South Dakota State University

GEOG 372 - S01, 3 Credits
Introduction to Geographic Information Systems
Course Syllabus (Spring 2022)

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

Zoom: https://sdstate.zoom.us/my/lidapeng (office hours)

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	Courtney Lusk	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
Courtney Lusk	courtney.lusk@jacks.sdstate.edu

Course Schedule

Date	Topic	Readings	Lab
1/10	Course Overview	Syllabus; p.1-10	Lab: Introduction
1/17	MLK Day Holiday (No Class)	Ch. 1	Lab 1: Ch. 1
1/24	What is GIS?	Ch. 1	Lab 1: Ch. 1
1/31	Mapping GIS Data	Ch. 2	Lab 2: Ch. 2
2/7	Presenting GIS Data	Ch. 3	Lab 3: Ch. 3
2/14	Coordinate Systems	Ch. 4	Lab 4: Ch. 4
2/21	Presidents' Day Holiday (No Class)	Bolstad Ch. 7	Lab 4: Ch. 4
2/28	Managing Vector Data	Ch. 5	Lab 5: Ch. 5
3/7	Managing Raster Data	Ch. 6	Lab 6: Ch. 6
3/14	Spring Break (No Class)	N/A	No Lab
3/21	Attribute Data	Ch. 7	Lab 7: Ch. 7
3/28	Editing	Ch. 8	Lab 8: Ch. 8
4/4	Queries	Ch. 9	Lab 9: Ch. 9 (Optional)
4/11	Joins and Overlay	Ch. 10	Project Time
4/17	A Short Proposal Due in the Lecture Section D2L by midnight		
4/18	Easter Holiday (No Class)	Ch. 11	Project Time
4/25	Raster Analysis	Ch. 11	Project Time
5/4	The Final Paper Due in the Lecture Section D2L by 11:15 am (Wednesday)		

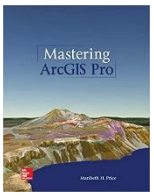
Note: The course schedule is subject to change. Students will be notified of any changes. GIS majors are strongly encouraged to do all the chapters in the lab section.

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 Pro*** (1st edition). McGraw-Hill, New York, NY (ISBN: 978-1260587333)



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 system*s. 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:

- Januarys 10, Monday — First day of class
- January 17, Monday — Martin Luther King Day Holiday
- January 19, Wednesday — Last day to drop or add and adjust final fees
- January 20, Thursday — "W" grade begins

- February 21, Monday — Presidents' Day Holiday
- March 7, Monday — First Half Spring Term ends
- March 10, Thursday — Deficiency reports due by midnight
- March 14-18, Monday – Friday — Spring Break (No Class)
- April 4, Monday — Last day to drop a course
- April 15-April 17, Friday – Sunday — Easter Recess
- May 2-May 6**, Monday – Friday — Final exams
- May 11, Wednesday — Grades due by midnight

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 Quiz	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 Assignment: All lab exercises will use ESRI's ArcGIS Pro 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 lab section. Students need to do the tutorial before they do each assignment. The ninth assignment is optional and could be used to replace a required assignment with the lowest score. All lab assignments should be submitted electronically through the Dropbox in D2L on time.

Weekly Quiz: This course has eight required weekly quizzes. The quizzes could include multiple choice questions, true/false questions, and matching questions. The questions come from the key points covered in the lecture. The ninth quiz is optional and could be used to replace a required quiz 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). 10% of the points will be deducted each day for late submissions.

Class Participation: Students are strongly encouraged to participate in various activities in the class/lab. Note that some activities will be graded.

Extra Credits: There may 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.

General Statement on COVID-19 Pandemic

Participants in this course are subject to, and expected to comply with, the policies, procedures, rules, and regulations of the SDBOR and SDSU as modified throughout the duration of the course. Due to the current COVID-19 Pandemic, the SDBOR and SDSU have adopted provisions to minimize COVID-19 exposure to the SDSU community that are compliant with changing CDC and SD DOH guidelines. These guidelines apply to all classes and activities held by SDSU. Anyone who does not comply with these important provisions may be subject to the SDSU Student Conduct Code 3:1 and other applicable policy provisions found in SDBOR and SDSU policies. Current information concerning SDSU updates to the provisions applicable during the COVID-19 Pandemic may be viewed online at the https://www.sdstate.edu/jacksrback and https://www.sdstate.edu/covid-19 webpages. Please check these sites frequently for updates.

Classroom Participation and Attendance

SDSU will return to pre-COVID-19 class attendance policy. Classroom participation and in-person interaction are integral components of the education process for face-to-face courses and

the university expects students enrolled in those courses to be physically present for scheduled in-person class sessions. Students are also expected to inform the instructor if absent due to illness. SDSU has installed many cameras and microphones in classrooms throughout campus, and instructors may allow participation in class via Zoom for those students in COVID isolation or quarantine.

As we return to pre-COVID-19 class attendance policy, I do ask that instructors work to accommodate students by allowing the student to make up work when possible. As applicable, the course syllabus should note that remote access to courses, activities, materials, and assignments cannot be guaranteed, and the level of Zoom access for students in COVID isolation or quarantine should be explained.

In closing, please know that SDSU's COVID Response Team and the JacksRBack Task Force continue to meet regularly and are monitoring the health and safety situation of our university community. I urge you all to take some time to continue checking the JacksRBackwebsite on a regular basis. If you have remaining questions, please contact the Office of Academic Affairs at 605-688-4173.