



South Dakota State University

GEOG 372 - S01, 3 Credits Introduction to Geographic Information Systems Course Syllabus (Spring 2020)

Instructor: Dapeng Li, Ph.D., GISP
Time: Mon. 10:00 – 11:50 AM
Location: Wecota Hall, Room 100
Office Hours: Tue. 1:00 – 3:00 PM & Wed. 1:00 – 3:00 PM (or by appointment)
Office: Wecota Hall 115D
Phone: 1-605-688-4620
Email: dapeng.li@sdstate.edu (primary contact)

Course Description

GEOG 372 is an introductory-level course in Geographic Information Systems (GIS). GIS is a discipline that focuses on collecting, managing, integrating, analyzing, and visualizing geospatial data and information. GIS has been widely used to develop solutions to pressing problems in many fields. The basic concepts and principles of GIS will be covered in the lecture section, and the lab section will help students develop ArcGIS skills.

Course Prerequisites

Basic computer literacy (CSC 105-Introduction to Computers or equivalent course/experience).

Instructional Methods

Lecture, discussion, demonstrations, lab assignments, final project, and quizzes/exams.

Lab Sections

SECTION	LAB INSTRUCTOR	DAYS	LOCATION	TIME
372L-S01	Marcus Haselhoff	Wed.	Wecota 014	10:00 am – 11:50 AM
372L-S02	Thomas White	Tue.	Wecota 014	11:00 am – 12:50 PM

*Note that Wecota Hall will be locked on weekends. Please schedule your time to use the GIS lab (Wecota Hall 0014) on weekdays.

Lab Instructors

Name	E-mail
Thomas White	thomas.white@sdstate.edu
Marcus Haselhoff	marcus.haselhoff@sdstate.edu

Course Schedule

Date	Topic	Readings	Lab
1/13	Course Overview	Syllabus; p.1-8	Lab: Introduction
1/20	MLK Day Holiday (No Class)	Bolstad Ch. 7	Lab 1: Ch. 1
1/27	GIS Data	Ch. 1	Lab 1: Ch. 1
2/3	Managing GIS Data	Ch. 2	Lab 2: Ch. 2
2/10	Coordinate Systems	Ch. 3	Lab 3: Ch. 3
2/17	Presidents' Day Holiday (No Class)	TBA	Lab 3: Ch. 3
2/24	Mapping GIS Data	Ch. 4	Lab 4: Ch. 4
3/2	Presenting GIS Data	Ch. 5	Lab 5: Ch. 5
3/9	Spring Break (No Class)	N/A	No Lab
3/16	Attribute Data	Ch. 6	Lab 6: Ch. 6
3/23	Basic Editing	Ch. 7	Lab 7: Ch. 7
3/30	Queries	Ch. 8	Lab 7: Ch. 7
4/6	AAG Conference (No Class)	TBA	Lab 8: Ch. 8
4/12	A Short Proposal Due in the Lab Section D2L by midnight		
4/13	Spatial Join	Ch. 9	Lab 8: Ch. 8
4/20	Map Overlay & Geoprocessing	Ch.10	Lab 9: Ch. 10
4/27	Raster Analysis (Guest Lecture)	Ch.11	Project Time
5/3	The Final Paper Due in the Lab Section D2L by midnight		
5/4	Final Exam Activity (TBD)	9:15 – 11:15 am, Wecota Hall, Room 0100	

Note: The course schedule is subject to change. Students will be notified of any changes.

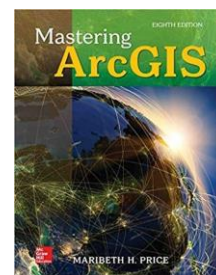
Guidelines for Success

1. Do the assigned readings BEFORE you attend each lecture.
2. Attend the lecture on time and stay focused in the class.
3. Review the points covered in the lecture after class (check D2L for the lecture slides) and take the weekly online test for each chapter BEFORE the deadline.
4. Attend the lab section on time and complete both the tutorial and the assignment in each chapter.
5. Continue to complete unfinished lab assignments and submit them before the deadline. (Lab assignments should be submitted electronically in D2L.)
6. Feel free to ask the instructor or the TA if you have any questions (during office hours or by appointment).
7. Lastly, there will be some other assignments or quizzes in D2L from time to time. Please always check D2L and your email for the updates.

Required Text

Price, M. (2019). *Mastering ArcGIS* (8th edition). McGraw-Hill, New York, NY (ISBN: 978- 0078095146)

Note: We will use the McGraw-Hill Connect platform, which includes the electronic book and many other resources. The fee will be automatically included in your tuition.



Optional Readings

- Bolstad, P. (2016). *GIS Fundamentals: A first text on geographic information systems* (5th edition). Eider Press, White Bear Lake, MN (ISBN: 978-0-9717647-3-6)
- Longley, P. A., Goodchild, M. F., Maguire, D. J., & Rhind, D. W. (2015). *Geographic information science and systems* (4th edition). John Wiley & Sons (ISBN: 978-1118676950)
- Burrough, P. A., McDonnell, R., McDonnell, R. A., & Lloyd, C. D. (2015). *Principles of Geographical Information Systems* (3rd edition). New York: Oxford University Press. (ISBN: 978-0198742845)
- DeMers, M. N. (2009). *Fundamentals of Geographic Information Systems* (4th edition). New York, N.Y.: John Wiley & Sons. (ISBN: 978-0470129067)
- Jensen, J. R., & Jensen, R. R. (2013). *Introductory geographic information systems*. Pearson Higher Ed. (ISBN: 978-0136147763)

Other readings may also be assigned and will be provided by the instructor in D2L.

Attendance Policy

Attendance and full participation in classes are encouraged. Attendance will be checked in the lecture. Students should sign the attendance sheets.

Make-up Policy

If a student misses an exam, points can only be made up if the student has an excused absence. To be considered an excused absence, the student must contact the instructor with a legitimate excuse prior to the day of the exam.

Classroom Policies

- All cell phones need to be turned off during the class/lab.
- No recording (photos, audio, etc.) without permission.
- Surfing the web or using computers to work on non-class related tasks is not allowed.

Important Dates:

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|-------------------------------|-----------------------------------------------|
| • January 13, Monday | First day of class |
| • January 22, Wednesday | Last day to drop or add and adjust final fees |
| • January 23, Thursday | “W” grade begins |
| • March 9-13, Monday – Friday | Spring Break (No Class) |

- March 16, Monday First Half Spring Term ends
- April 6, Monday Last day to drop a course
- April 10-April 12, Friday – Sunday Easter Recess
- May 4-May 8**, Monday – Friday Final exams
- May 13, Wednesday Grades due by midnight

Overall Course Goals

Upon completion of this course, students will be able to:

1. Recall the fundamental concepts and principles in GIS.
2. Understand the basic functionalities of ArcGIS.
3. Use ArcGIS to process, manage, and analyze various spatial data.
4. Apply GIS to solve some simple real-world spatial problems.

Student Learning Outcomes

Knowledge Outcomes

Students will **master fundamental principles and theories as well as factual knowledge** of: the definition of GIS; types of geographic data; basic GIS data structures; coordinate systems and map projections; spatial data compilation, processing, and management; interpretation and analysis of geographic data; geospatial visualization; and real-world applications of GIS.

Skills Outcomes

Students will develop specific skills and competencies in GIS and learn to use GIS to solve real-world problems. Other key skills are as follows: connecting hands-on GIS work to GIS theory, written communication, interpersonal communication, and planning and organization.

Grade Evaluation

Evaluation Components	Points (each)	Points	Percentage
Participation	TBD	100	10%
Lab Assignment	50	400	40%
Weekly Test	50	400	40%
Final Project	100	100	10%
Total		1000	100%

Course Grade Scale

Grade	Final weighted points
A	90-100
B	80-89
C	70-79
D	60-69
F	< 60

Weekly Lab Exercises & Assignments: All lab exercises will use ESRI's ArcGIS software to reinforce the concepts covered in the lectures. Although class time has been allocated for lab instruction and assignments, additional work might be necessary for the successful completion of

the course. Each Lab Exercise will be available following the demonstration given in the lab each week. Lab assignments should be submitted electronically through the Dropbox in D2L on time.

Weekly Test: This course has eight required weekly tests. The tests could include multiple choice questions, true/false questions, and short answer questions. The questions come from the key points covered in the lecture. The ninth test is optional and could be used to replace a required test with the lowest score.

Final Project: Students are expected to accomplish a mini mapping project. Students need to work on it individually and submit a final report (Word format) in D2L (the lab section). The TAs will grade the reports.

Class Participation: Students are strongly encouraged to participate in various activities in the class/lab. Note that some activities will be graded. We will use the iClicker system in the class, and students are strongly encouraged to use the mobile app (<https://www.iclicker.com/students/>) to participate in the activities in the class.

Extra Credits: There will be some extra assignments during the semester, and extra credits will be given to those who accomplish the assignments on time. Extra credits will be added to the participation section in D2L.

Lab Section

The lab section is designed for students to gain hands-on experience with GIS software. There will be eight required weekly lab assignments. In addition, the students will work on a final project to illustrate their competency in using GIS to solve problems. Please note:

- Lab attendance is required.
- The weekly lab assignments need to be completed and submitted on time (please refer to the lab syllabus for more details).
- Memorize all the commands and procedures you used in the lab.
- Always stay in the loop because the labs could be closely related.
- Do ask the instructor or the TA if you have any questions.

ADA Statement:

Any student who feels s/he may need an accommodation based on the impact of a disability should contact Nancy Hartenhoff-Crooks (or successor) Coordinator of Disability Services (605-688-4504 or Fax, 605-688-4987) to privately discuss your specific needs. The Office of Disability Services is located in room 065, the University Student Union.

Freedom in Learning Statement:

Students are responsible for learning the content of any course of study in which they are enrolled. Under Board of Regents and University policy, student academic performance shall be evaluated solely on an academic basis and students should be free to take reasoned exception to the data or views offered in any courses of study. Students who believe that an academic evaluation is unrelated to academic standards but is related instead to judgment of their personal opinion or conduct should first contact the instructor of the course. If the student remains unsatisfied, the

student may contact the Department Head, Dean, or both, of the college which offers the class to initiate a review of the evaluation.

Student Academic Integrity and Appeals:

The university has a clear expectation for academic integrity and does not tolerate academic dishonesty. University Policy 2:4 sets forth the definitions of academic dishonesty, which includes but is not limited to, cheating, plagiarism, fabrication, facilitating academic dishonesty, misrepresentation, and other forms of dishonesty relating to academics. The policy and its procedures also set forth how charges of academic dishonesty are handled at the University. Academic Dishonesty is strictly proscribed and if found may result in student discipline up to and including dismissal from the University. Please refer to the library website for more details (<http://libguides.sdstate.edu/copyright/Plagiarism>).

TurnItIn

All written assignments in D2L will be automatically submitted to TurnItIn for plagiarism detection. Students should make sure that their assignments are their original work before they submit them in D2L. Students should also check the similarity score of their submitted documents to ensure that their assignments pass the plagiarism test.

Veterans and Active Duty Military Personnel:

Veterans and Active Duty Military Personnel with special circumstances (e.g., upcoming deployments, drill requirements, disabilities, and other qualifying needs) are welcome and encouraged to communicate these, in advance if possible, to the instructor in order to address attendance requirements or other actions in accordance with SDBOR and University policies and procedures.

Late to Class statement:

All members of the class should make every effort to arrive on time. In the event that I am going to be late, due to circumstances beyond my control, I will, if possible, notify the department and ask that someone be sent to apprise you of the situation. If such notification is not possible, please remain in the class for 15 minutes beyond the scheduled start time. If I have not yet arrived, and if no emissary of the department has informed you otherwise, class will be cancelled and you will be free to leave.