

GEOG 5200S – Elements of Cartography: Serving the Community through Cartography – Spring 2019

Instructor

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Teaching Assistant

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Course Description

“Show me a geographer who does not need them [maps] constantly and want them about him, and I shall have my doubts as to whether he has made the right choice in life.” Carl O. Sauer (1889-1975)

This is an introduction to the art, craft, and science of cartography. We will emphasize important aspects of cartographic communication, including: map purpose, geographic phenomena and their measurement, map projections, data collection and creation, data manipulation such as classification and generalization, and various visualization and map design issues such as color choice, typography, and layout.

“Learning map craft is like learning to ride a bicycle. You cannot learn from a book. You take a bicycle, with an experienced friend to guide, encourage, and assist you, and you try...” British War Office Information Handbook, ca 1945.

Much emphasis is put on hands-on experience for you to learn to apply visual and cartographic techniques to spatial information. The Spring 2018 offering is also the service learning version of Geography 5200, which means that you will spend significant time outside of class providing much needed service to our community partner, Columbus Metropolitan Libraries, and design a map-based learning activity. More information about this can be found in the course schedule section.

Course learning outcomes

The course goal is that students learn basic principles of cartographic communication. More specifically, the objectives are that after successful completion of the course, students know:

- how to produce maps
 - Understand key components of the cartographic communication process
 - How and when to use different types of maps
 - Make informed decisions about map design in a given situation
- how to consume maps
 - Be able to read and understand different types of maps
 - Critically evaluate maps and be able to articulate why it is good or bad

With the service learning designation, the students will reach those objectives while also serving our local community through cartography.

Service Learning: "A form of experiential education characterized by student participation in an organized service activity that: 1) is connected to specific learning outcomes, 2) meets identified community needs and 3) provides structured time for student reflection and connection of the service experience to learning" --OSU Service Learning Initiative

General Education (GE)

This course fulfills GE requirements for the Open Option Service-Learning category.

The GE goals for Service-Learning are: Students gain and apply academic knowledge through civic engagement with communities.

GE Expected Learning Outcomes:

1. Students make connections between concepts and skills learned in an academic setting and community-based work.
2. Students demonstrate an understanding of the issues, resources, assets, and cultures of the community in which they are working.
3. Students evaluate the impacts of the service learning activity.

Course materials

Required:

Goodes's World Atlas, 23rd Ed., Rand McNally.

The atlas is used for illustration and for class exercises. It is also a valuable source for good design practice, one of the few occasions where I encourage copying work of others 😊.

Highly recommended:

Slocum T. et al., 2009, Thematic cartography and geovisualization, 3rd ed., Pearson Prentice Hall, 561p.

Lectures will cover the most of the book topics but in a different fashion so the text can serve as a complement to enrich the lectures, and provide more detail. (The 2nd edition works too but the newer text is re-organized and updated so any references to it may be off)

You will be able to find good deals on this book online, which is why I stick to a slightly older text. The fundamentals don't change that much!

Course technology

For help with your password, university e-mail, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at <https://ocio.osu.edu/help/hours>, and support for urgent issues is available 24x7.

- **IT Self-Service and Chat support:** <http://ocio.osu.edu/selfservice>
- **Phone:** 614-688-HELP (4357)
- **Email:** 8help@osu.edu
- **TDD:** 614-688-8743

Baseline technical skills necessary for this course

- Basic computer and web-browsing skills
- Navigating Carmen
- Using Microsoft Office Word and Excel

Software

You will spend a good amount of time using mapping software. Our labs have all necessary software installed and there should be enough time and opportunities outside of class to use the lab software for your assignments. Some of you may want to install the software in your personal computers and the instructions below should help with that.

1) *ArcGIS*. This is the primary software that we will be using in this course. There is a detailed document regarding the entire process of downloading and installing *ArcGIS* and authorizing it here <https://osu.app.box.com/s/qvz49ho50o61axmlkerqw9a5d6d899x1>. For any installation questions not answered by this document, you will need to contact ESRI Customer Support at 1 (888) 377-4575.

Please note that ArcGIS for Desktop is NOT certified or supported on the Mac operating system. However, if you have an Apple computer running Windows, you can install ArcGIS for Desktop using VMWare, BootCamp, or Parallels. To learn more, please visit this link:

<http://edcommunity.esri.com/software-and-data/mac-os-support>.

ArcGIS Online. Although you cannot use ArcGIS Online in lieu of the desktop software, you may still find ArcGIS Online fun to explore! You can use your OSU account credentials to log onto ArcGIS Online. You can read more about this here:

<https://osu.app.box.com/s/r93gfujpxbr3vij2l57tjibwnpefbxjf>.

2) QGIS. This is the secondary software that we will be using in this course. It is free and open source and can be obtained by visiting <http://qgis.org/en/site/>. Unlike ArcGIS, QGIS can operate on the Mac operating system.

Please note that if you choose to install QGIS onto your personal machine, your instructor and TA are NOT responsible for answering your installation-related questions. You will need to troubleshoot such issues yourself.

Course schedule, grading and faculty response

Schedule

The most up to date schedule will always be posted on [Carmen](#) under Course info. Any significant changes to the schedule will be announced well in advance.

Lectures & exercises

Mondays 08:00 AM — 09:20 AM in 324 Hitchcock Hall.

Class material such as lecture notes, worksheets, handouts will be made available through [Carmen](#) under the heading Lectures.

During lectures we will often spend some time to work with sample problems and discuss practical applications. These activities are meant to build a deeper understanding of the subject matter but it also relies heavily on your active participation. You will also have material to review before classes or other types of homework assignments.

Labs

Wednesdays or Fridays 08:00 AM — 09:20 AM in 0135 Derby Hall.

There are weekly lab sessions and you should be signed up for one of them, either on Wednesdays or on Fridays. These are led by the course TA, and they offer a critical opportunity to practice cartography and get hands on experience with a lot of the concepts that is covered in lecture. Details on the labs will be posted on Carmen under the Labs heading.

You must swipe your BuckID to access the classroom in Derby 0135. (Note: The card scanners are sometimes unreliable. You may need to swipe more than once, and you may need to wait a second or two after swiping to open the door, giving the scanner a chance to unlock the door. If you continue to have problems, please notify the office staff in Derby 1036.)

To access the computers in Derby 0135 and 0140, you should use your OSU name.# credentials. You will notice that it will take a few minutes to log on to a machine the first time you are logging in

on that particular PC. This is due to the way that Windows 10 manages User Profiles. Once you have been logged in on a machine it will retain your profile and the next time you sit down at that machine it will be much faster at logging you on. We encourage you to use the same machine when you work in the lab to avoid extra wait and filling the machines with user profile info.

PLEASE NOTE THAT WE ARE NOT RESPONSIBLE FOR FILES LEFT ON LAB MACHINES. Files may be deleted at any time if needed. You should use USB devices or Cloud storage to save your work. Also, remember to LOG OUT when you are done with your work.

If you need to return to the computer lab outside of class time, please be aware that the building is usually locked at night, over weekends, and on holidays, so be sure to plan accordingly. When you do return to the computer lab outside of class time, there may be a class in session. Please attempt to avoid interrupting classes that are in session, and if there *is* a class in session, check the computer lab across the hall in Derby 140. It has the same software as Derby 135, and it is usually more available.

If you would like to check the schedules for Derby 135 and 140, you can check the Room Matrix:

https://delegated.osu.edu/psp/csosuda_1/EMPLOYEE/CAMP/c/OSR_CUSTOM_MENU.OSR_ROM_MATRIX.GBL

1. Enter DB0135 for Derby 135 or DB0140 for Derby 140.
2. Select the date under "Show Week of".
3. Click "Refresh Calendar".

You will be able to see when the room is occupied and when the room is available.

Service

As part of this course, you will put your learning into practice by engaging in service that addresses a community need. This aspect of the course is usually the most engaging and impactful of all activities.

Our partner for the fourth year in a row is the Columbus Metropolitan Libraries and you will be doing a mapping project in collaboration with their Homework Help Centers (HHCs). Their branch locations are off campus and most of them will be most conveniently reached by car, but bus & bike transportation is an option too. It is the student's responsibility to arrange their own transportation to and from service activities. No transportation or reimbursement for related expenses will be provided by the University.

To prepare for the service, students will be provided a Cultural Competence training session through the Multicultural Center in the Office of Student Life.

The service activity will be ongoing throughout the semester and is a way to understand the course topics by applying what you are learning in a real-world setting. Starting in February you will be serving in the HHCs and develop a map-based learning activity. The service will be a minimum of 15 hours total spread across at least ten occasions during the semester. You will

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have the opportunity to schedule a time that fits with the HHCs operating hours Monday-Friday 3-7pm. To be able to do the service, you must have a criminal background check done. The cost for this will be covered by the CML. If running a criminal background check will be a concern for you, please come see me to discuss your options. The libraries don't allow anyone to work with them who has a felony of any kind or charges related to theft, assault, concealed carry, crimes of a sexual nature, or arson.

Geography 5200S – Spring 2019 schedule				
Monday	Lecture (8-9:20am)	Same week lab Wednesday/Friday (8-9:20)	Exams	Service
7 Jan	Course introduction	Lab 1 - Getting started with ArcGIS Pro		n/a
14 Jan	Thematic mapping [Ch. 1-2]	Cultural competency training		Project introductions
21 Jan	MLK-day – no lecture	Lab 1 continued		
28 Jan	Earth coordinates [Ch. 7]	Lab 2 – Map projections		HHC - general
4 Feb	Map projections [Ch. 8, 9]	Lab 2 continued	Quiz 1	HHC – general
11 Feb	Symbolization [Ch. 5]	Lab 3 – Fundamentals		HHC – general
18 Feb	Map elements & design [Ch. 11, 12]	Lab 3 continued		HHC – general
25 Feb	Statistical foundations & Data classification [Ch. 3 pp.34-41, Ch. 4]	Lab 4 – Data and classification	Quiz 2	HHC – general
4 Mar	Data sources	Lab 4 continued		HHC – general
11 Mar	Spring	Break		
18 Mar	Choropleth mapping [Ch. 14], Color [Ch. 10]	Lab 5 – Color	Quiz 3	HHC – prepare prog.
25 Mar	Proposal preparation and project work	Lab 5 continued		HHC – prepare prog.

1 Apr	Typography [Ch. 11, 12]	Lab 6 – Typography and labeling		HHC – prepare prog.
8 Apr	Generalization & Effective graphing [Ch. 6 & 18]	Lab 6 continued	Quiz 4	HHC – deliver prog.
15 Apr	No class/ Project work	Project work		HHC – deliver prog.
22 Apr	Design reflections/ Project work	Thursday 4/25, 8-9:45am Final reporting back		HHC – deliver prog.

Grading

Overall credits for the course are given approximately as follows:

Lab Assignments ~300 points (or ~40%)

In-class work & other homework ~110 points (or ~15%)

Service and term project ~200 points (or ~25%)

Exams ~160 points (or ~20%)

The credits given to each course component reflects my notion that I can only facilitate for you to acquire theoretical and practical knowledge. *Only you can learn* what we want you to. Consequently, assessments relate mainly to your own learning, such as demonstrating practical use of the covered topic matter in class, homework and an individual project.

I do not grade on a curve, the points you earn count directly toward your grade. Final letter grades will be assigned based on how many percent of total points available you have earned.

93.0 <= A
 90.0 <= A- < 92.9
 87.0 <= B+ < 89.9
 83.0 <= B < 86.9
 80.0 <= B- < 82.9
 77.0 <= C+ < 79.9
 73.0 <= C < 76.9
 70.0 <= C- < 72.9
 67.0 <= D+ < 69.9
 60.0 <= D < 66.9
 F < 60.0

Faculty feedback and response time

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

Grading and feedback

In-class and lab assignments will usually be graded within a week after they are due. We will not release any correct answers until the due date for each assignment has passed.

E-mail

We will typically respond to e-mails within **24 hours on school days, but please allow up to 48 hours.**

Discussion board/office hours

We prefer to keep communication via the Carmen course webpage or through email.

For general questions related to the course:

1. Consult the **DISCUSSION : Course Q&A** in Carmen and use the search function. We check and respond to these messages regularly and you may find that we've already addressed your question.
2. If you don't find an answer, post your question to the discussion board. Your classmates may provide an answer before us. We encourage you to keep an eye on this discussion and that you help each other out to the extent possible, without giving away answers or otherwise put yourself or others in violation of the student code of conduct.

For questions on personal matters:

1. The open discussion is not appropriate for questions about your grade, illness, et c. In those situations an e-mail is the best way to contact us.

We will typically check and reply to e-mails and messages in the discussion boards every **24 hours on school days, but please allow up to 48 hours.**

Attendance, participation, and discussions

Student participation requirements

Lecture, in-class work & homework: You are expected to attend lectures every week. These cover basic cartographic and map design principles. Most classes also have time allotted for discussions, in-class work and other activities. Your contribution in these and in class generally, will be noted, and used to determine part of your final grade, just showing up won't count a

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whole lot toward this component! Obviously, you will receive no credit for in-class work if you are not present.

During the quarter, there will be several homework assignments. The main purpose of the homework is to provide an opportunity to learn how to apply and reflect upon the things we cover during the lectures. If you are having difficulty with assignments you should ask for assistance, whether from fellow students, from the course TA, or from me. Whatever you do, ask someone and *please note the academic integrity policy below!*

Exams: You will complete readings on cartography, map design and/or service learning principles each week, most from lecture materials but the recommended textbook is also a valuable complement. To ensure that the reading assignments are completed, you will be assigned to complete four online quizzes. These are essentially take-home exams administered through Carmen.

Labs: There will be 6 graded labs. Details of the lab assignments will be posted on the course web site.

Attending class is important since they provide you with access to the instructors and to other students. Keep in mind that not all assignments will be possible to finish in the allotted class time. Students will be expected to spend time on assignments outside of class during posted computer room hours (see Course schedule section).

You are welcome to discuss the exercises amongst yourselves, in fact this is encouraged, but the final product you hand in *must be your own work* (see Academic Integrity Policy below).

Service-learning & final project: Starting in February you will be serving in the Columbus Metropolitan Library HHCs and develop a map-based learning activity. We will seek to schedule a weekly recurring service time for you that also fits with the HHCs operating hours Monday-Friday 3-7pm. A record of your service hours will be kept by the libraries and we require a minimum of 15 hours total spread across at least ten occasions during the semester.

In lieu of a final exam and as part of the service-learning portion of the course, students will engage in a service-learning activity and complete a final map-based project. This project and service activity is graded primarily based on the mapping project you develop, but also on your participation at the HHCs. Further details on the mapping project will be posted on Carmen. You will report back to the class about your project in a presentation session held during the time allotted for the final exam, **Thursday 4/25, 8-9:45am.**

Grading: Given that this class has no pre-requisites, we understand that many of the concepts and techniques discussed early in the course will be new. Recognizing this, the first few assignments will contain more detailed instructions.

All course work (practical exercises, homework, service and project work) are expected by the due date. A late penalty of at least 10 percentage units will be taken off each day after the due date.

If you have a genuine reason (known medical condition, a pile-up of due assignments on other courses, ROTC, athletics teams, job interview, religious obligations etc.) for being unable to complete work on time, then some flexibility is possible. However, if in my judgment you could

reasonably have let me know *beforehand* that there would likely be a delay, then a late penalty will still be imposed if I don't hear from you until *after* the deadline has passed. For unforeseeable problems, I can be more flexible.

If there are ongoing medical, personal, or other issues that are likely to affect your work all semester, then please arrange to see me to discuss the situation.

There will be no make-up exams except for circumstances like those above.

Discussion, communication, and writing guidelines

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

- **Writing style:** Written assignments should have a professional tone. For discussions and other communication there is no need to act as if you were writing a research paper, but you should still remember to write using good grammar, spelling, and punctuation.
- **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.
- **Citing your sources:** When you write academically, please cite your sources to back up what you say. (For books and articles, list at least the author, year and title. For online sources, include a link.)
- **Backing up your work:** Consider composing your work in a word processor, where you can save your work, and then copying into the Carmen items.
- **Be ambassadors:** You will be serving members of our neighboring communities and as Ohio State students you are the face of our University to those you meet and interact with. Be your best and project our institutional values of excellence, integrity, transparency, trust, inclusion, and diversity in people and of ideas.

Other course policies

Academic integrity policy

Policies for this course

- **Assignments:** You must complete all assignments yourself, without any external help or communication, unless the instructions specifically says something else.
Your submissions, including discussion posts, should be your own original work. In formal assignments, you should follow a consistent citation style (e.g. MLA, APA) to cite the ideas and words of your research sources. You are free to ask a trusted person to proofread your assignments before you turn them in--but no one else should revise or rewrite your work.

- **Reusing past work:** In general, you are prohibited in university courses from turning in work from a past class to your current class, even if you modify it. If you want to build on past research or revisit a topic you've explored in previous courses, please discuss this with us before submitting it.
- **Falsifying research or results:** All work you will conduct in this course is intended to be a learning experience; you should never feel tempted to make your results or your work look more successful than it was.
- **Collaboration and informal peer-review:** The course includes several opportunities for collaboration with your classmates. While study groups and peer-review of major written projects is encouraged, and sometimes a specific requirement, remember that comparing answers on a quiz or assignment is not permitted. If you're unsure about a particular situation, please feel free to ask us ahead of time.

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*, 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."

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/>.

What this really means: If we suspect that a student has committed academic misconduct in this course, we are obligated by University Rules to report our 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. Please do not put yourself in that situation.

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

- The Committee on Academic Misconduct web pages ([COAM Home](#))
- *Ten Suggestions for Preserving Academic Integrity* ([Ten Suggestions](#))
- *Eight Cardinal Rules of Academic Integrity* (www.northwestern.edu/uacc/8cards.htm)

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

Accessibility accommodations for students with disabilities

The University strives to make all learning experiences as accessible as possible. Students with disabilities (including mental health, chronic or temporary medical conditions) that have been certified by the Office of Student Life Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office of Student Life Disability Services is located in 098 Baker Hall, 113 W. 12th Avenue; telephone 614-292-3307, slds@osu.edu; slds.osu.edu.

Accessibility of course technology

This online course requires use of Carmen (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.

Disclaimer: This course syllabus provides a general plan for the course; deviations may be necessary. Any changes will be announced by the instructor with as much advance notice as possible.