URBP 275G – GEOGRAPHIC INFORMATION SYSTEMS OVERVIEW

SUNRISE 2013

INSTRUCTOR: Rick Kos, AICP
OFFICE LOCATION: WSQ-218C
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EMAIL: Richard.Kos@sjsu.edu
OFFICE HOURS: Mondays and Tuesdays 2:00 p.m. – 4:00 p.m. (Appointments strongly preferred)
Instructor may also be able to meet with students at Panera restaurant in San Francisco (4th & King Streets, adjacent to Caltrain station)
CLASS DAYS/TIME: Tuesdays 7:30pm – 10:00pm on Jan. 29; Feb. 5, 12, 26; Mar. 12
CLASSROOM: Washington Square Hall (WSQ) 208
CLASS WEBSITE: http://urbp275G.pbworks.com/
PREREQUISITES: None
UNITS: 1

COURSE CATALOG DESCRIPTION
An overview of Geographic Information Systems with a focus on applications to urban planning, including the history of cartography, land use mapping, cartographic techniques, map design and methods for determining the most appropriate display of quantitative data for a variety of intended audiences.

COURSE DESCRIPTION AND COURSE LEARNING OBJECTIVES
This course provides a broad overview of key principles of GIS and will allow students to begin developing an appreciation for the technology and its application to urban planning. As this is a one-unit course, class sessions will be delivered using a seminar-style approach to learning and only held five times during the course of the semester. Meeting dates are listed in the table above as well as the class schedule on the last page.

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

1. Explain the influence of spatial literacy on both the historical evolution of human settlement patterns and contemporary efficacy of public policy.

2. Describe the design principles that make for clear, accurate, and compelling maps

3. Describe how urban planners typically use GIS as a tool for the analysis and display of quantitative data.
4. Critique and evaluate existing maps to assess how well they apply good map design principles.

5. Access and download GIS data from commonly-used sources such as the US Census Bureau and USGS Seamless Server.

6. Prepare a basic and complete map.

**Planning Accreditation Board (PAB) Knowledge Components**

This course partially covers the following PAB Knowledge Components:

1d) Human Settlements and History of Planning: understanding of the growth and development of places over time and across space.

1f) Global Dimensions of Planning: appreciation of interactions, flows of people and materials, cultures, and differing approaches to planning across world regions.

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

A complete list of the PAB Knowledge Components can be found at [http://www.sjsu.edu/urbanplanning/courses/pabknowledge.html](http://www.sjsu.edu/urbanplanning/courses/pabknowledge.html).

**Required Course Readings**


Both books will be available as free e-books from the SJSU Library. To access both books, visit the SJSU library web site at [http://www.sjlibrary.org/discover-catalog](http://www.sjlibrary.org/discover-catalog). After locating the two books listed above, click on the link in the resulting records for “An electronic book is available to SJSU Students and Faculty”. You might also try copying/pasting the following direct links into a web browser, though it is possible that the links might not work consistently:

**Thrower text:**

**Peterson text:**
Additional short, no-cost, online readings are likely to be assigned during the course; announcements will be made in class.

**Course Assignments and Grading Policy**

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

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Percent of Course Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Site Suitability using “Pre-GIS” Map Overlay Approach</td>
<td>15%</td>
</tr>
<tr>
<td>2 – Demographic Analysis with Esri Community Analyst</td>
<td>15%</td>
</tr>
<tr>
<td>3 – Urban Sustainability Analysis with Esri ArcGIS Online</td>
<td>15%</td>
</tr>
<tr>
<td>4 – Business Site Selection with Esri Community Analyst</td>
<td>15%</td>
</tr>
<tr>
<td>5 – Portfolio of “Best Practice” Map Designs</td>
<td>25%</td>
</tr>
<tr>
<td>Participation – Consistent, active, well-prepared, and measureable engagement in lectures and reading discussions, small team tasks, and draft/final presentations in class</td>
<td>15%</td>
</tr>
</tbody>
</table>

**Assignment 1** will introduce students to “pre-digital” map-making as a way to build appreciation for the accuracy and speed with which digital maps can be created today in a GIS. Students will be given a series of printed sheets, each representing a thematic set of data (e.g. sewer lines, land cover). Using these sheets, the assignment will challenge students to locate the best site for a new office building, given seven specific site location criteria.

**Assignment 2** will introduce students to Esri’s Community Analyst, a browser-based map-making application that gives users access to a wide array of data sets of high relevance to urban planning purposes. In this assignment, students will prepare a series of maps for a community of interest, integrating Census 2010 and American Community Survey data as well as additional data sets of interest to the student.

**Assignment 3** will enable students to explore the topic of urban sustainability. In-class discussions about relevant readings and short videos will help to build a shared understanding of the term. Next, students will explore facets of urban sustainability (e.g. income distribution, access to food stores) using Esri’s browser-based mapping tool, ArcGIS Online.

**Assignment 4** will once again involve the use of Esri’s Community Analyst application, this time allowing students to explore its application selecting the optimal location for a prominent food retailer.

**Assignment 5** will give students an opportunity to develop a clear understanding of effective, audience-appropriate map design techniques. Basic ArcGIS 10 techniques for this purpose will be explored and supplemented by examples of both poorly designed and well-designed maps to serve as inspiration.

**Calculation of Final Course Letter Grade**

I will calculate the final letter grade for the course by weighting the grade for each assignment according to the percentages in the table above. To do this, I first convert the letter grade for each
assignment to a number using a 4-point scale (A+ = 4.2, A = 4.0, A- = 3.67, B+ = 3.33, B = 3.0, B- = 2.67, C+ = 2.33, C = 2.0, C- = 1.67, D = 1, and F = 0).

I then use these numbers and the weights for each assignment to calculate a final, numerical grade for the course based on a 4-point scale. That number is converted back to a letter grade (A = 3.85+, A- = 3.50 – 3.84, B+ = 3.17 – 3.49, B = 2.85 – 3.16, B- = 2.50 – 2.84, C+ = 2.17 – 2.49, C = 1.85 – 2.16, C- = 1.41 – 1.84, D+ = 1.17 – 1.40, D = 0.85 – 1.16, F = 0 – 0.84).

**Fundamentals for Success in this Course**

I will make every effort to help you succeed in this course so that you develop a clear understanding of GIS applications to our profession. 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 somewhat technologically advanced course, but concepts and instructions will be explained as clearly as possible. If you wish to evaluate your readiness for this course at the outset, please see me as soon as possible.

- **Computer competencies:** Competence with the Windows operating system is expected, including 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 significant amount of independent work and relies heavily on student initiative. A sense of humor with computer “headaches” is helpful, too!

- **Seek Help Effectively:** Since 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 positively challenged by the assignments. Asking for help will never be perceived as a liability in my class. However, when seeking assistance, it is important for you to (1) clearly communicate the problem and (2) demonstrate that you have attempted to solve the problem on your own and are ready to clearly articulate your attempts.

Also, I am very happy to help you with your work outside of the classroom during office hours or via email. If we work together via email, it is vital that you send me as much information as possible to help diagnose the problem. It is not sufficient to write to me and vaguely state, “I can’t get this to work” and expect useful assistance without also including relevant screen captures and a description of the solution steps you’ve tried. In general, I will be very responsive to queries that meet these criteria and much less so for “lazy queries”, which I probably will not have time to address. This approach mirrors professional practice since supervisors expect valued employees to be proactive in solving problems.

- **Focus and Respect:** I fully understand the temptations and distractions we all face today with email, web sites, Twitter, Facebook and IMs vying for our attention, but lab computers may not be used for getting other work or e-mail done. Out of respect for everyone in a focused learning environment, I will be ruthless in getting everyone to turn computer monitors off when not being used for course exercises. If you have to "get something else done" during the class period, please do it elsewhere. Cell phones need to be in silent mode, or turned off.
**Professional Conduct:** I conduct this course in a manner that mirrors professional practice in order to help you develop valuable workplace skills. We all need to be in agreement that the following standards will apply, as listed in the two sections below:

**Instructor Responsibilities**
- To create a physically and intellectually safe and stimulating environment for learning
- To assist students as much as possible with their individual and collective learning goals
- To help resolve conflicts that hinder learning by answering student questions clearly and promptly, or to research answers and reply to the student as soon as possible
- To treat students with respect and kindness, using encouragement and humor to foster learning
- To arrive at the start of each class session fully prepared and organized, with clear learning objectives and a schedule for the day’s tasks ready to go
- 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 the requirements listed in this syllabus
- To fully read and understand all aspects of this syllabus and to carry out the requirements herein
- To actively and consistently participate in class discussions and question-and-answer sessions
- To demonstrate self-reliance and self-direction in setting and completing learning objectives
- To accept responsibility for working collaboratively in the learning process

**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 accordingly. Please understand that I am a very thoughtful, careful, thorough and fair grader of student assignments and it is a responsibility that I do not take lightly. You are encouraged to review your graded assignments with me at any time to discuss my comments and suggestions for improvement.

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

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

<table>
<thead>
<tr>
<th>Grades</th>
<th>Criteria and Interpretation</th>
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<tbody>
<tr>
<td>A-, A and A+</td>
<td>For assignments that clearly demonstrate excellence, workplace-quality professional presentation and obvious dedication to meeting course learning objectives, I reserve grades of A- and A. I very rarely issue an A+ grade unless student work exceeds my expectations on any and all levels. Put another way, you should not expect to receive an “automatic A” simply by completing assignments; these grades are set aside for students who go the extra mile. If you receive a grade in the A’s, it is my way of indicating that I am aware and proud of your extra effort. In instances where the work product is not of exceptional quality but the student has clearly demonstrated commitment in terms of extra time spent and/or seeking help with the assignment, earning a grade of A- is a strong possibility.</td>
</tr>
<tr>
<td>B-, B and B+</td>
<td>If work is above average in quality, thoroughness and presentation, I tend to issue a grade of B-, B or B+. I interpret these grades to mean “much better than ‘just good’”; in such instances the student has demonstrated more of a commitment to quality work than an assignment graded with a C. If you receive a grade in the B’s, you can be assured that your work was of very good quality and that I am pleased with your progress.</td>
</tr>
<tr>
<td>C-, C and C+</td>
<td>If student work is sufficient and acceptable, I issue a grade of C or C+ because these grades are reserved for work of average quality. I do not view a C or C+ as a terrible grade; it is an acknowledgment of average and acceptable effort, but that you could have done better.</td>
</tr>
<tr>
<td>D and F</td>
<td>I certainly hope not to issue any such grades this semester, but will do so for student work that is sub-par on all levels (D’s) or demonstrates the barest of minimal effort (F).</td>
</tr>
<tr>
<td>Zero</td>
<td>For assignments that are not submitted on the due dates listed in this syllabus and/or assignments which do not adhere to the late-submission policy described herein.</td>
</tr>
</tbody>
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**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. Other course structures will have equivalent workload expectations as described in the syllabus.

Because this is a one-unit class over five weeks, you can expect to spend a minimum of 45 hours (5 weeks * 9 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.

**Academic Integrity Statement, Plagiarism, and Citing Sources Properly**

SJSU’s Policy on Academic Integrity states: “Your own commitment to learning, as evidenced by your enrollment at San Jose State University, and the University's Academic Integrity Policy requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Student Conduct and Ethical Development” (Academic Senate Policy S07-2). The policy on academic integrity can be found at [http://www.sjsu.edu/senate/S07-2.htm](http://www.sjsu.edu/senate/S07-2.htm).

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

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

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

Learning when to cite a source and when not to is an art, not a science. However, here are some 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 University of Indiana has developed a very helpful website with concrete examples about proper paraphrasing and quotation. See in particular the following pages:

- Overview of plagiarism at [www.indiana.edu/~istd/overview.html](http://www.indiana.edu/~istd/overview.html)
- Examples of plagiarism at [www.indiana.edu/~istd/examples.html](http://www.indiana.edu/~istd/examples.html)
- Plagiarism quiz at [www.indiana.edu/~istd/test.html](http://www.indiana.edu/~istd/test.html)

If you still have questions, feel free to talk to me personally. There is nothing wrong with asking for help, whereas even unintentional plagiarism is a serious offense.
Citation style
It is important to properly cite any references you use in your assignments. The Department of Urban and Regional Planning uses Kate Turabian’s *A Manual for Writers of Research Papers, Theses, and Dissertations*, 7th edition (University of Chicago Press, 2007, ISBN-10: 0-226-82336-9). Copies are available in the SJSU King Library. Additionally, the book is relatively inexpensive, and you may wish to purchase a copy. Please note that Turabian’s book describes two systems for referencing materials: (1) “notes” (footnotes or endnotes), plus a corresponding bibliography, and (2) in-text parenthetical references, plus a corresponding reference list. In this class, students should use the “notes” style of referencing (system 1 above), and use Chicago Style formatting of references.

Accommodation for Disabilities
If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the DRC (Disability Resource Center) to establish a record of their disability.

You can find information about the services SJSU offers to accommodate students with disabilities at the Disability Resource Center website at www.drc.sjsu.edu.

Consent for Recording of Class and Public Sharing of Instructor Material
Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor’s permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.

Library Liaison
The SJSU Library Liaison for the Urban and Regional Planning Department is Ms. Toby Matoush. If you have questions, you can contact her at toby.matoush@sjsu.edu or 408-928-2096.

SJSU Writing Center
The SJSU Writing Center is located in Room 126 in Clark Hall. It is staffed by professional instructors and upper-division or graduate-level writing specialists from each of the seven SJSU colleges. Our writing specialists have met a rigorous GPA requirement, and they are well trained to assist all students at all levels within all disciplines to become better writers. The Writing Center website is located at http://www.sjsu.edu/writingcenter.
### COURSE SCHEDULE*

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading Due</th>
<th>Assignments Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 Jan</td>
<td>Introduction to course; overview of GIS applications to urban planning; “story-telling” with maps and exploration of online examples</td>
<td></td>
<td></td>
</tr>
<tr>
<td>05 Feb</td>
<td>Early history of cartography; discussion on importance of spatial literacy; introduction to Esri Community Analyst for demographic analysis</td>
<td>Thrower, Chapters 1-4</td>
<td>1 – Site Suitability using “Pre-GIS” Map Overlay Approach</td>
</tr>
<tr>
<td>12 Feb</td>
<td>The modern reemergence of cartography; exploring urban sustainability with Esri’s ArcGIS Online</td>
<td>Thrower, Chapters 8-9</td>
<td>2 – Demographic Analysis with Esri Community Analyst</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(optional but highly recommended reading: Thrower, Chapters 5-7)</td>
<td></td>
</tr>
<tr>
<td>19 Feb</td>
<td>-- NO CLASS MEETING --</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26 Feb</td>
<td>Introduction to map design; business site selection using Esri’s Community Analyst</td>
<td>Peterson, Chapters 1-3</td>
<td>3 – Urban Sustainability Analysis with Esri ArcGIS Online</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 – Business Site Selection with Esri Community Analyst (to be completed during the class session)</td>
</tr>
<tr>
<td>05 Mar</td>
<td>-- NO CLASS MEETING --</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Mar</td>
<td>High Standards: Best practice design for specific map features</td>
<td>Peterson, Chapters 4-7</td>
<td>5 – Portfolio of three “Best Practice” Map Designs</td>
</tr>
</tbody>
</table>

*Note: This schedule is subject to change with fair notice in class or by email. There is no final exam for this one-unit course.