SAN JOSÉ STATE UNIVERSITY
URBAN AND REGIONAL PLANNING DEPARTMENT
URBP-278: INTRODUCTION TO GIS FOR URBAN PLANNING
SPRING 2024

Instructor	Rick Kos, AICP
Email	richard.kos@sjsu.edu
Office hours	Tuesdays (13:00 – 1:00 p.m.) and Thursdays (2:30 p.m. – 4:00 p.m.) Appointments strongly preferred. Sign up here: https://goo.gl/pEvVod
Office location	WSQ-218C
Class days/time	Thursdays 4:30 p.m. – 7:15 p.m.
Class meetings	Washington Square Hall, Room 208
Class website	All course materials will be available on Canvas.
Prerequisites	Completion of URBP-275G (Geographic Information Systems Overview) is highly recommended, though not required
Units	4 units

Course Catalog Description

Examination of geographic information systems (GIS) applications to urban and regional planning topics.

Course Overview

Geographic Information Systems, GIS, is a rapidly evolving technology involving the study of the 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 Pro 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 seek 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 topics.

The course strives to provide a balance between the "how-to" of using ArcGIS Pro and the "why" of GIS by explaining the roles GIS technology plays in analyzing local and regional (even global) problems. My primary goal is to ensure that by completing the course you will possess the fundamental GIS skills valued by today's employers. Quite a number of my past students have secured internships and full-time jobs at agencies including the San Francisco Municipal Transportation Agency, the Valley Transportation Authority, and numerous municipal and county planning departments specifically because they demonstrated GIS expertise in their portfolios and during job interviews.

The majority of students that take this 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, this course emphasizes the hands-

on use of ArcGIS Pro software with a particular focus on the usage of real-world geospatial data typically used by urban planners.

During the first part of the course, you will learn the specific steps necessary to navigate ArcGIS Pro, acquire and manage geographic data sets, develop effective cartographic techniques, and query geospatial data to answer typical planning-related questions. For some exercises, you will use real geospatial 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 an independent final GIS project. Since the visual communication of quantitative data is a vital skill for urban planners, this final project will help you further develop your skills by framing an urban planning issue, developing a set of high-quality GIS maps to illustrate the issue, and presenting your maps to the class. A key objective 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 students have produced for their final projects!

As we work together over the next few months, you will be encouraged to think about integrating geospatial analysis into your other San José State coursework and Masters Planning Report. There are many avenues for assistance and to accelerate your understanding of GIS: in-class exercises and personal guidance from me, at least three office hours per week, and the ability to reach me via e-mail (I typically reply to clearly worded messages very quickly). I've also hired a terrific student assistant to help you. 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.

Course Learning Objectives

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

1. Describe how contemporary urban planners use ArcGIS Pro as a tool for the analysis and display of quantitative data such as demographic information from the US Census Bureau
2. Utilize the core components and functionality of ArcGIS Pro
3. Prepare professional-grade maps with all necessary cartographic elements
4. Conduct attribute and spatial queries with geospatial datasets
5. Conceptualize, design, and execute a structured GIS-based project
6. Create new geostapaial datasets and edit existing datasets
7. Utilize geoprocessing tools to transform geospatial datasets into new ones
8. Interpret municipal zoning code information and translate it into a GIS-based map

Planning Accreditation Board (PAB) Knowledge Components

This course partially covers the following PAB Knowledge Components:

2b) Written, Oral and Graphic Communication: ability to prepare clear, accurate and compelling text, graphics and maps for use in documents and presentations.

2c) Quantitative and Qualitative Methods: data collection, analysis and modeling tools for forecasting, policy analysis, and design of projects and plans.

A complete list of the PAB Knowledge Components can be found at https://www.sjsu.edu/urbanplanning/graduate-programs/masters-in-urban-planning/pab-knowledge.php (accessed January 21, 2024)

Required Course Textbook

Understanding GIS, An ArcGIS Pro Project Workbook is required and will serve as a reference throughout the course. The textbook provides detailed, step-by-step instructions in the use of ArcGIS Pro for a multifaceted

urban planning analysis. The textbook is available via Canvas with permission from the authors. **You do not need to purchase the textbook.** Please do <u>not</u> purchase an earlier version of the book.

Required Software

<u>ArcGIS Pro</u> is required of all students who choose to complete coursework off campus. This software will be available for download from Canvas. Additionally, the university's eCampus office will provide each student with an ArcGIS Online account to maximize use of the software.

Please note that ArcGIS Pro only runs on the **Windows** operating system. In order to run ArcGIS Pro in Windows on a Mac, virtualization software is needed (in Canvas Discussions I added some tips for running ArcGIS Pro on a Mac. You are responsible for installing and maintaining your software on a personal computer and for properly following Esri's installation instructions.

> It is HIGHLY recommended that you check your personal computer to see if it meets the minimum standards to run ArcGIS Pro 3.2. Visit esri.com for the standards:
> https://pro.arcgis.com/en/pro-app/latest/get-started/arcgis-pro-system-requirements.htm

Recommended Course Readings

See Canvas for a number of recommended readings on a variety of topics including geodesign, open-source GIS platforms, and techniques for designing professional-looking maps. These topics will enhance your experience in this course.

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 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; highest 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. There will be numerous, detailed, and sometimes overlapping assignments – please prepare for this from the outset.

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 techniques for saving work frequently.

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 warrants 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 <u>never</u> be perceived as a liability in my class. However, when seeking assistance, you must (1) clearly communicate the problem and (2) demonstrate that you have attempted to solve the problem on your own and are ready to describe 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 <u>not</u> sufficient to write to me and vaguely state, "I can't get this to work" and

expect useful assistance without <u>also</u> 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 our phones vying for our attention. Please tun 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, 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 and Grading Policy

Your grade for the course will be based on the following assignments and other components. All relevant materials and assignment details will be posted to Canvas.

Assignment (assignment descriptions follow this table)	Percentage of Total Grade	Course Learning Objectives Covered
A – Textbook Chapters 1-2 and supplemental exercises	10%	1-7
B – Textbook Chapters 3-5 and supplemental exercises	10%	1-7
C – Textbook Chapters 6-7 and supplemental exercises	10%	1-7

Assignment (assignment descriptions follow this table)	Percentage of Total Grade	Course Learning Objectives Covered
D – Textbook Chapters 8-9 and supplemental exercises	10%	1-7
E – "New Life for Old Maps" (georeferencing)	10%	1-7
F – Applied GIS I: a choice of projects: (1) cellular tower regulation mapping or (2) Mountain View, CA General Plan	20%	2-8
G – Applied GIS II: independent course project *(One-credit professional engagement unit)*	25%	1-7
Participation – Consistent, active, well-prepared, and measureable engagement in lectures and reading discussions, peer support tasks, and presentations in class.	5%	---

Assignment A focuses on topics from chapters 1 and 2 of the textbook. Students will learn professional techniques for managing GIS project workflows and articulating a GIS-based problem. Other topics will cover exploratory analysis techniques and best practices for evaluating geospatial data. Additional supplemental material prepared by the instructor will reinforce the skills covered in these chapters. Essential ArcMap Pro tools will be covered, along with steps for creating thematic maps. This assignment will feature skills used by professional urban planners, thereby building valuable workplace-ready skills.

Assignment B focuses on topics from chapters 3, 4 and 5 of the textbook. This includes projections and coordinate systems, shapefile and geodatabase management, preparing data for geospatial analysis, and editing/creating new geospatial data. Additional supplemental material prepared by the instructor will reinforce the skills covered in these chapters.

Assignment C focuses on topics from chapters 6 and 7 of the textbook. This includes steps for conducting a proper geospatial analysis, selecting suitable map features for the study's objectives, evaluation of preliminary results, commonly used geoprocessing tools, and ModelBuilder. Additional supplemental material prepared by the instructor will reinforce the skills covered in these chapters.

Assignment D includes material from chapters 8 and 9 of the textbook and will cover steps for presenting analysis findings in a professional manner and sharing results via ArcGIS Online. Additional supplemental material prepared by the instructor will reinforce the skills covered in chapters 8 and 9. The principles of creating professional-looking maps for urban planning purposes will also be covered.

Assignment E is what I like to call "new life for old maps". Students will learn the skills for georeferencing images (like historic maps) to their corresponding locations on a digital GIS basemap. This is a fascinating way to depict urban change through time. The assignment will ask students to design and execute their own georeferencing project using a historic map from an urban area of interest.

Assignment F is a unique opportunity to apply the core GIS skills covered in previous lessons. Students will choose between one of two projects based on their interests: (1) conducting an analysis of telecommunications tower siting ordinances in a Bay Area municipality, or (2) preparing General Plan Update maps for the City of Mountain View, CA. Students have the option to work in small teams to determine a plan for meeting the project objectives. Each student will then prepare professional-grade maps and a

summary methodological report to illustrate how practitioners utilize GIS to analyze local urban planning policies, store and maintain geospatial data, and prepare quality maps for internal and public uses.

Assignment G involves the conceptualization, development, and execution of an independent GIS project. Tasks include preparing draft and final project descriptions, the development of a hand-drawn concept map, and the production of a summary report and poster map. Students will present their project findings to the class on the final day of the course (attendance is required). Completion of Assignment G will constitute the professional engagement unit for this course since the tasks will mirror the process by which urban planners with GIS skills undertake a professional GIS project.

Class Participation: students will write on their perceived level of engagement in the course material over the span of the semester. The instructor will consider these remarks and supplement with them with his own observations to calculate a grade ranging from 1 (minimal participation) to 5 (superior participation).

Calculation of Final Course Letter Grade

Each assignment will earn points reflected in the table above. For example, for Assignment D you can earn between 0 and 10 points. At the end of the semester, I will sum the points you earned on each assignment and assign a letter grade for your work in the course according to this scheme:

- **A+** (98-100); **A** (94-97); **A-** (90-93)

- **B+** (87-89); **B** (84-87); **B-** (80-83)

- **C+** (77-79); **C** (74-77); **C-** (70-73)

- **D+** (67-69); **D** (64-67); **D-** (60-63)

- **F** (<60)

Please read the "URBP-295 Grading Standards" document on Canvas for more details about how I will evaluate your performance in this course.

This grading scheme will not always be followed strictly since upward adjustment of the final course 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 over time. If such adjustments are made, they usually result in about a half-letter grade improvement. Students are encouraged to meet privately with me early in the semester to discuss expectations.

Other Grading and Assignment Issues

I understand that grades are important to students on both a personal and professional level. They are a measure of your achievements in class and your progress towards meeting the course learning objectives. I also understand that there tends to be a great deal of "grade anxiety" in a university setting. The best way that I can help students with these matters is to be as clear as possible about grading criteria and weightings in this syllabus, so that you can plan ahead.

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 each 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".

Opportunities for extra credit will be explained in individual assignments posted to Canvas.

Final Examination or Evaluation

Assignment G, described earlier in the syllabus, will constitute the final examination since its completion will require application of skills covered in the previous assignments.

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.

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 Canvas and in 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.

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 at http://www.sjsu.edu/gup/syllabusinfo/

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 <u>before</u> 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 reference to 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 encourages 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 your reader 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.

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 few months together. We'll have some fun along the way, too. My goal is to teach you introductory 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.

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, 1995). 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 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 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.

I manage the GIS Education Center for a non-profit organization called BayGeo. Additionally, I have co-authored a book titled *GIS for Economic Development* with Professor Mike Pogodzinski of the SJSU Economics Department, published by Esri Press. I also engage in a number of freelance GIS projects, including transit planning analyses for Mobility Planners, LLC and the development of interactive webapps.

I have been teaching at SJSU since 2007 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.

URBP-278: Introduction to GIS for Urban Planning
Spring 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 and verbally in class. As denoted with blue-colored headings, the course is divided into three modules:

Date	Topic	Assignment Due
	Module I: GIS Applications for Urban Planning; Mastering ArcGIS Pro Fundamentals	
Jan. 25	**Getting Organized and Started** Course and syllabus overview. What is GIS and ArcGIS Pro? How do today's urban planners use GIS and what spatial literacy skills are employers looking for? Setting up peer support groups.	
Feb. 01	Focus on skills from textbook **Chapter 1:** Framing the Los Angeles River problem; exploring the study area; listing data requirements; examining data; choosing relevant data.	
Feb. 08	Focus on skills from textbook **Chapter 2:** examining metadata, defining site suitability criteria.	
Feb. 15	Focus on skills from textbooks **Chapter 3 and 4:** symbolizing map layers, measuring distances, coordinate systems and projections, commonly used geoprocessing tools.	Assignment **A** *(Textbook Chapters 1-2 and supplemental exercises)*
Feb. 22	Focus on skills from textbook **Chapter 5:** editing and creating map features and attribute tables.	
Feb. 29	Focus on skills from textbook **Chapter 6:** further exploration of geoprocessing tools.	Assignment **B** *(Textbook Chapters 3-5 and supplemental exercises)*
Mar. 07	Focus on skills from textbook **Chapter 7**: working with ModelBuilder to visualize and preserve geoprocessing workflows.	
Mar. 14	Focus on skills from textbook **Chapter 8:** principles of professional map design, critiquing existing maps.	Assignment **C** *(Textbook Chapters 6-7 and supplemental exercises)*
Mar. 21	Focus on skills from textbook **Chapter 9:** moving from ArcGIS Pro to ArcGIS Online, creating StoryMaps.	
Mar. 28	**"New Life for Old Maps":** visualizing urban change through time by aligning historic maps to digital GIS base maps.	Assignment **D** *(Textbook Chapters 8-9 and supplemental exercises)*
Apr. 04	No class today – spring break	

Date	Topic	Assignment Due
	Module 2: Applying Your Skills, Part I – Your Choice of Mapping Projects: (1) Telecommunications Tower Regulations or (2) City of Mountain View, CA General Plan Update Maps	
Apr. 11	**Review Session**. We will start by reviewing your work on Assignment E – "New Life for Old Maps". Next, we will review course material covered in Module 1. **Then we start Module 2**. In this phase of the course, students apply their ArcGIS Pro skills to a project that mimics professional practice undertaken by urban planners who know how to use GIS tools. Students will choose between (1) a project that examines local Bay Area zoning ordinances to see how they impact the siting of telecommunications towers or (2) replicating maps that were used as part of the City of Mountain View's General Plan Update process. **Results are due on May 9** and will include detailed maps and an accompanying findings report. Class time will be available on Apr. 18, Apr. 25, and May 2 to review progress with the instructor and student assistant. Get ready to build your resume with very marketable, in-demand skills!	Assignment **E** *(Georeferencing historic maps to digital basemaps)*
Apr. 18	**In-Class Work Session:** Telecommunications Tower Ordinances or Mt. View General Plan Update mapping (Assignment F) and Independent Final Project (Assignment G)	Assignment **G (Part 1)** *Draft of Final Course Project Description*
Apr. 25	**In-Class Work Session:** same as above	Assignment **G (Parts 2,3)** *Final Course Project Description and Hand-Drawn Concept Map*
May 02	**In-Class Work Session:** same as above	
	Module 3: Applying Your Skills, Part 2 – Independent GIS Final Project	
May 09	**In-Class Work Session:** Independent Final Project (Assign. G)	Assignment **F**
May 16	**Final Class Meeting** (attendance required) - Final Project Presentations - Final Project Report Due - Final Project Poster Map	Assignment **G (Part 4)** *Final Course Project Report, Poster Map, and Class Presentation* **Class Participation** *(upload reflections on Canvas)*