

Course Code & No. - Section: ENVS 421/5 – Sect. 1

Course Title (Credits): G.I.S (3+1)

Term & Year: Fall / 2014

Course Ref. No. (CRN): 80014, 80010

Instructor: Dr. Chuck Levitan

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Office: TCES, room 224

Office Hours: MWF 12:00 - 1:00, TTh 3:00-4:00p.m., and by appointment

Class Meeting Time: MW 4:00 - 5:20 p.m., Lab M 1:00-3:50 (may continue into lecture)

Location: TCES 204

Prerequisites (from Catalog): ENGL 102 and CORE 101 and Math and ENVS 200

Course Description (from the Catalog)

Hands-on course using GIS software, mainly ESRI ArcGIS. Covers fundamental GIS concepts. Develop basic spatial analysis skills using vector and raster data. Creation and manipulation of geographic databases and themes, geocode addresses, display and query databases, perform spatial analysis, design map layouts, and generate hard-copy maps. Class size limited to available resources.

Student Outcomes

Upon successful completion of this course, a student will be able to:

1. Describe, identify, and apply projections and datums to geographic data
2. Gather and format geographic data for use in GIS systems
3. Apply the concepts of GIS to human- ecosystem interactions, considering economics and culture
4. Create maps honoring cartographic conventions
5. Interpret maps and identify symbologies that express or conceal ideas

Methods of Assessing Student Outcomes

Student outcomes will be assessed using the following:

1. Demonstration of software proficiency
2. Writing assignment(s), submitted in stages, both based on library and lab work;
3. Applied and theoretical in-class, problems;
4. Projects done in the field.
5. Written in-class, closed-book, comprehensive final examination and/or project that includes coverage of the topics discussed in the course outline.

Instructional Strategies

This class will utilize lectures, movies, lab work, small groups, and individual work in class using laptop computers, inquiry learning, case studies, and homework assignments. The course makes use of the *Moodle* course management system.

Required Texts and Materials

1. *Mastering ArcGIS*; Fifth Ed., Price, Maribeth; © 2012; ISBN: 978-0-07-336932-7
2. *Making Spatial Decisions Using GIS and Remote Sensing*. Keran, e K., and R. Kolvoord. 2014. ESRI Press. ISBN 978-1-58948-336-1 (Includes software)
3. *Understanding Map Projections*; First Ed., anon., © 2004 ESRI Press (on Moodle site)
4. Laptop computer (one that meets the published SNC Laptop Requirements)

Attendance

Work must be submitted on time; in-class exercises are due in class, and roll will be taken for scholarship purposes. Students should be on time to participate in class activities.

Research Project

Any research project involving human or animal subjects must be submitted to the College Research Committee for approval. Submit your proposal to your instructor by September 10, 2012.

Class Requirements

Please participate. Assignments due at beginning of each class. Half credit for assignments up to a week late. Please don't use laptops and phones except when requested. Students should dress appropriately for outdoor exercises. Students may be requested to offer cars for car-pooling; gas expenses will be compensated. Work cooperatively on all problems, questions, essays, and labs. Work alone on exams. Each student turns in each assignment.

Sanctions for Cheating and/or Plagiarism**The Honor Code**

The faculty of SNC believes students must be held to high standards of integrity in all aspects of college life in order to promote the educational mission of the College and to encourage respect for the rights of others. Each student brings to the SNC community unique skills, talents, values and experiences which, when expressed within the community, contribute to the quality of the educational environment and the growth and development of the individual. Students share with members of the faculty, administration and staff the responsibility for creating and maintaining an environment conducive to learning and personal development, where actions are guided by mutual respect, integrity, responsibility and trust. The faculty and students alike must make diligent efforts to ensure high standards are upheld by their colleagues and peers as well as themselves. Therefore faculty and students accept responsibility for maintaining these standards at Sierra Nevada College and are obligated to comply with its regulations and procedures, which they are expected to read and understand.

Consequences of Violating the Student Honor Code

SNC students and faculty share the responsibility for maintaining an environment of academic honesty. Thus, all are responsible for knowing and abiding by the SNC Faculty/Student Honor Code published in the current SNC Catalog. Faculty are responsible for presenting the Honor Code and the consequences of violating it to students at the start of their classes AND for reporting all incidences of academic dishonesty to the Provost. Students are responsible for knowing what constitutes CHEATING, PLAGIARISM and FABRICATION and for refraining from these and other forms of academic dishonesty. Violations of the Honor Code become part of a student's academic record.

1st Offense: Student receives a zero for assignment/exam and counseling with faculty on the honor code, consequences for violating the honor code, and the value of academic honesty in learning.

2nd Offense: Student fails course and receives counseling with faculty on the honor code, consequences for violating the honor code, and the value of academic honesty in learning.

3rd Offense: Student is expelled.

Grading Policy

Moodle Course Site: <http://sncmoodle.sierranevada.edu/>

The Assignments:

ASSIGNMENT	Points Each	Number	Total	When Due
Chapter assignments (CA)	10	10	100	Monday before class
Short Assignments (SA)	30	5	150	Tues Midnight
Labs (LA)	30	5	150	Tues Midnight
Final Project	200	1	200	Last Lab
Tests: 3 plus final	100	4	400	In Class
TOTAL		25	1000	

ADA Accommodations

In accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, students with a documented disability are eligible for support services and accommodations. If a student wishes to request an accommodation, please contact the Director of Academic Support Services, Henry Conover, at (775) 831-1314 x7534, hconover@sierranevada.edu or go to the OASIS offices on the third floor of Prim Library within the first week of the semester.

The SNC Email System

The SNC email system is the official communication vehicle among students, faculty members and administrative staff and is designed to protect the confidentiality of student information as required by the Family Educational Rights and Privacy Act of 1974 Act (FERPA). Students should check their college email accounts daily during the school year.

Students have a right to forward their SNC e-mail to another e-mail account (for example, @hotmail or @gmail). However, confidentiality of student information protected by FERPA cannot be guaranteed for SNC e-mail forwarded to an outside vendor. Having email redirected does not absolve a student from the responsibilities associated with official communication sent to his or her SNC email account.

Class Schedule

For the rest of the Syllabus, you may use / include any additional materials that you choose.

The Mission Statement:

Sierra Nevada College graduates will be educated to be scholars of and contributors to a sustainable world. Sierra Nevada College combines the liberal arts and professional preparedness through an interdisciplinary curriculum that emphasizes entrepreneurial thinking and environmental, social, economic and educational sustainability.

The Core Themes:

Liberal Arts

Professional Preparedness

Entrepreneurial Thinking

Sustainability

Date (Week of)	Topic	Reading	Assignment LA = Lab Ass't SA = Short Ass't CA = Chapter Ass't P = Price, K=Keranin	Lab
8/18/14	Intro, nature of geographic data,	Price 1	In-Class-Scale and Projection	Coordinate System, Projections Gallery, Symbology
8/25/14	Mapping GIS Data	Price 2	CA-1 (Mon)	Installation, Downloading data
9/3/14 (Closed Mon)	Presenting GIS Data- maps	Price 3	CA-2 (Wed) SA-1	Cartography
9/8/14	Attribute data	Price 4 Allen 3	CA-3 (Wed)	Field work
9/15/14	Coordinate Systems	Price 11	CA-4 LA-1 (Field work) (Test 1)	
9/22/14	Queries Proximity	Price 5 Allen 5	LA-2 (GPS) SA-2	GPS, Surveying
9/29/14	Spatial Joins	Price 6	CA-5 LA-3 (Projections)	Georegistering
10/6/14	Map Overlays	Price 7 Allen 4	CA-6 SA-3	Topology
10/13/14	Raster analysis	Price 8	LA-4 (Spectra)	Remote Sensing Census
10/20/14	Editing	Price 12	CA-7 Test 2	Modeling
10/27/14	Topology and Geodatabases	Price 13,14	SA-4	Field trip?
11/3/14 (Thu off)	Cartography	Allen 1	CA-8	Cartography
11/12/14 (Closed Mon)	Analysis	Allen 5	Test 3 LA-4	Hypothesis testing (?)
11/17/14	Time series	Allen 6	SA-5 CA-9	
12/3/14		Project Prelim. Reports	CA-10 SA-6 (alt)	
12/10/14 (Finals)				Final 12/10/14, 6:30-9:30

Prim Library Resources

Using the library's resources effectively (not just internet resources) contributes to developing each of SNC's core themes by exposing students to high quality academic resources, diverse opinions, new ideas, and a future that includes building on a liberal arts education. In this course, you will be expected to utilize the library's resources (either on-site or remotely) as you complete your assignments.

Prim Library Resources for CHEM 101 and CHEM 105 include, but are not limited to:

1. Books (can be checked out): such as Lipson C. Cite Right: a Quick Guide to Citation Styles. Chicago: University of Chicago Press; 2006. LCC number PN171. F56L55 2006. Includes a section on CSE style.
2. Electronic databases (for peer-reviewed primary source research articles, secondary source reviews, newspaper magazine articles, and online books): Electronic databases most likely to include articles on biology topics are EBSCO: Academic Search Premier, Environment Complete, General Science Collection, GreenFILE, Health Source, Newspaper Source, and TOPICsearch; BioOne; and GREENR.
3. Hardcopy periodicals: Prim Library has current subscriptions for Science, New Scientist, Science News, Scientific American, and National Geographic Magazine. Any of these are likely to have secondary source articles about science topics written for educated people who are not necessarily scientists. You will find these easy to read and articles will include references to primary source articles. Full-text articles from many more periodicals are available through the electronic databases.
4. Lib Guides: <http://Libguides.sierranevada.edu> These web pages contain instructions about how to use resources available at Prim Library, Prim Library resources for science topics, how to evaluation the appropriateness of information from the internet for a research paper, how to cite sources, and other topics related to finding and using information.