

SAN JOSÉ STATE UNIVERSITY
URBAN AND REGIONAL PLANNING DEPARTMENT
URBP-279: ADVANCED GIS FOR URBAN PLANNING
SPRING 2012

Instructor:	Rick Kos, AICP
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Office hours:	Mondays 2:00 – 4:00 pm Tuesdays 3:00 – 4:00 pm Wednesdays 12:00 pm – 2:00 pm
Class days/time:	Mondays 7:15 – 10:00 pm
Classroom:	WSQ-208
Class website:	http://urbp279.pbworks.com
Prerequisites:	URBP-278, or instructor consent. Students are expected to have prior experience with ArcGIS 9.3 or 10, including the ability to perform basic attribute and spatial queries and the ability to produce a cartographically correct map using multiple geospatial data layers. Self-study using the "Mastering ArcGIS" textbook is strongly recommended for students wishing to brush up on the fundamental GIS skills expected for participation in this course. Additional skills expected: geocoding, georeferencing, basic geoprocessing, metadata documentation.
Units	3 units

Official Course Catalog Description

Further examination of advanced geographic information systems applications to urban planning.

Course Description and Course Learning Objectives

The class is taught mainly as a combined lecture and computer laboratory course using Esri's ArcGIS 10 software in a variety of hands-on exercises. The course will consist of three primary components:

1. ArcGIS Extensions: an examination of the three most commonly used ArcGIS extensions used by urban planners: Spatial Analyst, Network Analyst and 3-D Analyst. You will have an opportunity to craft a mini-project using each of the three extensions that helps to analyze an urban planning scenario. Additionally, we will explore temporal data representation using ArcGIS 10 time-enabled capabilities to spatially analyze change through time.

2. Client Consultation Project: students will provide technical expertise to the non-profit organization Sustainable San Mateo. The class will have a chance to meet representatives of the organization, learn about their mission, and get up to speed on the preliminary GIS work completed by last semester's URBP-279 students.

Sustainable San Mateo has a strong need for geospatial analysis and detailed maps to supplement their annual "Indicators for a Sustainable San Mateo County" publication that has a wide readership amongst a variety of public and private organizations in the county. A particularly important part of the report is the "report card" for each incorporated San Mateo community that evaluates progress towards achieving key sustainability indicators.

This project will give you a real-world opportunity to apply your advanced ArcGIS skills and to provide a valuable service to a client. Additionally, this work will yield detailed maps that will be a highly useful component of your portfolio of work at San Jose State University.

3. Individual or Small Team Project: students will conceptualize, design, execute, and present an intermediate to advanced-level GIS-based project that incorporates a significant amount of material covered in the course that furthers each student's career interests and, if applicable, each student's Masters Project (URBP-298) work.

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

1. Define and study an urban planning problem using GIS. In consultation with the instructor, the student will select a topic that is current and relevant to the student's career interests and aspirations
2. Implement effective, efficient and responsive GIS project management skills. The student will determine an approach to a GIS project from the outset; establish priorities, milestones, goals and subtasks, anticipate and resolve setbacks; the student will also adopt techniques to get it "right" as early in the project as possible
3. Utilize advanced geospatial analysis skills by completing exercises using the Spatial Analyst, Network Analyst and 3D Analyst extensions to ArcGIS
4. Create a complete geodatabase for course projects by incorporating vector, tabular and raster data into a complete project geodatabase and also importing geospatial data from multiple, remote sources into the geodatabase
5. Utilize advanced cartographic techniques for the effective display of geospatial data by selecting appropriate visual displays of quantitative information
6. Prepare a "portfolio piece" that can demonstrate the student's GIS capabilities to current and future employers. Students will accomplish this by preparing a professional-quality report documenting an urban planning topic, relevant data sources, methodological approach, verified results and substantive conclusions

GIS in the Urban & Regional Planning Department

Geographic Information Systems, GIS, is a rapidly evolving technology involving the study of spatial (geographic) location of features on the Earth's surface and the relationships between them. Because the work of urban planners fundamentally involves the study of location and spatial

relationships, today's employers increasingly expect graduates of urban planning programs to possess a working knowledge of GIS. Environmental Systems Research Institute's (Esri) suite of GIS software - ArcGIS in particular - has become the industry standard and is used by a majority of government agencies and private firms engaged in GIS analyses. Specifically, employers are seeking professionals armed with a grasp of geospatial data types (vector, aerial imagery, satellite imagery, geodatabases, etc.), spatial analysis techniques and GIS project management skills in order to effectively study a host of multi-faceted urban planning issues.

San José State University's Urban and Regional Planning Department offers two courses specifically devoted to GIS: the course you are taking now, and an introductory course: *Introduction to GIS for Urban Planners*. Both courses aim to build sought-after GIS skills through a comprehensive, real world-focused course of study in GIS. The classes are taught mainly as a combined lecture and computer laboratory course using Esri's ArcGIS 10 software and a variety of hands-on exercises.

My primary goal is to ensure that by completing the course you will possess the intermediate- to advanced-level GIS skills valued by today's employers. A number of "alumni" from this course have secured internships and full-time jobs at agencies like the San Francisco Municipal Transportation Agency, the Valley Transportation Authority and numerous municipal planning departments specifically because they demonstrated GIS expertise in their portfolios and at job interviews.

The majority of students interested in taking either elective course typically do not intend to pursue careers dedicated exclusively to the use of GIS; rather, they wish to learn just enough about the technology so it can be one of many tools available to them during their urban planning careers. As such, the GIS courses offered by the Urban and Regional Planning Department are as practical in nature as possible, favoring case studies and the hands-on use of ArcGIS 10 software over theory, and with a particular focus on the acquisition and analysis of real-world geospatial data typically used by urban planners.

The course strives to provide a balance between the "how-to" of using ArcGIS 10 and the "why" of GIS by explaining the roles GIS technology plays in analyzing local and regional (even global) problems. One-half of the course will be devoted to helping you learn the specific steps necessary to utilize three powerful ArcGIS extensions: Spatial Analyst, Network Analyst, and 3D Analyst. For some exercises, you will use real GIS data from Bay Area cities, "warts and all", in order to learn how to overcome typical problems encountered by GIS practitioners.

The other half of the course will focus on GIS project design, management and execution. First, we will engage with the non-profit organization Sustainable San Mateo, as described above. Then, to wrap up the semester, you will focus on an individual (or small team-based) final GIS project on a topic that interests you. This final project must demonstrate significant competence with the tools covered in the course.

Since the visual communication of quantitative data is a vital skill for urban planners, these two projects will help you further develop your GIS skills by framing an urban planning issue that excites you, developing a set of high-quality GIS maps to illustrate the issue, and presenting a focused, seven-minute summary of your methodology and findings to your colleagues. A key goal of the final project is to provide you with a portfolio piece to present to current and future employers as evidence of your GIS abilities. I am continually impressed by the work that SJSU's GIS students

produce for their final projects! I recommend that you begin thinking about final project ideas from the first day of the course.

I am looking forward to helping you learn ArcGIS the intermediate to advanced capabilities of 10 this semester! As we work together over the next few months, you will be encouraged to think about integrating GIS into your other San José State coursework and Master's project. There are many avenues for assistance and to accelerate your understanding of GIS: in-class exercises and personal guidance from me, at least five office hours per week, and the ability to reach me via e-mail (I typically reply to clearly-worded messages very quickly).

Again, my primary goal is to ensure that by completing the course you will possess the fundamental GIS skills valued by today's employers. There is a lot of work to complete in this course and I am here to help you succeed - and we'll have some fun, too. Let's get started!

Planning Accreditation Board (PAB) Knowledge Components

This course partially covers the following PAB Knowledge Components:

4.2.3. Possess the skills needed to practice planning in a variety of venues in ways consistent with the ethical norms for planning, including:

4.2.3. (a) use problem solving skills to select, diagnose and solve relevant aspects of a complex planning problem including attention to the needs and interests of diverse stakeholders and the guidance provided by conceptual and empirical expertise.

4.2.3. (c) use written, oral and graphic skills to compose clear, accurate and compelling text, images and maps in documents and oral presentations.

4.2.3. (d) use numerical reasoning and computation skills to conduct quantitative analysis of social and geographic information for basic professional planning purposes, problems and projects.

4.2.3. (f) use ideas about the creation of plans, programs or projects to prepare an individually crafted product for a specific planning purpose and audience; demonstrating skill and judgment preparing a planning project that meets minimum professional standards.

A complete list of the PAB Knowledge Components can be found at <http://www.sjsu.edu/urbanplanning/courses/pabknowledge.htm>.

Required Course Readings:

In keeping with the joint focus of this course on (1) developing ArcGIS 10 skills and (2) the development of effective cartographic techniques, two textbooks are used in this course, listed below. The first, *Mastering ArcGIS, Fifth Edition* is required and will serve as a reference throughout the course; it provides detailed, step-by-step instructions in the use of ArcGIS 10. The second book, *Designing Better Maps: A Guide for GIS Users*, is optional but strongly recommended since it provides a great number of useful and effective design techniques and considerations which you will incorporate into your final course project in order to produce professional-quality maps.

The required textbook may be purchased at the Spartan Bookstore, online (at sites such as Amazon.com) or directly from the publisher. Note that if you purchase a used textbook online, you are responsible for obtaining the book from the seller in a timely manner.

Required Textbook: *Mastering ArcGIS, Fifth Edition* by Maribeth Price.

Spiral-bound: 610 pages

McGraw-Hill Science/Engineering/Math; 5th edition (January 21, 2011)

ISBN-10: 0077462955

ISBN-13: 978-0077462956

Optional (but highly recommended) Textbook: *Designing Better Maps: A Guide for GIS Users* by Cynthia A. Brewer

Paperback: 220 pages

Publisher: Esri Press (July 1, 2005)

ISBN-10: 1589480899

ISBN-13: 978-1589480896

Required Software, Recommended Materials:

ArcGIS 10 and Extensions is required of all students. This software is installed on each WSQ208 lab and department lounge computer. Also, each student will receive a free copy of Esri's ArcGIS 10 software for use on a personal computer; it is a fully-functioning version and will expire one year after installation. Please note that ArcGIS software only runs on Windows 2000, XP, Vista, or Windows 7. In order to run ArcGIS in Windows on an Intel-based Mac, virtualization software is needed such as Apple's BootCamp, SWSOft's Parallels, or VMware Fusion. You are responsible for installing and maintaining your software on a personal computer and for properly following Esri's installation instructions.

The computer laboratory in WSQ208 and "mini-lab" (in the Planning Department lounge area) are available to you to complete class assignments and homework. If you plan to use your personal computer to complete assignments started in class, a USB flash drive with at least 2 GB of capacity and/or a rewriteable CD-ROM or DVD is strongly recommended for saving your in-class work and transferring it to your personal computer. It is HIGHLY recommended that your personal computer have at least 2 GB of RAM installed, since ArcGIS is a very memory-intensive application. Ideally, more than 2 GB of RAM (if your computer supports it) is recommended.

To take full advantage of the course resources, each student should have access to a computer with an Internet connection and have access to the following software: Microsoft Internet Explorer (or Firefox), Adobe Acrobat Reader (available for free at www.adobe.com), Microsoft Word, Microsoft Excel, and Microsoft Powerpoint.

Fundamentals for Success in this Course

I will make every effort to help you succeed in this course so that you can use GIS confidently and successfully in your future career endeavors. Naturally, it is your responsibility to complete all assignments and to take advantage of the many learning opportunities this semester. Your final grade will reflect your overall commitment to learning; higher grades correlate with student efforts that exceed expectations. Here are some tips to help you succeed this semester:

Prior GIS experience: Students are expected to have prior experience with ArcGIS 9.3 or 10, including the ability to perform basic attribute and spatial queries and the ability to produce a cartographically-correct map using multiple geospatial data layers. Self-study using the "Getting to Know ArcGIS" textbook (not required for this course) or "Mastering ArcGIS" (4th or 5th edition) is strongly recommended for students wishing to brush up on the fundamental GIS skills expected for participation in this course. Additional skills expected: geocoding, georeferencing, basic geoprocessing, metadata documentation.

Maintain a fast pace: This will be a fast-moving and technologically advanced course, but concepts and instructions will be explained as clearly as possible. If you wish to evaluate your readiness for this course at the outset, please see me as soon as possible. There will be numerous, detailed and sometimes overlapping assignments – please prepare for this from the outset.

Computer competencies: Competence with the Windows XP, 7, or Vista operating system is expected, including the storing, copying and management of multiple data types; managing multiple windows and applications; and techniques for saving work frequently. Familiarity with data entry, sorting, editing and report generation using Microsoft Excel is also expected.

Enjoyment of Learning: A strong motivation to learn, explore and have fun with computer applications is essential. This course will require a significant amount of independent work and relies heavily on student initiative.

Seek Help Effectively: Since GIS practitioners and urban planners are problem-solvers at their core, it is important that you adopt a problem-solving mindset in this course. Asking for assistance this semester is encouraged and signals to me that you are engaged in your work, motivated by excellence and effectively challenged by the assignments. Asking for help will never be perceived as a liability in my class. However, when seeking assistance, it is important for you to (1) clearly communicate the problem and (2) demonstrate that you have attempted to solve the problem on your own and are ready to clearly articulate your attempts. Also, I am very happy to help you with your work outside of the classroom during office hours or via email. If we work together via email, it is vital that you send me as much information as possible to help diagnose the problem. It is not sufficient to write to me and vaguely state, "I can't get this to work" and expect useful assistance without also including relevant screen captures and a description of the solution steps you've tried. In general, I will be very responsive to queries that meet these criteria and much less so for "lazy queries", which I probably will not have time to address. This approach mirrors professional practice since supervisors expect valued employees to be proactive in solving problems.

Focus and Respect: I fully understand the temptations and distractions we all face today with email, web sites, Twitter, Facebook and IMs vying for our attention, but lab computers may not be used for getting other work or e-mail done. Out of respect for everyone in a focused learning environment, I will be ruthless in getting everyone to turn computer monitors off when not being used for course exercises. If you have to "get something else done" during the class period, please do it elsewhere. Cell phones need to be in silent mode, or turned off.

Professional Conduct: I conduct this course in a manner that mirrors professional practice in order to help you develop valuable workplace skills. We all need to be in agreement that the following standards will apply, as listed in the two sections below.

Instructor Responsibilities

- To create a physically and intellectually safe and stimulating environment for learning
- To assist students as much as possible with their individual and collective learning goals
- To help resolve conflicts that hinder learning by answering student questions clearly and promptly, or to research answers and reply to the student as soon as possible
- To treat students with respect and kindness, using encouragement and humor to foster learning
- To arrive prepared and organized, with clear learning objectives and a schedule for each class period
- To evaluate and grade student work fairly and accurately while providing constructive feedback

Student Responsibilities

- To attend each class session and to arrive punctually, bringing all needed materials
- To treat other students and the instructor with absolute respect, supporting fellow students whenever possible with their learning objectives, and minimizing distractions in class
- To complete all assignments on time and professionally according to requirements listed in this syllabus
- To fully read and understand all aspects of this syllabus and to carry out the requirements herein
- To actively and consistently participate in class discussions and question-and-answer sessions
- To demonstrate self-reliance and self-direction in setting and completing learning objectives
- To accept responsibility for working collaboratively in the learning process

Course Assignments and Grading Policy:

Your grade for the course will be based on the following assignments:

Assignment Title	Percent of Total Grade
A – Stanislaus County Mapping	10%
Textbook Chapter 6 – Spatial Joins	5%
Textbook Chapter 9 – Network Analysis	5%
B – ArcGIS Network Analyst	10%
Textbook Chapter 8 – Raster Analysis	10%
C – ArcGIS Spatial Analyst	10%
D – ArcGIS 3D Analyst	10%
E – Working with Time-Enabled Data	5%

Consulting Project – Sustainable San Mateo	15%
Peer Reviews Upon Completion of Consulting Project	5%
Final Independent or Small Team Course Project	15%

Other grading/assignment issues

I understand that grades are important to students on both a personal and professional level. They are a measure of your achievements in class and your progress towards meeting the course learning objectives. I also understand that there tends to be a great deal of “grade anxiety” in a university setting. The best way that I can help students with these matters is to be as clear as possible about grading criteria and weightings in this syllabus, so that you can plan accordingly. Please understand that I am a very thoughtful, careful, thorough and fair grader of student assignments and it is a responsibility that I do not take lightly. You are encouraged to review your graded assignments with me at any time to discuss my comments and suggestions for improvement.

I’ve been called a “tough grader”, and it’s true! High grades must be earned and all grades reflect my comprehensive estimation of a student’s effort - just as our efforts in a professional work environment are judged accordingly and considered by supervisors for promotions and pay raises. For example, I reserve a grade of “A” only for **exceptional** work, as a way of honoring students who go “above and beyond” when completing course assignments. After all, the strict definition of an “A” grade is “exceptional” - not “average” or even “above average”.

The guidelines in this section should help explain general grading criteria but, as your instructor, I reserve the right to use my professional discretion at all times, taking into account a student’s entire approach to the course: participation and alertness in class, consistent timely submissions of assignments, demonstrated and repeated willingness to assist other students with in-class assignments, and other factors. If you have any questions about this approach, you are more than welcome to talk with me privately. Below are the grading criteria for this course.

Grades	Criteria and Interpretation
A-, A and A+	For assignments that clearly demonstrate excellence , workplace-quality professional presentation and obvious dedication to meeting course learning objectives, I reserve grades of A- and A. I very rarely issue an A+ grade unless student work exceeds my expectations on any and all levels. Put another way, you should not expect to receive an “automatic A” simply by completing assignments; these grades are set aside for students who go the extra mile. If you receive a grade in the A’s, it is my way of indicating that I am aware and proud of your extra effort. In instances where the work product is not of exceptional quality but the student has clearly demonstrated commitment in terms of extra time spent and/or seeking help with the assignment, earning a grade of A- is a strong possibility.
B-, B and B+	If work is above average in quality, thoroughness and presentation, I tend to issue a grade of B-, B or B+. I interpret these grades to mean “much better than ‘just good’”; in such instances the student has demonstrated more of a commitment to quality work than an assignment graded with a C. If you receive a grade in the B’s, you can be assured that your work was of very good quality and that I am pleased with your progress.
C-, C and C+	If student work is sufficient and acceptable , I issue a grade of C or C+ because these grades are reserved for work of average quality. I do not view a

	C or C+ as a terrible grade; it is an acknowledgment of average and acceptable effort, but that you could have done better.
D and F	I certainly hope not to issue any such grades this semester, but will do so for student work that is sub-par on all levels (D's) or demonstrates the barest of minimal effort (F).
Zero	For assignments that are not submitted on the due dates listed in this syllabus and/or assignments which do not adhere to the late-submission policy described herein.

Grades on student work will be assigned as follows:

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
98-100	94-97	90-93	88-89	84-87	80-83	78-79	74-77	70-73	68-69	64-67	60-63	below 60

Grading Criteria - Individual Written Reports and Assignments¹

The narrative below describes the main attributes of A, B, C, D and F work. These are general criteria for written student work and I will make necessary adjustments considering that GIS work typically takes the form of maps and other graphics. Still, the general sentiment of these criteria will be applied to all student work this semester, especially to your final project report.

"A" Report: The principal characteristic of the "A" report is its rich content and the seamless integration of high quality supporting illustrations – maps, drawings, photographs, sketches – with the text. The information delivered is such that the reader feels significantly taught by the author, sentence after sentence, paragraph after paragraph. The "A" report is also marked by stylistic finesse: the opening paragraph is engaging; the transitions are artful; the phrasing is light, fresh, and highly specific; the sentence structure is varied; the tone enhances the purposes of the essay. Finally, the "A" report is carefully organized and developed. The author organizes the report so that it addresses the topic thoroughly. The report imparts a feeling of wholeness and clarity – it integrates the course readings, the lectures, the thoughts of the writer, as well as findings and interpretations derived from the systematic observation of the study area. This report leaves the reader feeling bright, thoroughly satisfied, and eager to reread the piece.

"B" Report: This report is significantly more than competent. Besides being almost free of mechanical errors, the "B" report delivers information that is substantial in both quantity and interest-value. Its specific points address the topic in question and are logically organized. It is well developed, and unified around a clear principle that is stated early in the essay. The opening paragraph draws the reader in; the closing paragraph is both conclusive and thematically related to the opening. The transitions between sections/paragraphs are for the most part smooth; the sentence structures are varied and pleasing. Illustrations – maps, drawings, photographs, sketches – are abundant, carefully prepared, and clearly expand on the concepts presented in the text. This report also integrates the citations, course readings, the lectures, as well as the thoughts of the writer and conclusions derived from field observations, although perhaps not as thoroughly as the A

¹ Adapted in part from Dr. Julia Rodriguez-Curry's handout on "Grading Criteria," San José State University, Mexican-American Studies Department, 2003

report. The distinction of the "B" report is typically much more than concise and precise than that found in the "C" report. Occasionally, it even shows distinctiveness –i.e., finesse and memorability. On the whole, the "B" report makes the reading experience a pleasurable one, for it offers substantial information with few distractions.

"C" Report: This report is generally competent. It meets the assignment, has few mechanical errors, and is reasonably well organized and developed. The actual information it delivers, however, seems thin and unsubstantiated by the literature. One reason for that impression is that the ideas are typically cast in the form of vague generalities. These generalities prompt the confused reader to ask marginally: "in every case?," "exactly how?," "why?," "according to whom?." Stylistically, the "C" report has other shortcomings as well: the opening paragraph does little to draw the reader in; the final paragraph offers only a perfunctory wrap-up; the transitions between paragraphs are often bumpy; the sentences besides being a bit choppy, tend to follow unclear logic; and the diction is occasionally marred by unconscious repetition, redundancy, and imprecision. The "C" report gets the job done, but it lacks intellectual rigor and hence does not address the topic in an in-depth format. It lacks care in the presentation and integration of graphic material.

"D" Report: Its treatment and development of the subject are rudimentary. While organization is present, it is neither clear nor effective. Sentences are frequently awkward, ambiguous, and marred by serious mechanical errors. Evidence is either misrepresented or not used at all, or it is scanty (showing little study of the readings, course readings, lectures or field observation). The whole report gives the impression of having been produced carelessly. Illustrations lack care and precision, and detract from the overall integrity of the report.

"F" Report: Its treatment of the subject is superficial; its theme lacks discernible organization. Stylistically, it is wanting. There is no evidence of reading, reflection, or of integration of the materials of the class and the field observations. The ideas, the organization, and style fall far below what is acceptable graduate level writing. It is often seriously incomplete and shows no evidence of familiarity with either the course material, the assignment instructions, or the study area.

Grading Criteria - Oral Presentations²

The criteria below describe the main attributes of A, B and C presentations and will be applied to your individual presentation for your final project (in May). It is not anticipated that grades of D or F will be given.

A: Cohesive, avoids jargon, accurate, professionally presented, entertaining, demonstrates exceptional organization

B: Cohesive, some jargon, accurate, reasonably professional presentation, demonstrates reasonable organization

C: Not cohesive, jargon in speech, accuracy questionable, boring, disorganized

Participation in Class and Attendance

Student participation in class discussions is a vital component of this course and students should make every attempt to attend all classes and actively participate in discussions. In cases where a

² Adapted in part from Dr. Julia Rodriguez-Curry's handout on "Grading Criteria," San José State University, Mexican-American Studies Department, 2003

student misses a significant number of lectures or does not actively participate in discussions, this will impact the final course grade. According to University policy F69-24, “Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to ensure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading.”

Completing Assignments on Time and Professionally

Assignments are due at the date and time specified in the course syllabus. In only rare instances will late assignments be accepted, as described below. Late assignments will receive a one-letter grade deduction for each day an assignment is late. For example, if the assignment would normally receive a grade of “B” but is submitted one day late, it will receive a final grade of “C”.

I realize that life happens. If a student expects not to be able to complete an assignment on time, it is important for the student to contact me **at least 24 hours prior to the due date** and, if appropriate, the other students in a group (for group project work). The student must also provide a date and time by which the late assignment will be submitted. If a student does not communicate an anticipated late assignment within this time frame or if the late assignment is not received on the date promised, the assignment will receive a grade of zero. The grading policies described earlier in the syllabus will still apply. **A maximum of two late assignments that adhere to this policy will be accepted;** all subsequent late assignments will receive an automatic grade of zero. Sorry, no exceptions to these policies will be granted, in fairness to the majority of students who submit their assignments on time.

Since this course focuses on the development of professional skills used by urban planners, the presentation of submitted materials will be considered as part of the assignment’s grade. All assignments must include the student’s name, date, course number, assignment number and other items as directed by the instructor. Neatness, clarity and organization do count. As in a professional setting, typed submissions are expected; handwritten assignments are not acceptable. Printing assignments on the clean sides of already-printed paper is neither professional nor acceptable (though the thought is appreciated, of course). Assignments not meeting these fundamental practices of professional presentation will generally receive a one-half to one-point deduction in the grade.

Academic integrity statement, plagiarism, and citing sources properly

SJSU’s Policy on Academic Integrity states: “Your own commitment to learning, as evidenced by your enrollment at San Jose State University, and the University’s Academic Integrity Policy 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” (Academic Senate Policy S07-2). The policy on academic integrity can be found at <http://www.sjsu.edu/senate/S07-2.htm>.

Plagiarism is the use of someone else’s language, images, data, or ideas without proper attribution. It is a very serious offense both in the university and in your professional work. In essence, plagiarism is both theft and lying: you have stolen someone else’s ideas, and then lied by implying that they are your own.

Plagiarism will lead to grade penalties and a record filed with the Office of Student Conduct and Ethical Development. In severe cases, students may also fail the course or even be expelled from the university.

If you are unsure what constitutes plagiarism, it is your responsibility to make sure you clarify the issues before you hand in draft or final work.

Learning when to cite a source and when not to is an art, not a science. However, here are some examples of plagiarism that you should be careful to avoid:

- If you use a sentence (or even a part of a sentence) that someone else wrote and don't identify the language as a quote by putting the text in quote marks and referencing the source, you have plagiarized.
- If you paraphrase somebody else's theory or idea and don't reference the source, you have plagiarized.
- If you use a picture or table from a webpage or book and don't reference the source, you have plagiarized.
- If your work incorporates data someone else has collected and you don't reference the source, you have plagiarized.

The University of Indiana has developed a very helpful website with concrete examples about proper paraphrasing and quotation. See in particular the following pages:

- Overview of plagiarism at www.indiana.edu/~istd/overview.html
- Examples of plagiarism at www.indiana.edu/~istd/examples.html
- Plagiarism quiz at www.indiana.edu/~istd/test.html

If you still have questions, feel free to talk to me personally. There is nothing wrong with asking for help, whereas even unintentional plagiarism is a serious offense.

Citation style

It is important to properly cite any references you use in your assignments. The Department of Urban and Regional Planning uses Kate Turabian's *A Manual for Writers of Research Papers, Theses, and Dissertations*, 7th edition (University of Chicago Press, 2007, ISBN-10: 0-226-82336-9). Copies are available in the SJSU King Library. Additionally, the book is relatively inexpensive, and you may wish to purchase a copy. Please note that Turabian's book describes two systems for referencing materials: (1) "notes" (footnotes or endnotes), plus a corresponding bibliography, and (2) in-text parenthetical references, plus a corresponding reference list. In this class, students should use the "notes" style since I feel that it creates a less distracting experience for your reader than the parenthetical-reference style.

Accommodation for Disabilities

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 requires that students with disabilities requesting accommodations must register with the DRC (Disability Resource Center) to establish a record of their disability.

About the Instructor: Rick Kos, AICP

I am very much looking forward to working with you this semester and expect that you will learn quite a bit in our 3-1/2 months together. We'll have some fun along the way, too. My goal is teach you a number of intermediate- to advanced-level ArcGIS 10 skills clearly, with minimal jargon and maximum time using the software to help you remain competitive in today's labor market.

Throughout my career using GIS, I have never strayed far from my roots in urban and regional planning and this combination of experience is what I am excited to share with you. I take pride in providing personal, one-on-one attention to the needs of my students and strongly encourage you to take advantage of all opportunities to meet with me during class and during office hours.

A little about my background: my formal training is in environmental planning and urban design (B.S., Rutgers University, 1985) as well as regional planning and New Urbanism (Masters, University of North Carolina at Chapel Hill, 1993).

In the late 1980s, I worked as a planner in Middlesex County, New Jersey, reviewing subdivision and site plan proposals for compliance with county regulations. In the 1990s, I served two rapidly growing North Carolina municipalities in a dual role as town planner and GIS coordinator (the latter being a role I created for both towns), so I am equally conversant in the language of both disciplines. From 1996 - 2000, I served as Senior Town Planner for Huntersville, North Carolina - the fastest-growing town of its size in the state at the time. The New Urbanist principles mandated by the Town's development regulations applied to both greenfield and infill sites. Since the regulations were design-based (i.e. non-Euclidean), they required me to make frequent subjective judgments on the visual qualities of streets, the orientation of proposed buildings to public spaces, and the relationship of buildings and land uses to one another. I thoroughly enjoyed defending the principles of traditional town planning, often to developers and citizens that were not particularly receptive, at first, to deviations from the conventional suburban planning model.

After relocating to the Bay Area in 2000, I worked with the Metropolitan Transportation Commission in Oakland as a GIS Analyst. The Bay Area Lifeline Transportation Map that I completed for MTC was chosen from among thousands of entries for inclusion in Esri's *2003 Map Book*. This annual publication showcases innovative uses of Esri's GIS software to solve real-world problems. The Lifeline Map locates disadvantaged neighborhoods and thousands of geocoded essential destinations (e.g. grocery stores, daycare centers, clinics) within the nine county region, along with existing public transit services. The spatial analyses enabled by this mapping work allowed transportation planners to locate gaps in transit service so that decision-makers could direct funding to alter bus schedules, connections and routing for improved neighborhood connectivity.

From 2003 to 2007 I served as GIS Manager for Design, Community & Environment, a 45-person planning and design firm in Berkeley. I managed all aspects of the firm's GIS practice and took great pride in keeping hundreds of data layers organized across multiple projects, ensuring that the firm's metadata was up-to-date, training staff to use ArcGIS and ArcCatalog, and managing the production of hundreds of maps for General Plans and EIRs throughout California.

Currently, I am a digital cartographer with WorldLink, based in the Presidio of San Francisco. I am helping to create an engaging geobrowser application called Interactive Earth that is designed to excite school-age children about geography and in becoming world citizens. I am also a part-time GIS instructor with the GIS Education Center affiliated with City College of San Francisco. Additionally, I am co-authoring a book titled *GIS for Economic Development* with Professor Mike

Pogodzinski of the SJSU Economics Department. The book is expected to be released in late 2012 by Esri Press.

I also engage in occasional freelance GIS projects. For example, I am now assisting the City of Mountain View, CA with GIS work related to the update of the city's 1992 General Plan. I also assist Raimi + Associates of Berkeley, CA with GIS work related to their mission of fostering healthy cities.

This will be my twelfth semester teaching GIS at San José State and, I must admit, it is my favorite job of the many I've listed above. Welcome, and let's have some fun with GIS! I'm here to help.

URBP-279: ADVANCED GIS FOR URBAN PLANNING SPRING 2012 COURSE SCHEDULE

The following course outline describes the general approach we will take this semester, but please bear in mind that specific details are subject to change with reasonable notice. I will communicate changes via email or verbally in class. The course is generally divided into three parts:

PART I: (Jan. 30 – Apr. 9) ArcGIS 10 intermediate- to advanced-level capabilities

PART 2: (Apr. 16 – May 7) Applied GIS I: Consulting for Sustainable San Mateo

PART 3: (May 7 – May 21) Applied GIS II: Final independent GIS project and presentation

PART 1 INTERMEDIATE / ADVANCED ARCGIS 10	
January 30	<ul style="list-style-type: none"> ▪ Student and instructor introductions; course and syllabus overview ▪ Create ESRI Global Account ▪ ArcGIS “Refresher” session ▪ Assignment A Distributed: Stanislaus County GIS data acquisition and General Plan land use mapping
February 6	<ul style="list-style-type: none"> ▪ Assignment A (Stanislaus Mapping) Due ▪ Lecture: Spatial Joins ▪ Lab: Textbook Chapter 6: Spatial Joins ▪ Textbook Chapter 6 Assignment Distributed: Spatial Joins
February 13	<ul style="list-style-type: none"> ▪ Textbook Chapter 6 Assignment (Spatial Joins) Due ▪ Lecture: ArcGIS Network Analyst ▪ Lab: Textbook Chapter 9: Network Analysis ▪ Assignment B Distributed: Practice with ArcGIS Network Analyst ▪ Textbook Chapter 9 Assignment Distributed: Network Analysis
February 20	<ul style="list-style-type: none"> ▪ Discussion and Lab: Further Exploration of ArcGIS Network Analyst
February 27	<ul style="list-style-type: none"> ▪ Textbook Chapter 9 Assignment (Network Analysis) Due ▪ Assignment B (ArcGIS Network Analyst) Due ▪ Lecture: ArcGIS Spatial Analyst ▪ Lab: Textbook Chapter 8: Raster Analysis ▪ Assignment C Distributed: Practice with ArcGIS Spatial Analyst ▪ Textbook Chapter 8 Assignment Distributed: Raster Analysis

March 5 & 12	<ul style="list-style-type: none"> ▪ Discussion and Lab: Further Exploration of ArcGIS Spatial Analyst
March 19	<ul style="list-style-type: none"> ▪ Textbook Chapter 8 Assignment (Raster Analysis) Due ▪ Assignment C (Spatial Analyst) Due ▪ Lecture: ArcGIS 3D Analyst ▪ Lab: Practice with ArcGIS 3D Analyst ▪ Assignment D Distributed: ArcGIS 3D Analyst
March 26	NO CLASS MEETING – SPRING BREAK!
April 2	<ul style="list-style-type: none"> ▪ Discussion and Lab: Further Exploration of ArcGIS 3D Analyst
April 9	<ul style="list-style-type: none"> ▪ Assignment D (3D Analyst) Due ▪ Lecture: Animations in ArcGIS ▪ Lab: Practice with ArcGIS Animations ▪ Assignment E Distributed: Animating GIS Data
PART 2 APPLIED GIS I: CONSULTING SERVICES	
April 16 APA Conference	<ul style="list-style-type: none"> ▪ Assignment E (Animations) Due ▪ Sustainable San Mateo project tasks described/assigned ▪ Consulting project working session #1 ▪ Project Requirements Distributed: Consulting Project
April 23	<ul style="list-style-type: none"> ▪ Draft Course Project Description Due ▪ Consulting project working session #2
April 30	<ul style="list-style-type: none"> ▪ Final Course Project Description and Concept Map Due ▪ Consulting project working session #3
PART 3 APPLIED GIS II: FINAL COURSE PROJECT	
May 7	<ul style="list-style-type: none"> ▪ Consulting Project Deliverables Due: poster/verbal presentations to client ▪ Final Course Project In-Class Work Session #1
May 14	<ul style="list-style-type: none"> ▪ Final Course Project In-Class Work Session #2 ▪ Course Evaluation (SOTES)
May 21 Official Final Exam Day	<ul style="list-style-type: none"> ▪ Final Course Project Presentations; Written Report Due; Poster Map Due ▪ End of Semester Celebration?