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
978-0415498067
Press. ISBN: 978-0-520-26625-4
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. Forging, 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:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weight</th>
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<tr>
<td>Attendance and Participation</td>
<td>10%</td>
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<td>Exercises (3 x 5%)</td>
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<tr>
<td>Exam 1 (take-home)</td>
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<td>Exam 2 (take-home)</td>
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<td>Exam flex</td>
<td>5%</td>
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<tr>
<td>Research Project</td>
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<td><strong>TOTAL</strong></td>
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"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)
• Wed. (9/12): LECTURE: Health and Development
  o IHME (2015), Rethinking Development and Health Findings from the Global Burden of Disease Study (skim)
  o A & H, ch. 8
• Fri. (9/14): DISCUSSION: International Health Policy

Week 3. Social Determinants of Health
• Mon. (9/17): LECTURE: Social Determinants: Health Inequalities
• Tues. (9/18): EXERCISE #1 (Demographic and Health Indicators) due by 5 pm
• Wed. (9/19): LECTURE: Place Effects
  o A & H, ch. 5 (second part)
• Fri. (9/21): DISCUSSION: Social Determinants and Race

Week 4. Spatial Methods in Medical Geography
• Mon. (9/24): LECTURE: Spatial Approaches: Mapping Patterns
  o A & H, ch. 9
  o Other readings TBA
• Wed. (9/26): LECTURE: Spatial Epidemiology
  o A & H, ch. 10
  o Other readings TBA
• Fri. (9/28): GIS Lab Activity (details TBA)

Week 5. Environmental Health
• Mon. (10/1): LECTURE: Environmental Health Issues
  o A&H, ch. 4
• Wed. (10/3): LECTURE: Epidemiology of Cancer Clusters
  o Cape Cod Breast Cancer Study
• Fri (10/5): GUEST LECTURE: Kelsey McDonald on Green Spaces and Health
  o Readings TBA
  o EXERCISE #2 (Mapping Patterns of Social Determinants of Health) DUE
Week 6. Environmental Justice
- Mon. (10/8): Environmental Justice and Geography
- 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
  - 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
- 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
  - SHAH, *The Fever* (begin)
  - SHAH, *The Fever* (continue)
  - SHAH, *The Fever* (finish)
Week 11. Emerging Infectious Diseases
- Mon. (11/12): LECTURE: Emerging Infectious Diseases 1: Emergence
- 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)
- Fri. (11/16): DISCUSSION: Emerging Infectious Diseases 3: Response
  - Watch (outside of class): Frontline documentary on 2014 West African Ebola epidemic

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.
  - 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

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<tr>
<td>1</td>
<td>3 (SEPTEMBER) LABOR DAY</td>
<td>4</td>
<td>5 First Day; Introduction and Course Business</td>
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<td>2</td>
<td>10 LECTURE: Demographic Transition Theory</td>
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<td>12 LECTURE: Health and Development</td>
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<td>3</td>
<td>17 LECTURE: Social Determinants 1</td>
<td>18 EXERCISE 1 DUE</td>
<td>19 LECTURE: Place Effects</td>
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<td>4</td>
<td>24 LECTURE: Spatial Approaches: Mapping Patterns</td>
<td>25</td>
<td>26 LECTURE: Spatial Epidemiology</td>
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<td>5</td>
<td>1 (OCTOBER) LECTURE: Environmental Health 1</td>
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<td>3 LECTURE: Environmental Health 2</td>
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<td>6</td>
<td>8 LECTURE: Environmental Justice</td>
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<td>10 DISCUSSION: Environmental Justice (Flint, MI case study)</td>
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<td>7</td>
<td>15 LECTURE: Obesity Epidemic</td>
<td>16</td>
<td>17 DISCUSSION: Obesity Epidemic (Guthman, Weighing In)</td>
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<td>8</td>
<td>22 NO CLASS: Work on Take-Home Exam</td>
<td>23</td>
<td>24 NO CLASS Exam 1 (Take-Home) Due</td>
<td>25 FALL BREAK</td>
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<td>Week</td>
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<td>29 LECTURE: Disease Ecology 1</td>
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<td>31 LECTURE: Disease Ecology 2</td>
<td>1 (November)</td>
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<td>10</td>
<td>5 LECTURE: Malaria Control (Historical Perspective)</td>
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<td>7 DISCUSSION: Malaria (Shah, <em>The Fever</em>)</td>
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<td>11</td>
<td>12 LECTURE: Emerging Infectious Diseases 1</td>
<td>13 Research Project Research Question DUE</td>
<td>14 LECTURE: Emerging Infectious Diseases 2</td>
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<td>12</td>
<td>19 LECTURE: Climate Change and Health</td>
<td>20 EXERCISE 3 DUE</td>
<td>21 THANKSGIVING BREAK</td>
<td>22 THANKSGIVING BREAK</td>
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<td>13</td>
<td>26 DISCUSSION: Climate Change and Health</td>
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<td>28 NO CLASS: Work on Take-Home Exam</td>
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<td>14</td>
<td>3 (Dec) Final Paper Workshop (attendance optional)</td>
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<td>15</td>
<td>10 ORAL PRESENTATIONS</td>
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<td>12 ORAL PRESENTATIONS Last Day of Classes</td>
<td>13 Study Day</td>
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<td>16</td>
<td>17 ORAL PRESENTATIONS (during final exam period)</td>
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