



Course Syllabus

GIS 1270- Introduction to Geographic Information Systems (GIS)

Revision Date: 1/10/2017

Catalog Description: Introduction to basic concepts of vector GIS using several industry specific software programs including nomenclature of cartography and geography.

Lecture hours = 1, Lab hours = 4

Prerequisites: none

Semester Credit Hours: 2

Lecture Hours per Week: 1

Lab Hours per Week: 4

Contact Hours per Semester: 80

State Approval Code: 45.0702

Instructional Goals and Purposes: The purpose of this course is to introduce the students to the hardware and software components of a Geographic Information System and GIS applications. Topics include data structures and basic functions, methods of data capture and sources of data, and the nature and characteristics of spatial data and objects. Students will gain basic knowledge of the Geographic Information System program from ArcCatalog through collecting data, creating maps with ArcMap, generating reports, creating geodatabases and digitizing new and existing features.

Specific Course Objectives (includes SCANS):

After studying all materials and resources presented in the course, the student will be able to:

1. Discuss the history, purpose and parts of a map

SCANS (1a-i, 1a-ii, 1a-iv, 1c-i, 2c-i, 2c-ii, 2c-iii)

2. Obtain and evaluate data

SCANS (1a-i, 1a-ii, 1a-iv, 1b-i, 1b-ii, 1b-iii, 1b-iv, 1b-v, 1c-i, 1c-iv, 1c-v, 2a-i, 2a-iii,

2b-ii, 2c-i, 2c-ii, 2c-iii, 2c-iv, 2e-i, 2e-ii)

3. Create a personal geodatabase

SCANS (1a-i, 1a-ii, 1a-iv, 1b-ii, 1b-iii, 1b-v, 1c-i, 1c-iv, 1c-v, 2a-i, 2a-iii, 2b-ii,

2c-i, 2c-ii, 2c-iv, 2e-i, 2e-ii, 2e-iii)

4. Digitize a point, polygon and line layer

SCANS (1a-i, 1a-ii, 1a-iv, 1b-i, 1b-ii, 1b-iii, 1b-v, 1c-i, 1c-iv, 1c-v, 2a-i, 2a-iii,

2b-ii, 2c-i, 2c-ii, 2c-iv, 2e-i, 2e-ii, 2e-iii)

5. Create a map using ArcGIS

SCANS (1a-i, 1a-ii, 1a-iv, 1b-ii, 1b-iii, 1b-v, 1c-i, 1c-ii, 1c-iv, 1c-v, 2a-i, 2a-iii,

2b-ii, 2c-i, 2c-ii, 2c-iii, 2c-iv, 2e-i, 2e-ii, 2e-iii)

6. Demonstrate the implementation and management of a GIS project

SCANS (1a-i, 1a-ii, 1a-iv, 1a-v, 1b-ii, 1b-iii, 1b-v, 1c-i, 1c-ii, 1c-iii, 1c-iv, 1c-v,

2a-i, 2a-iii, 2b-ii, 2c-i, 2c-ii, 2c-iii, 2c-iv, 2e-i, 2e-ii, 2e-iii)

Course Content: A general description of lecture/discussion topics included in this course are listed in the Learning Objectives / Specific Course Objectives sections of this syllabus.

Students in all sections of Supervision will be required to do the following:

1. Students will complete quizzes and assignments based on the material provided for the course and outside research.
2. Students will complete 4 exams and give a presentation at the end of the semester.

Methods of Instruction/Course Format/Delivery: Students in traditional, hybrid and Internet classes will have access to courses via Canvas. Students in the traditional class will meet regularly for lecture. Students in the Internet class will be required to take quizzes and exams at an approved testing facility or, they may also be administered by the instructor. Students in hybrid classes will have both in class and online assignments. Hybrid classes are required to read assigned material, take quizzes and exams as assigned by instructor, and complete assigned homework prior to meeting for the face to face labs. Resources for this course, provided through Canvas, include the following Sections in Canvas....

Modules: Study materials

- Announcements and Recent Activities List: Instructor Announcements
- Inbox: Email (to communicate with instructor and classmates inside Canvas)
- Grades: Student grades
- Other sections, as assigned by the Instructor: Students in both the traditional and Internet classes should use the People feature within Canvas (includes Canvas Email) to communicate with the instructor. Using Canvas Email located in the "In Box" menu, gives the student access to the instructor and other classmates without having to remember or type email addresses; the student just selects a name from the list. The instructor will attempt to respond to all Canvas email within a timely manner. Please always include in the subject line of the Canvas email, the student's name, course number and course section number.

Assessment:

The following items will be assigned and assessed during the semester and used to calculate the student's final grade.

- **Quizzes and Assignments**
Quizzes and daily assignments: The ability to makeup late quizzes and assignments will be determined by the instructor for a reduced score. To receive full credit for an assignment the student must remain in class for the full class period. Leaving early and arriving late to class will have an effect on the students score. If a student leaves without turning in the completed assignment before the class period ends the student will receive a late grade for the assignment. If the student is present until the end of class the student will have until the starting time of the next class period to turn in the daily assignment.

- **Tests**

Written and computer portion. The computer portion of each test is due by the start time of the class on the day the test is due. Turning the computer portion in late (even due to an absence) will result in a reduced score. Students are only allowed ONE makeup test for the written portion per semester due to an excused absence with the approval of the instructor.

- **Final Presentation**

Class presentation

Course Grade:

The grading scale for this course is as follows:

- Quizzes and Assignments – 25%
- Tests – 50%
- Final Presentation – 25%

Grading Notes:

Missed Exams: Missed exams due to legitimate reasons should be taken prior to the reporting of mid-term or final grades as applicable. It is the responsibility of the student to reschedule the makeup with the instructor. The Instructor reserves the right to change the test format of any makeup. Instructors are not required to makeup work for an unexcused class absence. The Instructor also reserves the right to give full or partial credit for any makeup work that is allowed and that resulted from an unexcused absence.

Missed Quizzes and Assignments: Missed quizzes/assignments due to legitimate reasons should be rescheduled within one week of the scheduled quiz or a date assigned by the Instructor. It is the responsibility of the student to reschedule makeup work. The Instructor reserves the right to change the test format of the makeup quiz. Instructor is not required to makeup work for unexcused class absences. Instructor reserves the right to give full or partial credit for any make up work that is allowed and that resulted from an unexcused absence.

Attendance: Attendance is based on the student missing no more than 10% out of the semester without a valid excuse. After the 10% the instructor may withdraw the student at their discretion. Any student thirty or more minutes late will be counted absent. Students that leave before class is dismissed will be counted absent. The Instructor reserves the right to dock points for any missed class without a legitimate excuse.

Internet Usage Policy: Any student found using the internet during class for non GIS related activities will not receive credit for class assignments due that day.

Plagiarism: Plagiarism shall be defined as appropriating, buying, receiving as a gift or obtaining by any other means another person's work. Plagiarism in this class consists of copying another student's files and using them as your own, copying another student's projects and using it as your own, downloading a completed file and using it as your own, and/or having someone complete the work for you and using it as your own. Plagiarism will not be tolerated and will result in an automatic "F" for the course.

-If there is any questions about a students work the instructor can have the student redo the assignment in the presence of the instructor to determine if the student has the skill set needed to complete the assignment. If the student is not able to complete the assignment then the student will not receive credit for the assignment in question.

Cheating: Cheating on a test or assignment shall include:

- a. Copying from another student

- b. Using test materials not authorized by the person administering the test
- c. Collaborating with or seeking aid from another student during a test without permission from the test administrator
- d. Knowingly using, buying, selling, stealing, or soliciting, in whole or in part, the contents of an unadministered test.
- e. The unauthorized transporting or removal, in whole or in part, of the contents of the unadministered test.
- f. Substituting for another student, or permitting another student to substitute for one's self, to take a test.
- g. Bribing another person to obtain an unadministered test or information about an unadministered test. Absolutely no cheating is tolerated.
- h. Plagiarism in this class consists of copying another student's files and using them as your own, copying another student's projects and using it as your own, downloading a completed file and using it as your own, and/or having someone complete the work for you and using it as your own. Plagiarism will not be tolerated and will result in an automatic "F" for the course!!!

Class Conduct: All cell phones should be on silent or turned off and put away in all classes. If you must receive a call notify your instructor before class begins and step out of the classroom. The use of cell phones (texting, calls, internet, ect.) during class will result in points being taken from the students Test grades.

Grading Scale A=90-100, B=80-89, C=70-79, D=60-69, F=69 and below

A student that chooses to NOT finish the course must complete the withdrawal procedure in the Student Success office in order to receive a —W. Otherwise, the student will receive a grade at the end of the semester commensurate with the work completed.

Students needing special classroom or testing accommodations because of physical or learning disabilities must contact the Student Success office before these services will be made available in the classroom.

Texts, Materials, and Supplies:

- *GIS Tutorial: 1*
Basic Workbook for ArcGIS 10.1, 5th Edition
Authors: Wilpen L. Gorr and Kristen S. Kurland
- Flash drive-mass storage device
 - Min. 2 GB

Required Readings:

- GIS Tutorial: 1
Basic Workbook for ArcGIS 10.1, 5th Edition
Authors: Wilpen L. Gorr and Kristen S. Kurland

Recommended Readings:

- None

Other:

- For current texts and materials, use the following link to access bookstore listings: <http://www.panolacollegestore.com>
- For testing services, use the following link: <http://www.panola.edu/elearning/testing.html>
- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student Coordinator in Support Services located in the Administration Building or go to <http://www.panola.edu/student-success/disability-support-services/> for more information.
- Withdrawing from a course is the student's responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.
- Student Handbook, *The Pathfinder*: <http://www.panola.edu/student-success/documents/pathfinder.pdf>

SCANS CRITERIA

1) **Foundation skills are defined in three areas: basic skills, thinking skills, and personal qualities.**

- a) **Basic Skills:** A worker must read, write, perform arithmetic and mathematical operations, listen, and speak effectively. These skills include:
 - i) Reading: locate, understand, and interpret written information in prose and in documents such as manuals, graphs, and schedules.
 - ii) Writing: communicate thoughts, ideas, information, and messages in writing, and create documents such as letters, directions, manuals, reports, graphs, and flow charts.
 - iii) Arithmetic and Mathematical Operations: perform basic computations and approach practical problems by choosing appropriately from a variety of mathematical techniques.
 - iv) Listening: receive, attend to, interpret, and respond to verbal messages and other cues.
 - v) Speaking: Organize ideas and communicate orally.
- b) **Thinking Skills:** A worker must think creatively, make decisions, solve problems, visualize, know how to learn, and reason effectively. These skills include:
 - i) Creative Thinking: generate new ideas.
 - ii) Decision Making: specify goals and constraints, generate alternatives, consider risks, and evaluate and choose the best alternative.
 - iii) Problem Solving: recognize problems and devise and implement plan of action.
 - iv) Visualize ("Seeing Things in the Mind's Eye"): organize and process symbols, pictures, graphs, objects, and other information.
 - v) Knowing How to Learn: use efficient learning techniques to acquire and apply new knowledge and skills.
 - vi) Reasoning: discover a rule or principle underlying the relationship between two or more objects and apply it when solving a problem.
- c) **Personal Qualities:** A worker must display responsibility, self-esteem, sociability, self-management, integrity, and honesty.
 - i) Responsibility: exert a high level of effort and persevere toward goal attainment.
 - ii) Self-Esteem: believe in one's own self-worth and maintain a positive view of oneself.
 - iii) Sociability: demonstrate understanding, friendliness, adaptability, empathy, and politeness in group settings.
 - iv) Self-Management: assess oneself accurately, set personal goals, monitor progress, and exhibit self-control.
 - v) Integrity and Honesty: choose ethical courses of action.

2) **Workplace competencies are defined in five areas: resources, interpersonal skills, information, systems, and technology.**

- a) **Resources:** A worker must identify, organize, plan, and allocate resources effectively.
 - i) Time: select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
 - ii) Money: Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.
 - iii) Material and Facilities: Acquire, store, allocate, and use materials or space efficiently. Examples: construct a decision time line chart; use computer software to plan a project; prepare a budget; conduct a cost/benefits analysis; design an RFP process; write a job description; develop a staffing plan.
- b) **Interpersonal Skills:** A worker must work with others effectively.
 - i) Participate as a Member of a Team: contribute to group effort.
 - ii) Teach Others New Skills.
 - iii) Serve Clients/Customers: work to satisfy customer's expectations.

- iv) **Exercise Leadership:** communicate ideas to justify position, persuade and convince others, responsibly challenge existing procedures and policies.
- v) **Negotiate:** work toward agreements involving exchange of resources, resolve divergent interests.
- vi) **Work with Diversity:** work well with men and women from diverse backgrounds.

Examples: collaborate with a group member to solve a problem; work through a group conflict situation, train a colleague; deal with a dissatisfied customer in person; select and use appropriate leadership styles; use effective delegation techniques; conduct an individual or team negotiation; demonstrate an understanding of how people from different cultural backgrounds might behave in various situations.

- c) **Information:** A worker must be able to acquire and use information.

- i) **Acquire and Evaluate Information.**
- ii) **Organize and Maintain Information.**
- iii) **Interpret and Communicate Information.**
- iv) **Use Computers to Process Information.**

Examples: research and collect data from various sources; develop a form to collect data; develop an inventory record-keeping system; produce a report using graphics; make an oral presentation using various media; use on-line computer data bases to research a report; use a computer spreadsheet to develop a budget.

- d) **Systems:** A worker must understand complex interrelationships.

- i) **Understand Systems:** know how social, organizational, and technological systems work and operate effectively with them.
- ii) **Monitor and Correct Performance:** distinguish trends, predict impacts on system operations, diagnose deviations in systems' performance and correct malfunctions.
- iii) **Improve or Design Systems:** suggest modifications to existing systems and develop new or alternative systems to improve performance.

Examples: draw and interpret an organizational chart; develop a monitoring process; choose a situation needing improvement, break it down, examine it, propose an improvement, and implement it.

- e) **Technology:** A worker must be able to work with a variety of technologies.

- i) **Select Technology:** choose procedures, tools or equipment including computers and related technologies.
- ii) **Apply Technologies to Task:** understand overall intent and proper procedures for setup and operation of equipment.
- iii) **Maintain and Troubleshoot Equipment:** Prevent, identify, or solve problems with equipment, including computers and other technologies.

Examples: read equipment descriptions and technical specifications to select equipment to meet needs; set up and assemble appropriate equipment from instructions; read and follow directions for troubleshooting and repairing equipment.