UC Berkeley, Department of Geography Fall 2022

GEOG 183: Cartographic Representation

Instructor: John Isom (he / him)

Where we meet: The C.A.G.E. Lab, 535 McCone Hall

Lecture meets: Monday and Wednesday, 3:00 to 4:00

Lab meets: Monday and Wednesday, 4:00 to 6:00

Office: McCone 561

Office hours: Monday and Wednesday, 11:00am to 1:00pm, or by appointment

Email: [**isom@berkeley.edu**](mailto:isom@berkeley.edu)

Lab Teaching

Assistant:

**Introduction to the course**

The UC Berkeley course catalog states that this course examines “problems in the representation of quantitative and qualitative data on thematic maps.” There’s more:

This course examines the art, science, politics, and ethics of making and interpreting thematic maps. Much of the course focuses on concepts, principles, and best practices in map design, in cartographic visualization (also known as geo-visualization) and in communicating intended geographic meanings (good maps are like good writing). Related topics will introduce you to the history of cartography and the role of maps in colonization, as well as the rise of resistance responses through counter cartography and guerilla cartography.

You’ll make what are called static thematic maps using *Adobe Illustrator Creative Cloud*, a leading vector-based graphic arts application. You need familiarity with either Mac OS or Windows operating system, and you need familiarity with using a computer mouse. You do not need to have taken a course in GIS, coding or programming, or databases.

**Student learning outcomes**

Given that **practice makes [more] proficient**, the student learning goals and outcomes for this course include working towards proficiency and mastery in:

1. Using principles of thematic map design and cartographic visualization in order to create maps that communicate effectively the map maker’s intended geographic meanings
2. Finding, evaluating, analyzing, visualizing, and critiquing types of data on and for thematic maps
3. Understanding how maps can narrate, make an argument, show change over space and show change over time, show correlations and causal relations, and substantiate and refute hypotheses
4. Understanding how to use these rhetorical modes to communicate geographic meanings w/ maps
5. Critiquing and improving thematic maps that you encounter in books, journals, on the internet, in newspapers, and other public and civic forums
6. Understanding and situating your mapmaking work in standards of ethics in the selection, generalization, visualization, and communication of geographic meanings on maps
7. Using Adobe Illustrator Creative Cloud for the design and production of static thematic maps

**In this course, we are all committed to working collaboratively in a supportive learning environment**

* You, I, and we are part of a learning community. When we meet, we agree to work, collaborate, and support each other – emotionally, culturally, learning-ly – in a safe and inclusive learning environment.
* You, I, and we participate as peers and colleagues as we explore, inquire, challenge and critique what we read, what we learn, what we create and revise.
* You, I, and we support each other’s efforts at intellectual and practitioner mastery of concepts and methods related to map design, visualization, communication, and critique. We are devoted to the principle that in learning **practice makes more proficient**.
* You, I, and we engage in these practices with diplomacy and mutual respect. We will have moments of differing. In such moments, we are respectful of the evidence-based arguments and positions that we each take, especially when those positions differ from our own.

**Weekly course workload**

This is a five-unit course. The long-standing consensus in university is that students are to spend **three hours per week engaged in coursework for every unit of credit**. That means that for this course you can expect to put in ~ **15 hours per week**. Here is what this time commitment looks like, week to week:

* We meet on Mondays and Wednesdays for 3.0 hours, for a total of **6.0 hours**.
* Weekly readings will average 1.0-1.5 hours a week, and then you’ll need another 0.5 hours or so to compile notes from readings for near-weekly discussions. **Call it 2.0 hours each week.**
* Working on assignments outside of class and lab is anywhere for **4.0 to 5.0 hours per week**.
* Watching pre-recorded videos, before we meet: Typically, **1-1.5 hours per week**.
* Prep for and take possible quizzes based on readings: **0.5 hours per week**

These total **14-15 hours**, weekly, which is in line with expectations.

**Course website**

The course webpage on bCourses is an essential course resource. The site provides access to each week’s listing of pre-recorded lectures, readings, any discussion topics and prompts, assignment deadlines, and other vital info and resources. Please visit the site regularly. And please: ***Check your UCB email regularly***, especially the day before we meet AND the day that we meet. You never know what might come up that I need you to be aware of.

**Readings**

The following textbook is required. It is available as a **FREE** ebook through the UC Berkeley libraries. If you can’t find it, just ask me. I will post PDFs of each week’s readings to bCourses, as well as occasional additional readings.

Krygier, John and Denis Wood. *Making Maps: A Visual Guide to Map Design for GIS*, 3rd edition. 2016. New York: The Guilford Press. ISBN-13: 978-1462509980.

**Assessment and grading**

Your overall course grade is based on mapmaking assignments, a critique of a public cartographic project, the course final project, a final exam, attendance, preparation and participation, and, possibly, some number of unannounced quizzes. I will provide a detailed “how-to” guidance document for each of the assignments listed below.

**Assignments**

There are **TEN assignments**, including the final project. I will provide a detailed **how-to guidance document** for each, as well as a **grading rubric**. Due dates for each assignment are in the **Weekly Calendar** (pp. 6-7, below) and on bCourses.

1. Assignment 01, specifications sheets (“spec sheet”) of cartographically relevant Visual Variables for text, and for point, line, and area symbols and symbolization.
2. Assignment 02, MAP SHEET 01, using AI CC tools to trace a base map of Central America.
3. Assignment 03, introduction to demography and to using Excel to work demographic data.
4. Assignment 04, MAP SHEET 02, mapping census data of 12 California cities using categorical data with pie charts and using rankable / sequential data and graduated point symbols.
5. Assignment 05, MAP SHEET 03, mapping change over time in the data of your CA cities from A04.
6. Assignment 06, Frequency displays and data displays.
7. Assignment 07, scoping document for your final project.
8. Assignment 08, MAP SHEET 04, choropleth maps and ethics in data visualization.
9. Assignment 09, written critique of the cartographic design elements of a public cartographic project.
10. Assignment 10, MAP SHEETS 05 and 06: Final project involving two map sheets, topically and regionally focused. The final project also includes a one-page cartographer’s statement.

**Exams and the occasional, possible, surprise quiz**

There is a take-home critical essays you’ll write two essays) for the course; it is worth 20% of your overall course grade. There is no midterm exam. In addition, there MIGHT be some number of unannounced quizzes based on readings. Quiz grades are incorporated into your grade for attendance and participation.

**Weekly Readings Summaries (WRSs)**

Making sense of and summarizing large amounts of info in a reading – a scholarly article, a book chapter, a report, etc. – is a valuable skill, in university and in professional life. It’s also useful for engaging the ideas of authors, especially for helping to define and to shape your own thoughts and arguments about a reading.

Many of the weekly readings are designated in **blue text as “for discussion”** in the course weekly calendar (see pages 7-8, below). There are **EIGHTEEN discussion readings that take place in ELEVEN weeks**. You must submit **hand-written Weekly Readings Summaries (WRS)** **notes** **for** **ANY EIGHT readings in these eleven weeks**. To become familiar with what to do, everyone must **complete WRS notes for week 04 and week 05, plus SIX more**.

Note that the WRSs are a low-stakes assignment, so we’ll take a “practice makes [more] proficient” approach to mastering how to do them. In addition, I will provide you with a notes-taking template and method that you can use to help with being tactical in responding to a reading: Summarizing important ideas / topics, finding a couple of quotes in the reading that compellingly characterize the author’s main point or argument in the reading.

Finally, these notes will be extremely useful for the take-home critical essays that you will submit during finals week. More on this as we go through the semester.

**Attendance, participation, and preparation**

Attending class and lab is about showing up to participate, and participation is about being prepared: Having read the readings, watched lecture videos, practiced with AI CC tools, completed assignments, and so on, *before we meet*.

I take attendance. Not always, but I do take attendance. It’s your choice to come to class or not; I respect your own decision-making about this. However, in this course, missing more than a couple of class and / or lab meetings starts to add up. Showing up for class is like showing up for work: If you can’t get to work, you do your best to contact your supervisor ***before*** you are scheduled to arrive. Same here.

As such, here’s my attendance / absence policy, for each day of lecture and lab:

* Everyone gets TWO unexcused absences, no questions asked.
* After that, each unexplained / unexcused absence CAN DROP (at my discretion, on a case-by-case, individual basis) your final course grade by up to 3% per unexplained / unexcused absence.
* More than FOUR unexcused absence means that you can fail the course – again, at my discretion.

What’s the difference between unexplained and unexcused? Some explanations are compelling excuses, and some aren’t. I am pretty reasonable with regard to this distinction, but only if you work with me. So, please contact me in advance to tell me what’s going on. My paramount role as your instructor is to help you achieve that which you aspire to in the course. Talk to me...

* You are responsible for work that you miss for every class meeting that you miss.
* And finally, arriving late or leaving early without letting me know; doing homework from another course; engaging in activities unrelated to class: ***not acceptable.***

**Deadlines policy**

During the semester, it’s likely going to happen that you will get slammed with assignments, exams, and even at your job. I get it that this happens. However: if you don’t contact me to say that an assignment will be late, why it will be late, and when you expect to submit it, I will assume that you won’t be submitting it.

Additionally, providing me with an explanation does not automatically excusenon-submission of work. Non-communication about late submissions ***can mean***, at my discretion, a zero grade for the assignment. In turn, assignments submitted late with permission will receive a reduction in grade unless I decide otherwise: again, I will work with you on this, but you need toinform me before it’s due.

**How I calculate your course grade**

|  |  |
| --- | --- |
| **Deliverables** | **Percent of course grade** |
| Mapmaking-related assignments | 25% |
| Final project (including scoping document) | 25% |
| Weekly Readings Summaries (WRS) notes | 20% |
| Written critique of a public cartographic project | 10% |
| In-class final exam | 10% |
| Attendance and participation, and any quizzes | 10% |

97% through 100%: A+ 87% through 89%: B+ 77% through 79%: C+ 67% through 69%: D+

93% through 96%: A 83% through 86%: B 73% through 76%: C 63% through 66%: D

90% through 92%: A- 80% through 82%: B- 70% through 72%: C- 60% through 62%: D-

**The C.A.G.E. Lab and access to an effective computing device**

The Cartography and GIS Education Lab – The C.A.G.E. Lab – is in 535 McCone Hall; turn left as you exit the elevators. Hours for access will be posted on both Lab doors. In turn, Berkeley Student Technology Services has information about student access to computing labs on campus: <https://studenttech.berkeley.edu/services/computer-labs>.

In turn, if having access to an effective device becomes difficult, you can contact Student Technology Services for details on getting a free loaner device – <https://studenttech.berkeley.edu/devicelending> – or through the Student Technology Equity Program – <https://technology.berkeley.edu/STEP> .

**Access to a license for Adobe Illustrator:** Students need access to Adobe Illustrator Creative Cloud (AI CC), which means you need a free license. To request a license, please go to Cal’s [Adobe software page](https://software.berkeley.edu/adobe-creative-cloud) before August 22. The website has info about the software available.

Once you’ve submitted your license request, you’ll have access in about one business day. Your license is active for the semester. You’ll then need to request a new license at the beginning of the fall term. To access free software while a Cal student, go here: <https://software.berkeley.edu/> or here: <https://studenttech.berkeley.edu/techsupport>.

Finally, drop-in IT support for students is available in Eshleman Hall (1st floor) and Doe Library (190 Doe). Students can also call Student Technology Services at 510-642-4357 or email [sts-help@berkeley.edu](mailto:sts-help@berkeley.edu).

**Student collaboration in lab and on assignments**

I am a huge fan of students helping each other, especially in lab with on-the-fly suggestions, insights, etc. I strongly believe that learning often works best in a two-heads, four-heads, and more heads are better than one approach.

In strong contrast to collaboration and academic support of each other is ***academic dishonesty***. What is academic dishonesty? It is the ***intentional act of deception*** in any one or more of the following areas:

* ***Cheating***: use or attempted use of unauthorized materials, information or study aids.
* ***Fabrication***: falsification or invention of any information designed to enhance or promote your or another’s person’s academic standing.
* ***Assisting***: helping another student commit an act of academic dishonesty.
* ***Tampering***: altering or interfering with evaluation instruments & documents.
* ***Plagiarism***: representing the words, work, or ideas of another person as your own.

I take academic integrity very seriously. Anyone found engaging in any aspect of academic dishonesty will be dealt with accordingly. More at the Division of Student Affairs, **The Center for Student Conduct**: <https://sa.berkeley.edu/conduct>.

**Student access to the course**

UC Berkeley and the Department of Geography are committed to creating accessible learning environments and reasonable accommodation for all students at UC Berkeley. Towards this end, the UCB Disabled Students’ Program provides support resources for students needing accommodation.

If you think this applies to you, please contact me, either in person or by email: **isom@berkeley.edu**. In turn, I urge you to visit the DSP office, which is located in 260 César E. Chávez Student Center. You can also access DSP resources here – <https://dsp.berkeley.edu/>. Just click on the Students pulldown menu at upper left of the home page.

In turn, the mission of Counseling and Psychological Services (CAPS) is to support the emotional, psychological, educational, social and cultural development and well-being of all UC Berkeley students through a wide range of multiculturally based counseling, psychiatric, career, training, and educational services.

### CAPS offers short term counseling for academic, career, and personal issues, as well as psychiatry services for situations when medication can help with counseling. <https://uhs.berkeley.edu/caps>. In addition, UCB’s Mental Health Handbook is a useful resource: <https://uhs.berkeley.edu/counseling/prevention-education-outreach/mental-health-handbook>.

**Changes to syllabus and the weekly calendar**

The weekly calendar, which appears on pages 7-8 of this syllabus, is subject to change, depending upon circumstances and course needs. I will announce, in class and through the bCourses website, any changes that I make, and will do my best to assure that you have enough advance notice to adjust accordingly. I will never add more work, but I might substitute one thing for another.

**Instructional resilience**

Fires, Public-Safety Power Outages (or PSPS: <https://www.pge.com/en_US/residential/outages/public-safety-power-shuttoff/learn-about-psps.page>), the COVID-19 global pandemic: It’s an understatement to say that the past several years in the greater Bay-Area region have been challenging for quality of living and for instructional continuity.

Good news! UC Berkeley faculty, staff, and students have all learned how to adapt to these kinds of situations, and so if the need arises to temporarily shift from in-person to remote learning, or we have to adapt to temporary power outages, then we’ll all be ready. I will adapt assignments, due dates, and the like as each and any situation warrants.

**Extra credit**

While I sometimes provide extra-credit questions on exams, I almost never offer the option of doing extra-credit assignments during the semester. Here’s why:

1. During the semester, your focus should always be on making your best effort to complete all work that has already been assigned, and ***not*** to take on extra work. Success in university is not about taking on tonnage of work; it's about achieving mastery in the work that is already in front of you.
2. It’s my responsibility to evaluate extra-credit submissions. What happens if you have a B- average in the course and your grade on an extra-credit assignment is C-? Your overall course grade goes down, not up.
3. Most requests for extra credit come near the end of the semester, a timing that correlates strongly with anxiety about one's grade, and about improving one's grade. And while I am glad you are focused on your grade and the quality of your work, you need to keep tabs on your grade *before* things get out of control.

**Final thoughts**

I will ***always*** work with ***any*** student who wishes to make up a missed class, assignment, or exam because of a reasonable and compelling excuse. But: I need to know, in advance, that you will be out and need to make up a class, an assignment, an exam. In turn, I urge you to talk to me, before you fall behind, before something is due. Talk to me, and I will do my best to go the extra mile for you. My number-one role is to support your learning, your efforts, your goals as you work to achieve that which you aspire to, in this course and here at Berkeley.

**Calendar of topics, readings, and assignments**

**Week Dates Topics Readings and assignments**

01 Aug 24 – Course intro and syllabus **– WATCH in lab:** Terry White video and related videos

– It’s easy to make a bad map... **– ALL READ:** *Making Maps*, pp. **26-31 and 232-251**

– Using type and text on maps

**–** **LAB:** Intro to Adobe Illustrator (AI CC)

02 Aug 29 – Symbology, symbolization and the Visual **– ALL READ:** Krygier & Wood, pp. **1-23**, **208-215 and 122-139**

Aug 31 Variables for cartography **–** **WATCH on your own:** Relevant AI CC videos

– General reference vs. thematic maps **–** **Assignment 01, due** **Friday, Sept 02, by midnight**

– Anatomy of a thematic map(Terrific 10+)

**–** **LAB:** Working with text, color, and basic – [Online tutorial for Beziér handles](https://bezier.method.ac/)

tools in AI CC; work on A01; **start A02**

03 Sept 05 – **Labor Day holiday on Sept 05: No class** **–** **ALL READ:** *Making Maps*, pp. **160-169 and 56-81**

Sept 07 – Nouns, adjectives, numbers, info, data, **–** **ALL READ:** *Demography*, pp. **5-10 and 27-34**

and evidence **–** **Assignment 02, due** **SUNDAY, Sept 11, by midnight**

– Precision and accuracy

– Intro to demography – Use pp. 26-31 for sample WRSs

– Maps as rhetorical devices

**–** **LAB:** Work on A02; AI CC and layers

04 Sept 12 – Common kinds of thematic maps **–** **ALL READ:** *Making Maps*, pp. **218-231**

Sept 14 – Data types and types of thematic maps **–** **ALL READ for discussion**: Ethics and Map Design

– Proportional symbols on thematic maps **–** **ALL submit Weekly Reading Summaries (WRS) notes by**

**– LAB:** Start A03 (Mon.); Start A04 (Wed.)  **Wednesday, Sept 14, 3pm. Week-04 notes are REQUIRED.**

**– Use of WRSs notes-taking tool –** **Assignment 03 due SUNDAY,** **Sept 18, by midnight**

05 Sept 19 – Color on thematic maps: Symbolization, **–** **ALL READ:** *Making Maps*, pp. **170-173 and 218-223**

Sept 21color, and the VVs; color and data types **–** **ALL READ for discussion**: Can There Be a Cartographic Ethics?

– Data visualizations: Categorical data and **–** **OPTIONAL READ:** Brewer, Ch. 05, Color Decisions for Mapping

data over time; Tufte’s chart junk **– WRS notes are due by Wednesday, Sept 21, 3pm. Week-05**

**– LAB:** work on A04 **notes are REQUIRED.**

**–** **Assignment 04** **due** **SUNDAY, Oct 02,** **by midnight**

06 Sept 26 – Thematic map design and layout; visual **–** **ALL READ:** *Making Maps*, pp. **140-155**

Sept 28 hierarchy, figure-ground, data visualizations **–** **ALL READ for discussion**: *Critical Cartography and GIS*, Ch. 04

**–** **ALL READ for discussion**: Mapping, Race, and Ethnicity

**– LAB:** Start A05 **– WRS notes are due by Wednesday, Sept 28, 3pm**

07 Oct 03 – Intro to choropleth maps **– ALL READ:** *Making Maps*, pp. **211-221**

Oct 05 – Intro to data classification **– ALL READ for discussion:** Generalization in Statistical Mapping

**– LAB:** Work on A05 **– WRS notes are due by Wednesday, Oct 05, 3pm**

**– First visit to Map Library**

08 Oct 10 – Divergent and bivariate choropleth maps **– ALL READ for discussion**: Isom, Chapter 01

Oct 12 – Ethics of data classification; ethics of using **– ALL READ:** *Making Maps*, pp. 24-25

choropleth maps vs. cartograms **– WRS notes are due by Wednesday, Oct 12, 3pm**

– Isom’s cartographic communication model **– Assignment 05 SUNDAY, Oct 16 due by midnight**

**– LAB:** Start and finish A06  **– Assignment 06 due WEDNESDAY, Oct 19, by midnight**

**Calendar of topics, readings, and assignments**

**Week # Dates Topics Readings and assignments**

09 Oct 17 – Atlases: History, Structure, Function, Politics **– MONDAY discussion:** The Atlas as Narrative Form

Oct 19 – Isoline maps, micro and macro readings, and **– WRS notes are due by Wednesday, Oct 19, 3pm**

small multiples

– **Second visit to Map Library: Atlases – ALL READ for IN-CLASS discussion**: *Making Maps*, pp. **24-25**

**– LAB:** Start A08, Choropleth maps **– Assignment 07 due** **FRIDAY, Oct 21, by midnight**

10 Oct 24 – History of modern cart.: Maps as models, **– MONDAY discussion:** *Cartographies of Disease* Ch. 09

Oct 26 the QR, CUBE, ISOM model, diseases **– WEDNESDAY discussion:** *Cartographies of Disease* Ch. 10

– **Start A09**: Critique of a public map project **– WRS notes are due by Wednesday, Oct 26, 3pm**

– Tour of examples of final projects

**– Oct 26: Map Librarian** workshop:

Finding data for your final project

11 Oct 31 – Map projections: A technical and use / **– ALL READ**: *Making Maps*, pp. **94-121**

Nov 02 functionality primer **– Optional READ**: *Seeing through Maps*, Chapters 1-3

– Map projections: A geo-political primer **– MONDAY discussion:** [*Maps Are Territories...*](http://territories.indigenousknowledge.org/home/contents.html)Exhibits 1-5

on projections as constructions of and for **– WEDNESDAY discussion:** Power / Politics of Mapping

power, dominion, and colonization **– WRS notes are due by Wednesday, Nov 02, 3pm**

**–** **Assignment 08 due** **Sunday,** **Nov 06,** **by midnight**

12 Nov 07 – Cartographic encounters: Cross-cultural **– MONDAY discussion**: *Siam Mapped*

Nov 09 and counter cartographies **– WEDNESDAY discussion:** Counter-Mapping, by Rundstrom

**– LAB:** Start final project **– WEDNESDAY discussion:** Indigenous Cartographies and

Counter-Mapping

**– WRS notes are due by Wednesday, Nov 09, 3pm**

**–** **Assignment 09 due SUNDAY, Nov 13, by midnight**

13 Nov 14 – Cartographic empowerments: Cartographies **– MONDAY for discussion,** [*This Is Not an Atlas*](https://notanatlas.org/wp-content/uploads/2018/11/Counter-Cartographies_-Politics-Arts-and-the-Insurrection-of-Maps-.pdf): “Counter

Nov 16 of resistance Cartographies: Politics, Art, and the Insurrection of Maps”

**– NO lecture videos this week. – WEDNESDAY discussion:** Selections from *The Maya Atlas*

**– LAB:** Continue work on final project **– WRS notes are due by Wednesday, Nov 16, 3pm**

**– In-class exam on lecture concepts**

14 Nov 21 **– Thanksgiving Week; no class on Wednesday**

Nov 23 **– NO lecture videos this week. – LAB:** Continue work on final project

15 Nov 28 – Ethical, justice, and actionable cartographies **– MONDAY discussion:** In [*This Is Not an Atlas*](https://notanatlas.org/book/), choose **one**

Nov 30 **– NO lecture videos this week.** **essay** in the section [Counter cartographies as a tool for action](https://notanatlas.org/book/)

**– WRS notes are due by Wednesday, Nov 30, 3pm**

16 Dec 05 **– Reading / Review / Recitation Week – Assignment 10, Final project due** **WEDNESDAY, Dec 07, by**

Dec 07  **midnight**

**17 – The take-home critical essay is due by Tuesday, December 13, midnight**