Course Name: Geovisualization: Cartography
Course Number: GEOG 370
Credits: 4
Instructor name: Peder Nelson
Instructor email: peder.nelson@oregonstate.edu
Teaching Assistant:, email:

Course Description
Basic cartographic principles. Design, compilation, and construction of maps. Equivalent course is GEO 360. PREREQS**:** GEOG 201 [D-] or GEO 301 [D-]

Communication
Please post all course-related questions in the Q&A Discussion Forum so that the whole class may benefit from our conversation. Please contact me privately for matters of a personal nature. I will reply to course-related questions within 24 hours. I will strive to return your assignments and grades for course activities to you within five days of the due date.

Course Credits
This course combines approximately 120 hours of instruction, online activities, and assignments for 4 credits.

Technical Assistance
If you experience any errors or problems while in your online course, contact 24-7 Canvas Support through the Help link within Canvas. If you experience computer difficulties, need help downloading a browser or plug-in, or need assistance logging into a course, contact the IS Service Desk for assistance. You can call (541) 737-8787 or visit the IS Service Desk online.

Learning Resources

Slocum, T.A., McMaster, R.B., Kessler, F.C. and Howard, H.H., 2009. Thematic cartography and geovisualization.

Reading assignments are required for almost all modules (see table in Course Schedule). Students should complete readings early in the week. This book is expensive, but it is one of the top three used by colleges and universities around the world. I recommend you not sell it back at the end of the semester; it's an excellent reference book.

Note to prospective students: Please check with the OSU Beaver Store for up-to-date information for the term you enroll (OSU Beaver Store website or 800-595-0357). If you purchase course materials from other sources, be very careful to obtain the correct ISBN.

Measurable Student Learning Outcomes

- Recognize and use basic spatial and cartographic concepts (e.g. scale, projection, and coordinate systems), as well as statistical and surveying principle.

- Demonstrate facility in the classification and analysis of geospatial data (e.g. satellite images, digital maps and their associated tabular datasets) and the ability to use geographic information science technology (software, data collection instruments and devices).

- Develop and integrate spatial thinking and the capacity to create visualizations (e.g. images, maps, diagrams, charts, 3D views) of spatial phenomena, including those illustrating natural and human systems and their interactions.

- Describe and interpret key advanced concepts of geospatial science: advanced statistical concepts; autocorrelation; projections; scale; coordinate systems; ethics.

- Construct and compose the following advanced tools and skills used by geospatial scientists, at multiple scales: conduct sampling; collect, measure data in the field; Import, export, validate data; classify data and imagery; conduct statistical analyses; create and publish visualizations; apply critical thinking and problem-solving skills; apply programming languages (e.g., Python, Java, R); demonstrate working knowledge of GIS hardware and software; create, update, and maintain GIS databases.

- Apply cartographic design principles; apply basic layout and typography principles; select map projections and coordinate systems for maps at various scales; select and apply statistical mapping methods; describe and interpret principles of cartographic generalization; demonstrate proficiency in mapping terrain from digital elevation data; and use of professional raster and vector graphics software (Adobe Illustrator and Adobe Photoshop); create maps with ArcGIS.

Evaluation of Student Performance

- Quizzes 18% of final grade
- Labs 42%
- Midterm Exam 15%
- Final Map 25%
- Total 100%

Assignment Overviews

Quizzes

Online and/or take-home quizzes covering topics from lecture and reading assignments.

Lab Assignments

Six (6) lab assignments (7% each). We understand that many of the ArcGIS techniques will

be relatively new to the students. Recognizing this, the first few assignments will contain more detailed instructions.

Midterm Exam
Evaluating your understanding of the basic concepts that has been covered prior to the mid-term, mainly from the textbook readings and lecture notes.

> **Note:** Midterm exam is proctored.
> Register with OSU ecampus proctoring after the first week of classes.

Final Map
A complex evaluation of your understanding of the cartographic concepts, methodologies and applications that have been covered in this course.

Letter Grade

Grade	Percent Range
A	92-100
A-	90-91
B+	88-89
B	82-87
B-	80-81
C+	78-79
C	72-77
C-	70-71
D+	68-69
D	62-67
D-	60-61
F	<60

Course Content
Course weeks begin on Monday and end the following Sunday at 11:59 pm

Week	Topic	Reading s (Slocum, et al., 2009)	Learning Activities
1	Introduction Human Vision System Thematic cartography	Chapters 1, 2	Intro Discussion Due Fri., Week 1 @ 11:59 pm Lab 1 Software installs & start Getting to know ArcGIS Pro Due Tue., Week 2 @ 11:59 pm

Week	Topic	Reading s (Slocum, et al., 2009)	Learning Activities
2	A brief history of information graphics	Chapter 3	Quiz 1 Due Fri, Week 3 @ 11:59 pm Lab 2 Mapping with ArcGIS Due Tue, Week 3 @ 11:59 pm
3	Geodesy, Projection, and Coordinate System	Chapters 7, 8, 9	Lab 3 Projections Due Tue, Week 4 @ 11:59 pm
4	Choropleth maps and data classification Map types and Data types	Chapter 4, 13, 18 Chapter 5	Quiz 2 Due Fri, Week 4 @ 11:59 pm Lab 4 Cloropeth Due Tue, Week 6 @ 11:59 pm
5	Toponymy, typography and map text	Chapter 10, 11	Midterm Exam (week 1-4 materials) Opens: Fri, Week 4 Due Fri, Week 5 @ 5:00 pm
6	Map design Production, Reproduction, and Dissemination	Chapter 12 Chapter 13	Quiz 3 Due Fri, Week 6 @ 11:59 pm Lab 5 Map Design Due Tue, Week 7 @ 11:59 pm
7	Dasymetric and isarithmic mapping Point Symbol and flow maps	Chapter 15, 16 Chapter 17, 19	Lab 6 Proportional Symbol and Dot Density Maps Due Tue, Week 8 @ 11:59 pm
8	Map animation Visual analytics and data exploration	Chapter 21 Chapter 22	Lab 7 Summary of Task & Personal Choice Map Introduced
9	Uncertainties Web mapping	Chapter 23 Chapter 24	Quiz 4 Due Thur, Week 10 @ 11:59 pm Lab 7 Summary of Task Due Tue, Week 9 @ 11:59 pm

Week	Topic	Reading s (Slocum, et al., 2009)	Learning Activities
10	Cartography in virtual environments Cartographic frontiers and class summary	Chapter 25 Chapter 26	Lab 7 Personal Choice Map Due Due Thur, Week 10 @ 11:59 pm
Finals	Final - Map Critique		Lab 7 Map Critique Due Fri, Week 11 @ 11:59 pm

Course Policies

Discussion Participation

Students are expected to participate in all graded discussions. While there is great flexibility in online courses, this is not a self-paced course.

Late Work Policy

Lab assignments are required to be submitted electronically to Canvas unless stated otherwise. Efforts will be made to have them graded and returned within one week after they are submitted. Lab assignments are expected to be completed 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, and 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 except for circumstances like those above**.**

Proctored Exams

This course requires that you take exams under the supervision of an approved proctor. Proctoring guidelines and registration for proctored exams are available online through the Ecampus testing and proctoring website. It is important to submit your proctoring request as early as possible to avoid delays.

Makeup Exams

Makeup exams will be given only for missed exams excused in advance by the instructor. Excused absences will not be given for airline reservations, routine illness (colds, flu, stomach aches), or other common ailments. Excused absences will generally not be given after the absence has occurred, except under very unusual circumstances.

Incompletes
Incomplete (I) grades will be granted only in emergency cases (usually only for a death in the family, major illness or injury, or birth of your child), and if the student has turned in 80% of the points possible (in other words, usually everything but the final paper). If you are having any difficulty that might prevent you completing the coursework, please don't wait until the end of the term; let me know right away.

Guidelines for a Productive and Effective Online Classroom
Students are expected to conduct themselves in the course (e.g., on discussion boards, email) in compliance with the university's regulations regarding civility. Civility is an essential ingredient for academic discourse. All communications for this course should be conducted constructively, civilly, and respectfully. Differences in beliefs, opinions, and approaches are to be expected. In all you say and do for this course, be professional. Please bring any communications you believe to be in violation of this class policy to the attention of your instructor.

Active interaction with peers and your instructor is essential to success in this online course, paying particular attention to the following:

- Unless indicated otherwise, please complete the readings and view other instructional materials for each week before participating in the discussion board.
- Read your posts carefully before submitting them.
- Be respectful of others and their opinions, valuing diversity in backgrounds, abilities, and experiences.
- Challenging the ideas held by others is an integral aspect of critical thinking and the academic process. Please word your responses carefully, and recognize that others are expected to challenge your ideas. A positive atmosphere of healthy debate is encouraged.

Ecampus Reach Out for Success
University students encounter setbacks from time to time. If you encounter difficulties and need assistance, it's important to reach out. Consider discussing the situation with an instructor or academic advisor. Learn about resources that assist with wellness and academic success.

Ecampus students are always encouraged to discuss issues that impact your academic success with the Ecampus Success Team. Email ecampus.success@oregonstate.edu to identify strategies and resources that can support you in your educational goals.

For mental health:
Learn about counseling and psychological resources for Ecampus students. If you are in immediate crisis, please contact the Crisis Text Line by texting OREGON to 741-741 or call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255).

For financial hardship:
Any student whose academic performance is impacted due to financial stress or the inability to afford groceries, housing, and other necessities for any reason is urged to contact the Director of Care for support (studentassistance@oregonstate.edu or 541-737-8748).

Statement Regarding Students with Disabilities
Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval, please contact DAS immediately at 541-737-4098 or at http://ds.oregonstate.edu. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Accessibility of Course Materials
All materials used in this course are accessible. If you require accommodations please contact Disability Access Services (DAS).

Additionally, Canvas, the learning management system through which this course is offered, provides a vendor statement certifying how the platform is accessible to students with disabilities.

Expectations for Student Conduct
Student conduct is governed by the university's policies, as explained in the Student Conduct Code. Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in compliance with the university's regulations regarding civility.

Academic Integrity
Students are expected to comply with all regulations pertaining to academic honesty. For further information, visit Student Conduct and Community Standards, or contact the office of Student Conduct and Mediation at 541-737-3656.

OAR 576-015-0020 (2) Academic or Scholarly Dishonesty:

a) Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another.
b) It includes:
    i) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.

ii) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.
iii) ASSISTING - helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone's grades or academic records, taking a test/doing an assignment for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).
iv) TAMPERING - altering or interfering with evaluation instruments or documents.
v) PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

c) Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

Tutoring and Writing Assistance

NetTutor is a leading provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access. NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing suite where tutors critique and return essays within 24 to 48 hours. Access NetTutor from within your Canvas class by clicking on the Tools button in your course menu.

The Oregon State Online Writing Suite is also available for students enrolled in Ecampus courses.

TurnItIn

Your instructor may ask you to submit one or more of your writings to Turnitin, a plagiarism prevention service. Your assignment content will be checked for potential plagiarism against Internet sources, academic journal articles, and the papers of other OSU students, for common or borrowed content. Turnitin generates a report that highlights any potentially unoriginal text in your paper. The report may be submitted directly to your instructor or your instructor may elect to have you submit initial drafts through Turnitin, and you will receive the report allowing you the opportunity to make adjustments and ensure that all source material has been properly cited. Papers you submit through Turnitin for this or any class will be added to the OSU Turnitin database and may be checked against other OSU paper submissions. You will retain all rights to your written work. For further information, visit Academic Integrity for Students: Turnitin – What is it?

Student Evaluation of Courses

During Fall, Winter, and Spring term The online Student Evaluation of Teaching system opens to students the Wednesday of week 8 and closes the Sunday before Finals Week. Students receive notification, instructions and the link through their ONID. They may also log into the system via Online Services. Course evaluation results are extremely important and used to help improve courses and the hybrid learning experience for future students. Responses are anonymous (unless a student chooses to "sign" their comments, agreeing to relinquish anonymity) and unavailable to instructors until after grades have been posted. The results of scaled questions and signed comments go to both the instructor and their unit head/supervisor. Anonymous (unsigned) comments go to the instructor only.