GEO3452: Introduction to Medical Geography

Fall 2025 | 3 credits

I. General Information

Meeting days and times: Asynchronous, 100% online via Canvas
Class location: 100% online via Canvas | https://ufl.instructure.com/courses/541832

Instructor:

Name: Ian Pshea-Smith, MPH | Ph.D. Student, Medical Geography in Global Health
Office Building/Number: Turlington 3014
Phone: +1.517.677.7930
Email: ianpsheasmith@ufl.edu

Office Hours: 2-3pm Tuesdays and Thursdays via online Zoom meetings, or by appointment.
Office Hours Zoom Link: https://ufl.zoom.us/j/99990483035
In-person office hours are available upon request in TURL 3014.

Course Description
Medical geography deals with human-environment interactions and the influence of these interactions on public health. This course provides a broad-based, comprehensive survey of geographic topics and approaches in medical sciences. Hands-on experiences will be emphasized through GIS labs.

Prerequisites
Sophomore standing or higher; entry-level knowledge of statistics (STA 2023 or GEO 3162C or equivalent) recommended.

General Education Designation: None.

Course Materials

- Recommended Textbook: Emch, M., Root, E. D., & Carrel, M. (2017). Health and medical geography (4th ed.). New York, NY: The Guilford Press.
    - Free online access to the textbook is available through the UF Library.

Materials will be available through the following means:
Course materials including lectures, selected readings and varied external sources will be linked to via Canvas. No purchase of textbook or materials is required, and ArcGIS Pro access is provided via the materials fee.
Materials Fee: Materials Fee: $46.86 | ArcGIS Pro fee for access via UF Apps. Students are also welcome to access ArcGIS Pro via campus computers which have the program installed.

II. Course Goals

Course Objectives
In this course we will:

- 1. Apply basic concepts, principles, and methods that are widely used in medical geography.
- 2. Investigate health problems with a systematic approach and spatial analysis methods.
- 3. Analyze real-world health problems using geographic information systems software.

Student Learning Outcomes
A student who successfully completes this course will be able to:

- Demonstrate competence in the terminology, concepts, theories and methodologies used within the discipline.
- Logically analyze information from multiple perspectives and develop reasoned solutions to problems within the discipline.
- Students communicate knowledge, ideas and reasoning clearly and effectively in written and oral forms appropriate to the discipline.

Category	Student Learning Outcomes	Course activities	Assessments
Content	Students demonstrate competence in the terminology, concepts, theories and methodologies used within the discipline.	Discuss and describe fundamental concepts, principles, and methods relating to medical geography.	Module quizzes, midterm exam, graded discussion boards, GIS labs, final term project.
Critical Thinking	Students carefully and logically analyze information from multiple perspectives and develop reasoned solutions to problems within the discipline.	Synthesize recent scientific literature related to a disease or health issue to identify alignment with the Triangle of Human Ecology.	Graded discussion boards, GIS labs, and final term project.
Communication	Students communicate knowledge, ideas and reasoning clearly and effectively in written and oral forms appropriate to the discipline.	Visualize health data in maps to communicate spatial patterns of health issues. Interpret quantitative statistical results from spatial health data. Explain key scientific findings in written, oral, and visual formats.	Graded discussion boards, GIS labs, and final term project.

III. Graded Work

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the Catalog.

Items	Percentages (%)
Discussions	10
Quizzes	40
Midterm	20
Final Assignment	30
Total	**100**

Graded Components

Discussions (10%): There are multiple modules with discussion forums (combined for 10% of overall grade). These are opportunities to extend what students have learned in the same module. Students are expected to adhere to professional etiquette standards (see UF Policies) in all posts and to engage in CONSTRUCTIVE dialogue. Posts are expected to be thoughtful, detailed responses (i.e., "yes," "no," "I agree," or "I disagree" answer is not sufficient). In most cases, discussions require some research or reading before initial post. Follow-up posts are typically required. For discussion forum assignments, timeliness is critical, and due dates should be strongly adhered to.

Module and GIS Lab Quizzes (40%): There are two types of quizzes in the course, module quizzes and GIS lab quizzes, combined for 40% of the final grade. All quizzes will be due on Sunday night for the week listed in the course schedule at 11:59 PM (ET). Module quizzes: There are four module quizzes across the six weeks. Each module quiz is graded, timed, and worth 100 points. Questions are asked based on the objectives, lectures, and readings of the module. Module quizzes have 24-hour time limits, but are due every Sunday at 11:59pm and will close at that time, even if 24 hours have not passed since the student began the quiz. GIS lab quizzes: There are four lab quizzes after the GIS labs with no time limit. There is also an extra GIS lab setup quiz to prepare for the labs; this is optional but highly recommended for students unfamiliar with the required software. Students should follow the PDF instructions for each lab and answer the lab-related questions completely and accurately to receive full credit on these quizzes.

Midterm (20%): The exam will cover modules 1-8, all content from the modules preceding the exam. The exam has no time limit, but must be taken within the allotted window of time. It is open note. No questions will require ArcGIS Pro-related tasks. Additional details are available on the Canvas site.

Final Assignment (30%): The purpose of the Final Assignment is to share your knowledge on a specific topic with your classmates so you would be able to learn more diverse disease problems and their ecological triangles. You will choose any disease problem or any other health-related issue that has NOT been covered in the class. Please follow the instructions provided in Canvas.

Step 1: Topic selection and approval.
Step 2: Final video presentation.
Step 3: Peer review of video presentations (subject to change).
Step 4: Final term paper

TOTAL: 100%

Grading Scale

Letter Grade	Number Grade
A	100-92.5
A-	92.4-89.5
B+	89.4-86.5
B	86.4-82.5
B-	82.4-79.5
C+	79.4-76.5
C	76.4-72.5
C-	72.4-69.5
D+	69.4-66.5
D	66.4-62.5
D-	62.4-59.5
E	59.4-0

IV. Calendar

Dates	Module	Topics	Readings	Assignments
August 21 - 24	Orientation	Course Overview	Syllabus, Lab_Setup.pdf	Introduce Yourself, Orientation Quiz

August 25 – 31	1	Introduction to Medical Geography	Zika Virus news article Medical Geography web page	Discussion 1 Module Quiz 1
August 27 (Wednesday) | End of Course Add/Drop Period **September 1 (Monday) | Labour Day – Official UF Holiday**				
September 1 - 7	2	Basic Concepts and Principles	On Airs, Waters, and Places Module 2 Definitions	GIS Lab Setup Quiz
September 8 - 14	3	Measuring Diseases	Kentucky Cancer Registry	Discussion 3 Module Quiz 3
September 15 - 21	4	Methodology Design	4.1 Where to Find Data for Medical Geography Studies? Data Analysis of Epidemiological Studies	Module Quiz 4
September 22 - 28	5	Inferring Causal Relationships	Data Analysis of Epidemiological Studies (Again!)	Module Quiz 5

September 29 – October 5	6	Maps and GIS	6.1 Principles of Maps & 6.2 GIS Basics Spatial Turn in Health Research	Discussion 4 GIS Lab 1
October 6 - 12	7	Vector-borne diseases	Malaria Transmission in the U.S. 7.3-7.5 Mosquito-Borne Diseases 8.3 RMSF & 8.4 STARI	Case Study #1 Discussion GIS Lab 2 Midterm Study Guide
October 13 - 19	8	Zoonoses	Zoonoses presentation Chapter 2 – Ecology of Health & Disease Selected article readings	Case Study #2 Discussion GIS Lab 3
October 17 – 18 (Friday & Saturday) | Homecoming – Official UF Holiday				

October 20 - 26	9	Midterm Exam	Midterm Exam	Midterm Exam
October 27 – November 2	10	Climate Change & Global Health	10.4 Climate Change Case Study 3	Discussion 5 Module Quiz 6 GIS Lab 4
November 3 - 9	11	Air Pollution & Human Health	11.1 – 11.3 Air Pollutants & Health Ghost Factories Article	Case Study 4 Discussion GIS Lab 5 Topic Approval for Final Assignment
November 11 (Tuesday) | Veteran's Day – Official UF Holiday				

November 10 - 16	12	Spatial Diffusion of Disease	No Readings!	Case Study 5 Discussion Module Quiz 7
November 17 - 23	13	Human Behaviour & Health	No Readings!	Case Study 6 Discussion Module Quiz 8 Final Video Presentation
November 24 – 29 | Thanksgiving Break – Official UF Holiday				
December 1-3	14	Spatial Disparities in Healthcare	No Readings!	Case Study 7 Discussion GIS Lab 6 Final Term Paper

December 4 – 6 (Thursday & Friday) | Reading Days

December 6-12 (Saturday – Friday) | Exam Days

December 14 (Sunday) | Finalized Course Grades Due to Department

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V. Procedure for Conflict Resolution

Any classroom issues, disagreements or grade disputes should be discussed first between the instructor and the student.
If the problem cannot be resolved, please contact Gabriela Hamerlinck (ghamerlink@ufl.edu). Be prepared to provide documentation of the problem, as well as all graded materials for the semester. Issues that cannot be resolved departmentally will be referred to the University Ombuds Office (http://www.ombuds.ufl.edu; 352-392-1308) or the Dean of Students Office (http://www.dso.ufl.edu; 352-392-1261).

VI. University Policies

NOTE: This course complies with all UF academic policies. For information on those policies and for resources for students, please see UF's "Academic Policies and Resources" web page: https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/