

Infrastructure, Spatialization and Society

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Course Information

Course Description

This course introduces students to the social and technical histories of built environments and the impacts (past and present) of socio-cultural biases on the shaping of those environments. Using readings, group discussions, research and spatial mapping tools, students will develop skills in exploring ways that built environments can either facilitate or constrain access to resources, including health. Previous experience with GIS is not required.

Course Materials & Books

No textbook is required. GIS course resources available for download (free):

- [ArcGIS Online](#) and [The ArcGIS book and Instructional Guide](#)

Course Format

This course can be offered in-person or in on-line format, either synchronously or asynchronously. For all formats, readings, discussion postings, individual and group projects, presentations and recorded class content will be shared via Brightspace, Canvas or other online platforms as relevant.

Learning Outcomes

Students' knowledge and skills will be developed in relation to the following learning outcomes:

- Understanding of major socio-cultural movements that have shaped the U.S. urban landscape;
- Understanding of impacts of these movements on access disparities within communities;
- Understanding of links between disparities in access and disparities in health; and
- Ability to discuss infrastructure, access, health and disparity in cultural exploration.

Skills Outcomes

Students will:

- Develop hands-on familiarity with geo-spatial mapping tools (GIS) and types of downloadable publicly-available data that can be used to evaluate access disparities across multiple geospatial scales;
- Gain skills in interpreting, presenting and combining multiple types of information in ways that use maps, graphs and visualizations (StoryMaps) to tell nuanced story of place; and
- Develop understanding of how social forces create measurable and mappable differences in health and access across geographic and geospatial scales.

Coursework & Grading

Course Grading

Assessment Name	Value
Class Readings and Discussion Participation	15%
Team StoryMaps (2 group exercises)	15%
GIS Exercises (3 individual exercises)	15%
Individual Final StoryMap Project – Draft	10%
Individual Final StoryMap Project – Final Submission	25%
Final StoryMap Project Presentation	20%
Total:	100%

Assessment Descriptions & Requirements

Perspective Readings | Discussion

Readings that build on class content will be assigned and discussed throughout the semester via Brightspace or Canvas (as relevant). Responses to discussion posts should draw on materials and examples found through each students' development of individual Final StoryMap projects. For each Discussion, students will need to respond to at least two (2) classmate posts with a follow-up response that shows thoughtful consideration of the original post.

GIS and StoryMaps

This course is about learning to find, use, combine and interpret the spatial mapping data that are available on-line. We will build our understanding of these data using ArcGIS, practicing with on-line assignments and skills-building through developing StoryMaps. There will be three (3) GIS practice exercises assigned over the course of the semester that will draw from information covered in class or available as self-paced on-line exercises.

There will be two (2) group StoryMap map-making assignments over the semester to practice course concepts and one (1) individually created StoryMap focused on neighborhood-scale infrastructural frameworks and access disparities in a selected city. Group StoryMaps will be turned in as assignments during the semester. Individually-created StoryMaps will be shared during Finals week, either in-person or via on-line recorded presentation.

Final Examination/Final Project

There is no Final Exam for this course. Final StoryMaps will be presented during Finals week. Presentations will either be in-person or recorded and posted on Brightspace or Canvas.

Writing Style & Formatting

Most importantly, writing should strive for helping classmates follow thinking and rationales; likewise, the role of thematic maps is to help improve spatialized understanding. Written assignments and StoryMaps should be clear in content and objectives and citations should be included when referencing others' works.

Class Schedule

Week & Date	Topics & Content for the Week	Checklist Items
Week 1	<p>Introduction and Course Structure</p> <p>GIS: Introduction to Cartography and Map Making</p> <p>Read:</p> <ul style="list-style-type: none"> ● No reading for Week 1 	<p>Checklist:</p> <ul style="list-style-type: none"> ● Read/review instructor notes and presentation materials. ● Brightspace post – Introduce yourself to your classmates. ● Confirm ArcGIS access
Week 2	<p>Underpinnings and Natural Environments</p> <p>GIS: Mapping Societal Spatialization – Tools and Data Sources</p> <p>Read:</p> <ul style="list-style-type: none"> ● Ueland and Warf (2006) ● The Great Mississippi Flood of 1927 ● Case Study – Portland, ME 	<p>Checklist:</p> <ul style="list-style-type: none"> ● Read/review instructor notes and presentation material. ● Post discussion response to W2 readings by Fri. pm ● Organize teams for Group StoryMap #1 – choose city
Week 3	<p>Underpinnings and Natural Environments (cont.)</p> <p>GIS; Introduction to StoryMaps Case Study: Miami FL</p> <p>Read:</p> <ul style="list-style-type: none"> ● Case Study: Pittsburgh, PA 	<p>Checklist:</p> <ul style="list-style-type: none"> ● Read/review instructor notes and presentation material. ● Respond to two (2) classmate posts for W2 readings. ● Select individual Final StoryMap city
Week 4	<p>Infrastructure and Historical Framing</p> <p>GIS: Data Presentation, Data Interpolation and Bias</p> <p>Read:</p> <ul style="list-style-type: none"> ● Prener (2021) ● Case Studies: St. Louis, MO and New Orleans, LA 	<p>Checklist:</p> <ul style="list-style-type: none"> ● Read/review instructor notes and presentation material. ● Post discussion response to Wk4 reading by Friday pm. ● Complete GIS practice exercise #1

<p>Week 5</p>	<p>Infrastructure and Historical Framing (cont.)</p> <p>GIS: Case Study: Racialization of Space (Flint, MI)</p> <p>Read:</p> <ul style="list-style-type: none"> ● Case Study: Flint, MI 	<p>Checklist:</p> <ul style="list-style-type: none"> ● Read/review instructor notes and presentation material. ● Respond to two (2) classmate posts on Wk4 reading. ● GIS quiz #1
<p>Week 6</p>	<p>Patterns and Overlays</p> <p>GIS: Views, Tables and Maps</p> <p>Read:</p> <ul style="list-style-type: none"> ● Detroit: (1) (2) (3) ● Case Study: Detroit, MI 	<p>Checklist:</p> <ul style="list-style-type: none"> ● Read/review instructor notes and presentation material. ● Post discussion response to Wk 6 readings by Fri. pm
<p>Week 7</p>	<p>Patterns and Overlays (cont.)</p> <p>GIS: Vector Layers and Raster Data</p> <p>Read:</p> <ul style="list-style-type: none"> ● Case Study: Jackson, MS 	<p>Checklist:</p> <ul style="list-style-type: none"> ● Read/review instructor notes and presentation material. ● Respond to two (2) classmate posts on Wk6 reading. ● Organize teams for Group StoryMap #2 – choose city
<p>Week 8</p>	<p>Exploring Demographics</p> <p>GIS: Group StoryMap #1 Due – Presentation of Results</p> <p>Read:</p> <ul style="list-style-type: none"> ● Massey and Tannen (2015) ● Case Study: Milwaukee, WI 	<p>Checklist:</p> <ul style="list-style-type: none"> ● Read/review instructor notes and presentation material. ● Post discussion response to Wk 8 reading by Fri. pm ● Complete GIS practice exercise #2
<p>Week 9</p>	<p>Break Week</p>	

<p>Week 10</p>	<p>Social Determinants of Health</p> <p>GIS: Geoprocessing – Examining the Interaction of Mapped Layers</p> <p>Read:</p> <ul style="list-style-type: none"> ● ProPublica: The Black American Amputation Epidemic 	<p>Checklist:</p> <ul style="list-style-type: none"> ● Read/review instructor notes and presentation material. ● Post discussion response to Wk 10 reading by Fri. pm.
<p>Week 11</p>	<p>Human Ecology</p> <p>GIS: Guest Presenter (TBD)</p> <p>Read:</p> <ul style="list-style-type: none"> ● [TBD - by Guest Presenter] 	<p>Checklist:</p> <ul style="list-style-type: none"> ● Read/review instructor notes and presentation material. ● Respond to two (2) classmate posts on Wk10 reading. ● GIS quiz #2
<p>Week 12</p>	<p>Vulnerability Indices and Health Mapping</p> <p>GIS: <u>Draft Individual StoryMap Due</u></p> <p>Read:</p> <ul style="list-style-type: none"> ● Goovaerts (2019) ● Switzer and Teodoro (2017) ● Case Study: Chicago, IL 	<p>Checklist:</p> <ul style="list-style-type: none"> ● Read/review instructor notes and presentation material. ● Post discussion response to Wk 12 reading by Fri. pm.
<p>Week 13</p>	<p>Vulnerability Indices and Health Mapping (cont.)</p> <p>GIS: Group StoryMap #2 due – Presentation of Results</p> <p>Read: No assigned reading</p>	<p>Checklist:</p> <ul style="list-style-type: none"> ● Read/review instructor notes and presentation material. ● Respond to two (2) classmate posts on Wk12 reading. ● GIS practice exercise #3 due
<p>Week 14</p>	<p>Resistance Spaces and Solution Spaces</p> <p>GIS: No assignment</p> <p>Read:</p> <ul style="list-style-type: none"> ● Ron Finley and TED Talk 	<p>Checklist:</p> <ul style="list-style-type: none"> ● Read/review instructor notes and presentation material. ● Catch up on anything you need extra time on!

<p>Week 15</p>	<p>Resistance Spaces and Solution Spaces (cont.)</p> <p>GIS: <u>Final</u> Project StoryMaps due</p> <p>Read:</p> <ul style="list-style-type: none"> ● Infrastructure Removal ● Rochester, NY ● I-395 Removal - Detroit 	<p>Checklist:</p> <ul style="list-style-type: none"> ● Read/review instructor notes and presentation material. ● Catch up on anything you need extra time on!
<p>Finals Week</p>	<p>Final StoryMap Presentations</p>	

Policies & Expectations

Attendance & Late Work

Attendance will be gauged by consistency of engagement with class discussion posts and mapping assignments. For class discussion posts, I am less focused on the ‘rightness’ of what you post than on the consistency and seriousness of engagement with the topics and with each other’s posts. It is important that Discussion posts are made by stated deadlines so that classmates are able to post required responses. If you know you will be missing assignments, please discuss with me beforehand so that we can find a workaround for that assignment. Late work without prior notice will have to result in a zero grade for that assignment.

Classroom Community Expectations

In this course, we will address a range of topics that can be difficult to discuss. For this reason, please approach our course materials and our class discussions with an open mind. Always express agreement, disagreement, and debates with classmates in a civil manner. Similarly, be willing to listen to peers and faculty when they disagree with you or present a different viewpoint. There is a zero tolerance policy for harmful behavior or speech in this class.