GPS and GIS in Agriculture – AGRI 1020

Semester/Year: Fall 2015

Lecture Hours: 1	Lab Hours: 2	Credit Hours: 2.0
	Days: Lect. W: 1-1:50	Room: PS 325
	Lab W 2-3:50	Room: PS 325

Instructor's Name: Jeff Sun

Instructor's Contact
Information:

Office Phone: 268-3560
Office Number: GW 116G
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Office Hours: M: 11-11:50am; T: 4-5pm; W: 11-11:50am; TH: 11:11:50pm or by appointment:

Course Description: An introductory course in geographic information systems (GIS) with an accompanying lab session. The emphasis will be on GIS and Agriculture

Statement of Prerequisites: AGRI 1010
A working knowledge of a graphical computer user interface such as Windows.

Goal: 1. Understand the fundamentals of a GIS
2. Understand the basics of geographic information, map projections, coordinate systems, and scale
3. Understand how to access, search, query and restructure geographic information in the GIS
4. Understand how GIS is being used in the Agricultural Industry

Outcomes:
1. Work with simple GIS Layers to make maps
2. Know what a projection is and how to set them
3. Know how to query using attribute tables and select by location
4. Create new GIS data and use it to analyze range land
5. Know the difference between Raster and Vector data sets and when to use them
6. Solve problems using critical thinking and creativity
7. Use appropriate technology and information to conduct research

Methodology: This class is a combination of lecture and computer lab work.

Evaluation Criteria: 10 Labs – 10 points each: 100 Total Points
2 Tests – 100 points each: 200 Total Points
Final Project – 100 points: 100 Total Points
400 Total Points

Grade A: 90 – 100 points
Grade B: 80 – 89.9 points
Grade C: 70 – 79.9 points
Grade D: 60 – 69.9 points
Grade F: 0 – 59.9 points

Recommended Text, Readings, and Materials: Getting To Know ArcGIS

Class Policies: Grades will be based on homework, quizzes, and exams. Homework will have due dates and be subject to penalties if turned in late. Exams cannot be made up unless other arrangements are agreed upon.

Student Rights and Responsibilities: Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

Chain of Command: If you have any problems with this class, you should first contact the instructor in order to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take your problem through the appropriate chain of command starting with the department head, then the division chair, and lastly the vice president for academic affairs.

Academic Dishonesty - (Cheating & Plagiarism) Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct for more information on this topic.

ADA Accommodations Policy: If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, bheuer@caspercollege.edu . The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations

Calendar or schedule indicating course content:

Week#	Week of	Lecture	Lab
1	Aug 26	What is GIS? Definitions and History.	Lab 1. Introduction
2	Sept 2	Projections: Understanding what they are and why we need them. 1	Lab 2. Projections in ArcGIS
3	Sept 9	GIS Data Types: Raster and Vector	Lab 3. Vector and Raster Models
4	Sept 16	Cartography in GIS No Formal Class Due to GeCo West	Lab 4. Making maps with ArcGIS

5	Sept 23	Exam 1: Weeks 1-4	Test
6	Oct 30	Bringing Data into a GIS	Lab 5. Digitizing and Georeferencing
7	Oct 7	What is GPS?	Using GPS Units (Possible Collar Data)
8	Oct 14	Suitability Analysis	Performing Suitability Analysis on rangeland using GIS
9	Oct 21	Remote Sensing	Using Remote Sensing Software ENVI
10	Oct 28	Combining Remote Sensing Data with GIS to analyze rangeland	RS lab with GIS data
11	Nov 4	Exam 2	Exam 2
12	Nov 11	Projects	
13	Nov 18	Projects	
14	Nov 27	No Class	No Class
15	Dec 2	Projects	
16	Dec. 9	Turn in Final Projects	