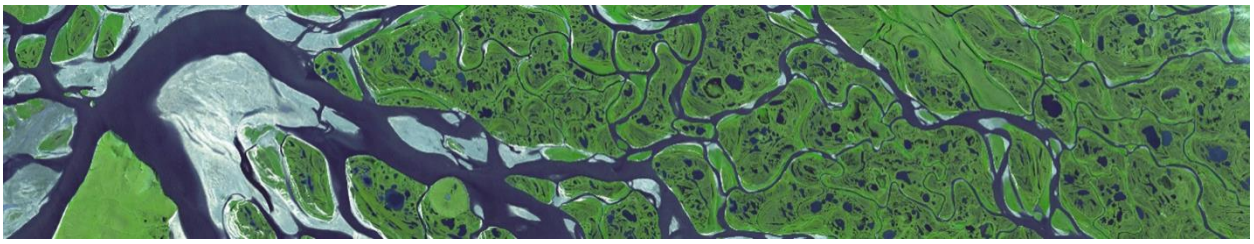
SYLLABUS :: GEOG 472/686
Cartography: Art & Science of Mapping Data

Tue (lecture) & Thu (lab) 2:00-3:15 pm
@ https://udel.zoom.us/j/98780362090 [password: map]



(Aerial photo of an unknown region, contemporary. Source: internet)

Instructor
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https://udel.zoom.us/j/98780362090
[password: map]

Teaching Assistant
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[password: 136901]

1. Description

A picture is worth a thousand words. A map is worth much more. As a powerful communication vehicle, maps are widely used to tell geographic stories in many fields, e.g. earth and environmental sciences, natural resources, public health, community engagement, journalism, and many more. This course offers a broad introduction to cartography, surveying the science, art, and ethics of making and using maps. Students will learn to analyze geospatial data, design appealing graphics, and use them to tell effective and ethical visual stories.

2. Learning Objectives

By the end of the semester, you are expected to (1) understand map design principles and key cartographic concepts, (2) obtain necessary skills (technical and artistic) to make effective and appealing maps, and (3) practice critical thinking in map interpretation and design.

3. Prerequisites

There are no formal pre-requisites for this course. However, students with no prior experience in geography are advised to devote extra time to assigned reading, as many aspects of cartography root in the discipline of geography.

Students are expected to back up their own coursework. If using USB drives, make sure to reserve enough space (e.g. 20 gigabytes).

4. Course Structure

The course has two components: lectures and labs (see section 8 for a complete course schedule). Lectures cover essential guidelines for cartographic practices, including theories, time-tested conventions, and best-practice examples. Labs include hands-on assignments for students to exercise the principles taught in lectures, and a course project mapping a topic of each student's own choice.

Attentive notetaking is critical for learning in both lectures and labs. Keeping a lab notebook on GIS techniques and tools, technical problems and solutions, design ideas and hints, thematic thoughts and comments, will help make your course project manageable when the time comes.

5. Textbook, Software, and Online Resources

Textbook: Terry A. Slocum, Robert B. McMaster, Fritz C. Kessler, and Hugh H. Howard. 2009. *Thematic Cartography and Geographic Visualization*, Third Edition. Pearson. ISBN 978-0132298346
Textbook companion website: https://media.pearsoncmg.com/bc/abp/slocum3e/

Students are encouraged to read the textbook chapter(s) associated with each lecture (as listed in the course schedule in section 8).

Software: *ESRI ArcGIS Suite* and *Adobe Illustrator CC*

Lab assignments will provide guidance for students to develop operational knowledge of both software packages. No previous experience is required. However, students are advised to budget extra practice time outside the formal lab sessions, especially those who are new to either or both of the software packages.

Required and additional readings as well as useful resources (when applicable) will be made available at CANVAS@UD (https://sites.udel.edu/canvas/) as the semester progresses.

6. Grading

COMPONENTS	PERCENTAGE
Quizzes	10 %
Exam 1	15 %
Exam 2	15 %
Lab Assignments	40 %
Course Project	20 %

Quizzes are given at the beginning of selected lectures or labs, covering materials from the immediately prior lecture. There will be 10 throughout the semester. They are open-book to promote attentive notetaking, and should be completed within 5 minutes after the lecture starts to promote timely attendance. Late arrivers do not receive extension to the said quiz period and should submit at the 5 min mark to receive a grade. Students arrive after the quiz period will receive a zero for the quiz.

Exams test students' understanding of the lecture materials. There will be two, and they are not cumulative. Exams are closed-book and must be completed within 75 min. No cheating is tolerated. Any impropriety will be disclosed to the University for disciplinary measures (see section 7 for more information on Academic Honesty) and result in a zero score for the exam.

Make-up quizzes and exams can be arranged in case of excusable absence according to UD attendance policies, while the student should inform the instructor and the TA as soon as possible (preferably, in advance). Generally speaking, the make-up test should be taken no later than 1 week after the period of absence.

Lab assignments must be print-ready PDF files, and submitted through CANVAS@UD no later than the beginning of the lab meeting on the due date. Late submissions are penalized by 10% of the total score per late day. Submissions made on the due date but after the abovementioned cutoff time (e.g., after your lab that day) count as one day late.

Extensions for lab assignments may be granted in case of severe medical conditions and/or unusual circumstances, while the student should inform the instructor and the TA as soon as possible (preferably, in advance). Generally speaking, technical complications, such as printing problems, system crashes, are not reasons for extension, because managing potential technical mishaps is a necessary skill for modern cartographers. Back up your work always and frequently. Version meticulously. Plagiarism is not tolerated. Any impropriety will be disclosed to the University for disciplinary measures (see section 7 for more information on Academic Honesty) and result in a zero score for the lab.

Course project is an individualized opportunity for students to apply everything learned throughout the course to a mapping project of his/her own choosing. Group projects are not allowed. Start early to think about a topic of interest to you, and begin assembling necessary geographic data the sooner the better.

You are encouraged to look at past winners of UD, national, and international student map competitions for examples of excellent student map design. Take inspirations but not the same exact ideas. Remember plagiarism is not tolerated.

UD Student Competition for Geospatial Data Visualization / Map Design 2020 Winners: https://dsi.udel.edu/events/student-geo-data-map-competition-2020/

CaGIS Map Design Competition (links to *Galleries* of previous entries are on the right side of the page): https://cartogis.org/awards/map-competition/

NACIS Map Competition Past Winners: http://nacis.org/awards/student-map-and-poster-winners/

MonoCarto 2019 Winners: https://somethingaboutmaps.wordpress.com/monocarto-2019-winners/

A completed course project map should be a single PDF, designed for high quality printing, and submitted through CANVAS@UD. Late submissions will receive a zero score. Submit what you can achieve within the time bound. Reserve enough time for physically making the submission to avoid missing out completely.

Extra credits (up to 3%) can be gained by starting and actively participating in map critique discussions at CANVAS@UD throughout the semester. As beginning cartographers, it is important to foster critical thinking and aesthetic appraisal skills about maps. To start a discussion, post an online map that you found unique and interesting in the discussion forum of the course site, along with your opinions on what the map does well and/or what is problematic. To participate in a discussion, post your critique of a map shared by a fellow student. Make sure your posts are substantial and non-repetitive.

7. Other Important Issues

Academic Honesty

Each student is expected to be honest and forthright in their academic endeavors. Please review the Reference Guide to Academic Integrity (https://sites.udel.edu/studentconduct/academic-integrity/) to understand the strict and high standards of the University of Delaware and ways to protect yourself.

Inclusion Statement

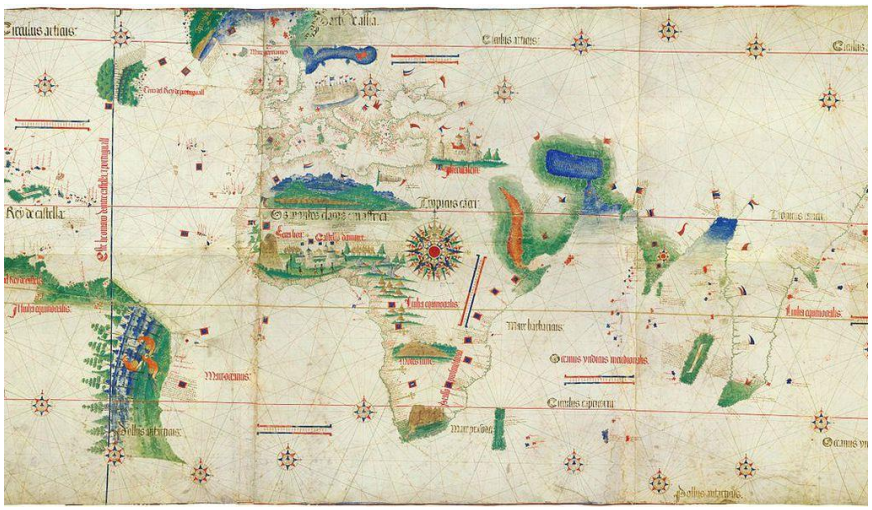
Our virtual classroom is a place of mutual respect and is inclusive of all students. This environment must be free of any discrimination, where everyone is comfortable and at liberty to contribute to and benefit from the learning experience. We ask you to help facilitate this environment and enhance positive interactions in the class. If you have any concerns and/or suggestions, please bring forward to the Instructor. Additionally, students in need of special accommodations should contact the Office of Disability Support Services at dssoffice@udel.edu, and students who encounter inaccessible web technology at UD should contact accessibility@udel.edu for assistance.

Classroom Etiquette

Students are asked to silence their phones and disconnect from distracting digital feeds. The class time and the university computational resources are designated only for course related activities. If you must answer a phone call or respond to a message, please be sure to mute yourself from the class.

Sexual Misconduct Policy

The University of Delaware prohibits sexual discrimination, sexual assault, sexual harassment, dating violence, domestic violence and stalking by anyone on University property. This policy is intended to keep the University community free from sexual misconduct and is designed to ensure a safe and non-discriminatory environment that protects the constitutional and civil rights of students, faculty and staff, as well as vendors, guests, visitors and volunteers, regardless of their sexual orientation or gender identity. For resources and support visit https://sites.udel.edu/sexualmisconduct/ .



(The Cantino Planisphere, 1502.
Source: https://www.smithsonianmag.com/travel/where-see-some-worlds-oldest-maps-180963855/)

8. Course Schedule

Week		Lecture Topics	Textbook Chapters	Lab Topics	Lab Points	Course Project Timeline
1	Feb 15	introduction to cartography	ch 1, 2	Lab 1: reference / base maps (intro to ArcGIS)	14	
2	Feb 22	geographic coordinate systems & map projections	ch 7, 8, 9	Lecture 2 cont. & Lab 1 cont.		assignment hand out
3	Mar 1	scale & generalization	ch 6	Lab 2: map projections	14	
4	Mar 8	typography & map labels	ch 11	Lab 2 cont.		
5	Mar 15	map elements & visual hierarchy	ch 12, 13	Lab 3: typography (intro to Illustrator)	24	
6	Mar 22	map symbolization	ch 5, 10	Lab 3 cont. ***Exam 1 Review***		
7	Mar 29	***Blue Hen Re-Coop Day***	ch 14, 4, 3	Lecture: choropleth maps		proposal due
8	Apr 5	***EXAM 1: weeks 1-6***		Lab 4: choropleths	14	
9	Apr 12	proportional symbol maps & cartograms	ch 17, 19	Lab 5: proportional symbol maps	14	
10	Apr 19	dot maps & dasymetric maps	ch 15	Lab 6: dot maps	6	rough draft (50%-complete checkpoint)
11	Apr 26	isoline maps & flow maps	ch 16	Lab 7: isoline maps ***Exam 2 Review***	14	
12	May 3	course project: work & consult	ch 18	course project: work & consult		
13	May 10	***EXAM 2: weeks 7-12***		course project: presentations		presentation (90%-complete checkpoint)
14	May 17	***UD finals week***				final map due