Term Information

Effective Term	Spring 2023
Previous Value	*Summer 2018*

Course Change Information

What change is being proposed? (If more than one, what changes are being proposed?)

We are proposing that GEOG 5229 be offered in alternative formats. In addition to the traditional in person lecture, we propose to teach this course as a completely online course.

What is the rationale for the proposed change(s)?

Our goal is to make the course more available to students in all terms who need the course offered in an alternative format to accommodate work or athletic schedules, greater accessibility needs, as well as to accommodate students who are away from the OSU campus. The online version of this course will also be included in our newly proposed online Master of Geographic Information Science and Technology program. Our hope is to increase enrollments with the completely online option. Alternative formats will also provide greater capacity potential enrollments without detracting from student learning and instructor engagement.

What are the programmatic implications of the proposed change(s)?

(e.g. program requirements to be added or removed, changes to be made in available resources, effect on other programs that use the course)?

None

Is approval of the request contingent upon the approval of other course or curricular program request? No

Is this a request to withdraw the course? No

General Information

Course Bulletin Listing/Subject Area	Geography
Fiscal Unit/Academic Org	Geography - D0733
College/Academic Group	Arts and Sciences
Level/Career	Graduate, Undergraduate
Course Number/Catalog	5229
Course Title	Emerging Topics in GIS
Transcript Abbreviation	Topics in GIS
Course Description	Examination of major recent developments in the theories, technologies, and/or applications of geographical information science.
Semester Credit Hours/Units	Fixed: 3

Offering Information

Length Of Course	14 Week, 12 Week
Flexibly Scheduled Course	Never
Does any section of this course have a distance education component?	Yes
Is any section of the course offered	100% at a distance
Previous Value	*No*
Grading Basis	Letter Grade
Repeatable	Yes
Allow Multiple Enrollments in Term	No

Max Credit Hours/Units Allowed	15
Max Completions Allowed	5
Course Components	Lecture
Grade Roster Component	Lecture
Credit Available by Exam	No
Admission Condition Course	No
Off Campus	Never
Campus of Offering	Columbus

Prerequisites and Exclusions

Prerequisites/Corequisites	Prereq: A grade of C- or above in 5210.
Exclusions	Not open to students with credit for 5224.
Electronically Enforced	Yes

Cross-Listings

Cross-Listings

Subject/CIP Code

Subject/CIP Code	27.0304
Subsidy Level	Doctoral Course
Intended Rank	Junior, Senior, Masters, Doctoral

Requirement/Elective Designation

The course is an elective (for this or other units) or is a service course for other units

Course Details

Course goals or learning objectives/outcomes	• Most recent theories in GIS • current GIS technologies

Content Topic List	• Recent developments in GIS. Variable content.
	
	• Specifically for this offering (Spatial analysis in R):
	
	  1. Process spatial data in R
	
	  2. Visualize spatial data in R
	
	  3. Apply various data analytic techniques to make sense of spatial data in various real-world applications

Previous Value	• *Recent developments in GIS. Variable content.*
Sought Concurrence	No

Attachments

- Syllabus GEOG 5229 SP22 online.docx: Syllabus (online)

  (Syllabus. Owner: Xiao,Ningchuan)

- GEOG-5229 asc-distance-approval-cover-sheet.pdf: ASCTech review (online)

  (Other Supporting Documentation. Owner: Xiao,Ningchuan)

- sp22_geog_5229_syllabus_le.pdf: Syllabus (current, in-person)

  (Syllabus. Owner: Xiao,Ningchuan)

Comments

- We have fully addressed the comments in the ASC DL approval cover sheet:

  - It follows exactly the syllabus template. Table of contents is now removed.

  - We clarified this is an online, asynchronous course, with explicit description of the online activities in the newly

  added a section of Attendance and Participation Requirements, under How This Online Course Works.

  - Sufficient description of online activities is now added, see above.

  - We added more description about how the lab portion of the grade is calculated.

  - Due dates are added, now can be found on page 5 in the breakdown of different categories of course activities. *(by*

  Xiao,Ningchuan on 03/10/2022 09:16 AM)

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Xiao,Ningchuan	03/10/2022 09:17 AM	Submitted for Approval
Approved	Xiao,Ningchuan	03/10/2022 09:18 AM	Unit Approval
Approved	Vankeerbergen,Bernadette Chantal	03/16/2022 11:43 AM	College Approval
Pending Approval	Cody,Emily Kathryn Jenkins,Mary Ellen Bigler Hanlin,Deborah Kay Hilty,Michael Vankeerbergen,Bernadette Chantal Steele,Rachel Lea	03/16/2022 11:43 AM	ASCCAO Approval

SYLLABUS
GEOG 5229: Emerging Topics in GIS
Spatial analysis in R

Spring 2022
3 credit hours
Online asynchronous

COURSE OVERVIEW

Instructor

Instructor: Dr. Huyen Le

Email: le.253@osu.edu (preferred contact method)

Office hours: check Canvas Calendar

All office hours are through Zoom. Details about office hours are available in the course website. To request an appointment outside of the above times, please email Dr. Le with your availability up to a week ahead.

Prerequisites

GEOG 5210 or equivalent or as approved by the instructor.

Course description

This course introduces you to R, one of the most popular programming languages, and spatial analysis in R. We will start with the basics of R programming, and transition to R spatial data processing, analysis, and mapping. The lab examples in this class cover various applications of spatial data analytics in the real world, such as urban studies, transportation, environmental sciences, and public health.

Course learning outcomes

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

1. Process spatial data in R

2. Visualize spatial data in R
3. Apply various data analytic techniques to make sense of spatial data in various real-world applications

HOW THIS ONLINE COURSE WORKS

Mode of delivery: This class is 100% asynchronous online. There are no required sessions when you must be logged in to Carmen at a scheduled time. All learning materials will be uploaded on Carmen Canvas.

Pace of online activities: This course is divided into **weekly modules** that are released one week ahead of time. Students are expected to keep pace with weekly deadlines but may schedule their efforts freely within that time frame.

Credit hours and work expectations: This is a **3-credit-hour course**. According to Ohio State policy (go.osu.edu/credithours), students 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.

Attendance and participation requirements: Because this is an online course, your attendance is based on your online activity and participation. The following is a summary of students' expected participation:

- **Participating in online activities for attendance**: **AT LEAST ONCE PER WEEK**
  You are expected to log in to the course in Carmen every week. The actual time you log in will vary (during most weeks you will probably log in many times), but you must log in at least once to access course materials. If you have a situation that might cause you to miss an entire week of class, discuss it with me *as soon as possible.* The following is a list of activities and time you will spend. Note some activities can be done off-line once you download the materials (for reading and exercises).
  - Video lectures (1-1.5 hours/week)
  - Labs, exercises, and discussion (2-5.5 hours/week)
  - Readings (1-2 hours/week)
  - Weekly check-in on Zoom (reserve on Carmen Calendar)
- **Office hours and live sessions**: **OPTIONAL**
  All live, scheduled events for the course, including my office hours, are optional.

Communications with instructor: *Email me if you have questions related to class materials and assignments. Make sure you include a detailed description of the problem and attach a screenshot and/or R file if applicable.* You are encouraged to help your classmates out via Canvas discussion board 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 instructor <u>via email</u> (always include both instructor and TA in your emails, in case one of us is unavailable). ***Make sure that you put "GEOG 5229" in the subject line.***

COURSE MATERIALS AND TECHNOLOGIES

Textbooks

- No required textbooks.
- Lecture videos, lab tutorials, and exercises will be posted on Carmen.

Recommended texts:

- An introduction to R for spatial analysis and mapping, Chris Brunsdon and Lex Comber, Sage 2nd edition.
- Geocomputation with R, Robin Lovelace, Jakub Nowosad, & Jannes Muenchow, CRC Press.

Course technology

Technology support

For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the Ohio State IT Service Desk. Standard support hours are available at ocio.osu.edu/help/hours, and support for urgent issues is available 24/7.

- **Self-Service and Chat support:** ocio.osu.edu/help
- **Phone:** 614-688-4357(HELP)
- **Email:** servicedesk@osu.edu
- **TDD:** 614-688-8743

Technology skills needed for this course

- Newest R and RStudio version
- Familiarity with spatial analysis in ArcGIS or QGIS
- Basic computer and web-browsing skills
- Navigating Carmen (go.osu.edu/canvasstudent)
- CarmenZoom virtual meetings (go.osu.edu/zoom-meetings)
- Recording a slide presentation with audio narration (go.osu.edu/video-assignment-guide)
- Recording, editing, and uploading video (go.osu.edu/video-assignment-guide)

Required equipment

- Computer: current Mac (Mac OS) 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
- Other: a mobile device (smartphone or tablet) to use for BuckeyePass authentication

Required software

- R version 4.1.2 or newer, which is a free and open source program for statistical computing and graphics (https://www.r-project.org/). Its privacy policy can be found at https://www.r-statistics.com/privacy-policy/. R will be used within RStudio (see the next item for its accessibility features).
- RStudio version 1.2.1335 or newer (https://rstudio.com/products/rstudio/), which is a shell for enhanced visualization and programming. Its privacy policy can be found at https://www.rstudio.com/about/privacy-policy/. Accessibility features can be found at https://support.rstudio.com/hc/en-us/articles/360044226673-RStudio-Accessibility-Features.
- Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365. Full instructions for downloading and installation can be found at go.osu.edu/office365help.

Carmen access

You will need to use BuckeyePass (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 take the following steps:

- Register multiple devices in case something happens to your primary device. Visit the BuckeyePass - Adding a Device help article for step-by-step instructions (go.osu.edu/add-device).
- 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.
- Download the Duo Mobile application (go.osu.edu/install-duo) to 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) and IT support staff will work out a solution with you.

GRADING AND FEEDBACK

How your grade is calculated

All submissions must be made via Carmen Canvas by 11:59PM on the due date to be considered on time. All lab assignments are due on Thursday except for holidays.

CATEGORY	POINTS	OCCURRENCE	DUE DATES
Participation	10%	Multiple	
Lab assignments	65%	Multiple	1/27 2/10 2/24 3/10 3/24 4/7
Final project	25%	Once, with 3 milestones	4/14 (proposal) 4/21 (halftime check in) 4/28 (final submission)
Total	**100%**		

Participation (10%)

Class participation is required and accounts for 10% of the total grade. Attendance will be taken through online Carmen quizzes, which include weekly submissions of lab work and small questions embedded in the labs.

Lab assignments (65%)

You will have multiple lab assignments throughout the semester. The lab assignments are designed to help you apply the R functions introduced in class to real world mini-projects such as traffic crashes, air quality modeling, and assessing equity issues. Instructions will be provided to guide you through the steps in the lab. Discussion forum and weekly check-in via Zoom will be available to help you troubleshoot the coding problems that you encounter in the lab.

You will submit the HTML outputs from your R markdown code for grading, along with a short memo to summarize the results. Detailed guidelines and rubrics are available on Carmen Canvas.

Final project (25%)

You are expected to consult with me during the semester about the topic, data gathering, and analysis. You will turn in a short proposal, half-time progress, and final paper for grading on Carmen Canvas.

Details about each assignment, including guidelines and rubric, will be made available on Carmen Canvas.

Late submissions

By default, late submissions of assignments and final project (or paper) are subject to 5% grade reduction for each late day. Late submission is always better than no submission.

You have <u>one</u> opportunity to extend your deadline <u>for one day</u> during the semester (indicate it in your submission to get the full credit). This extension will be applied to an assignment of your choice (including the final paper). No permission is required; you will indicate in your submission that you are using the one-day extension. We suggest that you use this opportunity wisely and reserve it for the end of the semester when the workload is unusually high.

In case of personal and family emergencies, please notify me as soon as possible so that we can work out a new submission time. Such extensions will be granted on a case-by-case basis.

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: P/NP option may be available during COVID-19 (this may change during the semester). Check the OSU website and/or with your academic advisor.

Instructor's feedback and response time

We are providing the following list to give you an idea of our intended availability throughout the course. (Remember that you can call **614-688-4357(HELP)** at any time if you have a technical problem).

- **Grading and feedback:** For large assignments, you can generally expect feedback within **10 school days**, unless emergencies occur to the instructor or grader.

- **Email:** We will reply to emails within **36 hours on school days when class is in session at the university**.

OTHER COURSE POLICIES

Absence related to COVID-19

Continuous engagement with this course is essential to learning the material. Students are expected to participate in Carmen Canvas <u>at least</u> once per week for courses with fully remote participation. Students who need to miss class or who are not able to participate due to illness (COVID-19 or other illnesses), exposure to COVID-19, care for family members exposed to COVID-19 or other reasons are expected to contact the instructor as soon as possible to arrange for accommodation. Students in

special situations or those requiring specific, long-term or other accommodation should seek support from appropriate university offices including but not limited to Student Advocacy, Student Life Disability Services and the Office of Institutional Equity.

Health and safety requirements

Although there is no in-person components in this class, all students, faculty and staff are required to comply with and stay up to date on all university safety and health guidance (https://safeandhealthy.osu.edu), which includes wearing a face mask in any indoor space and maintaining a safe physical distance at all times. Non-compliance will be warned first and disciplinary actions will be taken for repeated offenses.

Academic integrity policy

See **Descriptions of major course assignments**, above, for my specific guidelines about collaboration and academic integrity in the context of this online class.

Ohio State's 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* (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 we 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, we are obligated by university rules to report my suspicions to the Committee on Academic Misconduct. 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 web page (go.osu.edu/coam)

- Ten Suggestions for Preserving Academic Integrity (go.osu.edu/ten-suggestions)
- Eight Cardinal Rules of Academic Integrity (go.osu.edu/cardinal-rules)

Copyright for instructional materials

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. For more information on OIE, visit equity.osu.edu or email equity@osu.edu.

Commitment to a diverse and inclusive learning environment

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.

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 resources are available at go.osu.edu/ccsondemand. You can reach an on-call counselor when CCS is closed at 614- 292-5766, and 24-hour emergency help is also available through the 24/7 National Prevention Hotline at 1-800-273-TALK or at suicidepreventionlifeline.org. The Ohio State Wellness app is also a great resource available at go.osu.edu/wellnessapp.

ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Requesting accommodations

The university strives to make all learning experiences as accessible as possible. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let us know immediately so that we can privately discuss options. To establish reasonable accommodations, we may request that you register with Student Life Disability Services. After registration, make arrangements with us 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.

Accessibility of course technology

This online course requires use of CarmenCanvas (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- Canvas accessibility (go.osu.edu/canvas-accessibility)
- Streaming audio and video
- CarmenZoom accessibility (go.osu.edu/zoom-accessibility)
- Collaborative course tools

COURSE SCHEDULE

The tentative schedule is provided below. Please refer to Carmen Canvas for a more updated schedule.

Week	Date	Topic
1	1/10 – 1/16	Introduction Installing and working with R
2	1/17 – 1/23	Basic R functions and operations
3	1/24 – 1/30	Visualizing data
4	1/31 – 2/6	Scripting and writing functions
5	2/7 – 2/13	Non-spatial data manipulation
6	2/14 – 2/21	Spatial data manipulation
7	2/28 – 3/6	Application: Traffic crash analysis 1
8	3/7 – 3/13	Application: Transit accessibility analysis
9	3/14 – 3/20	SPRING BREAK – no class
10	3/21 – 3/27	Application: Modeling air quality 1
11	3/28 – 4/3	Application: Working with GPS data
12	4/4 – 4/10	Application: Traffic crash analysis 2
13	4/11 – 4/17	Application: Modeling air quality 2
14	4/18 – 4/24	Application: Activity space Introducing final project
15	4/25 – 4/29	Class wrap-up Working on final project

SYLLABUS
GEOG 5229: Emerging Topics in GIS
Spatial analysis in R
Spring 2022
3 credit hours
3:55-5:15 TR, Derby 140

CONTENTS

ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

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- Streaming audio and video
- CarmenZoom accessibility (go.osu.edu/zoom-accessibility)
- Collaborative course tools

COURSE OVERVIEW

Instructors

Instructor: Dr. Huyen Le

Email: le.253@osu.edu (preferred contact method)

Office hours with instructor: 1-2 Mon & 3-3:50 Thu (book a slot on Carmen Calendar) or by appointment

All office hours are through Zoom. Details about office hours are available in the course website. To request an appointment outside of the above times, please email Dr. Le with your availability up to a week ahead.

Lab assistant and grader: Zane Patterson

Email: patterson.1037@buckeyemail.osu.edu

Prerequisites

GEOG 5210 or equivalent, or as approved by the instructor.

Course description

This course introduces you to R, one of the most popular programming languages, and spatial analysis in R. We will start with the basics of R programming, and transition to R spatial data processing, analysis, and mapping. The lab examples in this class cover various applications of spatial data analytics in the real world, such as urban studies, transportation, environmental sciences, and public health.

Course learning outcomes

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

1. Process spatial data in R
2. Visualize spatial data in R
3. Apply various data analytic techniques to make sense of spatial data in various real-world applications

HOW THIS COURSE WORKS

Mode of delivery: This class is in-person. All learning materials will be uploaded on Carmen Canvas. There will be additional components:

- General lectures
- Labs and exercises
- Office on Zoom (reserve on Carmen Calendar).

Credit hours and work expectations: This is a **3-credit-hour course**. According to Ohio State policy (go.osu.edu/credithours), students 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 instructor: *Email me 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.* You are encouraged 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 email (always include both instructor and TA in your emails, in case one of us is unavailable). *Make sure that you put "GEOG 5229" in the subject line.*

COURSE MATERIALS AND TECHNOLOGIES

Textbooks

No required textbooks.

Course technology

Technology support

For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the Ohio State IT Service Desk. Standard support hours are available at ocio.osu.edu/help/hours, and support for urgent issues is available 24/7.

- **Self-Service and Chat support:** ocio.osu.edu/help
- **Phone:** 614-688-4357(HELP)
- **Email:** servicedesk@osu.edu
- **TDD:** 614-688-8743

Technology skills needed for this course

- R version 4.0.2 or newer
- RStudio version 1.2.1335 or newer
- Familiarity with spatial analysis in ArcGIS or QGIS
- Basic computer and web-browsing skills
- TopHat (https://teaching.resources.osu.edu/toolsets/top-hat)
- Navigating Carmen (go.osu.edu/canvasstudent)
- CarmenZoom virtual meetings (go.osu.edu/zoom-meetings)
- One Drive cloud storage associated with your OSU email account (https://onedrive.live.com/)
- Recording a slide presentation with audio narration (go.osu.edu/video-assignment-guide)
- Recording, editing, and uploading video (go.osu.edu/video-assignment-guide)

Required equipment

- Computer: current Mac (Mac OS) 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
- Other: a mobile device (smartphone or tablet) to use for BuckeyePass authentication

Required software

- R version 4.0.2 or newer
- RStudio version 1.2.1335 or newer
- Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365. Full instructions for downloading and installation can be found at go.osu.edu/office365help.

Carmen access

You will need to use BuckeyePass (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 take the following steps:

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

GRADING AND FEEDBACK

How your grade is calculated

All submissions must be made via Carmen Canvas by 11:59PM on the due date to be considered on time. All lab assignments are due on Monday except for holidays.

CATEGORY	POINTS	OCCURRENCE	DUE DATES
Participation	5%	Multiple	
Quizzes	5%	Multiple	
Lab assignments	65%	Multiple	Thursdays
Final project	25%	Once, with 3 milestones	Apr 28 (Thursday)
Total	**100%**		

Participation (5%)

Class attendance is required and accounts for 5% of the total grade. Attendance will be taken through online Carmen quizzes and/or real-time in-class quizzes.

If you have excuses, please notify me and the TA before class.

Quizzes (5%)

Open-book quizzes will be delivered through TopHat and/or Carmen Canvas.

Lab assignments (65%)

You will have multiple lab assignments throughout the semester. You will work on the lab exercise then summarize the results in a short memo. Guidelines and rubrics are available on Carmen Canvas.

Final project (25%)

You are expected to consult with me during the semester about the topic, data gathering, and analysis. You will turn in a short proposal, half-time progress, and final paper for grading on Carmen Canvas.

Details about each assignment, including guidelines and rubric, will be made available on Carmen Canvas.

Late submissions

By default, late submissions of assignments and final project (or paper) are subject to 5% grade reduction for each late day. Late submission is always better than no submission.

You have one opportunity to extend your deadline for one day during the semester (indicate it in your submission to get the full credit). This extension will be applied to an assignment of your choice (including the final paper). No permission is required; you will indicate in your submission that you are using the one-day extension. We suggest that you use this opportunity wisely and reserve it for the end of the semester when the workload is unusually high.

In case of personal and family emergencies, please notify me as soon as possible so that we can work out a new submission time. Such extensions will be granted on a case-by-case basis.

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: P/NP option may be available during COVID-19 (this may change during the semester). Check the OSU website and/or with your academic advisor.

Instructors' feedback and response time

We are providing the following list to give you an idea of our intended availability throughout the course. (Remember that you can call **614-688-4357(HELP)** at any time if you have a technical problem).

- **Grading and feedback:** For large assignments, you can generally expect feedback within **10 school days**, unless emergencies occur to the instructor or grader.

- **Email:** We will reply to emails within **48 hours on school days when class is in session at the university**.

OTHER COURSE POLICIES

Absence related to COVID-19

Continuous engagement with this course is essential to learning the material. Students are expected to attend class and engage with assignments and discussion prompts for every scheduled meeting, participating <u>at least</u> twice per week (ideally thrice) for courses with fully remote participation. Students who need to miss class or who are not able to participate due to illness (COVID-19 or other illnesses), exposure to COVID-19, care for family members exposed to COVID-19 or other reasons are expected to contact the instructors as soon as possible to arrange for accommodation. Students in special situations or those requiring specific, long-term or other accommodation should seek support from appropriate university offices including but not limited to Student Advocacy, Student Life Disability Services and the Office of Institutional Equity.

Health and safety requirements

Although there is no in-person components in this class, all students, faculty and staff are required to comply with and stay up to date on all university safety and health guidance (https://safeandhealthy.osu.edu), which includes wearing a face mask in any indoor space and maintaining a safe physical distance at all times. Non-compliance will be warned first and disciplinary actions will be taken for repeated offenses.

Academic integrity policy

See **Descriptions of major course assignments**, above, for my specific guidelines about collaboration and academic integrity in the context of this online class.

Ohio State's 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* (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 we 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, we are obligated by university rules to report my suspicions to the Committee on Academic Misconduct. 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 web page (go.osu.edu/coam)
- Ten Suggestions for Preserving Academic Integrity (go.osu.edu/ten-suggestions)
- Eight Cardinal Rules of Academic Integrity (go.osu.edu/cardinal-rules)

Copyright for instructional materials

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. For more information on OIE, visit equity.osu.edu or email equity@osu.edu.

Commitment to a diverse and inclusive learning environment

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.

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 resources are available at go.osu.edu/ccsondemand. You can reach an on-call counselor when CCS is closed at 614- 292-5766, and 24-hour emergency help is also available through the 24/7 National Prevention Hotline at 1-800-273-TALK or at suicidepreventionlifeline.org. The Ohio State Wellness app is also a great resource available at go.osu.edu/wellnessapp.

Course schedule

The tentative schedule is provided below. Please refer to Carmen Canvas for a more updated schedule.

Module	Topic
1	Introduction: Meet R
2	Handling spatial data
3	Visualizing data
4	Scripting and writing function
5	Spatial analysis
6	Spatial analysis
7	Application: Working with GPS data
8	Application: Traffic crash analysis 1
9	Application: Modeling air quality 1
10	Application: Measuring segregation
11	TBD
12	Application: Traffic crash analysis 2
13	Application: Modeling air quality 2
14	Application: Activity space
15	Class wrap-up

Distance Approval Cover Sheet

For Permanent DL/DH Approval | College of Arts and Sciences

Course Number and Title:

Carmen Use

When building your course, we recommend using the ASC Distance Learning Course Template for CarmenCanvas. For more on use of Carmen: Common Sense Best Practices.

☐ A Carmen site will be created for the course, including a syllabus and gradebook at minimum.

If no, why not?

Syllabus

☐ Proposed syllabus uses the ASC distance learning syllabus template, includes boilerplate language where required, as well as a clear description of the technical and academic support services offered, and how learners can obtain them.

☐ Syllabus is consistent and is easy to understand from the student perspective.

☐ Syllabus includes a schedule with dates and/or a description of what constitutes the beginning an end of a week or module.

☐ If there are required synchronous sessions, the syllabus clearly states when they will happen and how to access them.

Additional comments (optional):

Instructor Presence

For more on instructor presence: About Online Instructor Presence.

Students should have opportunities for regular and substantive academic interactions with the course instructor. Some ways to achieve this objective:

☐ Regular instructor communications with the class via announcements or weekly check-ins.

☐ Instructional content, such as video, audio, or interactive lessons, that is visibly created or mediated by the instructor.

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☐ Regular participation in class discussion, such as in Carmen discussions or synchronous sessions.

☐ Regular opportunities for students to receive personal instructor feedback on assignments.

Please comment on this dimension of the proposed course (or select/explain methods above):

Delivery Well-Suited to DL/DH Environment

Technology questions adapted from the Quality Matters rubric. For information about Ohio State learning technologies: Toolsets.

☐ The tools used in the course support the learning outcomes and competencies.

☐ Course tools promote learner engagement and active learning.

☐ Technologies required in the course are current and readily obtainable.

☐ Links are provided to privacy policies for all external tools required in the course.

Additional technology comments (optional):

Which components of this course are planned for synchronous delivery and which for asynchronous delivery? (For DH, address what is planned for in-person meetings as well.)

If you believe further explanation would be helpful, please comment on how course activities have been adjusted for distance learning (optional):

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Workload Estimation

For more information about calculating online instruction time: ODEE Credit Hour Estimation.

☐ Course credit hours align with estimated average weekly time to complete the course successfully.

☐ Course includes direct (equivalent of "in-class") and indirect (equivalent of "out-of-class") instruction at a ratio of about 1:2.

Provide a brief outline of a typical course week, categorizing course activities and estimating the approximate time to complete them or participate:

☐ In the case of course delivery change requests, the course demonstrates comparable rigor in meeting course learning outcomes.

Accessibility

For more information or a further conversation, contact the accessibility coordinator for the College of Arts and Sciences. For tools and training on accessibility: Digital Accessibility Services.

☐ Instructor(s) teaching the course will have taken Digital Accessibility training (starting in 2022) and will ensure all course materials and activities meet requirements for diverse learners, including alternate means of accessing course materials when appropriate.

☐ Information is provided about the accessibility of all technologies required in the course. All third-party tools (tools without campus-wide license agreements) have their accessibility statements included.

Description of any anticipated accommodation requests and how they have been/will be addressed.

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Additional comments (optional):

Academic Integrity

For more information: Academic Integrity.

☐ The course syllabus includes online-specific policies about academic integrity, including specific parameters for each major assignment:

☐ Assignments are designed to deter cheating and plagiarism and/or course technologies such as online proctoring or plagiarism check or other strategies are in place to deter cheating.

Additional comments (optional):

Frequent, Varied Assignments/Assessments

For more information: Designing Assessments for Students.

Student success in online courses is maximized when there are frequent, varied learning activities. Possible approaches:

☐ Opportunities for students to receive course information through a variety of different sources, including indirect sources, such as textbooks and lectures, and direct sources, such as scholarly resources and field observation.

☐ Variety of assignment formats to provide students with multiple means of demonstrating learning.

☐ Opportunities for students to apply course knowledge and skills to authentic, real-world tasks in assignments.

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Comment briefly on the frequency and variety of assignment types and assessment approaches used in this course (or select methods above):

Community Building

For more information: Student Interaction Online.

Students engage more fully in courses when they have an opportunity to interact with their peers and feel they are part of a community of learners. Possible approaches:

☐ Opportunities for students to interact academically with classmates through regular class discussion or group assignments.

☐ Opportunities for students to interact socially with classmates, such as through video conference sessions or a course Q&A forum.

☐ Attention is paid to other ways to minimize transactional distance (psychological and communicative gaps between students and their peers, instructor, course content, and institution).

Please comment on this dimension of the proposed course (or select methods above):

Transparency and Metacognitive Explanations

For more information: *Supporting Student Learning*.

Students have successful, meaningful experiences when they understand how the components of a course connect together, when they have guidance on how to study, and when they are encouraged to take ownership of their learning. Possible approaches:

☐ Instructor explanations about the learning goals and overall design or organization of the course.

☐ Context or rationale to explain the purpose and relevance of major tasks and assignments.

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☐ Guidance or resources for ancillary skills necessary to complete assignments, such as conducting library research or using technology tools.

☐ Opportunities for students to take ownership or leadership in their learning, such as by choosing topics of interest for an assignment or leading a group discussion or meeting.

☐ Opportunities for students to reflect on their learning process, including their goals, study strategies, and progress.

☐ Opportunities for students to provide feedback on the course.

Please comment on this dimension of the proposed course (or select methods above):

Additional Considerations

Comment on any other aspects of the online delivery not addressed above (optional):

Syllabus and cover sheet reviewed by *Jeremie Smith* on

Reviewer Comments:

Additional resources and examples can be found on ASC's Office of Distance Education website.

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I have completed and signed off on the preliminary distance learning review for the **GEOG 5229: *Emerging Topics in GIS Spatial analysis in R*** course approval proposal (see signed Cover Sheet attached). This syllabus includes all required syllabus elements and provides a basic overview of the course expectations.

I have a few recommendations to improve your syllabus that I hope will be helpful:

- I found the re-ordering of the syllabus template sections, with a table of contents on the first page and beginning with the accommodations statement was confusing. I recommend following the required syllabus template for consistency (for students and the faculty panel reviewers)

- I think this class is synchronous (based on the syllabus including class meeting times) but could not be certain because the *Attendance and Participation Requirements* section from the syllabus template was not included. Please consider adding this section to clarify attendance requirements for the course. Further complicating this is the fact that the submitted Cover Sheet states, "All components are planned for asynchronous delivery."

- Due to the ambiguity of whether the course is synchronous or asynchronous, I could not evaluate whether the course design includes sufficient direct instruction. If the course is asynchronous, I recommend adding additional information in the "How this Online Course Works" section of the syllabus that makes the direct instruction components clearer. For example, summarizing the average weekly volume of recorded lecture videos students should expect to view helps the students understand the rhythm of the course and the faculty review panel see where the direct instruction fits in the course design plan.

- I recommend adding additional information regarding the "lab assignments" portion of the grade calculation. This category is worth 65% of the grade but reading the syllabus does not provide much of an explanation of what these assignments are or student expectations for successfully completing these.

- The course schedule is lacking in important information such as due dates for lab assignments and components of the final project. I recommend adding these.

The ASC Office of Distance Education strives to be a valuable resource to instructors and departments in the College of Arts and Sciences. In addition to managing the [DL course review](#) process, [hosting ASC Teaching Forums](#), and developing an ever-expanding catalog of [instructor support resources](#), we also provide one-on-one instructional design consultation to ASC instructors interested in redesigning any aspect of their online course. If your department or any of your individual instructors wish to [meet with one of our instructional designers](#) to discuss how we can provide advice, assistance, and support, please do let me know.