

**GEOG 256  
MEDICAL GEOGRAPHY  
Fall 2018**

**MWF 2:20-3:20 pm, Carnegie 107**

**Instructor:** Eric D. Carter

**Office Hours:** TBA

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**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

Anthamatten, P. and H. Hazen (2011). *An Introduction to the Geography of Health*. Routledge. ISBN-13: 978-0415498067

Guthman, J. (2011). *Weighing In: Obesity, Food Justice, and the Limits of Capitalism*. Berkeley: UC Press. ISBN: 978-0-520-26625-4

Shah, S. (2011). *The Fever: How Malaria Has Ruled Humankind for 500,000 Years*. Picador, paperback edition. ISBN-13: 978-0312573010.

All other readings for this course will be available electronically on Moodle.

**Class Attendance and Participation Policy:**

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 and making yourself noticed in positive and intelligent ways. Recognize that "participation" can include many kinds of contributions: asking questions in class, contributing to class discussions, coming to see the professor during office hours with questions or comments, etc. Occasionally, I will assign brief reaction papers or essays related to readings, documentaries, the International Round Table (see course schedule), or other course items, which will count towards your attendance/participation grade. I also appreciate when students are engaged with relevant events and news beyond the course. I will create a forum on our course Moodle for you to post news items related to public health and other subjects we discuss in class. You can also improve your participation grade by writing reaction papers on campus events (lectures, film showings) that are relevant to this course. If you attend class consistently (zero or very few absences), participate frequently, and make significant contributions to everyone's learning experience, you can expect to get a high grade for attendance and participation. If you show up to every class but never say anything, you will get fewer points. If you miss many classes, and then make little or no effort to participate, you should expect to get a very low attendance/participation score.

**Class Format:**

In this course there will be a mix of lecture- and discussion-based meetings. Generally speaking, there will be one or two lectures to introduce a new topic, and then a day for discussion to review important concepts and discuss readings in further depth. This will be the general rhythm of the course. However, my lectures are meant to be interactive and not a one-way monologue, so feel free to ask questions, and expect that I will ask you questions, too.

**Contacting Prof. Carter:**

I welcome opportunities to talk with you one-on-one about this class, other academic issues, and career planning. I will have approximately 5 hours of office hours a week; during this time, feel free to drop-in to meet with me (I do not schedule appointments during office hours; these are first-come, first-serve meetings). I also have an open-door policy, so whenever I am in my office, my door is open, and you can also drop in to see me. Usually I will have time to talk to you, unless I have other pressing work (like getting ready for class). If you'd like to schedule an appointment to meet with me outside office hours, send me an email. Do not send me Google Calendar invites; I don't really pay attention to these. You can also call me on my office phone, though I much prefer face-to-face meetings.

**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/>. Acts of academic dishonesty include, but are not limited to, plagiarism, fabrication of data, cheating, stealing or buying copies of exams or papers, unauthorized collaboration, and taking exams for someone else. Be aware that at Macalester penalties for academic dishonesty include verbal reprimand, written reprimand, lowering of grade on a specific exam or assignment, a failing grade on specific exam or assignment, lowering of course grade, a failing course grade, suspension from the college, and expulsion from the college. Depending on the circumstances of the infraction, you may be subject to any of these penalties. There will be some collaborative work in this class, but I will indicate clearly when an assignment is meant to be done with a partner, in a group, or alone.

**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 Melissa Fletcher, Director of Disability Services in the Office of Student Affairs (mfletche@macalester.edu) who coordinates disability services and determines accommodations. It is important to meet with her at the beginning of the semester to ensure that your accommodations are approved and in place to begin the semester successfully.

**Late Policy:**

Any paper or assignment turned in after the due date will be graded down one letter grade (or equivalent, i.e. 10%) for each day it is late (weekends not included). Exceptions may be made for extraordinary circumstances, but don't count on it. Instructions for turning in an assignment will be clearly indicated on the assignment. If you're required to turn in a *hard copy*, please place it in my mailbox, which is in the back of the Geography department office suite, Carnegie 104.

**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. The midterm exam, because of other scheduling issues, will probably cover more material than the 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%
<b>TOTAL</b>	<b>100%</b>

"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" and which are "recommended." 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. In class meetings designated DISCUSSION, we may cover a whole week's readings. Rest assured that every week I will give you details about the reading assignment and plan for discussion. A&H = Anthamatten and Hazen, *Introduction to the Geography of Health*.

**Week 1. Introduction and Demographic Transition Theory**

- Wed. (9/5): Introduction and Course Business
- Fri. (9/7): What is Medical Geography?
  - A & H, ch. 1

**Week 2. Health and Development in International Perspective**

- Mon. (9/10): LECTURE: Demographic Transition Theory
  - A & H, ch. 3 and ch. 5 (first half)
  - Forero, J. (2011). Birth rate plummets in Brazil. *Washington Post*, Dec. 29.
  - Marshall, S. J. (2004). Developing countries face double burden of disease. *Bulletin of the WHO* 82: 556.

- Wed. (9/12): LECTURE: Health and Development
  - IHME (2015), *Rethinking Development and Health Findings from the Global Burden of Disease Study* (skim)
  - Sen, A. (2015, Jan. 6). Universal healthcare: The affordable dream. *The Guardian* online.
  - Frenk, J. (2010). The global health system: strengthening national health systems as the next step for global progress. *PLoS Med*, 7(1), e1000089.
  - A & H, ch. 8
- Fri. (9/14): DISCUSSION: International Health Policy
  - Garrett, L. (2007). The challenge of global health. *Foreign Affairs*, Jan/Feb.
  - Panter-Brick, C., Eggerman, M., & Tomlinson, M. (2014). How might global health master deadly sins and strive for greater virtues? *Global Health Action*, 7(1), 23411.
  - Marmot, M. (2015). Living Fairly in the World. In: *The Health Gap*. New York: Bloomsbury.

### Week 3. Social Determinants of Health

- Mon. (9/17): LECTURE: Social Determinants: Health Inequalities
  - Marmot, M. (2015). The organization of misery. In: *The Health Gap*. New York: Bloomsbury.
  - National Research Council and Institute of Medicine. (2013) *U.S. Health in International Perspective: Shorter Lives, Poorer Health*. (excerpt)
  - Tavernise, S. (2016). Disparity in Life Spans of the Rich and the Poor Is Growing. *New York Times*, Feb. 12.
  - Tavernise, S. (2016). Black Americans See Gains in Life Expectancy. *New York Times*, May 8.
- Tues. (9/18): **EXERCISE #1 (Demographic and Health Indicators) due by 5 pm**
- Wed. (9/19): LECTURE: Place Effects
  - A & H, ch. 5 (second part)
  - Smyth, F. (2008). Medical geography: Understanding health inequalities. *Progress in Human Geography* 32 (1): 119-127.
  - Klinenberg, E. (2002). *Heat wave: a social autopsy of disaster in Chicago*. Chicago: University of Chicago Press (excerpt)
  - Irwin, N. and Q. Bi. (2016). The Rich Live Longer Everywhere. For the Poor, Geography Matters. *New York Times*, April 11.
- Fri. (9/21): DISCUSSION: Social Determinants and Race
  - Roberts, D. (2012). Embodying race. In *Fatal Invention*. The New Press
  - Villarosa, L. (2018). Why America's Black Mothers and Babies Are in a Life-or-Death Crisis. *NY Times*, April 11.

### Week 4. Spatial Methods in Medical Geography

- Mon. (9/24): LECTURE: Spatial Approaches: Mapping Patterns
  - A & H, ch. 9
  - Other readings TBA
- Wed. (9/26): LECTURE: Spatial Epidemiology
  - A & H, ch. 10
  - Other readings TBA
- Fri. (9/28): GIS Lab Activity (details TBA)

### Week 5. Environmental Health

- Mon. (10/1): LECTURE: Environmental Health Issues
  - A&H, ch. 4
  - Hanchette, C. (2008). "The political ecology of lead poisoning in eastern North Carolina." *Health and Place* 14: 209-216.
- Wed. (10/3): LECTURE: Epidemiology of Cancer Clusters
  - *Cape Cod Breast Cancer Study*
- Fri (10/5): GUEST LECTURE: Kelsey McDonald on Green Spaces and Health
  - Readings TBA
  - **EXERCISE #2 (Mapping Patterns of Social Determinants of Health) DUE**

**Week 6. Environmental Justice**

- Mon. (10/8): Environmental Justice and Geography
  - Brulle, R. J., & Pellow, D. N. (2006). Environmental justice: Human health and environmental inequalities. *Annual Review of Public Health*, 27, 103-124.
  - Pulido, L. (2000). Rethinking Environmental Racism: White Privilege and Urban Development in Southern California. *Annals of the Association of American Geographers*, 90(1), 12-40.
  - 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.
- Wed (10/10): DISCUSSION: Flint Michigan Water Crisis
  - Reading Packet (online) on Flint water crisis
- Fri. (10/12): NO CLASS TODAY: International Round Table, "Beyond Blood and Skin: The Global Production and Consequences of Race and Racisms"
  - Please attend International Round Table events, Thursday-Saturday 10/11-13
  - Of special interest: plenary lecture by Dorothy Roberts (see readings for week 3)
  - Optional reaction paper assignment, details TBA

**Week 7. Obesity Epidemic**

- Mon. (10/15): LECTURE: Introduction to Obesity Epidemic
  - *New York Times* series on diabetes (2006)
  - Also: recap International Round Table symposium
- Wed. (10/17): DISCUSSION: *Weighing In* by Julie Guthman
- Fri. (10/19): DISCUSSION: *Weighing In* by Julie Guthman (cont'd)

**Week 8. Take-Home Exam**

- Mon. (10/22): NO CLASS; Work on Take-Home Exam
- Wed. (10/24): NO CLASS; **EXAM 1 due by 5 pm**
- Fri. (10/26): NO CLASS – FALL BREAK

**Week 9. Disease Ecology**

- Mon. (10/29): LECTURE: Introduction to Disease Ecology
  - A & H, ch. 2
  - McNeil, D. G. (2006). Dose of Tenacity Wears Down a Horrific Disease. *New York Times*, Mar. 26.
- Wed. (10/31) LECTURE: Vector-Borne Disease Case Studies
  - Readings on Lyme disease, dengue, Zika – details TBA
- Fri. (11/2): GUEST LECTURE: Miranda Harris '18 on Local Knowledge of Mosquito-Borne Disease in Ecuador
  - **RESEARCH PROJECT TOPIC STATEMENT DUE**

**Week 10. Malaria**

- Mon. (11/5): LECTURE: Malaria and Development in Historical Perspective
  - Sachs, J., and P. Malaney (2002). The economic and social burden of malaria. *Nature* 415: 680-685.
  - SHAH, *The Fever* (begin)
- Wed. (11/7): DISCUSSION: Shah, *The Fever*
  - SHAH, *The Fever* (continue)
- Fri. (11/9): DISCUSSION: Shah, *The Fever*
  - SHAH, *The Fever* (finish)

**Week 11. Emerging Infectious Diseases**

- Mon. (11/12): LECTURE: Emerging Infectious Diseases 1: Emergence
  - Wolfe, N. D., Dunavan, C. P., & Diamond, J. (2007). Origins of major human infectious diseases. *Nature*, 447(7142), 279-283.
  - Mayer, J. D. (2000). Geography, ecology and emerging infectious diseases. *Social Science and Medicine*, 50, 937-952.
- Tues (11/13): **RESEARCH PROJECT: RESEARCH QUESTION DUE**
- Wed. (11/14): LECTURE: Emerging Infectious Diseases 2: Diffusion
  - A & H, ch. 3 (review material on disease diffusion)
  - Haggett, P. (2000). *The geographical structure of epidemics*. Oxford: Clarendon Press (excerpt).
  - Ali, S. H. & R. Keil (2006). Global Cities and the Spread of Infectious Disease: The Case of Severe Acute Respiratory Syndrome (SARS) in Toronto, Canada. *Urban Studies* 43(3): 491-509.
- Fri. (11/16): DISCUSSION: Emerging Infectious Diseases 3: Response
  - Watch (outside of class): Frontline documentary on 2014 West African Ebola epidemic
  - Garrett, L. (2015). Ebola's Lessons: How the WHO Mishandled the Crisis. *Foreign Affairs*.

**Week 12. Climate Change and Health**

- Mon. (11/19): LECTURE: Climate Change and Health
- Tues. (11/20): **EXERCISE #3 (Infectious Disease: Distribution and Diffusion) due by 5 pm**
- Wed. (11/21) and Fri. (11/23): NO CLASS: THANKSGIVING BREAK

**Week 13. Climate Change and Health and Exam**

- Mon. (11/26): DISCUSSION: Climate Change and Health
  - APHA (American Public Health Association) reports on climate change and health.
  - McMichael, A. J. (2013). Globalization, climate change, and human health. *New England Journal of Medicine*, 368(14), 1335-1343.
  - Lafferty, K.D. (2009). The ecology of climate change and infectious diseases. *Ecology* 90(4):888-900.
  - Other reading TBA
- Wed. (11/28): NO CLASS: Work on Take-Home Exam
- Fri. (11/30): **EXAM 2 due by 5 pm**

**Week 14. Final Paper Workshop and Oral Presentations**

- Mon. (12/3): Final Paper Workshop (attendance optional)
- Wed. (12/5): Final Paper Workshop (attendance optional)
- Fri. (12/7): Begin **ORAL PRESENTATIONS** on student research (attendance required; schedule of speakers TBD); **RESEARCH PROJECT THESIS PARAGRAPH** due

**Week 15. Oral Presentations**

- Mon. (12/10): continue **ORAL PRESENTATIONS**
- Wed. (12/12): continue **ORAL PRESENTATIONS** – LAST DAY OF CLASSES

**Finals Week**

- Mon. (12/17): Conclude **ORAL PRESENTATIONS** during "final exam" time, 10:30 am – 12:30 pm. **FINAL RESEARCH PAPER due by 5 pm**

**COURSE SCHEDULE AT-A-GLANCE**

	Monday	Tuesday	Wednesday	Thursday	Friday
1	3 (SEPTEMBER) LABOR DAY	4	5 First Day; Introduction and Course Business	6	7 What is Medical Geography?
2	10 LECTURE: Demographic Transition Theory	11	12 LECTURE: Health and Development	13	14 DISCUSSION: International Health Policy
3	17 LECTURE: Social Determinants 1	18 EXERCISE 1 DUE	19 LECTURE: Place Effects	20	21 DISCUSSION: Social Determinants
4	24 LECTURE: Spatial Approaches: Mapping Patterns	25	26 LECTURE: Spatial Epidemiology	27	28 GIS LAB ACTIVITY
5	1 (OCTOBER) LECTURE: Environmental Health 1	2	3 LECTURE: Environmental Health 2	4	5 GUEST LECTURE: Kelsey McDonald (Green Spaces)  EXERCISE 2 DUE
6	8 LECTURE: Environmental Justice	9	10 DISCUSSION: Environmental Justice (Flint, MI case study)	11	12 NO CLASS: International Round Table
7	15 LECTURE: Obesity Epidemic	16	17 DISCUSSION: Obesity Epidemic (Guthman, <i>Weighing In</i> )	18	19 DISCUSSION: Obesity Epidemic (Guthman, <i>Weighing In</i> )
8	22 NO CLASS: Work on Take-Home Exam	23	24 NO CLASS  Exam 1 (Take-Home) Due	25 FALL BREAK	26 FALL BREAK

9	29 LECTURE: Disease Ecology 1	30	31 LECTURE: Disease Ecology 2	1 (November)	2 GUEST LECTURE: Miranda Harris (Vector-Borne Disease in Ecuador) <b>Research Project Topic Statement DUE</b>
	5 LECTURE: Malaria Control (Historical Perspective)	6	7 DISCUSSION: Malaria (Shah, <i>The Fever</i> )	8	9 DISCUSSION: Malaria (Shah, <i>The Fever</i> )
10	12 LECTURE: Emerging Infectious Diseases 1	13 <b>Research Project Research Question DUE</b>	14 LECTURE: Emerging Infectious Diseases 2	15	16 DISCUSSION: Emerging Infectious Diseases (Ebola)
11	19 LECTURE: Climate Change and Health	20 <b>EXERCISE 3 DUE</b>	21 THANKSGIVING BREAK	22 THANKSGIVING BREAK	23 THANKSGIVING BREAK
12	26 DISCUSSION: Climate Change and Health	27	28 NO CLASS: Work on Take-Home Exam	29	30 NO CLASS <b>Exam 2 (Take-Home) Due</b>
13	3 (Dec) Final Paper Workshop (attendance optional)	4	5 Final Paper Workshop (attendance optional)	6	7 <b>ORAL PRESENTATIONS</b>  Research Project Thesis Paragraph DUE
14	10 <b>ORAL PRESENTATIONS</b>	11	12 <b>ORAL PRESENTATIONS</b>  Last Day of Classes	13 Study Day	14 Study Day
15	17 <b>ORAL PRESENTATIONS (during final exam period)</b>  <b>FINAL RESEARCH PAPER DUE</b>	18	19	20	21
<b>F I N A L S</b>					