GEOG 1800  Introduction to Geographic Information Science- Syllabus

Instructor

Gustavo Ovando-Montejo
Office: 219 BLT (Blanding campus)
Email: gustavo.ovando@usu.edu

Digital office hours

I will hold digital office hours every Wednesday from 10:00 AM to 12:00 PM. My goal is to break the hurdles of the only setting by using technology to communicate, so if you prefer another method of virtual communication, send me an email and I will make the necessary arrangement. If you are on campus and would like to visit in person instead, feel free to stop by my office during my digital office hours or by appointment.

Course Description

This introductory GIS course is designed to cover the fundamental principles and concepts of GIS and to provide hands-on experience with selected Environmental Systems Research Institute's (ESRI) GIS software. Lecture topics will include basic map concepts, GIS data input/output, GIS data models, GIS data quality and standards, GIS analysis functions, and GIS issues and prospects.

Course Objectives

The objectives of GEOG 1800 are to introduce students to the foundational components of Geographic Information Systems and Science (GIS) through practical use of geographic data, geospatial analysis, and exposure to spatial technologies. The lecture component (recorded and online) of GEOG 1800 will provide the theory and background of geospatial sciences and the use of geospatial tools. Lectures are available online (Canvas) and on YouTube. The lab component of GEOG 1800 will build the necessary skills to utilize and understand geospatial data through the operation of the most commonly used GIS software ArcGIS Pro.

We will focus on four critical learning objectives throughout the semester:

- Gaining factual knowledge of GIS, geospatial theory, and the use of spatial data
• Learning fundamental principles, generalizations, and theories of geospatial technologies
• Developing specific skills, competencies, and points of view needed by professionals using geospatial technologies
• Learning how to find and use resources for answering questions or solving problems related to geospatial topics

Course Materials

Required Text:

Software

We will use ArcGIS licenses are available to install on personal computers through the USU site license web site: https://software.usu.edu

Lectures:

Course lectures are intended to cover theory and basic knowledge of GISc and prepare you for the material to be covered in laboratory section. Geospatial studies present a complicated set of tools with many interactions in nearly all fields of study; hence, the best way to learn a complicated tool is to understand background and theory and gain hands-on experience, make mistakes, and fix those mistakes as your abilities grow. It is our goal that by the end of the semester students will see and understand the complex interaction between all components covered in class and be able to carry that knowledge forward.

Communication is critical. Students are encouraged to ask questions and participate in discussions throughout the semester (via the Google Group)

Course Requirements

Students MUST have a Microsoft Windows-based personal computer that is capable of running the ArcGIS 10.7. It is the responsibility of the student to ensure their data is backed up in the event of computer hard drive failure. Computer failures are not the responsibility of the instructor or USU. Please note that Esri ArcGIS WILL NOT run on Mac computers.

Students should be comfortable using the Microsoft Windows operating system and be able to perform basic tasks such as copying files, moving folders, opening documents, exploring folders, and editing files. Further, students should be able to utilize internet search engines, word processing software, and perform basic scholarly research.

Students should understand basic mathematics and be able to apply that knowledge to perform general calculations and evaluate analysis results.
This is not a writing course; however, as with any university course, students are expected to write professionally using proper spelling and grammar, and provide citations when appropriate.

### Course Format

**Lectures:**
Course lectures are intended to cover theory and basic knowledge of GISc and prepare you for the material to be covered in laboratory section. Geospatial studies present a complicated set of tools with many interactions in nearly all fields of study; hence, the best way to learn a complicated tool is to understand background and theory and gain hands-on experience, make mistakes, and fix those mistakes as your abilities grow. It is our goal that by the end of the semester students will see and understand the complex interaction between all components covered in class and be able to carry that knowledge forward.

### Evaluation Methods and Criteria

**Quizzes:**
There will be five quizzes posted on Canvas with their respective due dates. There are no time limits on the quizzes and you may use any desired resource to help complete the quiz.

The quizzes are not designed to freak you out or make you stress over the hundreds of minute details associated with GIS theory. They are written to help reinforce the fundamental topics from each chapter. To that end, there is no time limit on the quizzes, they are open book, and you can retake them until you are satisfied that you understand the concepts being covered.

**Exams:**
Due to the nature of the course, there are no exams given for GEOG 1800. Student learning and points will stem from the completion of weekly quizzes and lab assignments.

**Final Project:**
There is no final project associated with GEOG 1800. However, as the semester progresses, assignments will become more challenging and require students to recall and use previously developed skills.

**Labs:**
The goal of the labs is to provide you with the opportunity to learn GIS and GISc concepts through hands-on experience. Lab instructions will be provided to you via Canvas. Lab exercises have been written with the intent of exposing you to the fundamental tools of ArcGIS, teaching you to think and problem solve spatially, and to be resourceful when troubleshooting and/or designing analysis workflows.

The lab portion of this course is critical. You cannot learn GIS by understanding theory only. Thus, you are encouraged to complete all labs. Your lab assignments are due at the time stated on Canvas unless circumstances require arrangements to be made with the instructor.

**Lab Exercises:**

There will be 10 lab exercises throughout the semester and they will be worth 100 points. Exercises will generally require some research and extensive time using ArcGIS. *Students are required to present all lab submissions in his/her own words and provide proper citations when relevant.* Due dates can be found on the GEOG 1800 Canvas page, but as a rule, each lab or module will be due Monday of the following week before midnight. Late assignments will be accepted with a 10 percent per day penalty. This rule is designed to help you stay on track. The lab schedule is aggressive and unrelenting. If students fall behind, catching up can be anywhere from painfully challenging to impossible. Each exercise builds on knowledge and skills acquired in previous assignments.

**Lab Grading:**

Grading rubrics for each lab can be found under the individual assignment page on Canvas. Specific grading criteria are listed with the total points each criteria is worth. If you do what is asked of you on each assignment, you will meet expectations and can expect to get a B. To get an A, your submissions will need to be exceptional.

**Grade Scheme**

The following grading standards will be used in this class:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
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<tbody>
<tr>
<td>A</td>
<td>100 % to 93.0%</td>
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<tr>
<td>A-</td>
<td>&lt; 93.0 % to 90.0%</td>
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<tr>
<td>B+</td>
<td>&lt; 90.0 % to 87.0%</td>
</tr>
<tr>
<td>B</td>
<td>&lt; 87.0 % to 83.0%</td>
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<tr>
<td>Grade</td>
<td>Range</td>
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<tr>
<td>B-</td>
<td>&lt; 83.0 % to 80.0%</td>
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<tr>
<td>C+</td>
<td>&lt; 80.0 % to 77.0%</td>
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<tr>
<td>C</td>
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<tr>
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<tr>
<td>D+</td>
<td>&lt; 70.0 % to 67.0%</td>
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<tr>
<td>D</td>
<td>&lt; 67.0 % to 60.0%</td>
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<tr>
<td>F</td>
<td>&lt; 59.0 % to 0.0%</td>
</tr>
</tbody>
</table>

**Course Schedule/Outline**

Outline dates and assignments

**Attendance and Excused Absences Policy**

Insert course policy content here.

**Library Services**

All USU students attending classes in Logan, at our Regional Campuses, or online can access all databases, e-journals, and e-books regardless of location. Additionally, the library will mail printed books to students, at no charge to them. Students can also borrow books from any Utah academic library. Take advantage of all library services and learn more at libguides.usu.edu/rc. (http://libguides.usu.edu/rc)

**Classroom Civility**
Utah State University supports the principle of freedom of expression for both faculty and students. The University respects the rights of faculty to teach and students to learn. Maintenance of these rights requires classroom conditions that do not impede the learning process. Disruptive classroom behavior will not be tolerated. An individual engaging in such behavior may be subject to disciplinary action. Read Student Code Article V Section V-3 (https://studentconduct.usu.edu/studentcode/article5) for more information.

University Policies & Procedures

COVID-19 Classroom Protocols

In order to continue to provide a high standard of instruction at USU, and to limit the spread of COVID-19 during the pandemic, students are asked to follow certain classroom protocols. These protocols are in place not only for your safety but also the safety of the rest of the campus community. You will be asked to clean your desk area at the start of each class, sit in designated seats, wear face coverings, and follow dismission instructions. There may be individual medical circumstances that prevent some students from using face coverings. These circumstances will be rare, but if they do exist, we ask that everyone be respectful. It is imperative that we each do our part so that on-campus instruction can continue.

Academic Freedom and Professional Responsibilities

Academic freedom is the right to teach, study, discuss, investigate, discover, create, and publish freely. Academic freedom protects the rights of faculty members in teaching and of students in learning. Freedom in research is fundamental to the advancement of truth. Faculty members are entitled to full freedom in teaching, research, and creative activities, subject to the limitations imposed by professional responsibility. Faculty Code Policy #403 (http://www.usu.edu/hr/files/uploads/Policies/403.pdf) further defines academic freedom and professional responsibilities.

Academic Integrity – "The Honor System"

Each student has the right and duty to pursue his or her academic experience free of dishonesty. To enhance the learning environment at Utah State University and to develop student academic integrity, each student agrees to the following Honor Pledge:

"I pledge, on my honor, to conduct myself with the foremost level of academic integrity."

A student who lives by the Honor Pledge is a student who does more than not cheat, falsify, or plagiarize. A student who lives by the Honor Pledge:

- Espouses academic integrity as an underlying and essential principle of the Utah State University community;
- Understands that each act of academic dishonesty devalues every degree that is awarded by this institution; and
- Is a welcomed and valued member of Utah State University.

Academic Dishonesty

The instructor of this course will take appropriate actions in response to Academic Dishonesty, as defined the University's Student Code. Acts of academic dishonesty include but are not limited to:

- **Cheating**: using, attempting to use, or providing others with any unauthorized assistance in taking quizzes, tests, examinations, or in any other academic exercise or activity. Unauthorized assistance includes:
- Working in a group when the instructor has designated that the quiz, test, examination, or any other academic exercise or activity be done "individually;"
- Depending on the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments;
- Substituting for another student, or permitting another student to substitute for oneself, in taking an examination or preparing academic work;
- Acquiring tests or other academic material belonging to a faculty member, staff member, or another student without express permission;
- Continuing to write after time has been called on a quiz, test, examination, or any other academic exercise or activity;
- Submitting substantially the same work for credit in more than one class, except with prior approval of the instructor; or engaging in any form of research fraud.

- **Falsification**: altering or fabricating any information or citation in an academic exercise or activity.
- **Plagiarism**: representing, by paraphrase or direct quotation, the published or unpublished work of another person as one’s own in any academic exercise or activity without full and clear acknowledgment. It also includes using materials prepared by another person or by an agency engaged in the sale of term papers or other academic materials.

For additional information go to: ARTICLE VI. University Regulations Regarding Academic Integrity (https://studentconduct.usu.edu/studentcode/article6)

**Sexual Harassment/Title IX**

Utah State University is committed to creating and maintaining an environment free from acts of sexual misconduct and discrimination and to fostering respect and dignity for all members of the USU community. Title IX and USU Policy 339 (http://www.usu.edu/policies/339) address sexual harassment in the workplace and academic setting.

The university responds promptly upon learning of any form of possible discrimination or sexual misconduct. Any individual may contact USU's Office of Equity (https://equity.usu.edu/) for available options and resources or clarification. The university has established a complaint procedure to handle all types of discrimination complaints, including sexual harassment (USU Policy 305 (http://www.usu.edu/policies/305/)), and has designated the Office of Equity Director/Title IX Coordinator as the official responsible for receiving and investigating complaints of sexual harassment.

**Withdrawal Policy and "I" Grade Policy**

Students are required to complete all courses for which they are registered by the end of the semester. In some cases, a student may be unable to complete all of the coursework because of extenuating circumstances, but not due to poor performance or to retain financial aid. The term ‘extenuating’ circumstances includes: (1) incapacitating illness which prevents a student from attending classes for a minimum period of two weeks, (2) a death in the immediate family, (3) financial responsibilities requiring a student to alter a work schedule to secure employment, (4) change in work schedule as required by an employer, or (5) other emergencies deemed appropriate by the instructor.

**Students with Disabilities**

USU welcomes students with disabilities. If you have, or suspect you may have, a physical, mental health, or learning disability that may require accommodations in this course, please contact the Disability Resource Center (DRC) (http://www.usu.edu/drc/) as early in the semester as possible (University Inn # 101, (435) 797-2444, drc@usu.edu (mailto:drc@usu.edu)). All disability related accommodations must be approved by the DRC. Once approved, the DRC will coordinate with faculty to provide accommodations.
Students who are at a higher risk for complications from COVID-19 or who contract COVID-19 may also be eligible for accommodations.

**Diversity Statement**

Regardless of intent, careless or ill-informed remarks can be offensive and hurtful to others and detract from the learning climate. If you feel uncomfortable in a classroom due to offensive language or actions by an instructor or student(s) regarding ethnicity, gender, or sexual orientation, contact:

- Division of Student Affairs: https://studentaffairs.usu.edu, (435) 797-1712, studentservices@usu.edu, TSC 220
- Student Legal Services: https://ususa.usu.edu/student-association/student-advocacy/legal-services, (435) 797-2912, TSC 326,
- Access and Diversity: http://accesscenter.usu.edu, (435) 797-1728, access@usu.edu, TSC 315
- Multicultural Programs: http://accesscenter.usu.edu/multiculture, (435) 797-1728, TSC 315
- LGBTQA Programs: http://accesscenter.usu.edu/lgbtqa, (435) 797-1728, TSC 3145
- Provost's Office Diversity Resources: https://www.usu.edu/provost/diversity, (435) 797-8176

You can learn about your student rights by visiting:

The Code of Policies and Procedures for Students at Utah State University: https://studentconduct.usu.edu/studentcode

**Grievance Process**

Students who feel they have been unfairly treated may file a grievance through the channels and procedures described in the Student Code: Article VII.

**Full details for USU Academic Policies and Procedures can be found at:**

- Student Conduct (http://www.usu.edu/studentconduct)
- Student Code (https://studentconduct.usu.edu/studentcode/)
- Academic Integrity (https://studentconduct.usu.edu/studentcode/article6)
- USU Selected Academic Policies and Procedures (http://www.usu.edu/provost/faculty-life/syllabus.cfm)

**Emergency Procedures**

In the case of a drill or real emergency, classes will be notified to evacuate the building by the sound of the fire/emergency alarm system or by a building representative. In the event of a disaster that may interfere with either notification, evacuate as the situation dictates (i.e., in an earthquake when shaking ceases or immediately when a fire is discovered). Turn off computers and take any personal items with you. Elevators should not be used; instead, use the closest stairs.

**Mental Health**
Mental health is critically important for the success of USU students. As a student, you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce your ability to participate in daily activities. Utah State University provides free services for students to assist them with addressing these and other concerns. You can learn more about the broad range of confidential mental health services available on campus at Counseling and Psychological Services (CAPS) (https://counseling.usu.edu).

Students are also encouraged to download the "SafeUT App" (https://healthcare.utah.edu/uni/programs/safe-ut-smartphone-app) to their smartphones. The SafeUT application is a 24/7 statewide crisis text and tip service that provides real-time crisis intervention to students through texting and a confidential tip program that can help anyone with emotional crises, bullying, relationship problems, mental health, or suicide related issues.