

SAN JOSÉ STATE UNIVERSITY
URBAN AND REGIONAL PLANNING DEPARTMENT
URBP-279: ADVANCED GIS FOR URBAN PLANNING
FALL 2024

Instructor	Rick Kos, AICP
Email:	richard.kos@sjsu.edu
Office hours:	Tuesdays (11:00 a.m.–1:00 p.m.) and Thursdays (12:30 p.m.–2:30 p.m.) Appointments strongly preferred. Sign up here: https://goo.gl/pEvVod
Class days/time:	Thursdays 3:00 – 5:45 p.m.
Classroom	In-person class meetings will be in Washington Square Hall, Room 208.
Class website:	All course materials will be available on Canvas.
Prerequisites:	Successful completion of URBP-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, basic geoprocessing, and the ability to design a cartographically complete map.
Units	4 units

Course Catalog Description

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

Course Format

We will meet in person, on campus. 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 3.3.1 software and ArcGIS Online cloud-based applications. The course will consist of four primary components:

1. Spatial Data Science Mini-Course (30% of final grade)

We will complete an Esri-designed online course over the span of six weeks. You can expect to devote roughly 4-5 hours of self-paced work on the course per week. By completing this mini-course, you will earn a certificate that you can add to your resume and social media platforms. We will use class time to review the concepts covered in the course. You are not expected to have prior experience in the topics listed below, though familiarity with the ArcGIS Pro user interface is highly recommended. Topics to be covered include:

- Data engineering and data visualization using ArcGIS Pro and ArcGIS Notebooks (Python);
- Predictive analysis using machine-learning approaches;

- Suitability modeling using weighted overlay analysis in ArcGIS Pro and R;
- Pattern detection and clustering using hotspot analysis and outlier analysis. Create space-time cubes and use space-time pattern mining tools;
- Object detection with deep learning. Learn how to automate the process of detecting objects and identifying features from imagery;
- Communicating results with impact, using ArcGIS StoryMaps.

2. Geospatial Analysis Skill-Building (40% of final course grade)

First, working in a small team, you will apply some of the skills from the mini-course above to an analysis of building height limitations near a Bay Area airport. This project will mimic the work I was asked to complete as part of my consulting practice.

Next, you will explore two powerful geospatial tools and we will discuss their use in urban planning:

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.

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.

3. 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. You will work in a small team on one of five projects that I have arranged with city staff.

This project 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 project. 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.

Course Learning Objectives

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

1. Use ArcGIS Pro 3.3.1 to design a professional-grade, visually-balanced, cartographically-complete map of the sort commonly employed by contemporary urban planners.
2. Explain fundamental data engineering and data visualization principles and apply ArcGIS Pro and ArcGIS Notebooks to the analysis of geospatial datasets.
3. Explain how machine-learning approaches can be used to undertake predictive analysis.
4. Perform site suitability analysis using a data science approach.
5. Perform pattern detection and clustering operations using hotspot analysis and outlier analysis.
6. Automate the process of detecting objects and identify features from imagery using object detection and deep learning tools.
7. Conduct transportation planning analysis using the ArcGIS Pro Network Analyst extension, including network service areas, closest facility analysis, and shortest route analysis.
8. Describe the purpose and core functionality of Esri's ArcGIS Urban application for urban development scenario modeling and analysis and create a scenario.
9. Use tools within the ArcGIS Online cloud-based ecosystem to conduct geospatial analysis, produce webmaps, and design webapps.
10. 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.
11. 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 save you some money) and 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 3.3.1 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 to maximize use of the software. Also, SJSU will provide access to all 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, virtualization software is needed such as Apple’s Boot Camp, SWSOft’s Parallels, or VMware Fusion. ArcGIS Pro can run on Macs with the newer Apple Silicon chips (e.g. M2, M4) using Windows 11, but be aware that there are some limitations – see the Esri website for details.

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 to see if your personal computer is ready to run ArcGIS Pro 3.3.1. 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 complete 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
Spatial Data Science Mini-Course	30%	
1 – Data engineering and visualization	5%	2, 9
2 – Predictive analysis	5%	3, 9
3 – Suitability modeling	5%	4, 9
4 – Pattern detection and clustering	5%	5, 9
5 – Deep learning and object detection from imagery	5%	6, 9
6 – Communicating results using ArcGIS StoryMaps	5%	9
Geospatial Analysis Skill Building	40%	
7 – Airport proximity analysis	20%	1, 11
8 – ArcGIS Network Analyst	10%	1, 7, 11
9 – ArcGIS Urban webapp	10%	8
Professional Engagement Activities	25%	
10 – GIS Consulting Project (professional engagement unit for the course)		1, 9, 10, 11
Consistently Active Engagement in all class activities, assignments, discussions, projects	5%	

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

Assignments 1 through 6: Working independently, you will complete six online modules as part of an Esri-designed course called “Spatial Data Science: The New Frontier in Analytics.” The course will include videos, exercises using ArcGIS Pro and other tools, and quizzes. For each module, you will document your findings using an ArcGIS StoryMap that you create and add onto while completing each module.

Assignment 7: 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 few core ArcGIS skills.

Assignment 8: Working independently, 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 you find.

Assignment 9: Working independently, this assignment will provide you with practice using Esri's ArcGIS Urban web application for 3D-based urban development scenario modeling.

Assignment 10 (engagement unit): The details of this assignment will unfold during our consultancy with our project partners. You will undertake a variety of tasks in a small team, 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 10) 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/>

Student Accommodations

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

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.

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 published in 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 Research 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 2024 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	Spatial Data Science Mini-Course and Geospatial Analysis Skill-Building <small>(70% of Final Course Grade)</small>	Professional Engagement: GIS Consulting Projects <small>(25% of Final Course Grade)</small>
Week 1 August 22	<ul style="list-style-type: none"> • Course and syllabus overview • Software installations and ArcGIS Online accts. • Overview of client projects 	
Week 2 August 29	<ul style="list-style-type: none"> • Kickoff Spatial Data Science mini-course • Meet with project clients: kickoff presentations 	Project clients visit class for project review presentations
Week 3 September 05	<ul style="list-style-type: none"> • Assignment 1 Due: Mini-course module 1 (data engineering and data visualization) • Discuss Assignment 1 findings • Class time for teams to work on Assignment 10 	Assignment 10-1 Due: RFP/Client Review Form project teams and begin work on client projects
Week 4 September 12	<ul style="list-style-type: none"> • Assignment 2 Due: Mini-course module 2 (predictive analysis) • Discuss Assignment 2 findings • Class time for teams to work on Assignment 10 	
Week 5 September 19	<ul style="list-style-type: none"> • Assignment 3 Due: Mini-course module 3 (suitability modeling) • Discuss Assignment 3 findings • Class time for teams to work on Assignment 10 	
Week 6 September 26	<ul style="list-style-type: none"> • Assignment 4 Due: Mini-course module 4 (pattern detection and clustering) • Discuss Assignment 4 findings • Class time for teams to work on Assignment 10 	Assignment 10-2 Due: Data Review Report and Project Deliverables at 30% Finished Stage
Week 7 October 03	<ul style="list-style-type: none"> • Assignment 5 Due: Mini-course module 5 (deep learning, object detection from imagery) • Discuss Assignment 5 findings • Class time for teams to work on Assignment 10 	
Week 8 October 10	<ul style="list-style-type: none"> • Assignment 6 Due: Mini-course module 6 (communicating results of geospatial analysis) • Discuss Assignment 6 findings • Class time for teams to work on Assignment 10 	

Week 9 October 17	<ul style="list-style-type: none"> • Launch Assignment 7 work in small teams • Class time to work on Assignment 7 • Review Assignment 10-3 progress 	Assignment 10-3 Due: Project Deliverables at 60% Finished Stage
Week 10 October 24	<ul style="list-style-type: none"> • Class time to work on Assignment 7 • Prepare for next week's presentations 	
Week 11 October 31	<ul style="list-style-type: none"> • Class time to work on Assignment 7 • Client project team presentations and supportive peer evaluations 	Assignment 10-4 Due: Status Report #1 Project update presentations I (15 minutes each)
Week 12 November 07	<ul style="list-style-type: none"> • Assignment 7 Due: Airport Proximity Analysis • Teams present Assignment 7 findings • Prepare for next week's presentations • Lecture/Discussion: ArcGIS Network Analyst I 	
Week 13 November 14	<ul style="list-style-type: none"> • Lecture/Discussion: ArcGIS Network Analyst II • Client project team presentations and supportive peer evaluations 	Assignment 10-5 Due: Draft Report Outline Due; Status Report #2 Due; Project Deliverables at 80% Finished Stage Project update presentations II (15 minutes each)
Week 14 November 21	<ul style="list-style-type: none"> • Assignment 8 Due: Network Analysis • Discuss Assignment 8 findings • Lecture/Discussion: ArcGIS Urban 	Recommended: Submit Draft Client Deliverables to Instructor and Student Assistant for review by 11:59 p.m. on November 19
Week 15 November 28	No Class Meeting (Thanksgiving)	
Week 16 December 05	<ul style="list-style-type: none"> • Assignment 9 Due: ArcGIS Urban • Discuss Assignment 9 findings • Final presentation practice session • Course evaluation (SOTES) 	Assignment 10-6 Due: Submit Draft Project to Client for Review; Rehearse for Final Presentation; Draft deliverables due to clients by 10:00 p.m.
Week 17 December 12*	<ul style="list-style-type: none"> • Final, formal presentation to clients • Student peer reviews for client project work • End of Semester Celebration! 	Assignment 10-7 Due: Deliver Final Project to Client; Final Presentation to Client

* 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.