

# Geography 225 - Introduction to Geographic Information Systems (FALL 2020)

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**Faculty:** Holly Barcus

**Lab Instructor:** Alysha Alloway

**Tutorial & Lab times:** MWF 11:00a.m.-1:30 p.m.

(Detailed schedule attached)

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## Virtual Office Hours:

Holly: M/W 1:30-2:30; Tues 9-10am, or by appointment

<https://tinyurl.com/OfficeHoursHolly>

Alysha: Tues 3-4pm, Thurs 10am-12pm by appointment, or email for alternate times:

<https://tinyurl.com/OfficeHoursAlloway>

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## Course Description and Objectives

The ability to create, visualize, and analyze spatial data is an increasingly important skill for assessing and understanding our rapidly changing global, regional, and local communities. Maps are the primary medium through which we communicate our knowledge of the spatial world, but are, by design, generalizations of more complex spatial data. In the first part of this course we will explore the principles of map design and geographic concepts that provide a foundation for spatial data analysis. During the second half of the course we will shift our focus to Geographic Information Systems and the development, display, and analysis of spatial data in a digital environment. We will approach each topic conceptually through our lecture sessions and then apply these principles during lab sessions. By the end of this course you should:

- Understand maps and their projections, scale, resolution and accuracy
- Be a more critical map user
- Acquire a basic GIS vocabulary
- Become familiar with the most used features of ArcGIS software
- Learn to solve common geographic problems using a GIS
- Be able to carry-out a GIS project from problem conceptualization to final analyses and interpretation

## COURSE READINGS

### Required Texts

- Monmonier, Mark. 1991. *How to Lie with Maps*. Chicago: University of Chicago Press (**1st or 2nd Edition only**)

### Additional Reading

- See *attached reading list*

## COURSE RESOURCES, REQUIREMENTS & GRADING

**Resources:** For each class meeting, the lecture slides and assignments will be made available on Moodle immediately following our tutorial time (see Course Organization & Policies section below for description of Tutorials and Labs). Other resources such as additional readings, web and news links can be found here as well. Please use this site as a resource for studying and exploring varied and interesting dimensions of GIS.

**Attendance –** Attendance is expected for each tutorial and lab period. Please attend regularly and keep up with all assignments and exams – your input and participation are key to making it interesting and relevant to your own experiences and in building knowledge and community. Please BE ON TIME and please follow “Netiquette” principles

(<https://accc.uic.edu/news-stories/make-the-most-of-online-earning-netiquette-best-practices/>).

As instructors, we usually take attendance simply to keep track of who is regularly attending. Our experience is that students who attend regularly are better equipped to successfully wed the conceptual and theoretical components of GIS with the applied technical requirements.

The lab section of this course also meets regularly. Most of the material covered in lab is not easily made up if you are absent. If you are absent from lecture or lab for any reason, please realize that it is your responsibility to obtain the information you missed.

**Tutorial Exercises and Final Project –** Over the course of the semester we will have a series of applied exercises in our tutorials. These exercises will help you utilize the concepts that we are discussing in our tutorial in a more hands-on manner. Tutorial exercises are designed to allow you to experiment with different techniques that we have discussed in the lectures and tutorials. We will discuss each exercise during the class period in which it is due.

Towards the end of the semester, you will complete a final project. In brief, the project consists of three major components: a project proposal, a story map, and an oral presentation. Details will be forthcoming.

**Exams** will consist of short answers, essays, and applied problem-solving questions. There are two exams; each exam is 100 points and will cover lecture, tutorial and lab material. The final exam is comprehensive.

**Incompletes** – Incompletes will be given according to Macalester policy. That means it will be given only to students “who have encountered difficulties beyond their control that have hindered their academic progress.”

### Make-up and Late Assignments

- **Exams** – Students are expected to take exams at the scheduled time. If extreme circumstances make it impossible to take an exam at the scheduled time, please notify Holly as far in advance as possible or as soon as possible after an unanticipated emergency.
- **Tutorial assignments** – Late assignments will be accepted for partial credit only.
- **Lab assignments** – Late assignments are only accepted in exceptional cases, such as illness or family emergency. In such cases, please contact Alysha **prior** to the due date. For unexcused absences, late assignments will be deducted one letter grade from your earned score for each day it is late.

## COURSE ORGANIZATION & POLICIES

### Why do we have asynchronous lectures?

In this course we have decided to provide pre-recorded lectures of our core content to you. We expect that you will review these recorded lectures, take notes, and come to your tutorial and lab periods ready to discuss the ideas and techniques presented in the lecture. Why pre-recorded lectures? In the same spirit as “flipped classrooms” we would like to spend our in-person time, our Tutorials, in interactive and applied learning scenarios. However, there is a lot of knowledge built into learning GIS. A pre-recorded lecture will allow you to review these core concepts when it is convenient for you (although always before the scheduled tutorial) and stop and start the video to take notes and develop questions that we can then discuss in our tutorial.

### What is a Tutorial?

Tutorials for this course are small groups of students (up to 10) who will meet synchronously to discuss lecture ideas, work on collaborative exercises, and create a community around learning GIS. GIS, regardless of how you use it outside of class, is a collaborative software. GIS Analysts regularly consult with each other, experts in various fields, and experts on geospatial data to make good decisions about mapping and spatial data analysis. These collaborations and consultations require a working knowledge and vocabulary, as well as an understanding of how broad GIS and spatial data concepts are applied in the real world. Our tutorials are designed to practice doing all of these things in a low-stakes, small group environment. Our primary objective is for you to be comfortable with GIS terminology and concepts and to feel comfortable in GIS collaborations.

## **What is the Lab?**

In your lab period you will work on applying the concepts learned in the tutorials within a GIS software program. This term we will be using the ArcGIS Online platform to practice some of the tools, concepts, and techniques we discussed in the tutorial. During the lab period we will meet to talk about the previous lab assignment, share tips and tricks for working with the software, and practice good map design and critique. We will share presentations and activities to reinforce the concepts we have practiced in the lab assignment. Every lab period you will have a new assignment that will be due at your next lab period. For most labs, you will work individually and on your own time to complete the assignment, but there may also be some group work and assignments throughout the term.

### **Lab Team**

You will be assigned to a small lab team of 2-3 people, this will be the group you will work with to complete group assignments and activities in the lab. Your lab team will be assigned a Lab Assistant who will act as a TA or mentor for your group. Your Lab Assistant has already completed all of the lab assignments and activities before you begin them and will be a helpful resource for assignment questions, software troubleshooting, and design help. You will meet with your Lab Assistant at least once per week.

**Courtesy** – The first and most important classroom policy is to BE COURTEOUS! This includes:

- If you arrive late or need to leave early, do so with a minimum of disruption.
- Please turn-off all cell phones, Ipods, etc. during class if you are not muted on Zoom.
- Be polite when others are speaking, there is enough time to discuss all perspectives.

**Course Information** – A fair amount of course information will be disseminated via Moodle and email. Please be sure to check your Macalester email account and the course Moodle page regularly.

**Office Hours** – Office hours provide a great opportunity to discuss questions, issues, or concerns about the class or to just talk about GIS. Feel free to “stop by” during office hours or schedule a different time to meet, if your schedule conflicts with the posted office hours.

**Attendance** - Attendance plays an essential role in learning; you are warmly invited, encouraged, and expected to attend all synchronous class/tutorial and lab meetings (whether in-person or virtual). Attendance will be important not only for your learning, but also for our ability to build a community together and maintain a sense of connection and commitment to one another during this time of imposed physical distance. Your presence in class matters.

I recognize that there are unavoidable circumstances that sometimes make it impossible for you to attend class. Although I hope it isn't the case, those unavoidable circumstances may be more common during this module given that we are in the midst of a pandemic. If you will not be in class for any reason, it is your responsibility to inform me in advance via email. It is also your responsibility

to make up work you missed in your absence. Students with disabilities should discuss their accommodations with me early in the course to work out a plan that aligns with maintaining course expectations and learning goals.

**Participation** - Participation is distinct from attendance and is also an essential part of this course. In-class discussions (in-person or via Zoom), on-line discussion forums, responses to brief ungraded writing assignments, etc. will be factored into your participation grade. Engaging with the (real and virtual, synchronous and asynchronous) classroom space — including by helping to create an environment where all of us can learn and think well about one another — will also be factored into participation.

It is important to remember that we all have different styles of expression. If you have not been able to participate in a class discussion for any reason but want to demonstrate your active engagement, please send me an email after class with a comment or an idea you had that you would have liked to share, but were not able to during class.

This is an interactive course. Our tutorial days will be mostly oriented around in-class exercises and discussions. In both the tutorial and lab sections of this course we define participation as attending class regularly and on-time, asking questions, contributing to discussions, being prepared (this means doing the readings and exercises before coming to class) and generally being intellectually engaged in the material.

**3 Question Rule:** Asking questions following in-class presentations or guest lectures is an acquired skill. Such skills only improve with practice. The 3 Question Rule requires that 3 questions be asked following every presentation that occurs in this classroom. As a general rule, we will not move on to the next presentation until at least three questions have been asked of the presenter(s). Questions can come in a variety of forms, for example, asking for clarification, or more information. Think critically, ask questions.

Students with any concerns, questions, or need for consideration for flexibility should connect with me as soon as possible to determine an appropriate plan.

**Please note:** It may be that illness or other unexpected situations will require you to be away for class for more than half of a module, necessitating that we consider the possibility of withdrawal or an incomplete. We will stay in contact, and will seek support from colleagues in Student Affairs and in Academic Advising, should that situation arise.

## **Academic Integrity**

Cheating and plagiarism are unacceptable and dishonest. In this class you are expected to complete and turn in your own work and to follow established academic practices regarding proper use and citation of materials and ideas that are not your own. Engaging in cheating or plagiarism will result in

a failing grade in this class. More information is available about Macalester's academic integrity policy in the Student Handbook ([www.macalester.edu/academicprograms/academicpolicies/academicintegrity/](http://www.macalester.edu/academicprograms/academicpolicies/academicintegrity/)).

## Recording Policy

In order to accommodate students who will not be able to attend synchronous class meetings during this module, I plan to record our synchronous class sessions in a manner consistent with [Macalester's classroom recording policy](#). I will share these recordings in a password-protected (and not public) place. If you download any class recordings, you must store them in a password-protected file or on a password-protected site. Please note that the recording policy clearly states that ***you may not share, replicate, or publish any class recording, in whole or in part, or use any of the recordings for any purpose besides knowing what happened during the class period, without my written approval.*** If I use any recorded content from any of our classes for purposes beyond our class, I will – in accordance with the policy – obtain your written permission to do so.

## Health and Well-Being

Here at Macalester, you are encouraged to make your well-being a priority throughout this semester and your career here. Investing time into taking care of yourself will help you engage more fully in your academic experience. Remember that beyond being a student, you are a human being carrying your own experiences, thoughts, emotions, and identities with you. It is important to acknowledge any stressors you may be facing, which can be mental, emotional, physical, financial, etc., and how they can have an academic impact. I encourage you to remember that sleeping, moving your body, and connecting with others can be strategies to help you be resilient at Macalester. If you are having difficulties maintaining your well-being, please reach out to one of the resources listed below.

If you do not feel well or are exhibiting any symptoms of COVID-19, please do not come to class. If you feel up to participating remotely, please do so. If you are too ill to participate at all, see attendance and participation policy.

Please adhere to the [Mac Stays Safer Community Commitment](#), which outlines practices to maintain your own health and that of others around you: wear a mask, maintain a 6 foot distance from others, wash your hands frequently, use hand sanitizer when handwashing is not available.

## Supporting Student Learning

In some circumstances, course design may pose barriers to a student's ability to access or demonstrate mastery of course content. If you are encountering barriers to your learning that we can mitigate, please bring them to our attention. Reasonable accommodations are available for students with documented disabilities. Contact the Disability Services office by emailing [disabilityservices@macalester.edu](mailto:disabilityservices@macalester.edu), or calling 651-696-6874 to schedule an appointment to discuss

your individual needs. It is important to meet as early in the semester as possible; this will ensure that your accommodations can be implemented early on.

**580 point grading scale**

200 = Exams (2; 100 pts each)

150 = Final project

120 = Lab Assignments (6 labs @ 20 pts each)

60 = Lecture exercises (6; 10 pts each)

50 = Participation and attendance

A = 94+                    A- = 90.0 – 93.9%

B+ = 87.0% - 89.9%;    B = 83.0 – 86.9%;    B- = 80.0 - 82.9%

C+ = 77.0% - 79.9%;    C = 73.0 – 76.9%;    C- = 70.0 – 72.9%

D+ = 67.0% - 69.9%;    D = 63.0 – 66.9%;    D- = 60.0 – 62.9%

**General Schedule: Dates are approximate – we will adjust as needed.**

**NOTE: All Readings denoted with \*\* are reference readings and therefore OPTIONAL**

WEEK	DATE	TUTORIAL & LAB GROUP 1*	TUTORIAL & LAB GROUP 2**	TUTORIAL PREPARATION  (What to read or review <u>before</u> your tutorial unless otherwise noted)
1		No Class	No Class	No Class
	Wed, Sept 2	11-12:10: Both Groups together  Tutorial 1 & 2 -----  Lab 1 12:20-1:30 LAB  (GROUP 1 ONLY) : Set up GIS accounts; sign in - get to know your lab group  <b>Lab 1: Getting Started/Introduction</b>	11-12:10: Both Groups together  -----  12:20-1:30:  NO LAB	<b>RECORDED LECTURE:</b>  GeoSpatial Technologies  <b>READINGS:</b>  Monmonier Ch 1; Cohen 2011; Scheid Vineyards 2013**Delaney & Van Niel Ch 1  <b>ASSIGNMENT:</b> None
	Fri, Sept 4	11-12:10 Tutorial  Tutorial 1 & 2 Map Types & Data Classification -----  Lab 2 12:20-1:30 NO LAB	11-12:10: LAB  (GROUP 2 ONLY) : Set up GIS accounts; sign in - get to know your lab group  <b>Lab 1: Getting Started/Introduction</b> -----  12:20-1:30  Map Types & Data Classification	<b>RECORDED LECTURE:</b>  Map Types & Data Classification  <b>READINGS:</b>  Monmonier Ch 7-8  Monmonier Ch10  <b>ASSIGNMENT:</b>  Tutorial Exercise 1: Data Classification  <b>DUE:</b> Wed Sept 8 to Moodle Dropbox
	Sept 7  LABOUR DAY	No Classes ~ Labour Day	No Classes ~ Labour Day	No Classes ~ Labour Day

	<p>Wed, Sept 9</p> <p>Tutorial 1 &amp; 2 Lab 1</p> <p>-----</p> <p>12:20-1:30 LAB</p> <p><b>Lab 2: Map Purpose + Design</b></p>	<p>11-12:10</p> <p>Data Visualization + Map elements + Map Design</p> <p>-----</p> <p>12:20-1:30 NO LAB</p>	<p>11-12:10* NOTE SCHEDULE CHANGE</p> <p>Data Visualization + Map elements + Map Design</p> <p>-----</p> <p>12:20-1:30 NO LAB</p>	<p><b>RECORDED LECTURE:</b></p> <p>Data Visualization &amp; Map Elements (Alysha)</p> <p><b>READINGS:</b> Few 2009; Krygier &amp; Wood Ch 9</p> <p>Monmonier Ch 5-6</p> <p>Brewer Ch 1; Buckley 2012; Buckley &amp; Field 2011</p> <p>20 Unrequested Map Tips <a href="#">Part 1</a> + <a href="#">Part 2</a></p> <p>Web Maps: <a href="#">GIS Provides a Common Visual Language   The ArcGIS Book</a> (read the chapter, don't complete the affiliated exercise)</p> <p><b>ASSIGNMENT:</b> Finish Poverty Maps (Tutorial Exercise 3 started in class)</p> <p><b>Due:</b> Friday, Sept 11</p>
	<p>Fri, Sept 11</p> <p>Tutorial 1 &amp; 2 Lab 2</p> <p>-----</p> <p>12:20-1:30 NO LAB</p>	<p>11-12:10</p> <p>Coordinate Systems &amp; Projections</p> <p>-----</p>	<p>11-12:10: LAB</p> <p><b>Lab 2: Map Purpose + Design</b></p> <p>-----</p> <p>12:20-1:30</p> <p>Coordinate Systems &amp; Projections</p>	<p><b>RECORDED LECTURE:</b></p> <p>Coordinate Systems &amp; Projections</p> <p><b>READINGS:</b> Tyner Ch 6</p> <p>**Delaney &amp; Van Niel 2008, Ch 5</p> <p><b>ASSIGNMENT:</b></p> <p>Tutorial Exercise 2: Exploring scale and projections</p> <p><b>Due:</b> Monday, Sept 14</p>
3	<p>Mon, Sept 14</p> <p>Lab 1 and 2 No tutorials</p> <p>-----</p>	<p>11-12:10</p> <p><i>Optional</i> Exam Review with Teaching Assistants - Please bring questions to class</p> <p>-----</p>	<p>11-12:10: LAB</p> <p><b>Lab 3: Poverty Map discussion + critique</b></p> <p>-----</p>	<p><b>RECORDED LECTURE:</b></p> <p>None</p> <p><b>READINGS:</b></p>

		<p>12:20-1:30 LAB</p> <p><b>Lab 3: Poverty Map discussion + critique</b></p>	<p>12:20-1:30</p> <p><i>Optional Exam Review with Teaching Assistants</i> - Please bring questions to class</p>	<p>None</p> <p><b>ASSIGNMENT:</b> Study for your Exam!</p>
	<p>Wed, Sept 16</p> <p>Tutorial 1 &amp; 2</p> <p>Lab 1</p>	<p><b>11-12:10</b></p> <p><b>EXAM 1</b></p> <p>-----</p> <p>12:20-1:30 LAB</p> <p><b>Lab 4: How to find data in ArcGIS Online</b></p>	<p><b>11-12:10</b></p> <p><b>EXAM 1</b></p> <p>-----</p> <p>12:20-1:30 NO LAB</p>	<p><b>RECORDED LECTURE:</b></p> <p>None</p> <p><b>READINGS:</b></p> <p>None</p> <p><b>ASSIGNMENT:</b></p> <p>None</p>
	<p>Fri, Sept 18</p> <p>Tutorial 1 &amp; 2</p> <p>Lab 2</p>	<p>11:12:10</p> <p>Discussion: Alternative Data Representations</p> <p>-----</p> <p>12:20-1:30 NO LAB</p>	<p>11-12:10: LAB</p> <p><b>Lab 4: How to find data in ArcGIS Online</b></p> <p>-----</p> <p>12:20-1:30</p> <p>Discussion: Alternative Data Representations</p>	<p><b>RECORDED LECTURE:</b></p> <p>1) GIS: Spatial Problem Solving 2) Representing Data in GIS: The Vector &amp; Raster Models</p> <p><b>READINGS:</b></p> <p><i>Smith 2007; Murphy 2008</i></p> <p>Hale 2008</p> <p>**Delaney &amp; Van Niel 2008 Ch 2</p> <p><b>ASSIGNMENT:</b></p> <p>Lect Ex 4:GIS Data Source Presentation(in class)</p>
4	<p>Mon, Sept 21</p> <p>Lab 1 and 2</p> <p>No tutorials</p>	<p>11-12:10:No Tutorial</p> <p>-----</p> <p>12:20-1:30 LAB</p>	<p>11-12:10: LAB</p> <p><b>Lab 5: How to bring in data from other sources</b> (not already up on AGOL)</p>	<p><b>RECORDED LECTURE:</b></p> <p>CENSUS DATA (Read-only)</p>

		<b>Lab 5: How to bring in data from other sources</b> (not already up on AGOL)	----- 12:20-1:30: No Tutorial	<b>READINGS:</b>  Wombold 2008  <b>ASSIGNMENT:</b>  Lect. Ex. 5: Using ACS data - in class
	Wed, Sept 23	11-12:10  Tutorial 1 & 2  Lab 1 -----  12:20-1:30 LAB  <b>Lab 6: Geoprocessing + Network Analysis</b>	11-12:10: NO LAB  -----  12:20-1:30  Overlay Analysis & Geoprocessing	<b>RECORDED LECTURE:</b>  GEOPROCESSING  <b>READINGS:</b>  Layton et al. 2008;  **Delaney & Van Niel 2008, Ch 9  <b>ASSIGNMENT:</b>  Tutorial Exercise 5: Overlay Analysis  <b>DUE:</b> Friday, Sept 25
	Fri, Sept 25	11-12:10  Tutorial 1 & 2  Lab 2 -----  12:20-1:30 NO Lab	11-12:10: LAB  <b>Lab 6: Geoprocessing + Network Analysis</b>  -----  12:20-1:30  GPS and Other GeoSpatial Data Resources	<b>RECORDED LECTURE:</b>  GPS  <b>READINGS:</b>  Harringa 2007;  Hill 2008  <b>ASSIGNMENT: Tutorial Exercise 4 (we will do this in class)</b>
5	Mon, Sept 28	11-12:10	11-12:10	

	<p>Lab 1 and 2</p> <p>No tutorials</p> <p>-----</p> <p>12:20-1:30</p> <p>Optional Q&amp;A Exam Review with TAs</p> <p>-----</p> <p>EXAM 2 is a “take home” exam. It will be posted on Moodle at 2pm on Monday. It is due to the DROPBOX by 11a.m. Wednesday.-</p>	<p>NO LAB</p> <p>Optional Q&amp;A Exam Review with TAs</p> <p>-----</p> <p>EXAM 2 is a “take home” exam. It will be posted on Moodle at 2pm on Monday. It is due to the DROPBOX by 11a.m. Wednesday.-</p>	
<p>Wed, Sept 30</p> <p>Tutorial 1 &amp; 2</p> <p>-----</p> <p>Lab 1</p> <p><b>11-12:10</b></p> <p>Final Project Strategies and Planning: A Discussion</p> <p>-----</p> <p><b>12:20-1:30</b></p> <p><b>LAB</b></p> <p><b>Creating Story Maps: Storyboarding tutorial</b></p>	<p><b>Exam due before 11a.m.</b></p> <p>-----</p> <p><b>11-12:10</b></p> <p>Final Project Strategies and Planning: A Discussion</p> <p>-----</p> <p><b>12:20-1:30</b></p> <p><b>LAB</b></p> <p><b>Creating Story Maps: Storyboarding tutorial</b></p>	<p><b>Exam due before 11a.m.</b></p> <p>-----</p> <p><b>11-12:10</b></p> <p><b>NO LAB</b></p> <p>-----</p> <p><b>12:20-1:30</b></p> <p>Final Project Strategies and Planning: A Discussion</p>	<p><b>RECORDED LECTURE:</b></p> <p>None</p> <p><b>READINGS:</b></p> <p><a href="#">How to Make an Awful StoryMap</a></p> <p><b>ASSIGNMENT:</b></p> <p>Project Proposals are due on Friday, Oct 2</p> <p><b>OPTIONAL LEARNING:</b></p> <p>New Story Maps: <a href="https://learn.arcgis.com/en/patterns/getting-to-know-the-new-storymaps/">https://learn.arcgis.com/en/patterns/getting-to-know-the-new-storymaps/</a> (1.5 hrs)</p>
<p>Fri, Oct 2</p> <p>Tutorial 1 &amp; 2</p> <p>-----</p> <p>Lab 2</p> <p><b>11-12:10</b></p> <p>What is a good Story Map?</p> <p>-----</p> <p>12:20-1:30 NO LAB</p>	<p><b>11-12:10</b></p> <p><b>LAB</b></p> <p><b>Creating Story Maps: Storyboarding tutorial</b></p> <p>-----</p>	<p><b>11-12:10</b></p> <p><b>LAB</b></p> <p><b>Creating Story Maps: Storyboarding tutorial</b></p> <p>-----</p>	<p><b>RECORDED LECTURE:</b></p> <p>None</p> <p><b>READINGS:</b></p> <p>None</p>

			<b>12:20-1:30</b>  What is a good Story Map?	<b>ASSIGNMENT:</b>  In your project groups, start gathering data for maps, and compile other content/media for your project. Start creating maps.
6	Mon, Oct 5  Lab 1 and 2  No tutorials  -----  *Holly Away*	<b>11-12:10</b>  <b>No Tutorial: Tutorial TAs available for project support</b>  -----  <b>12:20-1:30</b>  <b>Final Project Check-in Meetings</b>	<b>11-12:10</b>  <b>Final Project Check-in Meetings</b>  -----  <b>12:20-1:30</b>  <b>No Tutorial - Tutorial TAs available for project support</b>	<b>RECORDED LECTURE:</b>  None  <b>READINGS:</b> None  <b>ASSIGNMENT:</b> None  Create Maps
	Wed, Oct 7  Tutorial 1 & 2  Lab 1  -----  *Holly Away*	<b>11-12:10</b>  <b>No Tutorial: Tutorial TAs available for project support</b>  -----  <b>12:20-1:30</b>  <b>Final Project Work</b>	<b>12:20-1:30</b>  <b>Final Project Work</b>  -----  <b>12:20-1:30</b>  <b>No Tutorial: Tutorial TAs available for project support</b>	<b>RECORDED LECTURE:</b> None  <b>READINGS:</b> None  <b>ASSIGNMENT:</b> None  Storyboard and write content and compile any additional media or resources you need
	Fri, Oct 9  *Holly Away*  Tutorial 1 & 2  Lab 2	<b>11-12:10</b>  <b>Final Project Work</b>  -----  <b>12:20-1:30</b>  <b>LAB: Group Critique</b>	<b>11-12:10</b>  <b>LAB: Group Critique</b>  -----  <b>12:20-1:30</b>  <b>Final Project Work</b>	<b>RECORDED LECTURE:</b> None  <b>READINGS:</b> None  <b>ASSIGNMENT:</b> None  Storyboarding draft due  Continue to write content, and compile any additional media or resources you need

7	Mon, Oct 12	<b>11-12:10</b>	<b>11-12:10</b>	<b>RECORDED LECTURE:</b> None
	Lab 1 and 2	<b>No Tutorial</b>	<b>LAB: Final Project Story Map Critique</b>	<b>READINGS:</b> None
	No tutorials	-----	-----	<b>ASSIGNMENT:</b> None
		<b>12:20-1:30</b>	<b>12:20-1:30</b>	Critique - pair up and review another group's Story Map.
		<b>LAB: Final Project Story Map Critique</b>	<b>No Tutorial</b>	Revise story map and put finishing touches on before presentation.
	Wed, Oct 14	<b>11-1:30</b>	<b>11-1:30</b>	<b>RECORDED LECTURE:</b> None
	Tutorial 1 & 2	<b>JOINT SESSION for FINAL PRESENTATIONS</b>	<b>JOINT SESSION for FINAL PRESENTATIONS</b>	<b>READINGS:</b> None
	Lab 1	<b>5 Presentations on Wednesday</b>	<b>5 Presentations on Wednesday</b>	<b>ASSIGNMENT:</b> None
	Fri, Oct 16	<b>11-1:30</b>	<b>11-1:30</b>	<b>RECORDED LECTURE:</b> None
	Tutorial 1 & 2	<b>JOINT SESSION for FINAL PRESENTATIONS</b>	<b>JOINT SESSION for FINAL PRESENTATIONS</b>	<b>READINGS:</b> None
	Lab 2	<b>5 Presentations on Friday</b>	<b>5 Presentations on Friday</b>	<b>ASSIGNMENT:</b> None
STUDY WEEK & FINAL EXAMS	Mon, Oct 19	<b>11-1:30</b>	<b>11-1:30</b>	<b>RECORDED LECTURE:</b> None
	Lab 1 and 2	<b>StoryMap Competition, Wrap-Up and Evaluations</b>	<b>StoryMap Competition, Wrap-Up and Evaluations</b>	<b>READINGS:</b> None
	No tutorials	<b>End of class discussion - what to do with GIS in career</b>	<b>End of class discussion - what to do with GIS in career</b>	<b>ASSIGNMENT:</b> None

	<b>FINAL EXAM PERIOD</b>	<b>Guest Lecture:</b> <b>Alysha Alloway</b> <b>“GIS &amp; Social Justice”</b> <b>THURS 10/22: 11:00am – 1:00pm</b>	<b>Guest Lecture:</b> <b>Alysha Alloway</b> <b>“GIS &amp; Social Justice”</b> <b>THURS 10/22: 11:00am – 1:00pm</b>	
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\*\*Tutorial and Lab Group General Schedule

	Time	Tutorial Group	Lab Group
Mon	11:00-12:10 12:20-1:30	None None	Group 2 (10 students) Group 1 (10 students)
Wed	11:00-12:10 12:20-1:30	Tutorial Group 1 Tutorial Group 2	Group 1 (10 students)
Fri	11:00-12:10 12:20-1:30	Tutorial Group 1 Tutorial Group 2	Group 2 (10 students)