Course	**IPEC/GISC 4384.001** **Health and Environmental Policy/GIS: A Global Perspective**
Professor	Dohyeong Kim, Ph.D
Term	Fall 2015
Meetings	Monday & Wednesday 11:30am – 12:45pm
Classroom	GR 3.602

Professor's Contact Information

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Office Hours	Mondays 2-5pm, and by appointment
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General Course Information

Pre-requisites & other restrictions	Students must complete at least one of the following courses before taking this course: GEOS 2305, GISC 2305, GEOG 3304, GEOS 3304, GISC 3304, or obtain permission of instructor. Students may need some quantitative skills to analyze global public health problems, but the level of the analytical components of the course will be determined by the background of the enrolled students.
Course Description	This course covers emerging issues in global health and environmental policy, with special emphasis on applications of Geographic Information System (GIS) and spatial analytic tools in identifying and responding to physical and social environmental risk factors that impact the health and well-being of peoples throughout the world. This introductory but interdisciplinary course examines contemporary issues in global health and environmental policy and practices.
Learning Outcomes	- Students will understand various social, economic, political and environmental determinants of health, and consider evidences that inequalities in education, income and accessibility to resources influence health status. Emphasis is placed on issues of global health inequality and environmental justice at various levels. - Students will also obtain ample hands-on laboratory experiences on how to utilize various geospatial methods such as spatial analysis, modeling, simulation and mapping with real-world data using state-of-the-art commercial and open source software. - Students will also develop skills in cost-effectiveness analysis and health outcome measurement, using a variety of contemporary global health case studies which focus on content areas such as maternal and child health, environmental health, infectious diseases (HIV/AIDS, malaria, diarrheal diseases, etc.) and global healthcare delivery.
Required Texts & Materials	Anthamatten, P. and Hazen, H., *An Introduction to the Geography of Health*, (New York, NY: Routledge, 2011)
Suggested Texts & Readings*	Lloyd, C., *Spatial Data Analysis: An Introduction for GIS Users*, (Oxford: Oxford University Press, 2010) R1: Kim, D. et al., 2008. "Private demand for cholera vaccines in Hue, Vietnam," *Value in Health*, 11(1):119-128. R2: Kim, D. et al., 2008, "A framework for widespread replication of a highly spatially resolved childhood lead exposure risk model," *Environmental Health Perspective*, 116(12):1735-1739. R3: Kim, D. et al., 2011, "Spatial modeling for groundwater arsenic levels in North Carolina," *Environmental Science & Technology*, 45(11):4824-4831.

	R4: Kim, D. et al., 2012, "Reduction of malaria prevalence by indoor residual spraying: A meta-regression analysis," *American Journal of Tropical Medicine and Hygiene*, 87(1):165-170. R5: Kim, D., Malabika S., Vyas P., 2014, "Role of spatial tools in public health policymaking of Bangladesh: opportunities and challenges," under review at *Journal of Health, Population and Nutrition*. R6: Seo S., Kim D. et al., 2015, "GIS-based ecological association between ambient air pollutants and atopic dermatitis at the sub-district level in Seoul, Korea," *Allergy, Asthma and Immunology Research*, forthcoming. *All the reading materials will be posted online. Students are not required to print material available electronically.
Interaction with Instructor	The course web site on eLearning (elearning.utdallas.edu) serves as a main place to download lecture notes, assignments, readings, etc. All the announcements will be posted at eLearning, along with an email to students. Students should interact with the instructor via emails, office hours and in-class discussion.

Assignments & Academic Calendar

These are the planned readings, test dates, and assignment due dates. Always check the online version in eLearning for updates to the schedule.

Week	Dates	Topic/Lab/Assignments	Text/ Readings
WK 1	August 24	Course Overview and Requirements	
	August 26	Case Study Presentation	R1, R2, R3
WK 2	August 31	Introduction	A&H Ch.1
	Sept 2	GeoDa/QGIS Overview & Training	
WK 3	Sept 7	*Labor Day: No Class*	
	Sept 9	Guest Presentations	R4, R5, R6
WK 4	Sept 14	Cartography & Visualization of Health Data	A&H Ch.9
	Sept 16	**Lab #1: Visualization of Spatial Data**	
WK 5	Sept 21	Health & GIS	A&H Ch.10
	Sept 23	**Lab #2: Basic Analysis of Spatial Data**	
WK 6	Sept 28	Integrating Approaches to the Geography of Health	A&H Ch.11
	Sept 30	***Project Proposal Presentation (5-min)***	
WK 7	Oct 5	Human Health & Environmental Change	A&H Ch.2
	Oct 7	**Lab #3: Geocoding & Spatial Data Construction**	
WK 8	Oct 12	Demographic Change & Infectious Diseases	A&H Ch.3
	Oct 14	**Lab #4: Analysis of Spatial Autocorrelation**	
WK9	Oct 19	Environmental Exposures	A&H Ch.4
	Oct 21	***Midterm Exam #1 (in-class)***	
WK10	Oct 26	Social & Economic Environments	A&H Ch.5
	Oct 28	**Lab #5: Analysis of Spatial Association**	
WK11	Nov 2	Culture & Identity	A&H Ch.6
	Nov 4	**Lab #6: Analysis of Spatial Estimation**	
WK12	Nov 9	Power & Politics of Health	A&H Ch.7
	Nov 11	**Lab #7: Distance-based Spatial Analysis**	
WK13	Nov 16	Geographies of Healthcare	A&H Ch.8
	Nov 18	***Midterm Exam #2 (in-class)***	
WK14	Nov 23-25	*Fall Break: No Class*	
WK15	Nov 30	***Final Project Presentation #1***	
	Dec 2	***Final Project Presentation #2***	
WK16	Dec 7	***Final Project Presentation #3***	
	Dec 9	Advising for Final Project Report	
WK17	Dec 14	***Final Project Report Due by 5pm***	

Course Rules and Policies

Assignments	Assignments for this course include: 1. **Class attendance/participation**: Engaging in the class discussion and with the readings and exercises is the most effective way to learn. Rather than a mere attendance count, active and reflective participation in all course activities and interaction with other students will be considered as class participation in this course. 2. **Midterm exams**: The two midterm exams includes several short answers and essay questions which check student understanding of the concepts and cases covered in class. 3. **Class project presentations**: As a core component of learning, students will conduct an individual class project. Each student should identify a specific issue or problem in global health and environment, analyze the problem using tools and approach discussed in class, formulate possible solutions, and make recommendations applicable to a specific client or actor in the global health and environmental field. Each student should give two oral presentations in class, one for a project proposal (5 minutes) and the other for the final project products (10 minutes). Students will receive feedback from the instructor during the presentations. 4. **Final project report**: Based on the comments from the instructor, each student must submit the final project report no later than 5pm on December 14th.
Assignment Rules	Except in unusual circumstances, ***late assignments will not be accepted*** because the correct timing of the work is important in the learning process. Any concern on the assignments should be notified to the instructor as soon as possible.
Grading Criteria	Grades will be assigned as follows: Letter grades will be determined based on the overall course average, rounded to the nearest whole number. The grade brackets are as follows: A+: 98-100 A: 93-97 A-: 90-92 B+: 87-89 B: 83-86 B-: 80-82 C+: 77-79 C: 73-76 C-: 70-72 D: 60-69 F: 0-59 In determining the course average, assignments will be weighted as follows: **Class Attendance/Participation: 10 percent** **Midterm Exam #1: 20 percent** **Midterm Exam #2: 20 percent** **Project Proposal Presentation: 10 percent** **Final Project Presentation: 20 percent** **Final Project Report: 20 percent**
Incomplete	Generally speaking, the material in this course is best learned as a single unit. I will grant incompletes only in cases where a substantial change in life circumstances occurs that is beyond the control of the student, and only with appropriate documentation. Furthermore, by university policy, an incomplete can only be granted when 70 percent of the coursework has been completed at a passing level.
Comet Creed	*This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:* *"As a Comet, I pledge honesty, integrity, and service in all that I do."*
UT Dallas Syllabus Policies and Procedures	*The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.* *Please go to http://go.utdallas.edu/syllabus-policies for these policies.*

The descriptions and timelines in this syllabus are subject to change at the discretion of the Professor.