Tues. (April 7): Exercise 3: Spatial Analysis due
• Wed. (April 8): Library Meeting (on Research Methods)
  o Meet in Library
• Fri. (April 10): Environmental Justice and Geography  
  o Research Project: Mini-Proposal Due (includes research question and working bibliography)

Week 11. Environmental Justice (cont’d)
• Mon. (April 13): Environmental Justice – California case study  
  o Morello-Frosch, R., Pastor, M., Jr., Porras, C., & Sadd, J. (2002). Environmental justice and regional inequality in southern California: implications for future research. Environ Health Perspect, 110 Suppl 2, 149-154. (rcm.)
  o EJ Atlas website (rcm.)  
  o Other readings TBA
• Wed. (April 15): NO CLASS: Geography Honors Day
• Fri. (April 17): Environmental justice – discussion and preview Flint water crisis case study

Week 12. The Flint Water Crisis
• Mon. (April 20): The Flint Water Crisis  
  o Begin Clark, The Poisoned City
• Wed. (April 22): The Flint Water Crisis  
  o Continue Clark, The Poisoned City
• Fri. (April 24): The Flint Water Crisis  
  o Finish Clark, The Poisoned City  
  o Exam 2 (take-home) available

Week 13. Final Exam
• Mon. (April 27): NO CLASS: Work on Take-Home Exam
• Tues. (April 28): EXAM 2 DUE
• Wed. (April 29): Final Paper Workshop
• Fri. (May 1): Begin ORAL PRESENTATIONS on student research (attendance required; schedule of speakers TBD); Research Project: Thesis Paragraph and Expanded Bibliography Due

Week 14. Oral Presentations
• Mon. (May 4): continue ORAL PRESENTATIONS – LAST DAY OF CLASSES
• Fri. (May 8): finish ORAL PRESENTATIONS during "final exam" time, 1:30 – 3:30 pm.

Week 15 (Finals Week)
• Mon. (May 11): FINAL RESEARCH PAPER due by 12 noon
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