GEOG 360 001
GIScience I - Geographic Information Science and Theory
Syllabus

Course Credits: Section 001: 4 credits

On Campus
Time and Location: Section 001: Lecture: TTh 10:00 – 11:20 AM
Section 010: Lab Th 4:00 – 5:50 PM Wilkinson 210 (Digital Earth Lab)
Section 011: Lab F 12:00 – 1:50 PM Wilkinson 210 (Digital Earth Lab)

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Office hours: TBA

Course Objectives: GEOG 360 - GISCIENCE I: GEOGRAPHIC INFORMATION SYSTEMS AND THEORY. (4) Introduces the fundamentals of spatial data, geographic information systems (GIS), and introductory spatial analysis, programming, and modeling.

Student Learning Outcomes:
In following this course, students will:

Learning Outcomes	Assessment Method
1. Describe and interpret key concepts of geospatial science: Basic spatial statistical principles and principles of computational geometry and location.	Quizzes, Exams, Exercises
2. Describe the foundational concepts of Geographic Information Science and working with geospatial data.	Quizzes, Exams, Exercises
3. Demonstrate proficiency in the basic functions of geospatial software (ArcGIS).	Exercises, GIS notebook
4. Employ a conceptual and working knowledge of coordinate systems and map projections to geospatial data.	Quizzes, Exams, Exercises
5. Demonstrate basic proficiency in map creation and design principles, including thematic map display, map projections and cartographic design.	Exercises
6. Carry out basic spatial data analysis, programming, and modeling and display the results in the form of maps and tables.	Exercises
7. Demonstrate how to access different sources of data.	Exercises, GIS notebook
8. Demonstrate the process of creating and editing spatial data.	Exercises
9. Discuss the fundamental concepts of data quality and uncertainty throughout the stages of data creation and analysis.	Quizzes, Exams, Exercises, GIS notebook

REQUIRED TEXTBOOK:
Bolstad, Paul. 2019. GIS Fundamentals: A first text on geographic information systems, 6th Edition, Eider Press, XanEdu.
ISBN: 978-1-59399-552-2 (Each textbook purchase includes digital e-Book access)

Note: 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.

Pre-requisites: none
You should have some basic experience with Windows computers and be able to perform tasks, such as moving, copying, deleting and unzipping files, making and changing folders, working with simple word processors, spreadsheets and graphics programs, as well as navigating the Internet and downloading files.

FORMAT
GEOG 360 contains both GIS theory and hands-on experience working with the GIS software. You are expected to have read the textbook material prior to the class meeting and lab each week. The textbook and lecture material will present GIS concepts pertinent to the exercise material.

GRADING SYSTEM AND POLICY
This is an introductory course designed to teach you the basic theory behind Geographic Information Systems and how to use a specific GIS software package (ArcGIS Pro). Student progress toward learning outcomes will be evaluated through weekly quizzes, a series of exercises, a GIS lab notebook, and written exams.

The course point allocation is presented as percentages of the total course grade.
Grading System:

Assignment	Percent
GIS Notebook / Lab	25
Quizzes	15
Participation	15
Midterm exam	20
Final exam	25
Total	**100**

For a more detailed breakdown of individual assignments view the Grade Center on Canvas. This point allocation is subject to change.

Grading Policy:
This class is graded on an absolute scale, determined by the number of points you accumulate. **NOTE to students electing S/U grade:** If you choose to S/U the class, you need to know that a D+ (less than 70%) is a U.

Grade Option	**S/U Option**
A = 92.5 - 100 A- = 90.0 - < 92.5	S = 70 - 100
B+ = 87.5 - < 90.0 B = 82.5 - < 87.5 B- = 80.0 - < 82.5	
C+ = 77.5 - < 80.0 C = 72.5 - < 77.5 C- = 70.0 - < 72.5	
D+ = 67.5 – < 70.0 D = 62.5 – < 67.5 D- = 60.0 - < 62.5	U = 0 - < 70.0
F = 0 - < 60.0	

Course Policies:

Assignment deadlines

Due dates for all assignments will be posted on Canvas. Please make note of these due dates as late assignments, specifically exercises, will be penalized by 10% per day for each 24 hour period from the due date. If you have a legitimate excuse for not being able to complete the assignment on time, you must present this excuse (Dr.'s note, jury duty, etc) to the instructor before the due date of the assignment. Quizzes must be taken by the stated due date as there are no provisions for make-up quizzes.

Exercises:

Lab exercises are due each week by the specified date via the Canvas Assignment tool. The exercise instructions and data will be available on Canvas. All exercises are to be completed as individual work although asking questions and helping each other in a community of learning and exchange is strongly encouraged.

Quizzes:
Weekly open book quizzes are intended to encourage you to read the material at the beginning of the week so that subsequent activities and discussions are productive. These weekly quizzes will be available through Canvas. The due dates for the quizzes will be posted in Canvas.

You may use the textbook during the quiz but you are limited to 60 minutes to complete the quiz. Note that you may take the quiz up to three (3) times in order to improve your grade. If you experience a technical problem with a quiz, email the instructor before the due date.

Exams:

The exam dates have been set for this course and are posted in Canvas. If for some legitimate reason, supported by official documentation, you are not able to take the exam on the specified date, it is your responsibility to notify the instructor and make other arrangements during the first 2 weeks of the course. Unless you have contacted the instructor within this time period, regarding a conflict with the exam dates, there will be NO rescheduling or make up exams. More specific instructions on the logistics of taking the exam will be presented in our Canvas Course.

Incompletes:
Incompletes ("I") are only given for circumstances that are beyond the student's control that prevent the completion of the course within the quarter. Official documentation may be required to support a student's request for an incomplete.

In addition, incompletes are only given when the student has successfully completed at least 50% of the course work before the incomplete is requested. In all cases, the instructor and student will sign a contract for an Incomplete grade and decide on an appropriate timeline for the completion of the remaining work.

Please refer to the OSU Academic Regulations for specific grade regulations.

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 Code of Student Conduct. Students are expected to conduct themselves in the course (e.g., in class and lab as well as on discussion boards, email postings) in compliance with the university's regulations regarding civility. Students, faculty, and staff have the responsibility to treat each other with understanding, dignity and respect.

More specifically, in an academic community, students and faculty, and staff each have responsibility for maintaining an appropriate learning environment, whether online or in the classroom. Disrespectful behavior to others (such as harassing behavior, personal insults, inappropriate language) or disruptive behaviors in the course (such as persistent and unreasonable demands for time and attention both in and out of the classroom) is unacceptable and can result in sanctions.

Academic Integrity
Integrity is a character-driven commitment to honesty, doing what is right, and guiding others to do what is right. Students and faculty have a responsibility to act with integrity in all of our educational work, and that integrity enables this community of learners to interact in the spirit of trust, honesty, and fairness across the globe.

Academic misconduct, or violations of academic integrity, can fall into seven broad areas, including but not limited to: cheating; plagiarism; falsification; assisting; tampering; multiple submissions of work; and unauthorized recording and use.

It is important that you understand what student actions are defined as academic misconduct at Oregon State University. The OSU Libraries offer a tutorial on academic misconduct, and you can also refer to the OSU Student Code of Conduct and the Office of Student Conduct and Community Standard's website for more information. More importantly, if you are unsure if something will violate our academic integrity policy, ask your professors, GTAs, academic advisors, or academic integrity officers.

Diversity Statement:
Oregon State University strives to create an affirming climate for all students including underrepresented and marginalized individuals and groups. Diversity encompasses differences in age, color, ethnicity, national origin, gender, physical or mental ability, religion, socioeconomic background, veteran status, sexual orientation, and marginalized groups. We

believe diversity is the synergy, connection, acceptance, and mutual learning fostered by the interaction of different human characteristics.

Religious Accommodations:
Oregon State University strives to respect all religious practices. If you have religious holidays that are in conflict with any of the requirements of this class, please see me immediately so that we can make alternative arrangements. See the Religious Accommodation Process for Students.

Student Assistance and Success

Communication:

- **Contacting the instructor:**
  Depending on your location, the Instructor may be contacted via ONID email, phone, in person or online. Please use your ONID email address when sending emails and also state within the Subject line, which course you are taking. If your question is pertaining to the course material, please post this question to the Weekly Discussion Board so that everyone can benefit from the exchange. If your communication is of a personal nature, please email, call or visit in person or online with the instructor.

- **Contacting you:**
  If we need to get in contact with you personally, we will use your ONID email account, and then use the information you have given to the university. Please make sure that you read your ONID email.

Technical Assistance:
If you are having problems with the weekly exercises, please post your question to the weekly Discussion board so that we can all help each other.

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.

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. Please consider discussing your situation with me or academic advisor. Learn about resources that assist with wellness and academic success.

- **For Academic Success:**
  The Academic Success Center provides many resources to help you be successful as a student, including information on study skills as well as help in balancing your work/life demands. Please make use of these resources to help you be successful in your academic and personal endeavors.

http://success.oregonstate.edu/

- **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 (541-737-8748).

TurnItIn

Your instructor may ask you to submit one or more of your assignments 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.

GEOG 360 400 Course Schedule
(Refer to the current Canvas course for specific due dates)

Week	Topic	Reading	Quiz	Exercises	Exercise
1	Introduction History of Geographic Information Systems and Theory Scale and Pattern	ch 1		EX 1: Getting to know GIS	
2	Vector data model	ch 2 / 27-29, 38-50, 60 – 69 (up to Data Compression)	Vector Quiz due Sunday night	EX 2: Exploring the Vector Data Model	EX 1 due Tuesday night
3	Raster data model	ch 2 / 51-59, 69-86	Raster Quiz due Sunday night	EX 3: Exploring the Raster Data Model	EX 2 due Tuesday night
4	Georeferencing Systems	ch 2 / 29-38; ch 3	GCS/PCS Quiz due Sunday night	EX 4: Georeferencing Spatial Data	EX 3 due Tuesday night
5	Map scale and cartography	ch 4 / 147-167; 181-199	Maps Quiz due Sunday night	EX 5: Geospatial data creation and Map making	EX 4 due Tuesday night
6	GIS data acquisition and management Vector datasets	ch 7 ch 5 / 201-217; 224-241	GNSS Quiz due Sunday night	EX 6: Accessing and exploring vector data	EX 5 due Tuesday night along w/ GIS Notebook

	Midterm Exam Online				
7	Vector datasets Raster datasets	ch 8 / 331-339; 345-357 ch 6 / 247-272 review ch 2 / 51 - 59		EX 7: Exploring raster data	EX 6 due Tuesday night
8	Raster datasets Metadata and spatial data quality	ch 6 / 273 - 297 ch 14	Attribute Quiz due Sunday night	EX 8: Vector analysis using tabular and spatial attributes	EX 7 due Tuesday night
9	Vector analysis	ch 9 / 373 - 413	Spatial Analysis Quiz due Sunday night	EX 9: Raster analysis	EX 8 due Tuesday night
10	Raster analysis	ch 9 / 414 - 419 ch 10	Raster Analysis Quiz due Sunday night		EX 9 due Friday along w/ GIS Notebook
11	**Final Exam Online**				