THE OHIO STATE UNIVERSITY

College of Arts and Sciences
Department of Geography

SYLLABUS

GEOG 2200: Spatial Literacy: Visualizing our World through Mapping Space & Place

Autumn 2025
3 credit hours – lecture based
11:30 -12:25 MWF, Derby 135

COURSE OVERVIEW

Instructor and Teaching Assistant (TA)

Primary Instructor: Dr. Tammy E. Parece
Office: 1189 Derby Hall
Email: parece.1@osu.edu
Phone: 614-247-5994
Office hours:

Teaching Assistant: TBD

If you are ill or have symptoms, please do not visit us in our offices, please email us and we can set up a zoom link for your participation during our office hours. To request an appointment outside of the above times, please send both the instructor and the TA an email with your availability up to a week ahead.

Prerequisites: None

Course Description

This course introduces students to spatial representation and spatial literacy through the creation of thematic maps and analysis of descriptive statistics, probabilities, and hypothesis testing. Thematic maps provide a visual illustration of spatial patterns, patterns that are not normally apparent within other data representations. For example, corporations, governments, the media, and researchers use maps and geographic information technology to understand and visualize data, including natural resources, flows of trade, historical events, property management, and spatial behavior and spread of diseases, among other things. As such, students will utilize geographic information technology to create a variety of thematic maps which aid in critically evaluating issues present in our global society. Students will apply a variety of statistical metrics and analysis (including descriptive and inferential statistics) to spatial patterns seen within their created maps.

In this course, we explore the foundations and definitions of spatial data, how and why maps are such a powerful tool to understand an increasingly complex world, and how modern technology is currently transforming the art and science of map-making. Using practical exercises and discussions, students

will develop the knowledge, skills, and dispositions that constitute spatial literacy. The main goal is to give students a spatial literacy foundation (including spatial quantitative reasoning methodologies) so students can realize the value of geographic knowledge in today's world. Students will develop their critical thinking skills to analyze real-world, critical problems such as understanding demographic patterns, business locations, social and equity issues, transportation and infrastructure, natural disaster recovery and responses, and much more. At the conclusion of this course, students will be able to view and explain their environments and answer the who, what, when and why of space and place (the where).

Course Learning Outcomes

Upon successful completion of this course, students should be able to:

1. employ basic methods of spatial data-gathering, presentation, and interpretation;
2. interpret map symbology in order to analyze and critically evaluate the spatial structure of and relationships among spatial phenomena;
3. interpret and use basic statistical concepts, including descriptive statistics (mean, mode, median, range, standard deviation and variance), inferential statistics (probability and hypothesis testing), and spatial statistics (spatial correlation, hot spots, and interpolation);
4. apply statistical methods to explain spatial patterns on maps; and
5. evaluate the impact of spatial data sampling, uncertainty and scale on map use.

GENERAL EDUCATION

This course provides 3-credits of the required 4-6 credits in the General Education Theme: Lived Environments. For those students who are following the New General Education curriculum, Geography 2200 is an approved course in the GEN Theme: Lived Environments category.

GE Goals:

- **Goal 1:** Successful students will analyze an important topic or idea at a more advanced and in-depth level than the foundations. In this context, "advanced" refers to courses that are e.g., synthetic, rely on research or cutting-edge findings, or deeply engage with the subject matter, among other possibilities.
- **Goal 2:** Successful students will integrate approaches to the theme by making connections to out-of-classroom experiences with academic knowledge or across disciplines and/or to work they have done in previous classes and that they anticipate doing in future.
- **Goal 3:** Successful students will explore a range of perspectives on the interactions and impacts between humans and one or more types of environment (e.g. agricultural, built, cultural, economic, intellectual, natural) in which humans live.
- **Goal 4:** Successful students will analyze a variety of perceptions, representations and/or discourses about environments and humans within them.

GE Expected Learning Outcomes:

- **ELO 1.1** Engage in critical and logical thinking.
- **ELO 1.2** Engage in an advanced, in-depth, scholarly exploration of the topic or ideas within this theme.
- **ELO 2.1** Identify, describe, and synthesize approaches or experiences.

- **ELO 2.2** Demonstrate a developing sense of self as a learner through reflection, self-assessment, and creative work, building on prior experiences to respond to new and challenging contexts.
- **ELO 3.1** Engage with the complexity and uncertainty of human-environment interactions.
- **ELO 3.2** Describe examples of human interaction with and impact on environmental change and transformation over time and across space.
- **ELO 4.1** Analyze how humans' interactions with their environments shape or have shaped attitudes, beliefs, values and behaviors.
- **ELO 4.2** Describe how humans perceive and represent the environments with which they interact.
- **ELO 4.3** Analyze and critique conventions, theories, and ideologies that influence discourses around environments.

This course enables you (the student) an opportunity to explore the two-way interactions between humans and their different environments (built, cultural, economic, and natural). You will gather, present, and interpret data in the context of the space that humans occupy and use through mapping and statistical analyses.

LEGACY GENERAL EDUCATION: DATA ANALYSIS

This course meets the requirements of the Legacy General Education category *Data Analysis*. The intent of the Data Analysis GE is to enable students to deal with problems of data gathering, presentation, and interpretation. Students should develop an understanding of problems of measurement, be able to deal critically with numerical and graphical arguments, gain an understanding of the impact of statistical ideas in daily life and specific areas of study, and recognize the uses and misuses of statistics and related quantitative arguments.

GE Goals for Data Analysis: Students develop skills in drawing conclusions and critically evaluating results based on data.

Expected Learning Outcomes: Students understand basic concepts of statistics and probability, comprehend methods needed to analyze and critically evaluate statistical arguments, and recognize the importance of statistical ideas.

This course meets these goals and objectives by exposing students to the problems of data gathering, presentation, and interpretation, in the context of spatial, statistical maps.

HOW THIS COURSE WORKS

Mode of delivery: This class mode of delivery will be is in-person. All learning materials will be uploaded on Carmen Canvas. Additional components students will complete are:

- Readings
- General lectures
- Labs and exercises
- Quizzes and Exams

Credit hours and work expectations: This is a **3-credit-hour course**. According to Ohio State policy (go.osu.edu/credithours), an average student should expect around 3 hours per week of time spent on

direct instruction (instructor content, group and Carmen activities, for example) in addition to 6 hours of homework (reading and assignment preparation, for example) to receive a grade of (C) average.

Communications with instructors: *Email us if you have questions related to class materials and assignments. Make sure you include a detailed description of the problem and attach a screenshot if applicable.* We encourage you to help your classmates out if you know the answers, but make sure you are not violating the code of student conduct (e.g., do not upload your assignment or show them the exact answer to complete their assignments).

Other questions can be directed to the instructors via Outlook email or Carmen email (always include both instructor and TA in your emails, in case one of us is unavailable). If using Outlook, make sure that you put "GEOG 2200" in the subject line. Students should use their name.# Ohio State email address.

COURSE MATERIALS AND TECHNOLOGIES

Textbooks

Optional texts – available at the bookstore, as an ebook, or on Amazon:

1. *Tyner, Judith A. 2015. The World of Maps: Map Reading and Interpretation for the 21st Century. Guilford Publishing.*

Other readings will be uploaded on Carmen Canvas.

Technology skills needed for this course:

- ArcGIS Online (no previous experience is required)
- Microsoft Excel
- Basic computer and web-browsing skills

Required software:

- Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365. You must complete your registration for this if you are using your personal computer. If you have a Mac, you must be sure this registration is complete as we will be using Excel in this class. Full instructions for downloading and installation can be found at go.osu.edu/office365help.

Required equipment:

- While in the classroom, you must use the classroom computer to work on assignments or exams (unless specific permission is granted by Dr. Parece).
- You may use your personal device for taking notes.
- Other: a mobile device (smartphone or tablet) to use for BuckeyePass authentication

GRADING AND FACULTY RESPONSE

How your grade is calculated

All submissions are made via Carmen Canvas on the due date. Your due date is not an optional or suggested date, it is the last possible date you can submit an assignment and get a grade (with limited exceptions – see Late Submissions at the bottom of page 6).

CATEGORY	PERCENT OF FINAL GRADE	OCCURRENCE
Attendance	2%	2x per week
Quizzes	8%	8
Lab assignments	55%	6
Exam – Mapping	10%	1
Exam - Statistics	10%	1
Final paper	15%	1
Total	**100%**	

Grading scale

A	A-	B+	B	B-	C+	C	C-	D+	D	E
≥93%	90-92%	87-89%	83-86%	80-82%	77-79%	73-76%	70-72%	67-69%	60-66%	<60%

Note: Grades are not subject to negotiation and are not eligible for rounding up; an 89.9% is not a 90%.

Instructors' feedback and response time

- **Grading and feedback:** For assignments, you can generally expect feedback within 1 week, unless emergencies occur to one of the instructors.
- **Email:** We will reply to emails within **48 hours on school days when class is in session at the university**.

Attendance

Attendance will be taken each day on Mondays and Wednesdays. Attendance is not taken on Exam days.

Graded Assignments

All assignments, listed below, are required to be your own independent work. Do not share your work with others in this class. Use of generative artificial intelligence (AI) (e.g., ChatGPT) is not permitted in this course and use is subject to academic misconduct actions.

Failure to follow the instructions on any assignment could result in a grade reduction for that specific answer or it might result in an incorrect answer. Any assignment includes quizzes, exams, labs, and the final project. For example, if the directions state you need to round to 1 decimal place and you give no decimal points or provide 2 or more.

The schedule for this class is found at the end of this document.

Attendance (2%)

Attendance will be taken each day on Mondays and Wednesdays. Attendance is not taken on Exam days. Documented illnesses or time away for things like Military Service/Conferences will be excused.

Quizzes (8%)

Quizzes assist you in studying for the exams. Quizzes are 5 questions, online, untimed and open note/open book. See the attached schedule for weeks, topics and due date. These quizzes must be your own independent work and not completed in collaboration with any other student, the TA nor the instructor.

Lab assignments (55%)

You will have 6 lab assignments throughout the semester. The topics for each lab are identified on the schedule at the end of this syllabus.

5 of these lab assignments consist of downloading data, conducting an analysis, mapping within GIS and for 3 of the assignments, completing a statistical analysis. You then submitting a written report with jpegs of your map(s). A template with specific section headings is used to complete each lab report (with the exception of the Story Map lab). These five lab assignments must be your own independent work and not completed in collaboration with any other student, the TA nor the instructor.

You can download the actual template from Carmen Canvas. Each assignment has a specific step-by-step instruction on creating a map(s) for that analysis, 3 of the lab assignments involve a mapping assignment and a related statistical analysis. Each assignment submission has an associate Rubric in Canvas for the points division. Turnitin and AI checks are enabled within Canvas for these submissions.

Lab #3 is a Story Map and involves collecting your data on campus, mapping the data and then completing an accompanying story about that data. This Story Map lab assignment may be completed in collaboration with one other student.

Two exams

The exams contain multiple choice, true/false, short answer, essay and numerical answer questions. See the course schedule for the dates and times of the exams. These are held during class periods. These exams must be your own independent work and not completed in collaboration with any other student, the TA nor the instructor.

- Map exam is closed-book, closed-note, and timed. (10% of grade)
- Statistics exam – timed and you are allowed a cheat sheet one page in length during the exam. You are allowed to use a calculator. (10% of grade)

Final paper (15% of total grade)

The final paper is 100 points but worth 15% of your final grade. The topic of your paper is: A comparative analysis of evictions in Franklin County, Ohio, 2016 to present. The final project involves mapping data and statistical analysis. The final paper must be at least 1500 words, not including figures, figure captions and citations, using the same template as the labs. More detailed instructions for the paper are posted on Carmen Canvas. Turnitin and AI checks are enabled within Canvas for

these submissions. This final project must be your own independent work and not completed in collaboration with any other student, the TA nor the instructor.

Late submissions

Late submissions for any assignments are not accepted in this course and result in a zero for that assignment.

You do have **1** opportunity to extend your deadline **for 1 calendar day** during the semester, applied to a lab assignment of your choice. No permission is required, use this opportunity wisely, it can only be used once.

Accommodations for religious holidays will be considered in accordance with OSU policies – see more details below. Please provide information on the holiday and its date and the number of days requested in the extension.

Additionally, in case of personal and family emergencies, please notify us as soon as possible so that we can work out a submission timeline. Such extensions may or may not be granted, it is decided on a case-by-case basis at instructor discretion. Extensions are not granted after the fact, e.g., you can't ask for an extension on an assignment that was due two weeks before or wait until the end of the semester to submit assignments you missed. To request an extension for one of these emergency conditions, you must put the request in writing to Dr. Parece (cc to the TA) and the email must contain the following information:

- Course Name and Code (GEOG 2200 Mapping Our World)
- Reason for the extension request:
- The specific assignment:
- Specific extension requested:
- Attach documentation of the reason for the extension

Any emails requesting extensions without this information will be returned with a request to provide this information.

OTHER COURSE AND UNIVERSITY POLICIES

Academic Misconduct

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct **http://studentlife.osu.edu/csc/**.

Turnitin has been enabled for the lab and final paper submissions (https://www.turnitin.com/). Turnitin is a plagiarism and AI verification platform. This check is set to automatically review your paper when you submit it on Canvas. Please note that any assignments with significant scores may result in reporting a code of conduct violation to OSU's Committee on Academic Misconduct (please see the

Academic Integrity Policy below). Please note that when you use quotes or repeat the assignment instructions within your written report, it increases the Turnitin and AI score. Avoid these when at all possible.

To maintain a culture of integrity and respect, generative AI tools should not be used in this complete of course assignments including lab reports, quizzes, exams, and final paper unless specifically authorized by Dr. Parece.

Disability Services

The university strives to maintain a healthy and accessible environment to support student learning in and out of the classroom. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion.

If you are isolating while waiting for a COVID-19 test result, please let me know immediately. Those testing positive for COVID-19 should refer to the **Safe and Healthy Buckeyes site** for resources. Beyond five days of the required COVID-19 isolation period, I may rely on Student Life Disability Services to establish further reasonable accommodations. You can connect with them at **slds@osu.edu**; 614-292-3307; or **slds.osu.edu**.

Religious Holidays, Holy Days and Observances

Ohio State has had a longstanding practice of making reasonable academic accommodations for students' religious beliefs and practices in accordance with applicable law. In 2023, Ohio State updated its practice to align with new state legislation. Under this new provision, students must be in early communication with their instructors regarding any known accommodation requests for religious beliefs and practices, providing notice of specific dates for which they request alternative accommodations within 14 days after the first instructional day of the course. Instructors in turn shall not question the sincerity of a student's religious or spiritual belief system in reviewing such requests and shall keep requests for accommodations confidential.

With sufficient notice, instructors will provide students with reasonable alternative accommodations with regard to examinations and other academic requirements with respect to students' sincerely held religious beliefs and practices by allowing up to three absences each semester for the student to attend or participate in religious activities. Examples of religious accommodations can include, but are not limited to, rescheduling an exam, altering the time of a student's presentation, allowing make-up assignments to substitute for missed class work, or flexibility in due dates or research responsibilities. If concerns arise about a requested accommodation, instructors are to consult their tenure initiating unit head for assistance.

A student's request for time off shall be provided if the student's sincerely held religious belief or practice severely affects the student's ability to take an exam or meet an academic requirement and the student has notified their instructor, in writing during the first 14 days after the course begins, of the date of each absence. Although students are required to provide notice within the first 14 days after a course begins, instructors are strongly encouraged to work with the student to provide a reasonable accommodation if a request is made outside the notice period. A student may not be penalized for an absence approved under this policy.

If students have questions or disputes related to academic accommodations, they should contact their course instructor, and then their department or college office. For questions or to report discrimination or harassment based on religion, individuals should contact the Office of Institutional Equity. Religious Holidays, Holy Days and Observances | Office of Academic Affairs, The Ohio State University (osu.edu)

Mental Health Statement

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting *ccs.osu.edu* or calling *614-292-5766*. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at *614-292-5766* and 24-hour emergency help is also available 24/7 by dialing 988 to reach the Suicide and Crisis Lifeline.

Statement on Title IX

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at *http://titleix.osu.edu* or by contacting the Ohio State Title IX Coordinator at *titleix@osu.edu*.

Inclement Weather

Should in-person classes be canceled, we will meet virtually via CarmenZoom during our regularly scheduled time. I will share any updates via [CarmenCanvas, email or other mode of communication].

Course Schedule

Disclaimer: This course syllabus provides a general plan for the course; deviations may be necessary. Such deviations may be made for individuals or for the entire class, as deemed appropriate by the instructor. Any changes that affect the entire class will be announced by the instructor with as much advance notice as possible.

Week & Dates	Topics and Assignments	General Education Theme Lived Environments Learning Objective & Goal Statement
Week 1 August 26 - 30, 2025	Monday: Introduction to class Wednesday: Introduction to cartography and geospatial technologies Friday: Lab time Quiz 1 due Friday, 8/29 Required Reading: Household Food Security in the US, 2022 Optional Readings: Tyner Chapter 3	**ELO 1.1** **Goal Statement**: Students will define GIS and Cartography. Students explain how these technologies assist in identifying, explaining, and analyzing the different environments that people live in and utilize.
Week 2 August 31 – September 6, 2025	Monday: Labor Day, no class Wednesday: Scale & Coordinate Systems & Projections Friday: Lab time Quiz 2 due by 11 a.m. Monday, 9/8 Lab 1 Siting a New Hospital due 9/7 Optional Readings in Carmen Canvas: Kimmerling, et al. Chapters 1 – 4	**ELO 1.1** **Goal Statement**: Students will explain the complexities involved when measuring the Earth and then mapping location and demonstrate how the decisions made when creating maps can alter mapping results.
Week 3 September 7 - 13, 2025	Wednesday: Thematic Map types, variables, and measurements Friday: Introduction to Lab 2 & lab time Lab 2 Wind Farm Suitability Analysis due 9/21 Optional Readings: Tyner Chapters 8 – 11 in Carmen: Kimmerling Chapters 7 & 8	**ELO 1.1, ELO 1.2, ELO 2.1, ELO 2.2, ELO 3.1** **Goal Statement:** Students demonstrate the ability to read thematic maps, identify missing elements, identify when a map is being misread, and critique how the theme of the map represents the environment for the people in that place.
Week 4 September 14 – 20, 2025	Monday & Wednesday – Thematic Map exercise Quiz 3 Map Types due 9/19 Lab 2 Wind Farm Suitability Analysis due 9/21	**ELO 1.1** Engage in critical and logical thinking. **Goal Statement:** Students locate locations for a new wind farm, describe the environment for the location, and explain how it will support people living within this region.
Week 5	Monday: Exam Review	

September 21 - 27, 2025	Wednesday: Exam on Maps & Mapping Friday: Group Formation for Lab 3	
Week 6 September 28 – October 4, 2025	Monday: Data collection 2: GPS, observational data. Wednesday: Preparation for Lab 3 Creating a Story Map (due 10/12) Friday: Lab 3 Data collection (on campus, outside activity) Quiz 4 due 10/3 Optional Reading: Tyner Chapter 1	**ELO 1.1 & ELO 3.1** **Goal Statement:** Students demonstrate the ability to work in a group and execute a group assignment within the confines of the university environment.
Week 7 October 5 - 11, 2025	Monday – Lecture Modified Area Unit Problem Quiz 5 due Lab 3 Story Maps due 10/12	**ELO 1.1 & ELO 3.1** **Goal Statement:** Students select, identify, and map related places on OSU Campus, compare the locations to each other, defend their choices by explaining the value of the locations to other OSU students.
Week 8 October 12 – 18, 2025	Monday: Descriptive Statistics Wednesday: Descriptive Statistics Practice Problems; Introduction to Lab 4 – Earthquake Probabilities Friday: Fall Break Quiz 6 due October 20 Lab 4 Earthquake Probabilities due 10/26	**ELO 1.1, ELO 1.2, ELO 2.1, ELO 2.2, ELO 3.1** **Goal Statement:** Students will differentiate between different descriptive statistics, execute their use, and interpret the varying results when using different statistical measures.
Week 9 October 19 - 25, 2025	Monday: Probability, Distributions, Central Limit theorem Wednesday: Probability Practice Problems Friday: Finish Lab 4 due 10/26 Quiz 7 due on Friday, 10/24	**ELO 1.1 & ELO 2.1** **Goal Statement**: Students will discuss how statistical variables helps identify different living conditions between types of environments
Week 10 October 26 – November 1, 2025	Monday: Hypothesis testing, gathering data, testing hypotheses Wednesday: Practice Hypothesis testing examples Friday: Lab time Quiz 8 due 11/3 Lab 5 Health Disparities in Large US Metropolitan Regions due 11/9	**ELO 1.1, ELO 1.2, ELO 2.1, ELO 3.1** **Goal Statement:** Students appraise how inferential statistics can predict/explain outcomes/impacts for different peoples. Students solve statistical equations to examine the impact of a natural disaster on peoples and the environments that they use.
Week 11	Monday: Correlation, Spatial Autocorrelation, Outlier/cluster analysis	**ELO 1.1 & ELO 2.1**

November 2 - 8, 2025	Friday: Lab time	**Goal Statement:** Students compare and contrast different spatial correlation/autocorrelation methods and results. Students will distinguish how the methods provide information on the environment in which people live.
Week 12 November 9 - 15, 2025	Monday: Final Lecture: Hotspot Analysis, Kernel Density, Interpolation Wednesday & Friday: Lab time Lab 6 Analyzing Patterns of Traffic Crashes & Volumes around Public Schools due 11/23	**ELO 1.1, ELO 1.2, ELO 2.1, ELO 2.2**. & **ELO 3.1** **Goal Statement:** Students construct maps using statistical interpolation to explain traffic patterns in an urban environment and determine the relationship to vehicle/bicycle/pedestrian accidents in public school zones. Students investigate the patterns to recommend changes to local authorities to prevent future accidents in these locales.
Week 13 November 16 - 22, 2025	Monday: Exam Review Wednesday: Exam on Statistics due 11/21 Friday: Final paper, work time: A comparative analysis of eviction rates in Frankin County, Ohio, 2016 - present	**All ELOs** **Final Project Goal Statement:** Students will synthesize the knowledge gained over the semester through analyzing data over time. Students formulate a hypothesis and defend their hypothesis utilizing results from data analysis and ancillary information.
Weeks 14, 15 & 16 November 23 – December 12, 2025	Final Paper: work time Thanksgiving Break November 26 – November 30 Last Day of class: Wednesday, December 10, 2025 Final paper due Friday, December 12, 2025	