SCHOOL OF BUSINESS AND SOCIETY
Course Syllabus
(Template version 1.2, 3-17-24)
Location Analytics and Decision Making - GISB 694 (4 units)
Synchronous Sessions: Every Thursday
From March 7 to April 18, except the final
Class is moved to Mon., April 22.
6 to 8:30pm
(The April 25 class is re-scheduled to Monday, April 22,
due to a conflict in the instructors schedule)

Note: each Synchronous class has a 15 min break.

INSTRUCTOR

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COURSE SCHEDULE

The class meets synchronously online each Tuesday from 6 to 8:30pm Pacific Time.

CATALOG DESCRIPTION

GISB 694 (4 units):
Focus on decision-making spanning various stages of location value chain in businesses employing GIS and location Analytics. Emphasis on illustrations of location analytics project planning development, and implementation in businesses. Topics include spatial decision support, location analytics to examine big data, social media, mobile technologies, and their spatial components

COURSE OVERVIEW

The course has the goal to understand contemporary information systems and systems planning that underlie GIS and describe and discuss the modern context of outsourcing and consulting. These special topics are updated as the GIS field evolves. Students learn through lectures, discussion, readings, case studies, online learning activities, and labs. Cases concern the challenges in companies and government offices in achieving productive, effective, and successful spatial applications in the modern web-, mobile-, and social-media-, and AI-driven environments. Location analytics, spatial big data, and spatial statistics are emphasized. Hands-on lab assignments concern creating analytics outputs that include maps, graphics, and tables through querying and selecting spatial data,

working with location analytics and GIS tools, and performing spatial analysis. The course culminates with a team project to build a spatial big data solution.

COURSE LEARNING OUTCOMES

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

1. Apply concepts and skills of location analytics and spatial analysis
2. Understand and apply concepts of the variety of platforms for spatial technologies
3. Synthesize and actively participate in the process by which GIS projects and applications can be planned, developed, implemented, and sometimes consulted on.
4. Evaluate the costs, benefits, risks, and ethical issues of GIS projects and applications.
5. Apply hands-on GIS skills for inputting of locational information, spatial data management, spatial screening for marketing, buffering, calibration of gravity models, cluster analysis, identifying hot and cold spots, and network analysis.

MAJOR TOPICS

- How information systems and GIS are related
- Spatial data management.
- Location Analytics
- Spatial Statistics
- Locational applications of network analysis and marketing
- Planning, developing, building, and implementing spatial solutions
- Costs, benefits, risks, and ethical implications of spatial projects

Major topics should focus on content appropriate to the program goals, School of Business goals, and relevant thinking in the field.

LEARNING MATERIALS AND RESOURCES

REQUIRED TEXTS

1. Bennett, L.,and Vale, F. (2023). *Spatial Statistics Illustrated*, Redlands, CA: Esri Press. ISBN-10: 1589487017
2. Horan, T.A., Pick, J.B., and Sarkar, A. (2022). *Spatial Business: Competing and Leading with Location Analytics*. Redlands, CA: Esri Press. ISBN-10:9781589485334.
3. Gorr, W.L., and Kurland, K.S. (2023) GIS Tutorial for ArcGIS Pro 3.1. Redlands, CA: Esri Press. ISBN-10: 2021939321.

Required Readings (posted on Canvas)

Chapter 6 "Spatial Systems Development," in Pick, J.B. (2008) *Geo-Business: GIS in the Digital Organization*. New York: John Wiley and Sons.

Chapter 7 "The Value of Investing in GIS," in Pick, J.B. (2008) *Geo-Business: GIS in the Digital Organization*. New York: John Wiley and Sons.

Recommended/Optional (as per program)

Mitchell, A. and Scott Griffin, L. (2021). *The Esri Guide to GIS Analysis, Volume 2: Spatial Measurements and Statistics*, 2nd edition. Redlands, CA: Esri Press. ISBN-10: 9781589486089

American Psychological Association. (2019). *Publication manual of the American Psychological Association*. (6th ed.). Washington, D.C.: American Psychological Association. ISBN-10: 143383216X

Browne, M. N. and Keeley, S. (2014). *Asking the right questions: A guide to critical thinking* (11th ed.). Pearson Education. ISBN-10: 0321907957

Citation Styles
Citation style is American Psychological Association (APA).

REQUIRED RESOURCES/SOFTWARE

ArcGIS Online
You can obtain free access to it. Login at http://redlandsbusiness.maps.arcgis.com/home/index.html using University of Redlands e-mail and password. Click on "Maps" and you are using ArcGIS Online.
A basic training video, *"ArcGIS Online: An Introduction,"* is available at: https://www.esri.com/training/catalog/616f0e78be862a3c08c160ca/arcgis-online-an-introduction/
if you want a deeper grounding in the analytics visual features in the Map Viewer of ArcGIS Online, there is an Esri Training Seminar, "Analysis in ArcGIS Online," that you can watch at: https://www.esri.com/training/catalog/64dbc9f56e1a611a7491c66c/analysis-in-arcgis-online/

ArcPro
You can download ArcPro for free at the Center for Spatial Studies (CSS). https://www.redlands.edu/study/schools-and-centers/css/resources/arcgis-pro/
Please follow the directions. Please note: that older laptops (more than about 4 years old) may be slowed down or have installation problems with ArcPro. If you have a challenge installing ArcPro, please contact Lisa Benvenuti in CSS. (Lisa_Benvenuti@redlands.edu. If you still are having install problems, contact your instructor.

Canvas
Canvas is the Learning Management System (LMS) that we will use throughout the course for class announcements, documents, assignments and online discussions. You should visit the course Canvas site daily for important information concerning the course.

COURSE STRUCTURE AND RELATIONSHIP TO THE EMGIS DEGREE

This synchronous portion of the course mixes lectures, class and small-group discussions, case studies, videos, demos of software and lab exercises. Student teamwork is emphasized

for some assignments. The asynchronous part has videos, padlets, student discussions, and online activities.

This course is the third one in the GIS Concentration in the MBA program, and it is an elective course in the M.S. in Business Analytics program. The present course builds on the previous courses, especially on the GISB 691 and GISB 692 courses, both in previous content and in the ArcPro skills. The GISB course expands on the GIS experience to the use of spatial analytics and statistics. In addition, the GISB 694 course introduces the underlying concepts of planning, developing, and implementing a GIS, GIS consulting, and costs, benefits, and risks. For students in the MBA GIS Concentration, the skills learned also are essential to achieving better results with the GISB 695 project.

Recommended/Optional (as per program)

- American Psychological Association. (2019). ***Publication manual of the American Psychological Association***. (7th ed.). Washington, D.C.: American Psychological Association. ISBN-10: 143383216X
- Browne, M. N. and Keeley, S. (2014). ***Asking the right questions: A guide to critical thinking*** (11th ed.). Pearson Education. ISBN-10: 0321907957

Citation Styles

Citation style is American Psychological Association (APA).

ASSIGNMENTS

Reading Assignments – Individual

Your principal reading obligation is to keep up with the assigned chapters within the course study outline contained in this syllabus. Your knowledge of the textbooks and lectures, as illustrated in class discussions, and GIS Planning Report, will count towards your class participation grade.

Online attendance is expected and participation (individually and in groups) will be evaluated on its contribution to the learning process and discussion board threads.

Week 4 in-class discussion. "Space-Time" location analytics

This discussion focuses on Bennett/Vale Chapter 5 "Spatiotemporal pattern mining." The chapter concerns analyzing "space-time" analysis, a way to determine patterns and trends of a mapped area over time. This is done by sorting individual cases into space-time "bins," i.e., 3-D analogy of polygons. All the bins together form a space-time "cube." There are many ways to analyze a space-time cube, but the chapter emphasizes the principles of "emerging hot spot analysis." In this technique, spatial autocorrelation (Getis-Ord) and LISA (local indicators of spatial association), which can be extended from 2-D to 3-D for space-time analysis.

Please read the chapter and focus your discussion on the following:

- What is a "cube"?
- Why have a cube, instead of just putting maps side-by-side over regular time intervals?
- How can spate-time trends be understood through "location," which is a column of bins (see p. 117)?
- Discuss "emerging hot spot analysis." What is your understanding of it?
- How can "space-time" analysis be applied at Geosa or its partner organizations? What are the benefits of applying it?

Week 6 in-class discussion. Dashboards in Real Time.

Dashboards with maps have multiplicative benefits if they are utilized for real-time situational response. For this discussion, first read the article, "Location Intelligence Keeps Employees Safe in Saudi Arabian Desert," by F.K. Patta, H. Alnasser, and F. Al Hammad in *ArcNews*, Spring 2022. Its in Canvas and available also at https://www.esri.com/about/newsroom/arcnews/location-intelligence-keeps-employees-safe-in-saudi-arabian-desert/ .

In your discussion, examine why the online dashboard is key to the decision-making that assures the safety of Saudi Aramco drivers. What is being decided? How are decisions made from the dashboard? How could the map on this dashboard be improved? Which stakeholders (driver, driver-manager, journey-management department manager) are involved and what are they basing their decisions on?

Compare this Aramco case to dashboards you know about at Geosa. Are there real-time dashboards in use at Geosa or its partner organizations? Why are they important for decision-making?

Initial Paper

In the initial paper, the student searches for a real-world case of a large-scale GIS application which is a success and analyzes what problem was being addressed and why the GIS solution selected was a good fit to solving the problem. The student should consider the information accessed, type of platform and software, spatial analysis done, ease of use for the user, training, consulting, and outsourcing if relevant. How did all this blend together to a successful solution? What essential benefits were provided to the user and did they exceed the costs?

With the current technology, choose one innovation in IT that could benefit the case if replicated in the future somewhere else?

- You should discuss how an IT innovation could drive the future of traditional GIS applications (for example. think about autonomous cars and how the location aspects of IOT would be beneficial for Uber, what are the risks for company and customers?)

Note. The paper is done individually and is 4 to 5 pages in length. It is due on Sunday, March 10.

Lab Exercises (Individual)
The exercises are done individually. Each lab exercise has a clear instruction and the students should answer specific essay questions that are posted and include other outputs such as maps. If the student doesn't complete the lab, he/she can submit the incomplete version for partial credit.
Detailed instructions of each lab will be provided on Canvas. Due
Lab 1: ArcGIS Online. Spatial relationships and mapping with descriptive statistics. Due 3/17.
Lab 2: ArcGIS Online. Creating hot spots, outliers, buffering, and groupings. Due 3/24.
Lab 3. ArcGIS Online. Location Analytics in Texas, New Mexico, and Arizona: Spatial Challenges in Marketing and Sales of Electronics and Video Goods to Millennials. Due 3/31.
Lab 4: ArcPro. Buffering (G&K Tutorial 9-1), Multiple Ring Buffering (G&K Tutorial 9-2). Due 4/7.
Lab 5: ArcPro. Creating multiple ring service areas for calibrating a gravity model (G&K Tutorial 9-3). Due 4/14.
Lab 6: ArcPro. Using network analysis to locate facilities (G&K Tutorial 9-4). Due 4/18.

GIS Planning Report (Individual)
In this report, formulate a spatial big data application for an organization you are familiar with. This could be Geosa, a partner organization of a company, government office, or nonprofit organization that you have worked for or know about. You will be planning a spatial big-data/analytics application to solve problems the organization is facing. In the report, it is required to refer to some of the principles in the Horan/Pick/Sarkar textbook, Bennett/Vale textbook, or in the two Pick chapter readings. If you have relevant experience, please bring that in as well.

In this homework, you are doing planning for a locational application, but you are not actually building it.
Components of the planning report are:
- Organizational context, history of the organization.
- How the spatial big data can be collected and organized, and how they can be updated.
- How location analytics will be applied to the organization's business processes and operations.
- What platforms and location software will be utilized.
- Potential geographic information products.
- How these products will support better decision-making.
- How this solves problems that the company faces.
- The potential risks and benefits of developing and implementing the geographic information products.

The written paper's length should be **4** or **5** pages, double spaced, font size 12 excluding cover page, references, and any figures or tables. References to the textbooks or other sources must be cited and included. It is due in Week 6 on 4/11.

Building a Spatial Big Data Solution Term Paper (group)

Students will work in groups of two or three students. Each student will design a spatial big data map-set or dashboard solution for the big dataset (each is spatially-referenced) chosen by your group. The student will discuss some background on the organization, justify how each worksheet in the solution is put together, explain how the map set or dashboard will help executive decision-makers in the organization, and explain how the spatial aspects of the outputs will contribute to improved decisions. The maps and outputs can be produced with ArcGIS Online, AGOL dashboard, or ArcPro.

Students will also document what process they used to design, build, and implement the solution. This process needs to refer to principles in the Horan, Pick, Sarkar textbook or two Pick chapter readings. The paper will be 7-8 pages not including references and map images. It is due in Week 8 on Thurs. 4/25.

You will give a 10-minute presentation on Zoom at final, 8th session (4/22) of the course. You can use Screen Share to show your powerpoint, Esri Story Map, and/or hands-on demo as part of your talk. Following the team's talk, there will time for other students and the professor to ask questions and discuss the Zoom presentation.

Participation (Individual)
Class participation grade for each student will be evaluated through quality of the contribution to the on-line discussion and activities set up for each section of the course.

GRADE WEIGHTINGS
Final grades will be based on the following weighted factors:

Item	*Type*	*Session Due*	*Weight*	*Learning Objectives*
Initial Paper	Individual	Week 1	7	1,2,3
Lab Exercises	Individual	Weeks 2-7	36	1,5
GIS Planning Report	Individual	Week 6	16	1,2,3,4
Building a Spatial Big Data Solution Report (Written Term Paper)*	Group	Week 8	30	1,3,5
Building a Spatial Big Data Solution Report (Oral Report)	Group	Week 8	3	1,3,5
Course Participation	Individual	Weeks 1-8	8	1,2,3,4
TOTAL			**100**	

NUMBER/LETTER GRADING RELATIONSHIP

4.0 A	94% - 100%	2.0 C	73% - 76%
3.7 A-	90% - 93%	1.7 C-	70% - 72%
3.3 B+	87% - 89%	1.3 D+	67% - 69%
3.0 B	83% - 86%	1.0 D	63% - 66%

2.7 B-	80% - 82%	0.7 D-	60% - 62%
2.3 C+	77% - 79%	0.0 F	below 60%

GRADING CRITERIA

The nature of the written and oral assignments in this course is such that the quality of students' work may only be assessed through subjective evaluation. Therefore, all assignments will be evaluated on evidence of learning in accord with the objectives of the assignments, depth of analysis, organization and thoroughness as well as the ability to anticipate the elements affecting business. Assignments should demonstrate that you have analyzed the key issues in the course and text, and are thinking critically in the context of business. Assignments should be logically presented, effectively analyzed and supported, and carefully reasoned. Oral assignments should demonstrate effectiveness of delivery. All written assignments should be and accurate and coherent use of language; be typed, double-spaced; and contain a bibliography of cited sources in the literature and appropriate footnotes. All ideas, quotes and statistics borrowed from another author must be cited. If you did not collect the data to support your position, then you need to properly cite the authority that did. Evidence of individual contribution to any group projects will be gauged through the student's effectiveness and participation in class discussion of the project. Peer evaluation forms may be used to measure each group member's contribution to group work.

The evaluation criteria are more fully stated in the University of Redlands grading criteria as follows:

3.7, 4.0 A Outstanding
Student displayed exceptional grasp of the material, frequently with evidence of intellectual insight and original thought.

2.7, 3.0, 3.3 B Excellent
Work demonstrated a thorough grasp of the material with occasional errors and omissions. Assignments were thoroughly and completely done, with careful attention to detail and clarity, and with evidence of intellectual insight.

Note: Credit for a course graded below 2.0 cannot be applied toward a graduate degree. See the "Graduate Grading Section" in the UR Catalog.

1.7, 2.0, 2.3 C Acceptable
The quality of the work was acceptable, meeting minimal course standards, but not exceptional. Performance on the examinations and other assignments was satisfactory and demonstrated that the student was keeping up with the material and attending to detail.

0.7, 1.0, 1.3 D Poor
The quality of the work was not always satisfactory, but overall was passing. Assigned work was not always done, and when done was inadequate. Performance on examinations and other work was generally weak with regard to understanding of subject, proper formulations of ideas, and thoroughness.

0 F Failing

A grade of "F" indicates that the student failed the course. The quality and quantity of work was not of college level. A failing grade may be assigned for a variety of reasons such as failure to complete course requirements as outlined in the syllabus, inability to comprehend course material or ineptitude in dealing with it, consistently unsatisfactory performance on examinations and/or assignments, or excessive absences.

Grade of "Incomplete"

An "incomplete" is not given for poor or neglected work. A grade of "incomplete" is to be granted only for very special reasons and should occur only after a discussion between faculty and student, initiated by the student. The decision of whether or not to grant an incomplete is dependent on an emergency situation that prevents the student from completing (on time) the work necessary for the course. An incomplete grade will be converted to a permanent grade within eight weeks from the last night of the course. This means that the instructor must turn in the grade to the Registrar no later than the eighth week. Any incomplete work must be submitted to the instructor with enough lead time for the instructor to evaluate the work and issue a grade change. See U of R catalog for further guidance.

COURSE POLICIES

Attendance and Completion of Work

If a student must miss a class session, except for medical or personal/family emergencies, an alternative assignment covering part of the missed session's topics will be assigned by the instructor and must be completed. Unexcused absences (those not cleared with the instructor before the class and/or are for reasons other than an emergency) will adversely affect the grade. If a student misses more than one of the four on-the-ground class sessions, he or she will be encouraged to drop the course and take it in a subsequent offering. Students need to plan to arrive on time and not leave class before it ends. Repetitive late arrivals or early departures will reduce the class participation grade.

Assignments turned in late, without a compelling excuse or permission of instructor, will have the assignment grade reduced by one grade level.

Time Management

Each 4-unit (Carnegie Unit) graduate course is the equivalent of 180 hours. Thus an 8-week accelerated course is equivalent to 22.5 hours per week. Four hours are spent in class each week; the course has been designed with the expectation that homework will take about 18 hours per week. Although the amount of time that you spend studying may depend upon the subject matter, a student should expect to spend an average of 18 hours each week.

Disability Services

A student with a documented disability who wishes to request an accommodation should contact the School of Business Director of Student Services at (909) 748-8743 or SBStudentServices@redlands.edu for assistance.

The Office of Equity and Title IX

In order to provide a safe learning environment for all students, faculty, and staff, discrimination, harassment, retaliation, including sexual misconduct, sexual harassment (i.e., sexual assault, domestic violence, dating violence, and stalking) are not tolerated at the University of Redlands. The University prohibits and will not tolerate unlawful discrimination (as defined in Section II(A) of the Policy Prohibiting Discrimination, Harassment, Sexual Misconduct, and Retaliation) on the basis of age, color, race, ethnicity, national origin, ancestry, sex, marital status, pregnancy, status as a complaining party of domestic violence, sexual orientation, gender, gender identity or expression, physical or mental disability, genetic information, religion/creed, citizenship status (except to comply with legal requirements for employment), military/veteran status, or any other characteristic protected by law. If you (or someone you know) has experienced or experiences any of these incidents, know that you are not alone. You can reach out to the Office of Equity and Title IX, for reporting options and resources to support you.

All faculty and staff at the University of Redlands are considered "responsible employees," which means that if you tell me about a situation involving any of the above, I must connect you to the Office of Equity and Title IX. Although I make that connection, you are in control of how you would like to proceed, including whether or not you wish to pursue a formal complaint. Our goal is to make sure you are aware of the range of reporting options available to you and have access to the resources you need.

To report an incident, you can:

· Report online at: www.redlands.edu/titleixandequity --> Report
· Contact the Director of Equity and Title IX Coordinator at 909-748-8916

You can also file a report to local law enforcement at (909) 798-7681, ext. 1. If you are ever in immediate danger, please call 911 or email/text 911@redlandspolice.org if you are in a position where you cannot make a phone call.

If you wish to speak to someone confidentially (meaning not connecting with the Office of Equity and Title IX Office), you can contact any of the following on-campus resources:

· Counseling Service: 909-748-8108 or 24-Hour Crisis Line: 909-748-8960
· Chaplain's Office: 909-748-8368

For more information, please visit www.redlands.edu/titleixandequity

Policy for Cell Phones and Laptops in the Classroom

Cell phones will be off or on vibrate during all class sessions (excluding the dinner break) to avoid distractions. Students should refrain from making or taking non-critical personal or business cell phone calls during class sessions. If a phone call must be taken, the student will exit the classroom.

Laptop use during class is limited to taking notes related to the lecture or class discussions and/or researching material directly requested by the instructor. Internet searches will

not be used to support discussions or interaction during class time unless specifically requested by the instructor. Students will not use cell phones and/or laptops to surf the web, play games, read or generate personal or business email, or text others in class or outside of class for any reason during class time.

Academic Honesty

The University of Redlands Policy on Academic Honesty will be strictly adhered to and applied. The Procedures for Addressing Academic Honesty are set forth in the University of Redlands Catalog. It is expected that all students read and understand the Policy and the provisions outlined in the Catalog.

The highest standards of academic conduct are required. This is particularly true for the proper citation of course and research material in *all* written assignments. If you did not actually collect the data or independently arrive at the idea presented, then a proper citation must be used. Citations (in the form of parenthetical notes, endnotes or footnotes) must be used for quoted or paraphrased text and any time you borrow an idea from an author, the instructor, or your peers. Using someone else's sentence or organizational structure, pattern of argument and word choice, even if not exactly similar in every respect, warrants citation. It is students' responsibility to make sure that their citations and quotation marks **unambiguously** highlight the ideas, words, sentences, and arguments that they borrow from other sources. Paraphrasing is not simply changing one or two words in a sentence; it **completely** reconstructs someone else's idea in your own words. For guidelines on appropriate citation, quotation, paraphrasing, and plagiarism, see materials provided by the Indiana University's Writing Tutorial Center at https://wts.indiana.edu/writing-guides/plagiarism.html or by the Purdue Online Writing Lab (OWL) at https://owl.english.purdue.edu/owl/resource/589/01_/

Discussion with the instructor and your peers is encouraged before the composition of written work; however, all written work, unless specified by the instructor, is to reflect independent composition and revision. Students working on group or collaborative assignments are expected to contribute equally to all tasks necessary for completion of the assignment.

Students are expected to follow all written and verbal instructions provided by the instructor with regard to written assignments, quizzes and/or exams. In addition to plagiarism, other impermissible academic behavior includes, but is not limited to, collaboration without instructor consent, falsifying research data, illicit possession of exams, using study aids during exams, unauthorized communication about an assignment or exam, handing in others' work as your own, reusing assignments or papers from other courses, and impeding equal access to educational resources by other students.

Time constraints, the demands of work and family, failing to read the University's Policy on Academic Honesty, unintentional misuse of sources, or a lack of preparation do not excuse academic dishonesty or otherwise mitigate the appropriate penalty. Penalty for a first offense is at the discretion of the instructor.

If a student is uncertain about appropriate methods of citation or has a question about the academic honesty policy, it is his or her responsibility to seek guidance from the instructor, a University official, or another reputable source.

Armacost Library Services

Any time you see the word "research" or related concepts in your syllabus or on an assignment, there is a good chance that you will be required to locate, read, and incorporate information into your coursework from someplace other than Google. The University uses part of your tuition to pay for access to a wide variety of tools and resources located beyond firewalls on the web, undiscoverable or inaccessible to the casual searcher. Please visit library.redlands.edu/business in order to browse the many resources available to you. All links requesting a login can be accessed by entering your myRedlands ID (firstname_lastname) and the same, case-sensitive password you use for all other University applications.

Feel free to use the navigation on the webpage to explore the resources provided for many other disciplinary areas you may be interested in exploring. There are descriptions of which databases contain various types of information, and pictures and demos on how to most effectively use them. If you have a question regarding the research process or gaining access to or using a source, please contact your librarian, Janelle Julagay, by email at janelle_julagay@redlands.edu or by phone at 909.748-8083 anytime. Drop-in office hours are listed on the website, and she is generally in the library at the main campus Monday-Friday during normal business hours.

Code of Student Conduct

At the time of new-student orientation, all School of Business students were directed to read the University's Code of Student Conduct on the University's website. If you need access to the Code of Student Conduct at this time, please review the University catalog.

COURSE SCHEDULE-1 GISB 694 (Subject to change)

Session/Date	Topics	Reading Preparation for Class	Assignments Due
Week 1 Introduction to Location Analytics and GIS Planning. Applications in Marketing. March 7	Introduction to syllabus Introduction to Location Analytics **Video** "Oxxo: Expanding Beyond Traditional Borders" 11:40 minutes. Esri Events, 2020. https://www.youtube.com/watch?v=EiHWgdGuHlw&ab_channel=EsriEvents **Oxxo case study** (HPS, pp. 90-94) Asking the Right Analytics Questions, Spatial Relationships, Means and Medians (descriptive statistics) Demo of **Lab 1. ArcGIS Online (AGOL) -** Spatial relationships and mapping with descriptive statistics.	BV, Introduction,1,2 HPS, 2,4.	Initial Paper information Sheet for GISB 694 Video Introductions (3-min)
Week 2 Corporate Social Responsibility with GIS Spatial Ethics March 14	**Invited Speaker, Andrew Schroeder**, Direct Relief, CSB Speaker Series, 6-7:15pm. Please sign up for this virtual talk at www.redlands.edu/csb. You can also attend the event and the class afterwards in person (dinner is included). Class will follow on Canvas from 7:30-8:30pm Ethics of GIS, Location Analytics, and Big Data Demo of **Lab 2. ArcGIS Online (AGOL) -** Creating hot spots, outliers, buffering, and groupings. Dashboards.	HPS 3, 8 (also pp. 170-171) BV 3.4.5	Lab 1. Due Sun. 3/17
Week 3 Principles of Location Analytics Location Analytics in Operations and Services	Principles and hierarchy of location analytics Analytics across the value chain Methods of location analytics **John Deere case study** (HPS, pp. 61-66)	HPS 5 BV 5 GK 9, pp 200-204.	**Lab 2.** Due Sun. 3/24 **Video** for review. "Enable Digital Transformation with Big Data and Analytics" Damian Spangrud, Esri

March 21	**Demo of Lab 3. ArcGIS Online** - Location Analytics in Texas, New Mexico, and Arizona: Spatial Challenges in Marketing and Sales of Electronics and Video Goods to Millennials		18:30 Minutes https://www.youtube.com/watch?v=xp_4sOJCgtw&ab_channel=EsriEvents
Week 4 Space-Time Data Modeling Geo AI March 28	Introduction to Big Data and Spatial Big Data Space-Time modelling **Video.** Lauren Bennett, Space-Time mapping (Esri, 2017). https://www.youtube.com/watch?v=0aV6HHwJuo4 **Zonda Case Study** (HPS, p. 31) Location-based Mobile Platforms and Social Media **Demo of Lab 4.** ArcPro. Buffering (G&K Tutorial 9-1), Multiple Ring Buffering (G&K Tutorial 9-2). Due 4/7.	BV 5 HPS 2 GK 9, pp. 204-212	Lab 3. Due Sun. 3/31

Session/Date	Topics	Reading for Class	Assignments Due
Week 5 Costs and Benefits Risk Analysis April 4	Lecture: Costs and Benefits and Risk Analysis Planning a GIS **Demo of Lab 5. ArcPro - ArcPro -** creating multiple-ring service areas for calibrating a gravity model (GK 9-3)	HPS 6 Pick 7 (Canvas-posted) GK 9, pp. 212-216	Lab 4 due, Sun. 4/7
Week 6 Designing and Building GIS Applications& Projects April 11	Lecture/Discussion**:** Designing, Describing, Determining Requirements, and Building a GIS: System Requirements **Video.** "BP" Esri, 2017**.** https://www.youtube.com/watch?v=9qBw9sPkttI&ab_channel=EsriIndustries **BP Case Study** (HPS, pp. 170-172) **Demo of Lab 6. ArcPro –** Using network analysis to locate facilities (GK 9-4)	Pick 6 (Canvas-posted) GK 9, pp. 216-221	GIS Planning Report Lab 5 due, Sun. 4/14
Week 7 Business Management and Leadership April 18	Business Management and Leadership **KFC Case Study** (HPS, pp. 191-193)	HPS 8, 9	Lab 6 due Sun. 4/18
Week 8 GIS Ethics Summary on GIS and Projects and Strategies April 22 (Note changed from April 25)	Student Project Report Presentations Spatial Strategies and Competitiveness 4 Spatial Predictive Analytics Course Reflections	HPS 7 BV 6	Spatial Project Oral Report On Mon. 4/22/24 Spatial Project Written Report On Thurs. 4/25/24

GISB 694
Student Information Sheet
(This sheet will be dropped in the Moodle Dropbox or e-mailed to
to the instructor by the first day of class)

Name:

Government Position:

Job title:

Undergraduate university, degree, and major:

Other graduate degree and university (if appropriate)

How do you assess your own hands-on ability with GIS software including ArcGIS Online, ArcGIS Pro, Business Analyst Online, or Tableau.

What is, or has been, your responsibility for building an information system or a GIS at a university, company and/or a different organization?

What do you expect to get out of this course?

Do you have suggestions for modifying, improving, or adding topics to the course?