

San José State University
College of Social Sciences, Geography Department
Course # 47907, GEOG 282 –Advanced Geographic Techniques, Fall, 2015

Course and Contact Information

Instructor:	Kerry Rohrmeier, Ph.D.
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Office Hours:	Monday 1:30-2:30 pm, Tuesday 4:00-6:00 pm, and by appointment
Class Days/Time:	Tuesday 6:00-8:45 pm
Classroom:	Washington Square Hall 111
Prerequisites:	GEOG 170 or instructor consent

Course Format

This course is a graduate seminar in which everyone is expected to participate in weekly discussions in an informal setting. This will be the only graduate geography course offered during the 2015-1016 academic year so this very much geared toward student research productivity and advancement. There will be skill exercises to accompany progress, and all course materials can be found on the GEOG 282 [Canvas](#) webpage using your 9-digit SJSU ID and password. You are responsible for regularly checking this website for the latest information and communications. Please log in and follow the ‘Getting Started’ steps.

Faculty Messaging

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on the Canvas learning management system course website. You are responsible for regularly checking with the Canvas website to learn of any updates. The email address listed above is best for the fastest reply.

Course Description

From the Course Catalog: Specific topics in display and analysis of geographic information. Possible topics include advanced spatial analysis, cartographic representation, user-interface design, Internet map server technology. May be repeated for credit when offered as a different technique. (3 units)

Learning Outcomes and Course Goals

Course Learning Objectives (CLOs)

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

- CLO 1 *Demonstrate the ability to define a research problem and design and execute a research program.*
All 16-course assignments plus the final paper require independent sourcing, reading, and analytical techniques to support each geography graduate student's self-selected research problem and program. The class is customized to each student so that all work effort is applicable to his/her own graduate study.
- CLO 2 *Demonstrate the ability to communicate research results in written, graphic, and verbal form.*
Students will present their specific research through written assignments, two presentations, and display charts, graphs and maps each week during the term as outlined in detailed in Assignments 1-16 on the course schedule.
- CLO 3 *Demonstrate understanding of how GIS and technology may be applied to a variety of problems.*
GIS as a spatial analysis and geostatistical tool will be the focus of Assignment 11 lasting two weeks.

Required Texts/Readings

Textbook

No textbook is required for this course. Every student will be responsible for researching peer-reviewed sources and data sets pertinent to his/her own research pursuits.

Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on.

- Active participation in this course is mandatory, and is especially important for a seminar meeting just once per week. Given this limited time together it is unlikely to contribute to the class if a student has not completed required readings and class assignments ahead of time (CLO3).
- There are 16 assignments during the term. These range from preparing an annotated bibliography, synthesizing a research question, designing appropriate research methods and analytics, and working with statistical and GIS mapping software, plus introducing useful data visualization tools in an effort to support progress in each student's specific research path (CLO1 and CLO2).
- The final paper is customized to each student's desired outcome for the course whether it is a research statement, proposal, project/thesis chapter, or complete project/thesis draft (CLO1).

Grading Policy

	Points Possible
Participation	60
Assignments 1-16	640 (40 each)
Final Paper	200
TOTAL	900

SCALE:

A+ = ≥98%	A = 94-97%	A- = 90-93%
B+ = 87-89%	B = 84-86%	B- = 80-83%
C+ = 77-79%	C = 74-76%	C- = 70-73%
D+ = 67-69%	D = 60-66%	D- = 51-59%
		F = ≤50%

All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades. In keeping with this policy, and to making grading responsive. All assignments are due as stated on the Course Schedule and Canvas. **Late work is not accepted.** Please save all your work until after you have checked your final course grade. Then if you have questions about your final grade, you can bring in past work, and if necessary, corrections can be made.

Classroom & Online Protocol

- Assigned readings and preparatory materials must be completed prior to class for participation in all seminar discussions.
- This course requires considerable independent study so adequate time for graduate level effort is expected.

University Policies

General Expectations, Rights and Responsibilities of the Student

As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU's policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. See [University Policy S90-5](http://www.sjsu.edu/senate/docs/S90-5.pdf) at <http://www.sjsu.edu/senate/docs/S90-5.pdf>. More detailed information on a variety of related topics is available in the [SJSU catalog](http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html), at <http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html>. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not serve to address the issue, it is recommended that the student contact the Department Chair as a next step.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's [Catalog Policies](http://info.sjsu.edu/static/catalog/policies.html) section at <http://info.sjsu.edu/static/catalog/policies.html>. Add/drop deadlines can be found on the current academic year calendars document on the [Academic Calendars webpage](http://www.sjsu.edu/provost/services/academic_calendars/) at http://www.sjsu.edu/provost/services/academic_calendars/. The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/policy/) is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/>. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the [Advising Hub](http://www.sjsu.edu/advising/) at <http://www.sjsu.edu/advising/>.

Consent for Recording of Class and Public Sharing of Instructor Material

[University Policy S12-7](http://www.sjsu.edu/senate/docs/S12-7.pdf), <http://www.sjsu.edu/senate/docs/S12-7.pdf>, requires students to obtain instructor's permission to record the course and the following items to be included in the syllabus:

- “Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor's permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the

intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.”

- It is suggested that the greensheet include the instructor’s process for granting permission, whether in writing or orally and whether for the whole semester or on a class by class basis.
- In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.
- “Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.”

Academic integrity

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The [University Academic Integrity Policy S07-2](http://www.sjsu.edu/senate/docs/S07-2.pdf) at <http://www.sjsu.edu/senate/docs/S07-2.pdf> requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The [Student Conduct and Ethical Development website](http://www.sjsu.edu/studentconduct/) is available at <http://www.sjsu.edu/studentconduct/>.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. [Presidential Directive 97-03](http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf) at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the [Accessible Education Center](http://www.sjsu.edu/aec) (AEC) at <http://www.sjsu.edu/aec> to establish a record of their disability.

Accommodation to Students' Religious Holidays

San José State University shall provide accommodation on any graded class work or activities for students wishing to observe religious holidays when such observances require students to be absent from class. It is the responsibility of the student to inform the instructor, in writing, about such holidays before the add deadline at the start of each semester. If such holidays occur before the add deadline, the student must notify the instructor, in writing, at least three days before the date that he/she will be absent. It is the responsibility of the instructor to make every reasonable effort to honor the student request without penalty, and of the student to make up the work missed. See [University Policy S14-7](http://www.sjsu.edu/senate/docs/S14-7.pdf) at <http://www.sjsu.edu/senate/docs/S14-7.pdf>.

Student Technology Resources

Computer labs for student use are available in the [Academic Success Center](http://www.sjsu.edu/at/asc/) at <http://www.sjsu.edu/at/asc/> located on the 1st floor of Clark Hall and in the Associated Students Lab on the 2nd floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library. A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112. These items include DV and HD digital camcorders; digital still cameras; video, slide and overhead projectors; DVD, CD, and audiotape players; sound systems, wireless microphones, projection screens and monitors.

SJSU Peer Connections

Peer Connections, a campus-wide resource for mentoring and tutoring, strives to inspire students to develop their potential as independent learners while they learn to successfully navigate through their university experience. You are encouraged to take advantage of their services which include course-content based tutoring,

enhanced study and time management skills, more effective critical thinking strategies, decision making and problem-solving abilities, and campus resource referrals.

In addition to offering small group, individual, and drop-in tutoring for a number of undergraduate courses, consultation with mentors is available on a drop-in or by appointment basis. Workshops are offered on a wide variety of topics including preparing for the Writing Skills Test (WST), improving your learning and memory, alleviating procrastination, surviving your first semester at SJSU, and other related topics. A computer lab and study space are also available for student use in Room 600 of Student Services Center (SSC).

Peer Connections is located in three locations: SSC, Room 600 (10th Street Garage on the corner of 10th and San Fernando Street), at the 1st floor entrance of Clark Hall, and in the Living Learning Center (LLC) in Campus Village Housing Building B. Visit [Peer Connections website](http://peerconnections.sjsu.edu) at <http://peerconnections.sjsu.edu> for more information.

SJSU Writing Center

The SJSU Writing Center is located in Clark Hall, Suite 126. All Writing Specialists have gone through a rigorous hiring process, and they are well trained to assist all students at all levels within all disciplines to become better writers. In addition to one-on-one tutoring services, the Writing Center also offers workshops every semester on a variety of writing topics. To make an appointment or to refer to the numerous online resources offered through the Writing Center, visit the [Writing Center website](http://www.sjsu.edu/writingcenter) at <http://www.sjsu.edu/writingcenter>. For additional resources and updated information, follow the Writing Center on Twitter and become a fan of the SJSU Writing Center on Facebook. (Note: You need to have a QR Reader to



scan this code.)

SJSU Counseling Services

The SJSU Counseling Services is located on the corner of 7th Street and San Fernando Street, in Room 201, Administration Building. Professional psychologists, social workers, and counselors are available to provide consultations on issues of student mental health, campus climate or psychological and academic issues on an individual, couple, or group basis. To schedule an appointment or learn more information, visit [Counseling Services website](http://www.sjsu.edu/counseling) at <http://www.sjsu.edu/counseling>.

Course # 47907 / GEOG 282 Advanced Geographic Techniques, Course Schedule

This schedule is subject to change with fair notice. For the most up to date information please check Canvas.

Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	8/25	<p><u>SURVIVE</u></p> <p>Establish your actual baseline, and setting realistic semester and academic year goals and timeline.</p> <p>Just starting out? Research <i>your</i> passion, <i>not</i> your advisors. The practice of changing your research focus (again).</p> <p>Negotiating university department culture, and the at times punishing power dynamics of being an advisee.</p> <p>Don't go it solo; rely on your cohort to vent excessively!</p> <p>Assign 1: Part A: List your research interests (provide your project/thesis title and research question if you have one), include your advisor name (who is reviewing your work if not officially signing off), three committee members*, and honestly how far along you think you are today. If you are a prospective postgrad, or an undergrad planning one day to go onto grad school then list your research interests, university departments that might be a good fit for this, and potential faculty there who have similar interests. Part B: Determine your desired written outcome for the term. If you are a new grad student this could be your proposal. If you are an existing student then this might entail a literature review, chapter, or complete thesis/project draft. If you are an undergrad or prospective SJSU postgrad then this will be a personal statement/research statement to support a university application. Due 8/31</p>
2	9/1	<p><u>SUCCEED</u></p> <p>Always Keep Eyes on the Prize - What it takes to be successful in any research occupation as a student or professional:</p> <ul style="list-style-type: none"> • Academic Journal Article or Book Publications • Conference Presentations and Research Posters • Grants <p>Assign 2: Pick a journal most appropriate to your research interests. Copy/paste the required author submission format for a standard article, not a book review or field notes. Identify one conference this year that has a theme fitting with your research topic. Copy/Paste submission requirements for a student poster competition, and the requirements for panel session. Identify one grant (a scholarship or fellowship is fine too) application that might apply to your research, education, or background. Due 9/7</p>

Week	Date	Topics, Readings, Assignments, Deadlines
3	9/8	<p><u>CONSIDER</u></p> <p>Know the original contribution expectations for masters versus doctoral research in your program.</p> <p>Got a research idea? Terrific, now shrink it down! Evaluate what you can accomplish physically, emotionally, and intellectually within two years without help; then scale accordingly. Keep in mind any other time commitments: rare today is the unattached, unemployed student.</p> <p>Then determine if your idea is in fact ethical. Navigating the university Institutional Review Board (IRB) and working with human subjects. Read: AAG Statement on ethics Read: SJSU IRB Policies then Complete CITI Training</p> <p>Assign 3: Hone your research interests into a single research question. <i>Tip:</i> you will have likely achieved this when you are extremely specific and the thesis or project title writes itself. Due 9/14</p>
4	9/15	<p><u>INNOVATE</u></p> <p>If you do not know what has been done before then the statistical likelihood of creating something new lies slightly above nil.</p> <p>Assign 4 [In Class]: Get us pumped up on your research topic! Give a 20-slide, 5-minute Ignite format presentation. Start with your proposed single research question, then highlight only pertinent academic literature findings placed within three pertinent research lines, then close with how you believe your work will extend this existing body of knowledge. Due 9/15</p> <p>Assign 5: Prepare an annotated bibliography of significant academic publications pertinent to your research. <i>Tip:</i> Significant articles to a field are often cited frequently; a quick Google Scholar search reveals the ‘Cited By’ score. Due 9/21</p>
5	9/22	<p><u>MEASURE</u></p> <p>Applying the appropriate geographic technique(s) requires the right research method(s) - qualitative, quantitative and mixed methods vary greatly, and their applications are completely dependent on the intended research question. Remember, geographers do fieldwork, and all social scientists are reflexive!</p> <p>Nietschmann, Bernard. (2001). Nietschmann syllabus: A vision of the field. <i>The Geographical Review</i> 91(1/2) 175-184.</p> <p>Philip, L.J. (1998). Combining quantitative and qualitative approaches to social research in geography – an impossible mixture? <i>Environment and Planning A</i> 30(2) 261-276.</p>

Week	Date	Topics, Readings, Assignments, Deadlines
5 Cont.	9/22	<p>Assign 6: Identify and define one or more research method(s) appropriate for studying your research question. Ask for help if you need assistance regarding where to look for information on generally accepted social science methods. Due 9/28</p>
6	9/29	<p><u>EXPLORE</u></p> <p>Rarely does the perfect data set for your highly specific research question exist, compound that with the challenge of finding said data set, then whittle down the probability of projections working, or it visualizing perfectly as intended even after many attempts. Data exploration is one of the most time consuming and frustrating aspects of research. Since data usage, quantitative or qualitative, is needed to make scientific judgments a researcher must collect (primary) or compile it (secondary). [buzzwords: Data Mining, or Big Data, all mean exploring large data sets]</p> <p>Assign 7 In-class practice finding, manipulating, and joining U.S. Census Factfinder - American Community Survey data so that block-group level or more course scale socioeconomic data will be useable later in statistical or GIS software. Due 9/29</p>
7	10/6	<p><i>CLASS CANCELLED</i></p>
8	10/13	<p><u>MANIPULATE</u></p> <p>American Community Survey may be just one data source useful to your research question, but many others exist on the web. You can craft your own data set from documents using ‘Export’ in Adobe Acrobat Professional making any PDF file into Microsoft Word then copy/pasting it into Microsoft Excel. There are also several free data sets available to practice with:</p> <p>Open Source R: Data and GeoData Sets</p> <p>Assign 8 In class Intermediate Microsoft Excel Training - download two data sets from the same source that are ideally applicable to your research. Demonstrate your ability to use the Sort, Filter, Sum, Count, Mean, Delimit, and VLOOKUP tools. Then create a custom table using formulas. If you were trying to it in ESRI ArcMap its dynamic properties would probably fail so ‘Paste Special’ to save this data set as its own file. Due 10/13</p>
9	10//20	<p>Even with the useful data set you have created you may still wish to further slice and dice to get specific table outputs that address bivariate or multivariate results.</p> <p>Assign 9 In class Advanced Microsoft Excel Training – use the data set created in Assignment 8 and activate the PowerPivot feature. Drag the dependent and independent variables to the sidebars as you see best fit then adjust the outputs – counts, averages, frequency, etc. Create two custom tables from this practice. Due 10/20</p>

Week	Date	Topics, Readings, Assignments, Deadlines
10	10/27	<p><u>ANALYZE</u> Pivot tables are considered intermediate/advanced beginner analytics. Though most analysts, data scientists, and researchers (particularly those working in Silicon Valley technology fields) take custom created tables further using any number of statistical software packages available. R is a free, trendy open source statistical language that works well with Python and GIS. While it is akin to S of SPSS fame, both R and S require programming language knowledge. If your research project does not dictate heavy quantitative analysis then business intelligence level tools are fast effective ways to analyze data and create production worthy charts and graphs for research paper figures. [buzzword: ‘data science’ is a job analyzing large data sets]</p> <p>Assign 10: Run basic statistical tests on the custom tables created in Assignment 9. Chi-square, T-tests, Z-Scores, or Linear Regression are all useful operations for better understand data significance. You have the option of using SPSS in the new Social Sciences Applied Research Center (CCB 100). I prefer Tableau for my own work for relative ease and beautiful graphics. It is available free for download for educational purposes, and is considered to be the industry leader. No matter your preference, run one test and produce one advance analytics chart ideally useable in your research. Due 11/2</p>
11	11/3	<p><u>RELATE</u> Spatial Analysis [buzzword: aka location analytics, locational insight] So long as your data set includes any location identifier you may choose instead to run statistical testing in GIS. This is ideal for point data because the software can easily recognize clusters (H_1) against an assumed uniform distribution (H_0).</p> <p>Assign 11: Many researchers, particularly in quantitative measurement associated with physical geography, use point data sets. If you would like to try running the ESRI ArcMap geostatistical toolbox on your research data set then you are encouraged to do so. If not, a lab exercise will be provided to you to practice these operations. ArcMap results are comprehensive, for example regression analysis tests all possible relationships among all layers in the Table of Contents so interpreting the results display is a skill all its own. Due 11/16</p>
12	11/10	This will be an open lab day to continue working with GIS techniques.
13	11/17	<p><u>RESULTS</u> Data visualization, formerly know by the less glamorous name ‘descriptive statistics’ is simply visual communication. Cartographers extend this to include map making. ArcGIS maps are rarely “pretty” and may actually mislead a viewer just by sake of the bold default color palette. Most geography researchers having been trained in cartography know to bring a standard GIS map into to Adobe Illustrator and finish it through extensive manual redesign. Cynthia Brewer has made quicker work out the once time sucking color selection exercise. Today, several other data visualization programs exist.</p> <p>David McCandless TED “The Beauty of Data Visualization”</p>

Week	Date	Topics, Readings, Assignments, Deadlines
13 Cont.	11/17	<p>ColorBrewer2.0 Color Advice for Cartography</p> <p>Check out 37 of the Best Tools for Data Visualization</p> <p>Assign 12 Produce an eye-catching chart, graphic, or map to clearly communicate any aspect of your research. Due 11/23</p>
14	11/24	<p><u>MODEL</u></p> <p>Scientific experimentation should be replicable - especially by researchers outside your lab, department, or university. Verification of one's work by other scholars is a considered academic flattering. Using illusive or vague analyses narratives in a graduate project or thesis make adoption by others impossible. So a simple model, flow chart, or even step-by-step explanation as to how results were derived is critical.</p> <p>Melissa Marshall TED "Talk Nerdy to Me"</p> <p>Assign 13 Synthesize your analysis steps using any effective format so that they makes sense to the rest of us. Due 11/30</p>
15	12/1	<p><u>COMMUNICATE</u></p> <p>Education and research are endurance efforts. What's the point if only a few people on Earth can understand your interests, goals and results? Research findings need to be interpretable and communicated quickly and clearly to any intended audience. Edward Tufte has revolutionized graphics and particularly slide presentations, and Dennis Wood is a cartography genius. Both have published books that serve as an inspiration, and all students are encouraged to take advantage of Tufte's reduced one-day workshop fees.</p> <p>Talking Numbers with: Edward R. Tufte in <i>The New York Times</i> "Campaigning for the Charts that Teach"</p> <p>Dennis Wood on This American Life Act 1 "Mapping [Sight 4:00-13:00]" The significance of this is that this sight lecture is being communicated on the radio.</p> <p>Assign 14 [In Class] Give a 15-minute inspirational TED style formal talk (meaning slides are required) that guides us through your GEOG 282 portfolio evolution from Week 1 to Week 15. If you are an out of state student then you will be required to present using a video enabled VOIP system such as Skype or Google Hangout. Due 12/1</p> <p>Assign 15 Submit a hyperlink to any TED online that you find to be most inspiring; this selection can cover on any topic - not necessarily geography, or even in the sciences. Due 12/7</p>
16	12/8	<p><u>REVISE</u></p> <p>Read each word aloud, go back and rewrite, ask your significant other whether it "sounds ok," call your mom for help, then hire an editor. Now, it's ready for your graduate advisory review.</p>

Week	Date	Topics, Readings, Assignments, Deadlines
16 Cont.	12/8	<p>Assign 16 In class we will be peer reviewing the writing you set out to accomplish this term (as stated in Assignment 1B). Feedback from three reviewers required: one reviewer is a classmate further along on their research, one reviewer is just starting out, and one reviewer should be close to your own progress path. Vague or glossed-over commentary on any reviewer's part will result in him/her receiving a lower grade on this assignment since this is a disservice to the editorial process and the author. Due 12/8</p>
Finals Week		<p><u>PUBLISH</u></p> <p>Final: Thoroughly address feedback from each reviewer. Submit your marked-up draft along with your final version by 12/15 @ 5:15 pm (On Canvas).</p>