

Course Syllabus, Fall Semester 2010



URBP/ENVS-179 and URBP-278: Introduction to GIS Applications for Urban Planning

*A combined undergraduate/graduate-level
Geographic Information Systems-focused course in
the Department of Urban & Regional Planning
at San José State University*

Official Course Catalog Information

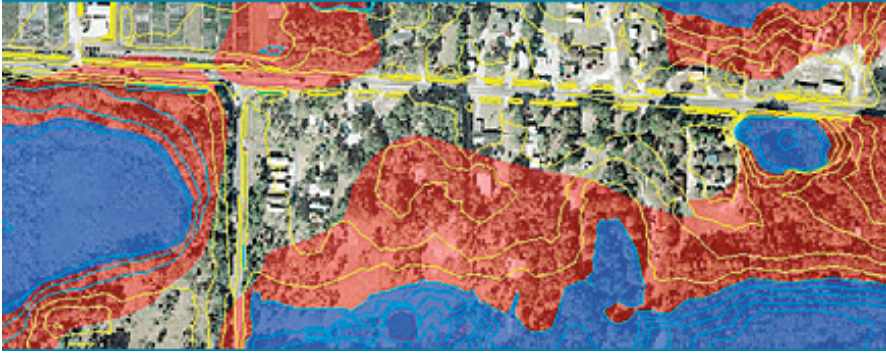
Section 01 - Tuesdays 4:00 p.m. - 6:45 p.m. Washington Square Hall, Room 208 3 Units	
<p>ENVS-179 (Class Number 48563) <i>Urban Geographic Information Systems</i></p> <p>URBP-179 (Class Number 47498) <i>Urban Geographic Information Systems</i></p>	<p><i>Catalog Description:</i> Exploration of Geographic Information Systems (GIS) area analysis techniques for spatial information management in local government: planning support systems, needs analysis, envisioning neighborhoods utilizing multiple maps, charts, photos and the Internet. Course may be repeated for credit when topic changes.</p>
<p>URBP-278 (Class Number 47500) <i>Geographic Information Systems Planning Applications</i></p>	<p><i>Catalog Description:</i> Examination of geographic information systems (GIS) applications to urban and regional planning topics.</p>

Instructor's Office Hours and Contact Information; Course Web Site

- ◆ Instructor: Rick Kos, AICP
- ◆ Office Hours in WSQ 218-C:
 - Mondays 11:00 - 1:00 p.m.
 - Tuesdays 2:00 - 4:00 p.m.
 - Wednesdays 11:00 a.m. - 1:00 p.m.
 - By appointment
- ◆ Email (*preferred method of communication outside of class*): rickkos@mindspring.com or online chat: [rickkos](http://rickkos.com)
- ◆ Department Phone: (408) 924-5875 Fax: (408) 924-5872
- ◆ Course web site: <http://urbp278.pbworks.com>

Overview of the Course

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 activities. 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.

My primary goal is to ensure that by completing the course you will possess

the fundamental 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.

San José State University's Urban and Regional Planning Department offers two courses specifically devoted to GIS: the course you are taking now, and a follow-up course held in the Spring semester: *Advanced 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 9.3.1 software and a variety of hands-on exercises.

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 software over theory and abstraction, 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 9.3.1 and the "why" of GIS by explaining the roles GIS technology plays in analyzing local and regional (even global) problems. During the first two-thirds of the course, you will learn the specific steps necessary to navigate ArcMap and ArcCatalog, acquire and manage geographic data sets, develop effective cartographic techniques, and query the data to answer typical planning-related questions. 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 last part of the course will focus on the development, execution and presentation of a final GIS project on a topic that interests you. Since the visual communication of quantitative data is a vital skill for urban planners, this project 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, 7-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 beginning GIS learners produce for their final projects!

I am looking forward to helping you learn ArcGIS 9.3.1 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). There is a lot of work to complete in this course, but I'm here to help you succeed – and we'll have some fun, too. Again, my primary goal is to ensure that by completing the course you will possess the fundamental GIS skills valued by today's employers.

Course Learning Objectives

Students completing *URBP-278: Introduction to GIS Applications for Urban Planning* will be able to:

- I.** Describe how urban planners typically use GIS as a tool for analysis and the display of quantitative data to solve urban planning problems
- II.** Utilize the core components and functionality of ArcGIS 9.3.1
- III.** Describe a variety of geospatial data types, data sources and metadata management techniques
- IV.** Create, manipulate and query geospatial data
- V.** Symbolize and classify geospatial data, understanding available choices and the implications of each technique
- VI.** Constructively critique cartographic styles and implement effective cartographic and display techniques

The following section lists each objective above, followed by specific topics and skills that will be covered during the semester.

I. Describe how urban planners typically use GIS as a tool for analysis and the display of quantitative data to solve urban planning problems. Examples include:

- Applicability of GIS to the primary areas of urban planning (land use, transportation, housing, conservation, environmental justice, etc.)
- Accessing, analyzing and presenting demographic data from the U.S. Census Bureau
- Creating maps of zoning districts, General Plan land use designations, hazards and other local features
- Calculating areas and lengths (e.g. parcels, streets, jurisdictional boundaries, wetlands, farmland, habitat areas...)
- Community buildout calculations and future land use alternatives analysis
- Proximity analysis (which features are closest, which features intersect, which features are within a distance of, which features share a common location...)
- Selection of features by tabular attribute and/or spatial location
- Creating reports that summarize geographic data using tables, graphs and other display techniques
- Preparation of maps for community meetings, Environmental Impact Reports and General Plans

II. Utilize the core components and functionality of ArcGIS 9.3.1

- Define the primary functions of a GIS (data capture, data storage, tools for querying data, tools for analyzing data, tools for displaying data, export functions)
- Explain the basic functionality of ArcMap, ArcCatalog and ArcToolbox
- Explain how MXD files are structured and how to repair broken links to component map layers
- Describe steps for creating and managing spatial bookmarks
- Measure distances and calculate area of spatial features
- Save MXDs with relative paths or absolute paths, and understand the difference
- Join and relate tabular data
- Design and execute Spatial Joins between multiple data sets
- Execute basic geoprocessing -- buffering, unions, intersections, dissolves, appends, and clipping
- Edit data layers with the Editor toolbar (e.g. changing locations of vertices, using the Sketch tool)
- Customize ArcMap (adding toolbars, creating toolbars, dockable toolbars)
- Understand the difference between, and usage of, ArcMap's Data View and Layout View
- Work with multiple data frames in one Map Document
- Implement map templates to standardize map design
- Create and use Layer Files (.LYR) and Layer Packages (.LPK) to store and share data and symbology

III. Describe a variety of geospatial data types, data sources and metadata management techniques

- Understand the definition and importance of metadata
- Use ArcCatalog as the primary management tool for creating, reading, searching and sharing metadata
- Use United States Census data
- Utilize shapefiles, personal geodatabases, file geodatabases
- Utilize vector data and raster data
- Understand the individual file components of a shapefile (DBF, SHP, SHX and others)
- Locate GIS data sources in Internet data portals (local, state, federal)
- Work with Text (TXT), Excel (XLS), Comma-delimited (CSV) files in the context of ArcGIS
- Create and understand PRJ files for storing coordinate system information
- Create and understand XML files for storing metadata documentation
- Understand the pros and cons of various raster data types (TIF, GeoTIFF, JPG, GIF, PDF, AI, MrSID, etc.)
- Move, copy and share data within ArcCatalog and with other users
- Understand the difference between geographic vs. projected coordinate systems

IV. Create, manipulate and query geospatial data

- Convert Excel (XLS) files to DBF and add them to ArcMap, or work with Excel files natively
- Understand the “anatomy” of data tables (records, attribute fields, cells, formulae)
- Open, sort and add data fields
- Arrange columns
- Summarize data columns
- Edit and add records
- Create definition queries
- View selected records and create a new map layer from selected features
- Create new shapefiles and geodatabases using ArcCatalog

V. Symbolize and classify geospatial data, understanding available choices and the implications of each

- Understand thematic map types (choropleth, isarithmic, flow, multivariate, dot density, graduated symbol, graduated color, cartogram) and when to choose a particular type to convey information
- Understand data measurement scales (nominal, ordinal, ratio, interval)
- Understand data classification methods (natural breaks, quantile, equal interval, standard deviations) and reinforce the ability to read a histogram
- Utilize dynamic labels, interactive labels and annotation (both map-based and geodatabase-based)
- Understand when it is appropriate to normalize quantitative data

VI. Constructively critique cartographic styles and implement effective cartographic and display techniques

- Understand the map needs of various audiences (e.g. public, stakeholders, technical staff, decision-makers)
- Learn techniques to “tell the story” of the map effectively, quickly and responsibly
- Ensure the inclusion of all standard map elements: title, data sources, scale bar, north arrow, legend, etc.
- Ensure that all data sources are properly cited on maps
- Create visual balance in maps; employ techniques of visual hierarchy
- Determine the most effective cartographic choices (color, labels, line weights, etc.)
- Develop awareness that not everyone is comfortable reading or using maps
- Develop awareness that maps are a powerful medium for conveying information and the attendant implications for the map designer; developing awareness that biases can be introduced by the map designer

Prerequisites

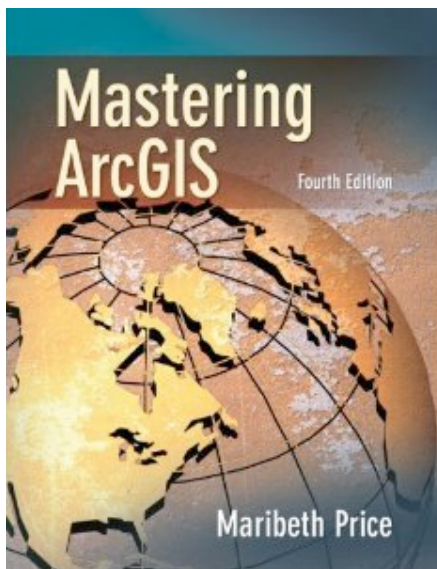
No prior knowledge of GIS is required to take this course; however, there is a lot of material to cover and this will be a fast-moving and fairly technologically advanced course. As such, there are a few basic prerequisites:

- ◆ Competence with the Windows XP, Vista, or 7 operating system, including the storing, copying and management of multiple data types; managing multiple windows and applications; and discipline to save work frequently.
- ◆ Familiarity with data entry, sorting, editing and filtering using Microsoft Excel.
- ◆ 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.
- ◆ An e-mail account that you plan to check frequently. You will be asked to provide your email address on the first day of class in order to facilitate communications with the instructor.

Required Textbooks and Software

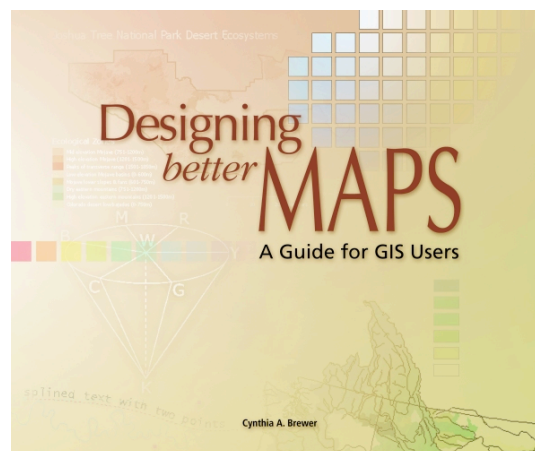
In keeping with the joint focus of this course on (1) developing ArcGIS skills and (2) the development of effective cartographic techniques, two textbooks are used in this course, listed below. The first, *Mastering ArcGIS, Fourth Edition* is **required** and will serve as a reference throughout the course; it provides detailed, step-by-step instructions in the use of ArcGIS. 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 online (at sites such as Amazon.com) or directly from the publisher (ESRI Press) or from the Spartan Bookstore on campus (recommended). 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, Fourth Edition
by Maribeth Price



Optional (but highly recommended)

Textbook:

Designing Better Maps: A Guide for GIS Users
by Cynthia A. Brewer

Required Software: ArcGIS 9.3.1 and Extensions

This software is installed on each WSQ208 lab and department lounge computer. Also, each student will receive a free copy of ESRI's ArcGIS 9.3.1 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.



Map of Contaminated Sites and Land Uses, City of Houston Department of Planning & Development

Recommended Hardware, Portable Media and Supplementary Software

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:

- ★ 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.
- ★ 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:

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 therein, and to sign the document on the last page of this document to confirm understanding of the syllabus.
- ★ 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 Outline

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:** (Aug. 31 – Nov. 2) ArcGIS 9.3.1 in-class tutorials and practice homework assignments
- **PART 2:** (Nov. 9 – Nov. 23) Applied GIS for land use, transportation and environmental analysis
- **PART 3:** (Nov. 30 – Dec. 14) Final independent or small team GIS project and presentation

PART 1 LEARNING ARCGIS 9.3.1	
August 31	<ul style="list-style-type: none"> - Student and instructor introductions; course and syllabus overview - “Geospatial Revolution” video - Create ESRI Global Account; hands-on with ArcGIS 9.3.1 - <i>Assignment A Distributed: Site Suitability Analysis using Manual Means; Evaluation of a GIS Project</i> - <i>Assignment B Distributed: Thematic Maps Reading; Finding Examples of Thematic Map Types</i>
September 7	<p>Assignment A Due</p> <ul style="list-style-type: none"> - Lecture: Working with GIS Data; Thematic Mapping - Lab: Textbook Chapter 1: GIS Data - <i>Lab Assignment 1 Distributed: Working with GIS Data</i>
September 14	<p>Assignment B Due</p> <ul style="list-style-type: none"> - Lecture: Map Design Considerations; Mapping Quantitative Data - Lab: Textbook Chapter 2: Mapping GIS Data - <i>Assignment C Distributed: Map Design Critiques: Preliminary Final Project Ideas</i> - <i>Lab Assignment 2 Distributed: Mapping GIS Data</i>
September 21	<p>Assignment C Due Lab Assignment 1 Due</p> <ul style="list-style-type: none"> - Lecture: Presenting GIS Data - Lab: Textbook Chapter 3: Presenting GIS Data - <i>Assignment D Distributed: California Choropleth Mapping</i> - <i>Lab Assignment 3 Distributed: Presenting GIS Data</i>
September 28	<p>Assignment D Due Lab Assignment 2 Due</p> <ul style="list-style-type: none"> - Lecture: Working with Attribute Tables in ArcGIS - Lab: Textbook Chapter 4: Attribute Data - <i>Lab Assignment 4 Distributed: Attribute Data</i>
October 5	<p>Lab Assignment 3 Due</p> <ul style="list-style-type: none"> - Lecture: Attribute and Spatial Queries - Lab: Textbook Chapter 5: Queries - <i>Lab Assignment 5 Distributed: Queries</i> - <i>Assignment E Distributed: Evaluating Two GIS Data Sources</i>

October 12	Lab Assignment 4 Due Assignment E Due <ul style="list-style-type: none"> - Lecture: Creating and Editing GIS Data; Georeferencing - Lab: Textbook Chapter 12: Basic Editing; Georeferencing Practice - <i>Lab Assignment 6 Distributed: Basic Editing</i> - <i>Assignment F Distributed: Georeferencing</i> - <i>Assignment G Distributed: San Francisco Base Map Design; Joining Tables</i>
October 19	Lab Assignment 5 Due Assignment F Due <ul style="list-style-type: none"> - Lecture: Geocoding - Lab: Textbook Chapter 10: Geocoding Practice - <i>Assignment H Distributed: Geocoding</i>
October 26	Draft Course Project Description Due <ul style="list-style-type: none"> - Lecture: Geoprocessing - Lab: Textbook Chapter 7: Geoprocessing Practice - <i>Assignment I Distributed: Geoprocessing</i>
November 2	- Open Work Session
PART 2 APPLIED GIS: MOUNTAIN VIEW MAPPING	
November 9	Assignment G Due Assignment H Due Assignment I Due <ul style="list-style-type: none"> - Introduction to Mountain View Mapping Project - Lab: Working on Mountain View Mapping Project
November 16	Final Course Project Description Due <ul style="list-style-type: none"> - Lab: Working on Mountain View Mapping Project
November 23	Final Project Concept Map Due <ul style="list-style-type: none"> - Lab: Finishing Mountain View Mapping Project
PART 3 FINAL COURSE PROJECT	
November 30	- Final Project In-Class Work Session
December 7	- Final Project In-Class Work Session
December 14	Final Course Project Presentations Final Project Written Report Due Final Poster-Sized Map Due <ul style="list-style-type: none"> - Course Evaluation; End of Semester Celebration?

Approach to Grading for Assignments and Final Course Grade

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 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. On the following five pages 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 <u>not expect</u> 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.

Final Course Grade Weighting

Your final grade for this course will be determined by your performance in the following weighted areas:

Component	Percentage of Final Course Grade	Notes
ArcGIS homework and tutorial assignments	55%	Six tutorial assignments (from the Price textbook) and nine homework assignments (created by Rick) will be issued during the semester and will comprise 55% of your final grade for the course. Each tutorial or homework assignment will generally be due 1-2 weeks after it is issued, depending on the anticipated complexity of the assignment.
Applied GIS: Mountain View Mapping Project	15%	Your grade for this component of the course will take into account your individual efforts as well as the contributions you made to your team. Grading details will be described in the project description (a separate handout).
Final project map, report and presentation	20%	The final course project is the culminating experience for this course and is a very important component of your final grade. Your project report and map will be an important addition to your portfolio of work at SJSU. Your grade will be determined by your efforts on the map, written report and presentation to the class in December. Grading criteria are described in this syllabus, and final project details will be provided in a separate handout.
Engagement in class	10%	Your participation will most definitely be noticed and evaluated - please speak up, get involved in discussions, ask questions, help your fellow students whenever possible, pay attention during class, be punctual to class, minimize absences and late assignment submissions, minimize technological distractions in class.....you know what to do!

Numeric Grading System

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

This scheme will not be followed strictly since upward adjustment of the final grade will be made if performance on one activity is an outlier (e.g. exceptionally low) or if the pattern of scores shows a significant improvement. If such adjustments are made, they usually result in about a half-letter grade improvement. Students are encouraged to meet privately with the instructor early in the semester to discuss expectations.

Grading Criteria - Individual Written Reports and Assignments

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 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 Presentations

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) and to your team presentation for the Five Wounds or Mountain View project (in April). 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

(The preceding two sections of this syllabus were adapted in part from Dr. Julia Rodriguez-Curry's handout on "Grading Criteria," San José State University, Mexican-American Studies Department, 2003)

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 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.

University, College or Department Policies

◆ Academic integrity statement (from Office of Judicial Affairs)

Your commitment as a student to learning is evidenced by your enrollment at San José State University. The University's Academic Integrity policy, located at <http://www.sjsu.edu/senate/S07-2.htm>, 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 is available at http://www.sa.sjsu.edu/judicial_affairs/index.html.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Policy S07-2 requires approval of instructors.

◆ Plagiarism and Proper Citation of Sources

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 on either draft or final work handed in to your instructor will lead to grade penalties and a record filed with the SJSU Office of Student Conduct and Ethical Development. It may also result in your failing the course. 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. Faculty will from time to time submit student work to Turnitin.com to check for plagiarism.

Learning when to cite a source, and when not to, is an art, not a science. However, here are some common 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 into quote marks and referencing the source, you have committed plagiarism.
- If you paraphrase somebody else's theory or idea and don't reference the source, you have committed plagiarism.
- If you use a picture or table you found in a web page, book, or report and don't reference the source, you have committed plagiarism.
- If your paper incorporates data someone else has collected and you don't reference the source, you have committed plagiarism.

San José State University has created a website tutorial on how to identify and avoid plagiarism that students are encouraged to visit. The site is available at <http://tutorials.sjlibrary.org/tutorial/plagiarism/index.htm>. In addition, the "Academic Dishonesty Procedures" are available in any SJSU Schedule of Classes.

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 (\$11.56 recently listed at Amazon.com). Please note that Turabian's book describes two systems for referencing materials: (1) footnotes or endnotes, plus a corresponding bibliography, and (2) in-text parenthetical references, plus a corresponding reference list. Either system is fine, but you need to be consistent with your referencing style.

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 <http://www.indiana.edu/~istd/overview.html>
- Examples of plagiarism at <http://www.indiana.edu/~istd/examples.html>
- Plagiarism quiz at <http://www.indiana.edu/~istd/test.html>

If you still have questions after reading this section, feel free to talk to your me or your graduate advisor. There is nothing wrong with asking for help, whereas even unintentional plagiarism is a serious offense.

◆ **Campus policy in compliance with the Americans with Disabilities Act**

If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with the instructor as soon as possible, or visit during office hours. Presidential Directive 97-03 requires that students with disabilities register with the Disability Resource Center (DRC) to establish a record of their disability. Students requesting accommodation of disabilities must do so through the DRC at <http://www.drc.sjsu.edu/> or by calling (408) 924-6000. Accommodations will be provided only to those students who are registered with the DRC, and who have requested accommodation pursuant to policies of the DRC.

◆ **Academic Honesty**

Faculty will make every reasonable effort to foster honest academic conduct in their courses. They will secure examinations and their answers so that students cannot have prior access to them and proctor examinations to prevent students from copying or exchanging information. They will be on the alert for plagiarism. Faculty will provide additional information about other unacceptable procedures in class work and examinations. Students who are caught cheating will be reported to the Judicial Affairs Officer of the University, as prescribed by Academic Senate Policy S04-12.

◆ **Eating**

Eating and drinking (except water) are prohibited in the classroom. Students with food are likely to be asked to leave the classroom. Students who disrupt the course by eating and do not leave the classroom will be referred to the Judicial Affairs Officer of the University. There will be at least one, short scheduled break during the class period during which you may eat or drink in appropriate locations near the classroom.

◆ **Cell Phones & Other Audible Devices**

Students will turn their cell phones and other audible devices off or put them on vibrate mode while in class. They will not answer their phones in class. Students whose phones disrupt the course and do not stop when requested by the instructor will be referred to the Judicial Affairs Officer of the University. There will be at least one, short scheduled break during the class period during which students may take calls outside of the classroom.

◆ **Computer Use**

Using your laboratory computer during class time for non-course related activities is disrespectful and distracting to the instructor and to your fellow students. In the classroom, faculty allows students to use computers only for class-related activities. These include activities such as taking notes on the lecture underway, following the lecture on web-based PowerPoint slides that the instructor has posted, and finding Web sites to which the instructor directs students at the time of the lecture.

Students who use their computers for other activities or who abuse the equipment in any way, at a minimum, will be asked to leave the class and will lose participation points for the day, and, at a maximum, will be referred to the Judicial Affairs Officer of the University for disrupting the course. (Such referral can lead to suspension from the University). Students are urged to report to their instructors computer use that they regard as inappropriate (i.e., used for activities that are not class-related).

Odds and Ends

◆ **Adds/Drops**

The student is responsible for understanding the policies and procedures about add/drops, academic renewal, withdrawal, etc. found at <http://www2.sjsu.edu/senate/S04-12.pdf>

◆ **Incomplete Grade**

An incomplete grade will only be assigned for a documented, serious, non-academic reason.

◆ **Students Adding the Class after the First Day of Class**

Students who add the class after the first day of class are responsible for completing all work in the course on the same schedule as students who were registered from the first day of the semester

◆ **Level of Effort**

This course requires approximately 5 to 7 hours of work per week outside of the normal class period, including the completion of tutorial assignments, instructor-designed homework assignments and other tasks as assigned. Students should expect to spend slightly more time per week for long-term projects such as the final course project and our analysis of Mountain View's GIS data and related projects.

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 introductory and intermediate-level GIS 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 9-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 Tutorial in Economic Development* with Professor Mike Pogodzinski of the SJSU Economics Department. The book will be released in the summer of 2011 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 eighth 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.

- Rick

COURSE SYLLABUS
ENVS/URBP-179 and URBP-278: Introduction to GIS Applications for Urban Planning
STUDENT STATEMENT OF UNDERSTANDING

I, _____ (*print your name*) have read the entire course syllabus for *ENVS/URBP-179 and URBP-278 Introduction to GIS Applications for Urban Planning*. I understand the details contained in the syllabus related to student and instructor responsibilities, the weekly schedule, the course grading policy and assignment submission policies, and I understand the University, College and Department policies contained herein. If any matter was not clear, I have received clarification from the instructor prior to signing this Statement of Understanding.

By signing below, I agree that this signed Statement will reside with the instructor as evidence that all course expectations and policies in this course syllabus are fully understood.

Signed: _____ (*sign your name*)

Date: _____ (*today's date*)