



Spring 2025

GEOG 4103 Introductory Spatial Data Analysis

Course Overview

Class Information

- **Class times and location:**
 - **Tuesdays and Thursdays, 2:20 PM – 3:40 PM**, Derby Hall 140
- **Credit hours:** 3.0
- **Mode of delivery:** In-person

Instructor

- **Name:** Dr. Chayanika Singh
- **Email:** singh.1883@osu.edu
- **Office location:** 1123 Derby Hall
- **Office hours:**
 - **Tuesday 1:00 PM – 2:00 PM** (in-person) or,
 - Zoom by appointment (send me an email for setting up zoom meeting)
- **Preferred means of communication:**
 - My preferred method of communication for questions is **email**. Please have the email subject as “**Geog4103_.....**”, to make sure it gets my attention.
 - My class-wide communications will be sent through the Announcements tool in Carmen Canvas. Please check your [notification preferences](https://go.osu.edu/canvas-notifications) (go.osu.edu/canvas-notifications) to be sure you receive these messages.

Teaching Assistant

- **Name:** Damon Mullen
- **Email:** mullen.289@osu.edu
- **Office location:** 1045 Derby Hall
- **Office hours:**
 - **Thursday 1:00 PM – 2:00 PM** (in-person; Please schedule ahead of time) or,
 - Zoom by appointment



Course Prerequisites

Math 1116 or 1130 or above, or Math Placement Level M or L, or permission of instructor.

Course Description

This course introduces the key concepts of statistical analysis of spatial data emphasizing on spatial thinking. In this course fundamental statistical methods are presented in the context of geographic sciences. Students will develop a fundamental understanding of statistical concepts and the tools geographers use to solve statistical problems. The class instructions are divided into lectures and labs (both in same room) to be held in-person at the scheduled class time.

Lectures will introduce students a range of fundamental statistical and spatial analysis methods used in geographic problem solving. Labs will help students develop skills to analyze and interpret spatially referenced data using computer software. This course emphasizes hands-on experience and practical understanding. Real-world examples from a variety of topical areas in geography will be used in the lectures and labs.

Learning Outcomes

By the end of this course, students should successfully be able to:

- Explain basic concepts of statistics and probability.
- Apply quantitative methods to analyze and critically evaluate statistical arguments.
- Recognize the importance of statistical ideas specifically in context to geographic sciences.
- Evaluate the social and ethical implications of data collection and analysis, especially in relation to human subjects.

Credit Hours and Work Expectations

This is a 3 credit-hour course. According to [Ohio State bylaws on instruction](http://go.osu.edu/credit) (go.osu.edu/credit hours), students should expect around 3 hours per week spent on direct instruction (instructor content 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.

Mode of delivery

This is a 100% face to face class. All class sessions (labs and lectures) will be **in person on Tuesdays & Thursdays (2:20 pm – 3:40 pm), in Derby Hall 0140.**



Course Materials and Technologies

Required Textbook

[R] Rogerson, P.A. (2020). *Statistical Methods for Geography: A Student's Guide (Fifth Edition)*, Sage Publications, London.

This book will be used as the required text for this course. The ISBN-13 for the paperback is 9781526498809. It is available for purchase in print or electronic format from the campus bookstore, Amazon, the publisher, etc.

You should be able to access this e-book on CarmenBooks in Myshelf, provided by OSU.

You can also access useful materials, videos, sample exercises on the following link:

<https://study.sagepub.com/rogerson5e/student-resources/introduction-to-statistical-methods-for-geography>

Required Equipment

Computer: current Mac (MacOS) or PC (Windows 10) with high-speed internet connection

Webcam: built-in or external webcam, fully installed and tested

Microphone: built-in laptop or tablet mic or external microphone

Data Storage: A portable memory device (with 16GB or larger) or access to cloud drive (Box, OneDrive, Dropbox etc.) is needed for data storage for lab assignments.

Other: a mobile device (smartphone or tablet) to use for BuckeyePass authentication

If you do not have access to the technology you need to succeed in this class, review options for technology and internet access at go.osu.edu/student-tech-access.

Required Software

Please keep in mind that **you are NOT required to purchase any software for this class**. The following list should help you access the software free-of-cost to you as a student in this class.

- **R and R Studio**

R: <https://cran.r-project.org/bin/windows/base/>

RStudio: <https://posit.co/download/rstudio-desktop/>

Please install R **first**, then install RStudio.

- **Microsoft Office 365**



- All Ohio State students are now eligible for free Microsoft Office 365 ProPlus through Microsoft's Student Advantage program. Each student can install Office on five PCs or Macs, five tablets (Windows, iPad®, and Android™), and five phones.
- Office 365 is installed within the student's BuckeyeMail account. Full instructions for downloading and installation can be found [here](#).

Remote Lab Access

If you have any trouble with downloading, installing, or using R or RStudio on your own machine, you may access the computers in the Derby Hall 0135 and 0140 computer labs via remotelab.osu.edu.

- Instructions for using Remote Lab can be found at the course website in Carmen.
- **Important:** It is best if you can download, install, and use R and RStudio on your own machine, rather than via Remote Lab, because there are a limited number of computers available remotely, so please only use this option only if absolutely needed.
 - Email your Instructor or TA in the first week of classes if you need remote lab access stating the reason for this necessity.
- Email [Jens Blegvad](mailto:Jens.Blegvad@osu.edu) at belgvad.1@osu.edu for Remote Lab technical support.

Carmen Canvas Access

You will need to use [BuckeyePass](http://buckeyepass.osu.edu) (buckeyepass.osu.edu) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you do each of the following:

Register multiple devices in case something happens to your primary device. Visit the [BuckeyePass - Adding a Device](http://go.osu.edu/add-device) (go.osu.edu/add-device) help article for step-by-step instructions.

Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click **Enter a Passcode** and then click the **Text me new codes** button that appears. This will text you ten passcodes good for 365 days that can each be used once.

[Install the Duo Mobile application](http://go.osu.edu/install-duo) (go.osu.edu/install-duo) on all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at [614-688-4357 \(HELP\)](tel:614-688-4357) and IT support staff will work out a solution with you.



Technology Skills Needed for This Course

Basic computer and web-browsing skills

[Navigating CarmenCanvas](https://go.osu.edu/canvasstudent) (go.osu.edu/canvasstudent)

[CarmenZoom virtual meetings](https://go.osu.edu/zoom-meetings) (go.osu.edu/zoom-meetings)

[Recording a slide presentation with audio narration and recording, editing and uploading video](https://go.osu.edu/video-assignment-guide) (go.osu.edu/video-assignment-guide)

Technology Support

For help with your password, university email, CarmenCanvas, or any other technology issues, questions or requests, contact the IT Service Desk, which offers 24-hour support, seven days a week.

- **Self Service and Chat:** go.osu.edu/it
- **Phone:** [614-688-4357 \(HELP\)](tel:614-688-4357)
- **Email:** servicedesk@osu.edu

Classroom door locks

As we begin a new semester, safety is top of mind. Please [watch this brief video](#) explaining the three types of door locks used across campus, and how to use them effectively in the event of an active aggressor situation.

Alternative to in-person class instructions

Should an in-person classes be canceled (due to any reason such as extreme weather, sickness etc.), I will notify you as to which alternative methods (**remote teaching, recorded video or homework assignment**) of teaching will be offered to ensure continuity of instruction for this class. Communication will be via Carmen Canvas.



Grading and Faculty Response

Your Grades will be calculated based on the following assignment weightage.

Assignment Category	Point %
Syllabus Quiz	1%
Labs (10)	50%
Homework assignments (6)	24%
Exam	25%
Total	100%
Attendance (extra credit)	5%

Descriptions of Major Course Assignments

(More information will be provided later in class).

Labs

Lab assignments provide hand-on exercises as software application of statistical methods learned in the lecture class. There will be 10 labs during this class, and each lab will have an assignment. For each lab assignment, you will need to answer several questions. Assignment questions will be provided to you in advance at the end of each lab's instruction. Please keep in mind that the process of completing any given lab may not go as smoothly as planned. Unexpected challenges may arise, so it is best to plan for this. Set a goal to submit each lab in advance of the deadline. That way, if unexpected challenges do arise, you have time to deal with them before the deadline passes.

Your lab reports should be your own original work. You are encouraged to ask a trusted person to proofread your written reports before you turn them in, but no one else should revise or rewrite your work.

All labs will use R & R studio. Basic skills to learn R in an easy-to-follow instructions, will be taught in labs (there is no need to have any previous experience in R or any other programming language).

Lab questions: If you have any questions on lab contents and/or grades (can't finish specific steps, tools are not working, etc.), **please contact your TA via email and/ or visit TA's office hours.**



Homework assignments

There will be 6 homework assignments including short quizzes and calculation exercises related to key statistical concepts. These will be introduced after a specific topic is discussed in class. Quiz part will contain multiple choices and blank filling questions while exercises need you to do some math-based calculations related to the lecture contents. The assignment will be administered via carmen canvas.

Exam

There will be ONE Final exam based on all the topics discussed in the lecture. You must take the exam to receive final course grade. Exam will be:

- *Timed.* If you are registered with SLDS for extended time accommodations, please confirm that extended time has been granted before you begin the exam.
- *Open-note.* This means that you can use the lecture slides, the handouts, your notes, the textbook, etc.
- *Completed independently.* You should complete the exam by yourself. Collaboration with one or more other persons will be considered academic misconduct.
- *Allowed only one attempt.* Be sure that you are ready to complete the exam in one sitting before you begin.

No make-up exam will be given unless legitimate documents for medical or personal emergency are presented in advance. Exam must be taken at the scheduled time unless you have informed your instructor *before* the exam with proper reasons and documents and got approved by the instructor. **Please contact your instructor in advance of the scheduled exam to schedule a make-up exam**, except in the case of emergency. Make-up exams for excused absences will not be penalized. Make-up exams for unexcused absences will be penalized 15%.

Attendance

Attendance (in lectures and labs) will be recorded at all class meetings. Presence during classes help students to understand and work in a coherent way. Our prior experience shows that those students who regularly show up in the lectures & labs learn more from their peers and instructors than those who prefer to work/study on their own (skipping class attendance). To encourage class presence and productivity, **attendance is made worth up to 5% of EXTRA CREDITS** counted towards the final grades in this course. However, 2 unexcused absences are allowed to cover any emergency or unexpected event that may prevent you coming to the labs. **In case of any health emergency such as COVID19 related absences, please make sure to inform your Lab TA and me as soon as possible to get special arrangements as per policies.** Documented proof may be required to get your attendance excused.

Late Assignments

Please refer to Carmen for due dates. Assignments will be **penalized 10% for each day late** (except holidays). Thus, **assignments submitted 10 days after the deadline will be graded 0.** **Extensions will not be granted due to lost work;** be sure you back up and keep all your work.



Academic integrity and collaboration:

Your written assignments, including discussion posts, should be your own original work. In formal assignments, you should follow APA style to cite the ideas and words of your research sources. You are encouraged to ask a trusted person to proofread your assignments before you turn them in but no one else should revise or rewrite your work.

Use of artificial intelligence in completing assignments

There has been a significant increase in the popularity and availability of a variety of generative artificial intelligence (AI) tools, including ChatGPT, Sudowrite and others. These tools will help shape the future of work, research and technology but when used in the wrong way, they can stand in conflict with academic integrity at Ohio State.

With effect from January 1, 2024, after a review by the Council on Student Affairs, the Committee on Academic Misconduct (COAM) clarifies that **the unauthorized use of generative artificial intelligence (AI) systems or similar technologies to complete academic activities is prohibited conduct.**

All students have important obligations under the [Code of Student Conduct](#) to complete all academic and scholarly activities with fairness and honesty. Our professional students also have the responsibility to uphold the professional and ethical standards found in their respective academic honor codes. Specifically, **students are not to use unauthorized assistance in the laboratory, on field work, in scholarship or on a course assignment unless such assistance has been authorized specifically by the course instructor.** In addition, **students are not to submit their work without acknowledging any word-for-word use and/or paraphrasing of writing, ideas or other work that is not your own.**

To maintain a culture of integrity and respect, these generative AI tools should not be used in the completion of course assignments unless specifically cited in the assignment submission. For example, in this course, **you may take help of GenAI tools to enhance your writing skills and/or formatting skills for a writing intensive assignment. If using such tools, you are required to acknowledge it while submitting the assignment.** Failure to acknowledge any work not done by yourself solely and where GenAI tools were used, will result in severe grade penalty (a failing grade might be assigned).

If you have questions about fair use of AI tools for specific assignments, please contact your instructor or TA.



Instructor Feedback and Response Time

I am providing the following list to give you an idea of my intended availability throughout the course. Remember that you can call [614-688-4357 \(HELP\)](tel:614-688-4357) at any time if you have a technical problem.

Preferred contact method: If you have a question, please contact me first through my Ohio State email address. **I usually reply to emails within 24 to 48 hours on school days. If you do not get a response within 2 days, you should send a follow up email.** To make sure your email does not go in my junk folder, **start the subject line as “GEOG_4103”** followed by appropriate subject text. (The email sent via Inbox on carmen canvas may not get my attention quickly).

Class announcements: I will send all important class-wide messages through the Announcements tool in Carmen Canvas. Please check [your notification preferences](https://go.osu.edu/canvas-notifications) (go.osu.edu/canvas-notifications) to ensure you receive these messages.

Discussion board: I will check and reply to messages in the discussion boards at least once a week. If there is something urgent and of personal nature, please send me an email.

Grading and feedback: For assignments submitted by the due date, you may expect to receive feedback and grades within **14 days after the due date**. Assignments submitted after the due date may have reduced feedback, and grades may take longer to be posted.

Grading Scale

93–100: A
90–92.9: A-
87–89.9: B+
83–86.9: B
80–82.9: B-
77–79.9: C+
73–76.9: C
70–72.9: C-
67–69.9: D+
60–66.9: D
Below 60: E



Other Course Policies

Discussion and Communication Guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

Writing style: While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. A more conversational tone is fine for non-academic topics.

Tone and civility: Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online. I will provide specific guidance for discussions on controversial or personal topics.

Citing your sources: When we have academic discussions, please cite your sources to back up what you say. For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.

Backing up your work: Consider composing your academic posts in a word processor, where you can save your work, and then copying into the Carmen discussion.

Synchronous sessions: During our Zoom sessions I ask you to use your real name and a clear photo of your face in your Carmen profile. During our full-group lecture time, you may turn your camera off if you choose. When in breakout rooms or other small-group discussions, having cameras and mics on as often as possible will help you get the most out of activities. You are always welcome to use the [free, Ohio State-themed virtual backgrounds](https://go.osu.edu/zoom-backgrounds) (go.osu.edu/zoom-backgrounds). Remember that Zoom and the Zoom chat are our classroom space where respectful interactions are expected.

Academic Integrity Policy

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university's [Code of Student Conduct](https://studentconduct.osu.edu) (studentconduct.osu.edu), and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the university's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the university's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that



you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. (Note that “warnings” are not given due to an offense being one’s first offense, due to ignorance of what constitutes academic misconduct, or due to any other circumstances.). If COAM determines that you have violated the university’s Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

[Committee on Academic Misconduct](http://go.osu.edu/coam) (go.osu.edu/coam)

[Ten Suggestions for Preserving Academic Integrity](http://go.osu.edu/ten-suggestions) (go.osu.edu/ten-suggestions)

[Eight Cardinal Rules of Academic Integrity](http://go.osu.edu/cardinal-rules) (go.osu.edu/cardinal-rules)

Collaboration for the purposes of troubleshooting is highly encouraged in this course, but everyone is expected to complete all assignment tasks themselves and submit their own unique work.

Here are some examples of acceptable and unacceptable behavior:

• Acceptable:

- o Asking a classmate how to resolve an unexpected error message, how to find a hidden setting in the software, or similar troubleshooting tasks.
- o Participating in a study group study the course material.
- o Asking a trusted person to proofread (without revising or rewriting) your assignments before you turn them in.

• Unacceptable:

- o Using another student’s work (in part or in full) as your own.
- o Sharing files and/or using shared files that contain intermediate or final results.
- o Submitting the same work (even if modified) from a past semester or from another course.
- o Comparing and/or sharing answers before submitting a graded assignment.
- o Forgetting to cite sources, including the course materials, websites visited, etc.

There are many other acceptable/unacceptable actions than those exemplified here, so if you have any questions or concerns about acceptable/unacceptable actions or what constitutes academic misconduct in this course, ask your instructor for clarification/permission.



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To maintain a culture of integrity and respect, these generative AI tools should not be used in the completion of course assignments unless specifically cited in the assignment submission. For example, in this course, **you may take help of GenAI tools to enhance your writing skills and/or formatting skills for a writing intensive assignment. If using such tools, you are required to acknowledge it while submitting the assignment.** Failure to acknowledge any work not done by yourself solely and where GenAI tools were used, will result in severe grade penalty (a failing grade might be assigned).

If you have questions about fair use of AI tools for specific assignments, please contact your instructor or TA.

Copyright disclaimer

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Statement on title IX

All students and employees at Ohio State have the right to work and learn in an environment free from harassment and discrimination based on sex or gender, and the university can arrange interim measures, provide support resources, and explain investigation options, including referral to confidential resources.



If you or someone you know has been harassed or discriminated against based on your sex or gender, including sexual harassment, sexual assault, relationship violence, stalking, or sexual exploitation, you may find information about your rights and options at titleix.osu.edu or by contacting the Ohio State Title IX Coordinator at titleix@osu.edu. Title IX is part of the Office of Institutional Equity (OIE) at Ohio State, which responds to all bias-motivated incidents of harassment and discrimination, such as race, religion, national origin and disability.

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.

The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

Statement on diversity

The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential.

Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity: Online at equity.osu.edu, or email at equity@osu.edu

Your Mental Health

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. No matter where you are engaged in distance learning, The Ohio State University's Student Life Counseling and Consultation Service (CCS) is here to support you. If you find yourself feeling isolated, anxious or overwhelmed, [on-demand mental health resources](#)



(go.osu.edu/ccsondemand) are available. You can reach an on-call counselor when CCS is closed at [614- 292-5766](tel:614-292-5766). **24-hour emergency help** is available through the [National Suicide Prevention Lifeline website](http://NationalSuicidePreventionLifeline.org) (suicidepreventionlifeline.org) or by calling [1-800-273-8255\(TALK\)](tel:1-800-273-8255). [The Ohio State Wellness app](http://TheOhioStateWellnessapp) (go.osu.edu/wellnessapp) is also a great resource.

Supporting students through tragedy

Tragic events and crises can occur at any point in the semester and may have a profound emotional and cognitive impact on students and instructors. The [Drake Institute has produced resources](#) that can be used by instructors to provide students support during difficult times. The [Student Advocacy Center](#) and [Counseling and Consultation Service](#) are additional resources that help students in crisis.

Accessibility accommodations for students with disabilities

The University strives to make all learning experiences as accessible as possible. 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. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Religious Accommodations

Our inclusive environment allows for religious expression.

*“It is Ohio State’s policy to reasonably accommodate the sincerely held religious beliefs and practices of all students. The policy **permits a student to be absent for up to three days each academic semester for reasons of faith or religious or spiritual belief.**”*



*Students planning to use religious beliefs or practices accommodations for course requirements **must inform the instructor in writing no later than 14 days after the course begins.** The instructor is then responsible for scheduling an alternative time and date for the course requirement, which may be before or after the original time and date of the course requirement. These alternative accommodations will remain confidential. It is the student's responsibility to ensure that all course assignments are completed."*

For more information about religious accommodations at Ohio State, visit [Religious Holidays, Holy Days and Observances | Office of Academic Affairs, The Ohio State University \(osu.edu\)](#).



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.

Geog 4103 Tue-Thu (2:20 PM- 3:40 PM) DB0140								
Week	Day	Date	Topics	Readings	Assignments due	% wts		
w1	T	7-Jan-25	Lecture Overview	Ch 1				
	R	9-Jan-25	Lecture Descriptive Statistics	Ch 2 (2.1 to 2.6)	Syllabus quiz	1		
w2	T	14-Jan-25	Lab L1: Introduction to R					
	R	16-Jan-25	Lab L2: Descriptive analysis		Lab1	5		
w3	T	21-Jan-25	Lecture Probability I	Ch 3 (3.1 to 3.6)	HW1	4		
	R	23-Jan-25	Lab L3: Probability Distributions		Lab2	5		
w4	T	28-Jan-25	Lecture Probability cont.	Ch 4 (4.1 to 4.5)				
	R	30-Jan-25	Lab L3 cont.					
w5	T	4-Feb-25	Lecture Inferential Statistics	Ch 5 (5.7)	HW2	4		
	R	6-Feb-25	Lab L4: Sampling		Lab3	5		
w6	T	11-Feb-25	Lecture Inferential Statistics	Ch 5 (5.1, 5.2)				
	R	13-Feb-25	Lab L5: Confidence Interval		Lab4	5		
w7	T	18-Feb-25	Lecture Inferential Statistics	Ch 5 (5.3 to 5.6)	HW3	4		
	R	20-Feb-25	Lab L6: Hypothesis tests		Lab5	5		
w8	T	25-Feb-25	Lecture Inferential Statistics					
	R	27-Feb-25	Lab L6 cont.					
w9	T	4-Mar-25	Lecture Analysis of Variance	Ch 6	HW4	4		
	R	6-Mar-25	Lab L7: ANOVA		Lab6	5		
w10	T	11-Mar-25	Spring Break (No class No lab)					
	R	13-Mar-25						
w11	T	18-Mar-25	Lecture Correlation	Ch 7				
	R	20-Mar-25	Lab L8: Correlation tests		Lab7	5		
w12	T	25-Mar-25	Lecture Regression	Ch 9	HW5	4		
	R	27-Mar-25	Lab L9: Regression analysis		Lab8	5		
w13	T	1-Apr-25	Lecture Spatial analysis	Ch 11				
	R	3-Apr-25	Lab L10: Spatial Autocorrelation		Lab9	5		
w14	T	8-Apr-25	Lecture Spatial analysis	Ch 11	HW6	4		
	R	10-Apr-25	Lab open lab		Lab10	5		
w15		TBD	Online Exam		*open 24 hrs	25		
						Total	100	

Final Exam date/time will be announced later.