GIS 51 -- INTERMEDIATE GIS METHODS
Course Syllabus (Ver.1a) - SPRING 2018 - Sec. 5463

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Lect: W 11:30 AM - 1:30 PM, Shuhaw 1751
Lab: W 2:00 - 5:00 PM, Shuhaw 1751
Office Hr: W 5:00-6:00 PM, Shuhaw 1775

Program and Instructor Web Pages:
Reg Parks SRJC Web Page
CESGT Program Web Page
Civil Engineering Certificate Web Page
Geospatial /GIS Certificate Web Page
Land Surveying Certificate Web Page

WELCOME TO GIS 51 !!!

Lectures and Laboratory: Lectures will comprise approximately two (2) of the five (5) weekly course hours with the remainder devoted to laboratory activities. This may vary occasionally depending on student progress and specific class activities/projects.

Mandatory Final Exam: TENTATIVE -- Wednesday, May 23, 10:00am – 12:45pm. TBA

GIS 51 - Required Course Text:	**GIS 51 - Course Reference Materials:**
1.) GIS Fundamentals A First Text on Geographic Information Systems, Paul Bolstad, Eider Press, 5th Edition, 2016 2.) Modeling Our World, Michael Zieler, ESRI Press, 2nd Edition, 2010	1.) GIS Library Folder (Work in Progress) 2.) SRJC Reserve Section in the Doyle Library on the SRJC Campus (see handout of ~ 25-30 course texts and reference books)

Additional Recommended Outside Reading: ***OPTIONAL!!!***

1. Introduction to Geographic Information Systems, Kang-tsung Chang, McGraw Hill, 5th Edition, 2010 (spendy) 2. GIS Concepts and ArcGIS Methods, David M. Theobald, Conservation Planning Technologies, 2nd Edition (ver 9.x), 2005 3. Elementary Statistics for Geographers James E. Burt, Gerald M Barber, David L. Rigby, Guilford, 3rd Edition, 2009	6.) Statistical Analysis of Geographic Information with ArcView GIS and ArcGIS, David W.S. Wong. Jay Lee, Wiley Press, 2005 7.) Geographic Information Analysis, David O'Sullivan & David J Unwin, Wiley Press, 2003

SRJC Geospatial Technology Certificate Program & Career Technical Education (CTE)
Students enrolled in the SRJC Geospatial Technology Program must complete all coursework with a grade of C or higher to qualify for a Certificate. Students should begin immediately by establishing their certificate candidacy in their cubby under "District Announcements" using the "Degree Audit Available" link.

Additional Info: https://portal.santarosa.edu/SRWeb/SR_ViewAnnouncement.aspx?Type=2&AnnouncementID=5

GIS 51 COURSE CONTENT:

Student Learning Outcomes:

Upon completion, students will be able to:
1. Create, edit and analyze geographic data
2. Prepare reports, charts and layouts
3. Describe and implement the steps necessary to answer a geographic question
4. Produce an output of finished quality maps representing a basic analysis, a basic survey or a basic scale-based, descriptive, diagrammatic summary

Objectives:

Upon completion of this course, students will be able to:
1. Demonstrate an understanding of the structure and organization of the software package
2. Create a map project using GIS software
3. Define and apply the relationship of geographic features and attribute data
4. Perform feature identification and classification
5. Perform query and analysis functions
6. Define and edit spatial relationships
7. Create a map layout
8. Integrate GIS with other software and technology
9. Utilize basic cartographic principles in map design and construction

COURSE EXPECTATIONS:

This is a second level course that prepares the student for a career as a GIS Technician/Analyst/Professional. These courses are designed to develop entry level or mid-level career skills. They are designed in conjunction with guidance from local professionals who assist in establishing course curriculum. The CESGT Program is committed to offer preparation and training to CTE students and to the professional community into which they will graduate.

GIS51 is the second in a series of three courses. Together, they provide the fundamentals of GIS data management, data analysis, basic project development & basic map/report production skills. In GIS 51, we will explore the analytic capabilities of GIS software and gain a basic understanding of the analytic process; all within the context of preparing students to become entry level GIS professionals upon completion of the certificate requirements.

A serious student attitude is strongly encouraged and a team learning approach underpins the course culture. A team learning approach is one where a student takes an equal (or better) measure of responsibility for their learning experience through their participation, performance and professional attitude.

Class Preparation:

Students are expected to arrive on time, to be prepared in advance for each class and to remain for the entire session. It is strongly recommended that students write down any questions about the material while reading and assignments. Bring them to class for clarification.

Students are to have successfully completed GIS 40 and APTECH 191 with a grade of C or better. They are expected to be familiar with microcomputer operations, Microsoft (MS) Windows and MS Windows file management, MS Windows Explorer, MS Internet Explorer, Adobe Acrobat Reader (free download), MS Notepad and MS Excel spreadsheet software. Tutorials are available on the SRJC campus. Please consult the campus website.

Access to a computer and to the internet is key to passing this course. If students require additional time beyond the allocated lab time to complete their assignments, there will be scheduled open lab hours posted outside Shuhaw 1751 and 1799. In some cases, students with home computers or laptops will be able to install course software and work, at home, outside of class hours. All students should be proficient in correctly transferring class data to and from their own USB drives. Use of identical folder (directory) structure across all environments is required. Students are strongly recommended to purchase a USB drive of at least 16GB capacity by the second class meeting.

Any student who feels that they have not met** or cannot meet the requirements and expectations for this course should contact the instructor before the second class meeting. There are classes available that will help you prepare for this program.

Attendance Issues:

- Attendance is required for both lab and lecture hours. Your lack of attendance can affect your grade for this course. Class generally begins on the hour and ends at ten (10) minutes before the hour. An excused absence may be granted by contacting your instructor sufficiently **prior** to the beginning of class. It is good practice to notify your instructor **by email** if you are going to be tardy or absent.
- Students are responsible for all material delivered in lecture and lab as well as the readings and assignments.
- Students are responsible for correctly obtaining any missed lecture or laboratory course information from their fellow classmates.
- Your class participation can and will affect your final grade as will your class conduct.
- There will be no make-ups for missed class activities (quizzes, exams, in-class demonstrations, etc).
- According to school policy, if a student misses over 10% of any course, they can be summarily dropped from the course.

Assignments:

- All assignments are to be completed per instructions and are due at the beginning of class on the assigned due date. A course calendar will be provided.
- All course deliverables shall be submitted on 8½" x 11" paper, in field books or on sheets provided to you by the instructor. Unless otherwise directed, all maps and diagrams shall be submitted on 8½" x 11" or 11" x 17" sheets (properly folded), in field books or on sheets provided to you by the instructor. Occasionally larger format output will be required
- Put your name, course number, assignment parameters and due date on the first page. Staple multiple sheets together ***prior*** to turning in. *(No name / no date / no staple = no score!!)*
- Any written reports, essays, or term papers shall be typed and formatted per instructions provided.
- Completed assignments are the student's responsibility. Failure to observe any of the above conditions may result in papers being returned without credit!

Required readings, handouts, weekly assignments and other information will generally be listed on the course calendar or on the white board at or near the beginning of each class meeting. The assignments will consist of a combination of worksheets, quizzes, mock exercises, discussion preparation, lab reports and written summaries.

Students should expect to complete a minimum of 1-2 hours of reading and/or homework for each class hour (e.g., 5 class hours per week translates into 5-10 outside hours per week; 10 class hours per week translates into 10-20 outside hours per week).

There will be no make-ups for missed assignments, labs or exams. Rarely, certain late submittals may be accepted but will be discounted starting at 20% off of total point value depending on how many classes have passed since the due date. Such instances will be at the instructor's discretion. After a certain date, no late submittals will be accepted. That date will be announced by your instructor during class, ~1 week in advance.

Essay Assignment Submittal and Format:
All essay assignments are to be neatly typed or word processed. Laboratory assignments (reports / summaries and class projects) will be submitted in scientific manuscript format (Introduction, Materials & Methods, Results, Discussion and Conclusions). This includes any examinations that require a laboratory report or project report. Any essay type questions will follow the standard 5 paragraph essay format for writing style.

Links to examples of writing styles discussed above:

Scientific Writing Format:
http://writing.colostate.edu/guides/processes/science/pop2a.cfm
http://abacus.bates.edu/~ganderso/biology/resources/writing/HTWgeneral.html

Essay Writing Format:
http://www.englishdiscourse.org/5.paragraph.essay.format.html
http://www.custom-essays.org/essay_types/Five_5_Paragraph_Essay.html

ESRI E-Learning Course Modules:
Students will complete approximately **eight to ten (8-10)** modules on the ESRI E-Learning Website (ELW) worth ~**20-140 points** each. Complete the step-by-step exercises as directed for each module. Occasionally, additional instructions will be provided by your instructor. Complete and submit all module exercise map layouts as directed (generally 10 points/map). Take any module exams (10 points) and submit your graded test answer sheet along with the certificate of completion (5 points) for the module. Assignments will be submitted stapled together in the following order: Certificate (cover page), module exam (if given), each exercise map in the order assigned.

One (1) to two (2) challenge exercises or worksheets may be assigned at **100 points each**.

Student Analysis Mini-Project:
Students will produce a special mini-project over the latter portion the semester. This project will involve submitting a project proposal for instructor approval, obtaining the necessary GIS data, completing a pilot study, completing the spatial analysis or model, and preparing a summary report which includes a final map or maps. All students must prepare and submit a project proposal for approval by the 12-13th week of class. **The student mini-project is worth ~200-300 points,** depending on whether it is presented as a final exam or not. (see below)

Projects and Field Exercises:
- Attendance is mandatory. ***NO MAKE-UP LABS WILL BE GIVEN!***
- All projects and field exercises (labs) are to be completed as per instructions and are due at the assigned date and time.
- Labs will be held as described by your instructor and on any handouts. There may be field and/or office components associated with each lab. Sometimes there will be both.
- Unless otherwise stated, your lab assignment will be due as indicated on the course calendar unless otherwise stated by your instructor.

- Field books and computation sheets will be turned in together. Late assignments will not be accepted.
- Land Surveying and GIS mapping equipment is expensive and delicate. It is for the use of all CESGT students and therefore must be treated respectfully. You will be instructed in the proper handling and use of the equipment.

Examinations:

Students will take a midterm and final exam worth **100-200 points each**. The midterm will be written. The final may be oral or written. The format for written exams is fill-in-the-blank, matching, short answer and essay, and may include a lab component. An oral final is generally a presentation of a student's mini-project or a core topic of study. Presentation details will be developed in class. Class examinations are mandatory. Please plan ahead.

- ***NO MAKE-UP EXAMS WILL BE GIVEN!***
- The final exam is required. Failure to take this exam will result in a grade of **F** for the course.

Scientific Calculators:

Students should have a scientific calculator and know how to use it (the range of recommended models will be discussed). For CESGT certificate students, your instructor strongly recommends the HP33s, the HP35s and the TI-30XIIs as these are calculators that will be allowed on certifying, licensure and board examinations. The instructor will NOT be responsible for training students in the use of scientific calculators.

Possession **and** working knowledge of a hand calculator is a REQUIREMENT for this class and will be necessary for all exams, quizzes and problem sets. Incorrect results secondary to miss-keyed or incorrectly used calculators are INCORRECT. In order to receive the most credit for work performed, please attempt, at all times, to SHOW YOUR WORK.

Grading:

- Your grade will be based on the total number of weighted points you accumulate with respect to the total number of possible points. Homework, lab/assignments and exams are weighted accordingly and shown below:

Work Distribution		Point Weighting	Percentage	Grade
Module exercises		~36%	90 - 100%	A
Exams		~25%	80 - 89%	B
Student Project		~30%	70 - 79%	C
Subjective (class participation)		~09%	60 - 69%	D
			< 60%	F
Total:		**100%**		

- An incomplete grade **"I"** will only be given as prescribed by college rules and regulations. ***Prior*** approval of the instructor is required.

STUDENT WEB READING (required):

It is the student's responsibility to consult the SRJC web-based information listed below -- please do so, they are considered parts of this syllabus:

SRJC Academic Schedules & Calendar to identify all important dates, deadlines and academic policies such as those relating to unexcused absences, adding and dropping classes.

Schedule of Classes: https://classes.santarosa.edu/
Academic Calendar: https://admissions.santarosa.edu/academic-calendar/

SRJC Academics Information: https://www.santarosa.edu/academics/
SRJC Affairs and Programs: https://studentlife.santarosa.edu/student-affairs-engagement-programs

SRJC Disability Resources: https://drd.santarosa.edu/home
SRJC Rights and Responsibilities: https://studentlife.santarosa.edu/rights-and-responsibilities

Class Conduct & Courtesy:

During lectures: Students should be listening to the presentation. Students shall please refrain from having conversations, checking your email or web-browsing. These behaviors are distracting to others and to the instructor. **No student is allowed to print or plot without permission during any lecture under any circumstances.** This includes when you are visiting in an open lab or have received permission to work quietly when an instructor may be lecturing. Remember your represent the CESGT Program especially when using the lab during other classes or during open lab hours.

The above distractions or any disruptive behavior during class **are grounds for being excused from class with a loss of that day's work**. Repeated events will result in disciplinary action via the Department Chair, Dean or Vice President of Academic Affairs.

During Laboratory: Kindly remember that other students may have different study habits and priorities than you do. Please speak softly when conversing with other students. Avoid long and/or social (unrelated to class matters) dialog in the computer lab. Take such conversations outside.

During open lab times or when other classes are in progress.
There will be open lab time in Shuhaw 1799 and 1751. A schedule will be posted on the doors to the labs. There may be lab seats available during other courses in progress. When desiring to occupy an empty station during a lecture, students should politely inquire with the instructor prior to just taking a seat. If a student shows up late and you are occupying their seat, you must vacate IMMEDIATELY. CESGT students will comport themselves per these course syllabus guidelines whenever using the computer labs. Again, you represent the CESGT Program to others.

Cell Phones: Turn cell phone ringtones off and if you must receive a call please **go outside** during your phone conversation.

ABSOLUTELY NO FOOD OR OPEN DRINKS ALLOWED IN CLASS or COMPUTER LABS!!!

Passwords, Accounts and Access Codes: Students will be given SRJC computer user accounts and will be required to establish user accounts at other websites. It is the responsibility of the student to keep track of their user names, passwords and security codes. Lost or forgotten passwords are not an acceptable reason for incomplete assignments.

This semester, I will be using the SRJC FILE DEPOT to distribute large files and to receive large files and assignments. This will keep my SRJC mailbox from over filling with large attachments (assignments). Certain files for distribution will be available in the File Depot (link below). Files that students will be instructed to send will be uploaded to the SRJC File Depot Dropbox (link below). Use of this site will be discussed at the first class meeting.

Link to File Depot: https://www2.santarosa.edu/file-depot/
Link to Dropbox: http://www2.santarosa.edu/file-depot/dropbox.php

Computers, Equipment and Equipment Handling:

In comparison to many other campuses, SRJC has BRAND NEW, high quality computer hardware, software and output facilities. In order to provide optimum laboratory access and usage experience; all students are expected to be familiar with and follow the posted rules for the computer labs (Shuhaw 1751 and 1799). Any student observed violating the rules may be excused from class (first offense). Repeat offenses will result in a student being dropped from the class. In some classes, your computer profile will NOT follow you to another station. Students will be assigned a workstation which will be their workstation for the entire semester. You may not sit at another workstation without permission from the instructor. Students will be provided with computer access account numbers on the first day of class. All students will complete a laboratory compliance agreement during the first class meeting.

Students are to treat all course equipment with proper care. Any damaged or malfunctioning computer equipment shall be promptly reported to the instructor. In certain courses there are red cards for reporting malfunctioning equipment.

Students observed mistreating the equipment will be warned either openly or in conference. Students who are repeatedly observed misusing equipment will be excused from that class. Students excused from class activities for mistreating equipment will not be allowed to make up that day's work. A second such event may result in a student being dropped from the course.

There are data volumes (folders) and documentation files for the various devices and software applications. This documentation can be found in the \PATHNAME*\Library folder and the various subfolders on the student local and network drives. Any hard copy documentation and display articles are **NOT** to be taken off the lab premises or off campus for **ANY** reason without prior approval of the instructor. STUDENTS ARE NOT PERMITTED TO PRINT THE DOCUMENTATION FILES ON SRJC PRINTERS. When such documentation is required for an out of class assignment, it may be obtained from the \PATHNAME*\Library folder in electronic format.

Assignments and support information will be provided on the SRJC read-only (N:\) network drive and should be copied to the student's local drive (F:\) BEFORE opening or operating on the file or files. The majority of the support documentation is in PDF format. Students are expected to be familiar with the use of Adobe Acrobat Reader software. Please make certain that you allow yourself the necessary time to transfer the appropriate support documentation in advance of assignments and class exercises.

CESGT students will receive a presentation familiarizing them with the in-class computing, printing and plotting equipment as part of course content. Account passwords and authorization codes will be issued at that time. These presentations will not be repeated. SRJC provides laboratory supervision and limited software support during the open lab hours on the Santa Rosa Campus. Please familiarize yourselves with Mr. Todd Amos' schedule. He is super knowledgeable and a valuable resource. His office is in Shuhaw 1799.

* PATHNAME=the SRJC network drive pathname to be established in class for the file location or locations.

SHUHAW 1751 and 1799 Network Drives

Drive C:	Local hard drive in the computer
Drive F:	(Private drive unique to each person- copy class materials to this drive)
Drive N:	(Read-only to students. Full-access to faculty and staff. Copy class materials FROM this drive ASAP)
Drive M:	(Full-access to everyone) will be deleted periodically. Please don't leave your important files on this drive.

Student USB drives or external HDDs should be inserted **AFTER** logon. External HDDs and USB drives should be used for backup and transfer of materials to outside/personal computers.

Syllabus Purpose and Disclaimers:
This syllabus is an agreement. Continued participation in this course means that you, the student, agree to the policies and procedures outlined in this document. If some aspect or aspects of the syllabus are unclear to a student, it is their responsibility to inquire regarding that matter at the outset of the course.

This syllabus is intended to provide guidance as to in what will be expected during the semester and will be followed as closely as possible. However, the instructor reserves the right to modify, supplement or make changes as necessary for general course needs as the semester progresses.

Instructor Commentary:
The 1-year program moves along quickly. Please do not fall behind. Come see me with problems EARLY, don't wait. The spring semester courses take the Fall semester concepts and apply them as you would in the professional workplace.

The bulk of GIS mapping and analysis is performed in your brain and subsequently implemented with technology. It cannot be emphasized how important it is to fully apply yourselves at every lesson opportunity. The lectures, labs and examinations in these courses are not easy. They are designed to orient and prepare students for the qualification and licensure exams. Please make the absolute best use of your time. Thank you and WELCOME.

Respectfully,
Reg Parks
SRJC E&AT CESGT Program