

**SAN JOSÉ STATE UNIVERSITY**  
**URBAN AND REGIONAL PLANNING DEPARTMENT**  
**URBP-279: ADVANCED GIS FOR URBAN PLANNING**  
**FALL 2023**

<b>Instructor</b>	Rick Kos, AICP
<b>Email:</b>	richard.kos@sjsu.edu
<b>Office hours:</b>	Tuesdays (11:30 a.m.–1:00 p.m.) and Thursdays (2:30 p.m.–4:00 p.m.) Appointments strongly preferred. Sign up here: <a href="https://goo.gl/pEvVod">https://goo.gl/pEvVod</a>
<b>Class days/time:</b>	Thursdays 4:30 – 7:15 p.m.
<b>Classroom</b>	<b>Hybrid course.</b> In-person class meetings will be in Washington Square Hall, Room 208. Four class meetings will be held synchronously on Zoom: Sept. 21, Oct. 5, Nov. 2., Nov. 16.
<b>Class website:</b>	All course materials will be available on Canvas.
<b>Prerequisites:</b>	Successful completion of URBP-179A/278 and/or GEOG-170, or instructor consent. Students are expected to have prior experience with ArcGIS, including the ability to perform attribute and spatial queries, geocode, georeference, basic geoprocessing, and the ability to design a cartographically complete map.
<b>Units</b>	4 units

## Course Catalog Description

Further examination of advanced geographic information systems (GIS) applications to urban and regional planning topics.

## Course Format

This is a hybrid course. Most class meetings will be held in person in WSQ-208. Four class meetings will be held synchronously on Zoom, listed in the table above and in the schedule at the end of this syllabus. Details for each class session are provided on Canvas.

## Course Overview

This class is taught mainly as a combined lecture and computer laboratory course using Esri's ArcGIS Pro 3.1 software and ArcGIS Online cloud-based applications. The course will consist of three primary components:

### 1. Geospatial Analysis Skill-Building (70% of final course grade)

We will explore five powerful aspects of geospatial analysis and their applications to professional-level urban planning analyses:

**ArcGIS Spatial Analyst:** this ArcGIS Pro extension is designed for powerful raster-based analysis. A common application of Spatial Analyst to urban planning is the design and execution of site suitability studies that incorporate multiple, disparate, standardized raster inputs such as landform, land use, access to transportation, and demographic information.

**ArcGIS Network Analyst:** this extension to ArcGIS Pro opens the door to numerous applications of GIS for transportation planning, including the generation of network-based service areas (e.g. “walk-sheds” to/from transit stations), closest facility analysis (useful for emergency planning applications), shortest path analysis, and the generation of origin-destination cost matrices (tabular summaries of distances between multiple locations). After learning Network Analyst basics, you will have an opportunity to craft an independent mini-project where you’ll put this highly practical ArcGIS Pro extension to the test.

**The Spatial Statistics Toolbox:** contains statistical tools for analyzing spatial distributions, patterns, processes, and relationships. Unlike traditional non-spatial statistical methods, they incorporate space (proximity, area, connectivity, and/or other spatial relationships) directly into their mathematics.<sup>1</sup> We will take a high-level tour of tools in four toolset groupings: Analyzing Patterns, Mapping Clusters, Measuring Geographic Distributions, and Modeling Spatial Relationships.

**Python Scripting Basics:** Python is the programming language that ArcGIS geoprocessing tools are based upon. Python basics are surprisingly easy to learn and the language allows the ArcGIS user to write specialized tools, set up iterative models, and customize geoprocessing tools to fit a particular project objective. After learning the basics of the Python language and use of the Python scripting window, students will have an opportunity to create and modify simple Python scripts using ArcGIS Notebooks.

**ArcGIS Urban** is a planning and design web application for measuring the visual and quantitative impacts of proposed development scenarios. We’ll see how urban planners are using this webapp and you’ll have a chance to create development scenarios of your own.

## 2. Client Consultation Project (professional engagement unit; 25% of final course grade)

Our class will provide technical expertise to project partners from various departments in the City of San Jose as well as Santa Cruz Metro. Another team of students will provide GIS support to students in the URBP-295 Capstone Studio course.

These projects will give you an opportunity to apply your GIS skills, develop project management skills, and provide a valuable service to a client. Additionally, this work will yield detailed maps and robust data analysis that I predict will be a valuable part of your San Jose State University portfolio.

You will be expected to fully “rise to the occasion” and play a proactive role in the conceptualization, design, and execution of the client projects. You’ll be expected to work with a small team of your peers in a mutually supportive, fully accountable, and positive manner under my supervision and guidance. Support from the course student assistant will also be provided. My hope is that your project will help you develop transferable workplace skills while endeavoring to meet (or exceed) the expectations of your client.

## 3. Active and Consistent Participation in Class (5% of final course grade)

You will be expected to bring your fullest measure of energy, dedication, engagement and participation to each class meeting. This aspect of the course grade will be measured by observations of your consistent, active, well-prepared, and measurable engagement in lectures and reading discussions, small team tasks, and presentations in class.

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<sup>1</sup> Adapted from “Spatial Statistics Resources” from Esri, <http://blogs.esri.com/esri/arcgis/2010/07/13/spatial-statistics-resources/> (accessed August 14, 2023)

## Course Learning Objectives

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

1. Use ArcGIS Pro 3.1 to design a professional-grade, visually-balanced, cartographically-complete map of the sort commonly employed by contemporary urban planners.
2. Conduct raster-based site suitability analyses using the ArcGIS Pro Spatial Analyst extension and define the primary categories of raster analysis.
3. Conduct transportation planning analysis using the ArcGIS Pro Network Analyst extension, including network service areas, closest facility analysis, and shortest route analysis.
4. Describe and execute tools in the ArcGIS Spatial Statistics toolbox, including at least two tools in each of the four primary toolsets: Analyzing Patterns, Mapping Clusters, Measuring Geographic Distributions, and Modeling Spatial Relationships.
5. Define the primary inputs, terminology, and ArcGIS Pro-specific tools needed to utilize the Python scripting language in a manner that allows for the customization and iteration of geoprocessing tools.
6. Describe the purpose and core functionality of Esri's ArcGIS Urban application for urban development scenario modeling and analysis, and create a scenario.
7. Use tools within the ArcGIS Online cloud-based ecosystem to conduct geospatial analysis, produce webmaps, and design webapps.
8. Implement effective, efficient, and client-responsive GIS project management skills. In small teams, collaboratively determine an approach to a GIS project from the outset and establish priorities, milestones, goals and subtasks. Anticipate and resolve setbacks and adopt techniques to manage project timelines and client expectations.
9. Create a complete geodatabase for course projects by incorporating vector, tabular and raster data into a complete project geodatabase, and import geospatial data from multiple, remote sources into the geodatabase.

## Planning Accreditation Board (PAB) Knowledge Components

This course partially covers the following PAB Knowledge Components: 2a, 2b, 2c, 2f. A complete list of the PAB Knowledge Components can be found at <https://sjsu.edu/urbanplanning/graduate-programs/masters-in-urban-planning/pab-knowledge.php>

## Required Course Readings and Tutorials

This course does not require a textbook to you some money while also recognizing that ArcGIS software often changes faster than tutorial textbooks can be published! In lieu of a textbook, you will be provided with readings, data, and tutorial instructions via Canvas.

## Recommended Course Readings

Brewer, Cynthia A. *Designing Better Maps: A Guide for GIS Users*. Redlands, CA: Esri Press, 2005.

Brown, Clint and Christina Harder. "The ArcGIS Imagery Book". Redlands, CA: Esri Press, 2016.

Dangermond, Jack and Matt Artz. "Understanding Earth: GIS Technology Drives a New Relationship Between Humans and the Environment". Redlands, CA: Esri Press, 2012.

\_\_\_\_\_. “Essays on Geography and GIS (Volumes 5 and 6)”. Redlands, CA: Esri Press, 2012 and 2013. (*skim for selected articles of interest*)

Peterson, Gretchen N. *GIS Cartography: A Guide to Effective Map Design*. Boca Raton, FL: CRC, 2009.

## Required Software

ArcGIS Pro 3.1 is required for students who choose to work on course assignments using their personal machine. Installation files are available for download from the course Canvas page. Each student has access to an ArcGIS Online account provided by SJSU in order to maximize use of the software. Also, SJSU will provide access to all of the necessary ArcGIS extensions and webapps needed for this course. Students are responsible for installing and maintaining software on their personal computer and properly following Esri’s installation instructions.

ArcGIS Pro only runs on the Windows operating system. In order to run ArcGIS on a Mac with an Intel chip (not Apple Silicon), virtualization software is needed such as Apple's Boot Camp, SWSOft’s Parallels, or VMware Fusion. At this time, ArcGIS Pro cannot run on Macs with the newer Apple Silicon chips.

For students who wish to use an SJSU-provided virtual/remote desktop to complete coursework, I will explain the details on the first day of class. See me to make arrangements if you wish.

It is **HIGHLY** recommended that you check [Esri.com](https://www.esri.com) to see if your personal computer is ready to run ArcGIS Pro 3.1. Search for “minimum system requirements” on the Esri website.

## Fundamentals for Success in this Course

I will make every effort to help you succeed in this course so that you can use ArcGIS Pro (and Online) confidently and successfully in your career. 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 meet or exceed expectations. Here are some tips to help you succeed this semester:

**Prior GIS experience:** Students are expected to have prior experience with ArcGIS Pro and ArcGIS Online, including the ability to use webmaps and webapps, perform basic attribute and spatial queries, and produce a cartographically correct map using multiple geospatial data layers.

**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. Start your work early!

**Computer competencies:** Competence with the Windows operating system is expected, including the storing, copying and management of multiple data types; managing multiple windows and applications; and saving work frequently (with a system to routinely backup all files).

**Enjoyment of Learning:** A strong motivation to learn, explore and have fun with computer applications is essential. This course will require a large amount of independent work and relies heavily on student initiative. Dealing with computer problems requires a sense of humor, too!

**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 will be less inclined to address quickly. 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 smartphones vying for our attention. Please turn off or mute your phone during class, and note that lab computers may only be used for class exercises during the class period. If you have to "get something else done" during the class period, please step outside and do it elsewhere.

**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 certain 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 syllabus requirements
- To fully read and understand all aspects of the 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**

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

Assignment Number and Description	Percentage of Total Grade	Course Learning Objectives Met
<b>Geospatial Skill Development</b>		
0 – ArcGIS Pro “refresher”	5%	1, 2, 7, 8, 9
1 – Spatial Analyst	10%	2, 7, 8, 9
2 – Network Analyst	10%	3, 7, 8, 9
3 – Spatial Statistics	15%	4, 7, 8, 9
4 – Python Scripting Basics	15%	5, 7, 8, 9
5 – Esri’s ArcGIS Urban application	15%	6, 7, 8, 9
<b>Professional Engagement Activities</b>		
6 – GIS Consulting Project (engagement unit for the course)	25%	1, 7, 8, 9
<b>Consistently Active Engagement</b>		
in all class activities, assignments, discussions, projects	5%	

Assignment details are on Canvas. Here’s an overview of each assignment:

**Assignment 0:** You will work in small groups to apply The Geographic Approach and implement methods to map the permissible maximum building heights in the vicinity of San Carlos Airport. This assignment will help you “refresh” a number of core ArcGIS skills.

**Assignment 1:** You will complete training material to learn fundamental raster analysis basics and then use the ArcGIS Pro Spatial Analyst extension to undertake a site suitability analysis.

**Assignment 2:** You will complete tutorials on the basic functionality and inputs of the ArcGIS Pro Network Analyst extension, then complete an independent mini project to explore Network Analyst capabilities using data collected by the student.

**Assignment 3:** You will be shown tools in the Spatial Statistics toolsets then, through short exercises and presentations, will demonstrate use of the tools for urban planning scenarios.

**Assignment 4:** A basic tutorial in Python scripting will be paired with exercises using ArcGIS Notebooks to practice scripting for designing, editing, and executing geoprocessing functions.

**Assignment 5:** This assignment will provide you with exposure to Esri’s ArcGIS Urban web application for urban development scenario modeling.

**Assignment 6 (engagement unit):** The details of this assignment will unfold during our consultancy with our project partners. You will undertake a variety of tasks in small teams, including data collection and geodatabase management, report writing, presentation of findings to clients, and production of analytical, cartographically complete maps.

## Calculation of Final Course Letter Grade

I first convert the letter grade for each assignment to a number using this scale:

- **Exceptional work: A+ (4.33), A/A+ (4.17), A (4), A/A- (3.85), A- (3.67)**
- **Above average work: A-/B+ (3.5), B+ (3.33), B/B+ (3.17), B (3), B/B- (2.85), B- (2.67)**
- **Satisfactory work: B-/C+ (2.5), C+ (2.33), C/C+ (2.17), C (2), C/C- (1.85), C- (1.67)**
- **Below average work: C-/D+ (1.5), D+ (1.33), D/D+ (1.17), D (1), D/D- (0.85), D- (0.67)**
- **Unacceptable or missing work: F (0)**

I then multiply the numerical values by the weighted value of each assignment (see table above). The resulting products are summed at the end of the semester to calculate the final course grade:

- **Outstanding: A+ (> 4.00)**
- **Exceptional: A (3.85 – 4.00), A- (3.50-3.84)**
- **Above average: B+ (3.17-3.49), B (2.85 – 3.16), B- (2.50-2.84)**
- **Satisfactory: C+ (2.17-2.49), C (1.85 – 2.16), C- (1.50-1.84)**
- **Below average: D+ (1.17-1.49), D (0.85 – 1.16), D- (0.50-0.84)**
- **Unacceptable: F (0-0.49)**

Please visit the “Grading Standards” link on Canvas for details about how I will evaluate written and oral work in this course.

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.

## Completing Assignments on Time and Professionally

Assignments are due at the date and time specified in Canvas and in the schedule at the end of this syllabus. In only rare instances will late assignments be accepted, as described below. Late assignments will receive a one-half 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 “B-minus”; after two days late it will receive a grade of “C+”.

I realize that life happens. If you expect not to be able to complete an assignment on time, it is important for you to do **two** things:

1. Contact me **at least 24 hours prior to the due date** and, if applicable, the other students on your team. If you do not communicate an anticipated late assignment within this timeframe, the grade reduction standards above will apply.
2. Provide a **date and time** by which the late assignment will be submitted. If you do not communicate an anticipated late assignment within this timeframe or if the late assignment is not received on the date promised, the assignment will begin losing points for every day it is late, as described above. If submission of the assignment continues to be delayed, a final grade of 50 is likely.

A maximum of **two** late assignments (or parts of assignments) that adhere to this policy will be accepted; all subsequent late assignments will receive an automatic grade of 50. 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 will influence your grade.

Assignments not meeting these fundamental practices of professional presentation will generally receive a reduction in the grade.

## **Final Examination or Evaluation**

Completion of individual and team-based tasks for the client project (Assignment 6) will effectively constitute the final exam for URBP-279 students.

## **Course Workload**

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of forty-five hours over the length of the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities including but not limited to internships, labs, clinical practica.

Because this is a four-unit class, you can expect to spend a minimum of nine hours per week in addition to time spent in class and on scheduled tutorials or activities. Special projects or assignments may require additional work for the course. Careful time management will help you keep up with readings and assignments and enable you to be successful in all of your courses. For this class, you will undertake additional activities outside of class meetings such as completion of tasks for the client projects. Details on how to complete these activities will be provided in handouts posted to Canvas.

## **University Policies**

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>

## **Use of Camera in an Online Class**

As much as possible/feasible given your unique circumstances at home, please turn on your Zoom camera throughout the classes when we meet on Zoom. If you have special needs or requests for any individual accommodations, please discuss this with me.



## Recording of Zoom Classes

Portions of this course (i.e., lectures, discussions, student presentations) will be recorded for instructional or educational purposes. The recordings will only be shared with students enrolled in the class through Canvas. The recordings will be deleted at the end of the semester.

University policy (S12-7) requires consent from all individuals who will appear in a class recording. If you do not wish to be identified in a class recording, please discuss this with me. For example, I may permit an “anonymous” option (e.g., you temporarily turning off identifying information from the Zoom session, including name and picture, prior to recording).

Students are not allowed to record without instructor permission. Also, students are prohibited from recording class activities (including class lectures, office hours, advising sessions, etc.), distributing class recordings, or posting class recordings. Materials created by me for the course (syllabi, lectures and lecture notes, presentations, etc.) are copyrighted. University policy (S12-7) is in place to protect the privacy of students in the course. Students who record, distribute, or post these materials will be referred to the Student Conduct and Ethical Development office. Unauthorized recording may violate university and state law.

Students must obtain permission in advance to record any course materials. Such permission allows the recordings to be used for a student’s private, study purposes only. Students will not be permitted to share any class recordings with someone who isn’t enrolled in the class or without permission. The recordings are protected by the instructor’s copyright.

## Student Accommodations

Any student that needs accommodations or assistive technology due to a disability should work with the Accessible Education Center (AEC), and me.

## Conduct During Online Class Meetings

All federal, state, CSU system, and campus regulations on conduct including harassment and discrimination against other students or faculty apply to the online environment, just as in face-to-face instruction.

## Technology Requirements for this Course

For our Zoom class meetings, you are required to have an electronic device (laptop, desktop or tablet) with a camera and built-in microphone. SJSU has a free equipment loan program available for students. Students are responsible for ensuring that they have access to reliable Internet access during class meetings. If you are unable to have reliable Internet service, you must inform me as soon as possible or, at the latest, one week before the class meeting date to find an alternative.

## Zoom Classroom Etiquette

**Mute Your Microphone:** To help keep background noise to a minimum, make sure you mute your microphone when you are not speaking.

**Be Mindful of Background Noise and Distractions:** Find a quiet place to “attend” class, to the greatest extent possible. Avoid video setups where people may be walking behind you or talking/making noise, etc. Avoid activities that could create additional noise, such as shuffling papers, listening to music in the background, etc.

**Position Your Camera Properly:** Be sure your webcam is in a stable position and focused at eye level. Ideally, everyone in class should be able to see your eyes and your whole face. Avoid having backlight from a window or other light source opposite the camera.

**Limit Your Distractions/Avoid Multitasking:** You can make it easier to focus on the meeting by turning off notifications, closing or minimizing running apps, and putting your smartphone away (unless you are using it to access Zoom).

**Use Appropriate Virtual Backgrounds:** If using a virtual background, it should be appropriate and professional and should NOT suggest or include content that is objectively offensive or demeaning.

## Plagiarism and Citing Sources Properly

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 common examples of plagiarism that you should be careful to avoid:

- Using a sentence (or even a part of a sentence) that someone else wrote without identifying the language as a quote by putting the text in quote marks and referencing the source.
- Paraphrasing somebody else's theory or idea without referencing the source.
- Using a picture or table from a webpage or book without reference the source.
- Using data some other person or organization has collected without referencing the source.

The SJSU MLK Library provides a short (20 minutes) and informative plagiarism tutorial. The MUP faculty highly encourage all students to complete it. Details are here:

<https://libguides.sjsu.edu/c.php?g=853661&p=6111789>

If you still have questions, feel free to talk to me. 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*, 9th edition (University of Chicago Press, 2018). 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 visually-distracting experience for readers than the parenthetical-reference style.

## Library Liaison

The SJSU Library Liaison for the Urban and Regional Planning Department is Ms. Lauren DeCelle. If you have questions, you can contact her at [lauren.decelle@sjsu.edu](mailto:lauren.decelle@sjsu.edu).

## A Little About Me.....

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

Additionally, I have co-authored a book titled *GIS for Economic Development* with Professor Mike Pogodzinski of the SJSU Economics Department. The book was released in late 2012 by Esri Press.

I also engage in occasional freelance GIS projects. For example, I am now assisting a former residents of the Marina district in San Francisco with mapping of historic sources of groundwater pollution in that neighborhood. Other recent clients include Mobility Planners, LLC (bus transit mapping); the Alameda County Water District (staff training); McKenzie & Albritton, LLC (maps related to telecommunications facility siting); BayGeo (managing the Bay Area GIS Education Center); and Perkins + Will (staff training), and Opticos Design (land use mapping and analysis).

### **Closing Thoughts.....**

My primary objective is to ensure that by completing this course you will possess the intermediate-level GIS skills valued by today's employers. Quite a few "alumni" of this course have secured internships and full-time jobs at firms and agencies across the region, specifically because they were able to demonstrate GIS expertise in their portfolios and at job interviews.

As we work together over the next few months, you will be encouraged to think about integrating GIS into your other San José State courses as well as your capstone projects (e.g. your Masters Planning Report or thesis).

There are many avenues for assistance and to accelerate your understanding of GIS: in-class exercises and personal guidance from me, at least four office hours per week, a terrific student assistant, 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 and I am here to help you succeed - and we'll have some fun, too. I have been teaching at SJSU since 2008 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 you succeed.

Let's get started!

## URBP-279: ADVANCED GIS FOR URBAN PLANNING FALL 2023 COURSE SCHEDULE

This schedule 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, via Canvas, and verbally in class.

Date	Geospatial Analysis Skill-Building (70% of Final Course Grade)	Professional Engagement: GIS Consulting Projects (25% of Final Course Grade)
Week 1 August 24	<ul style="list-style-type: none"> <li>• Course and syllabus overview</li> <li>• Software installations and ArcGIS Online accts.</li> <li>• Overview of client projects</li> <li>• Begin work on Assignment 0</li> </ul>	
Week 2 August 31	<ul style="list-style-type: none"> <li>• Continue work on Assignment 0</li> <li>• Meet with project clients: kickoff presentations</li> </ul>	Project clients visit class for project review presentations
Week 3 September 07	<ul style="list-style-type: none"> <li>• <b>Reading 1 Due:</b> Spatial Analyst background</li> <li>• Lecture/discussion: Spatial Analyst I</li> <li>• Spatial Analyst practice exercises</li> </ul>	<b>Assignment 6-1 Due:</b> RFP/Client Review  Form project teams and begin work on client projects
Week 4 September 14	<ul style="list-style-type: none"> <li>• <b>Assignment 0 Due: Building Heights</b></li> <li>• Lecture/discussion: Spatial Analyst II</li> <li>• Spatial Analyst practice exercises</li> </ul>	
Week 5 September 21 <b>(ZOOM)</b>	<ul style="list-style-type: none"> <li>• <b>Assignment 1 Due: Spatial Analyst</b></li> <li>• <b>Reading 2 Due:</b> Network Analyst</li> <li>• Lecture/discussion: Network Analyst I</li> <li>• Network Analyst practice exercises</li> </ul>	
Week 6 September 28	<ul style="list-style-type: none"> <li>• Lecture/discussion: Network Analyst II</li> <li>• Network Analyst practice exercises</li> </ul>	<b>Assignment 6-2 Due:</b> Data Review Report and Project Deliverables at <b>30%</b> Finished Stage
Week 7 October 05 <b>(ZOOM)</b>	<ul style="list-style-type: none"> <li>• <b>Assignment 2 Due: Network Analyst</b></li> <li>• <b>Reading 3 Due:</b> Spatial Statistics</li> <li>• Lecture/discussion: Spatial Statistics I</li> <li>• Spatial Statistics practice exercises</li> </ul>	
Week 8 October 12	<ul style="list-style-type: none"> <li>• Lecture/discussion: Spatial Statistics II</li> <li>• Spatial Statistics practice exercises</li> </ul>	

<p><b>Week 9</b> October 19</p>	<ul style="list-style-type: none"> <li>• <b>Assignment 3 Due: Spatial Statistics</b></li> <li>• <b>Reading 4 Due:</b> Python scripting background</li> <li>• Lecture/discussion: Python scripting basics I</li> <li>• Using Python with ArcGIS: practice exercises</li> </ul>	<p><b>Assignment 6-3 Due:</b> Project Deliverables at <b>60%</b> Finished Stage</p>
<p><b>Week 10</b> October 26</p>	<ul style="list-style-type: none"> <li>• Lecture/discussion: Python scripting basics II</li> <li>• Using Python with ArcGIS: practice exercises</li> </ul>	<p><b>Assignment 6-4 Due:</b> Status Report #1</p> <p>Project update presentations I (15 minutes each)</p>
<p><b>Week 11</b> November 02 <b>(ZOOM)</b></p>	<ul style="list-style-type: none"> <li>• <b>Assignment 4 Due: Python Scripting</b></li> <li>• <b>Reading 5 Due:</b> ArcGIS Urban background</li> <li>• Lecture/discussion: ArcGIS Urban I</li> <li>• ArcGIS Urban: practice exercises</li> </ul>	
<p><b>Week 12</b> November 09</p>	<ul style="list-style-type: none"> <li>• Lecture/discussion: ArcGIS Urban II</li> <li>• ArcGIS Urban: practice exercises</li> </ul>	<p><b>Assignment 6-5 Due:</b> Draft Report Outline Due; Status Report #2 Due; Project Deliverables at <b>80%</b> Finished Stage</p> <p>Project update presentations II (15 minutes each)</p>
<p><b>Week 13</b> November 16 <b>(ZOOM)</b></p>	<ul style="list-style-type: none"> <li>• <b>Assignment 5 Due: ArcGIS Urban</b></li> <li>• Open work session</li> </ul>	<p><b>Recommended:</b> Submit Draft Client Deliverables to Instructor and Student Assistant for review by 11:59 p.m. on November 16</p>
<p><b>Week 14</b> November 23</p>	<p><b>No Class Meeting (Thanksgiving)</b></p>	
<p><b>Week 15</b> November 30</p>	<ul style="list-style-type: none"> <li>• Open work session</li> <li>• <b>Final presentation practice session</b></li> <li>• Course evaluation (SOTES)</li> </ul>	<p><b>Assignment 6-6 Due:</b> Submit <u>Draft</u> Project to Client for Review; Rehearse for Final Presentation; Draft deliverables due to clients by 10:00 p.m.</p>
<p><b>Week 16</b> December 07</p>	<p><b>No Class Meeting (SJSU “Dead Day” – no classes or exams)</b></p>	
<p><b>Week 17</b> December 14*</p>	<ul style="list-style-type: none"> <li>• Final, formal presentation to clients</li> <li>• Student peer reviews for client project work</li> <li>• End of Semester Celebration!</li> </ul>	<p><b>Assignment 6-7 Due:</b> Deliver <u>Final</u> Project to Client; Final Presentation to Client</p>

\* The events of this class session will constitute the culminating experience for the course (in effect, our “final exam”). Student attendance on the final exam date is mandatory.