

Laboratory Policies and Procedures
Geography 5150/6150 – Spatial Data Design for GIS Laboratory
Fall 2019

Lab Instructor: Tim Edgar, M.S., Assistant Professor (Lecturer)

Contact Information: tim.edgar@geog.utah.edu, GC 4842

Office Hours: Mondays & Wednesdays 12:00 PM - 1:30 PM, or by appointment

Lab: Monday 9:40 AM - 11:35 AM, GC 1855

Prerequisite: C or better in GEOG 5140

Department: Geography

Credit Hours: GEOG 5150/6150 is a four credit hour course. At the University of Utah it is assumed that there is at least one hour in class and two hours outside of class per week or the equivalent combination connected to every credit hour.

Course Catalog Description: Meets with GEOG 6150. Graduate students should enroll in GEOG 6150 and will be held to higher standards and/or more work. Digital spatial data is widespread due to the global positioning system (GPS), satellite-based remote sensing, intelligent transportation systems and other geographic information technologies. Spatial data is important and useful due to geographic information systems (GIS) and other spatial applications such as Internet map serving and location-based services. However, spatial data involves complex objects and relationships that cannot be accommodated easily by standard database management systems. This course reviews the fundamentals of database design and data management to support GIS and other spatial applications. Topics include modeling spatial data, spatial database design, spatial query languages, spatial database storage and indexing, and spatial query optimization.

Expected Learning Outcomes: By the end of this course students will be able to:

1. Recognize the essential stages of database design and the purpose of each stage.
2. Explain the purpose of the core elements of a database as well as that of each element's subcomponents.
3. Demonstrate coherent database design through each of the design stages using database design principles.
4. Evaluate database solutions for their greatest utility for a variety of spatial data applications.
5. Diagram, create, and manage an independently developed database.

Important dates:

Last day to add, drop (delete), elect CR/NC, or audit classes

Friday, 30 August

Last day to withdraw from classes

Friday, 18 October

Laboratory Scoring and Assessments

Laboratory Percentage Points:

Assignments (8)	30 %
Project Proposal	2 %
Project Part 1	2 %
Project Part 2	2 %
Project Part 3	2 %
Project Part 4	2 %
Project Demonstration	3 %
Project Report	7 %
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Total	50 %

Assignments: There are eight lab assignments in this course. Lab assignments are introduced on Monday during the lab session, and are due by 11:59 PM on Sunday of the same week. Students may work together to complete the assignments, but each student's work must be their own. Lab assignments may be submitted late for partial credit as outlined in the late assignments policy.

Course Project: Each student will work independently to complete a project focused on the development of a spatial database using the knowledge gained over the semester. The course project is an opportunity for you to demonstrate what you have learned in the course, as well as allow you to be creative. Details for the final project will be provided as the semester progresses. Components of the project have due dates spread throughout the second half of the semester, as listed in the lab schedule.

The project is a combination of the following components:

1. Project proposal
2. Four (4) final project assignments related to the development of your final project, spaced throughout the latter half of the semester
3. Individual demonstration of your project to the instructors
4. Project report

As with the lab assignments, feedback will be provided on each stage of your final project. Most final project components may be accepted late under the late assignments policy. The Project Demonstration and Project Report will not be accepted late.

Extra Credit: There is **NO** extra credit available for this course.

Laboratory Schedule and Topics

Date	Topic
Week 1	
Monday 19 August	Discuss Laboratory Policies and Procedures
Week 2	
Monday 26 August	Lab 1: Geodatabases in ArcGIS
Week 3	
Monday 2 September	No Lab - Labor Day Holiday
Sunday 8 September	<i>Lab 1 due by 11:59 PM</i>
Week 4	
Monday 9 September	Lab 2: Entity-Relationship Diagram
Sunday 15 September	<i>Lab 2 due by 11:59 PM</i>
Week 5	
Monday 16 September	Lab 3: Relational Model Diagram
Wednesday 18 September	Exam 1
Sunday 22 September	<i>Lab 3 due by 11:59 PM</i>
Week 6	
Monday 23 September	Lab 4: Class Diagram
Sunday 29 September	<i>Lab 4 due by 11:59 PM</i>
Week 7	
Monday 30 September	Lab 5: Introduction to SQL/Queries
Sunday 6 October	<i>Lab 5 due by 11:59 PM</i>
Week 8	
Monday 7 October	No Lab – Fall Break
Week 9	
Monday 14 October	Lab 6: Physical Implementation in a DBMS
Sunday 20 October	<i>Lab 6 and Project Proposal due by 11:59 PM</i>
Week 10	
Monday 21 October	Lab 7: Implementation in ArcGIS I
Wednesday 23 October	Exam 2
Sunday 27 October	<i>Lab 7 due by 11:59 PM</i>
Week 11	
Monday 28 October	Lab 8: Implementation in ArcGIS II
Sunday 3 November	<i>Lab 8 due by 11:59 PM</i>
Week 12	
Monday 4 November	Project Part 1: Conceptual Data Model
Sunday 10 November	<i>Project Part 1 due by 11:59 PM</i>

Week 13

Monday 11 November	Project Part 2: Logical Data Model
Sunday 17 November	<i>Project Part 2 due by 11:59 PM</i>

Week 14

Monday 18 November	Project Part 3: Physical Data Model 1
Sunday 24 November	<i>Project Part 3 due by 11:59 PM</i>

Week 15

Monday 25 November	Project Part 4: Physical Data Model 2
Sunday 1 December	<i>Project Part 4 due by 11:59 PM</i>

Week 16

Monday 2 December	<i>Project demonstration to instructors</i>
Wednesday 4 December	Exam 3
Friday 6 December	<i>Project Report submitted by 11:59 PM</i>

**Note that the above schedule is subject to change.*

Additional Information

Late Assignments Policy:

Lab assignments and most project components (excluding the project demonstration and the final project submission) may be submitted late for partial credit within a one week window. If assignments are submitted within 24 hours following the assignment deadline, the assignment will receive a 10 % point reduction before it is evaluated and assigned its final score. Assignments submitted after of the 24-hour deadline window will receive a 50 % point reduction before the assignment is evaluated. Late assignments will not be accepted one week beyond their original due date.

Scheduling Conflicts:

Please speak with the lab instructor within the first two weeks of class regarding any known conflicts you may have with the lab schedule.

Academic Integrity:

As stated in the Student Code; “Academic misconduct’ includes, but is not limited to, cheating, misrepresenting one’s work, inappropriately collaborating, plagiarism, and fabrication or falsification of information, as defined further below. It also includes facilitating academic misconduct by intentionally helping or attempting to help another to commit an act of academic misconduct.”

- “‘Cheating’ involves the unauthorized possession or use of information, materials, notes, study aids, or other devices in any academic exercise, or the unauthorized communication with another person during such an exercise.”
- “Misrepresenting one’s work includes, but is not limited to, representing material prepared by another as one’s own work, or submitting the same work in more than one course without prior permission of both faculty members.”

- “‘Plagiarism’ means the intentional unacknowledged use or incorporation of any other person's work in, or as a basis for, one's own work offered for academic consideration or credit or for public presentation. Plagiarism includes, but is not limited to, representing as one's own, without attribution, any other individual's words, phrasing, ideas, sequence of ideas, information or any other mode or content of expression.”
- “‘Fabrication’ or ‘falsification’ includes reporting experiments or measurements or statistical analyses never performed; manipulating or altering data or other manifestations of research to achieve a desired result; falsifying or misrepresenting background information, credentials or other academically relevant information; or selective reporting, including the deliberate suppression of conflicting or unwanted data. It does not include honest error or honest differences in interpretations or judgments of data and/or results.”

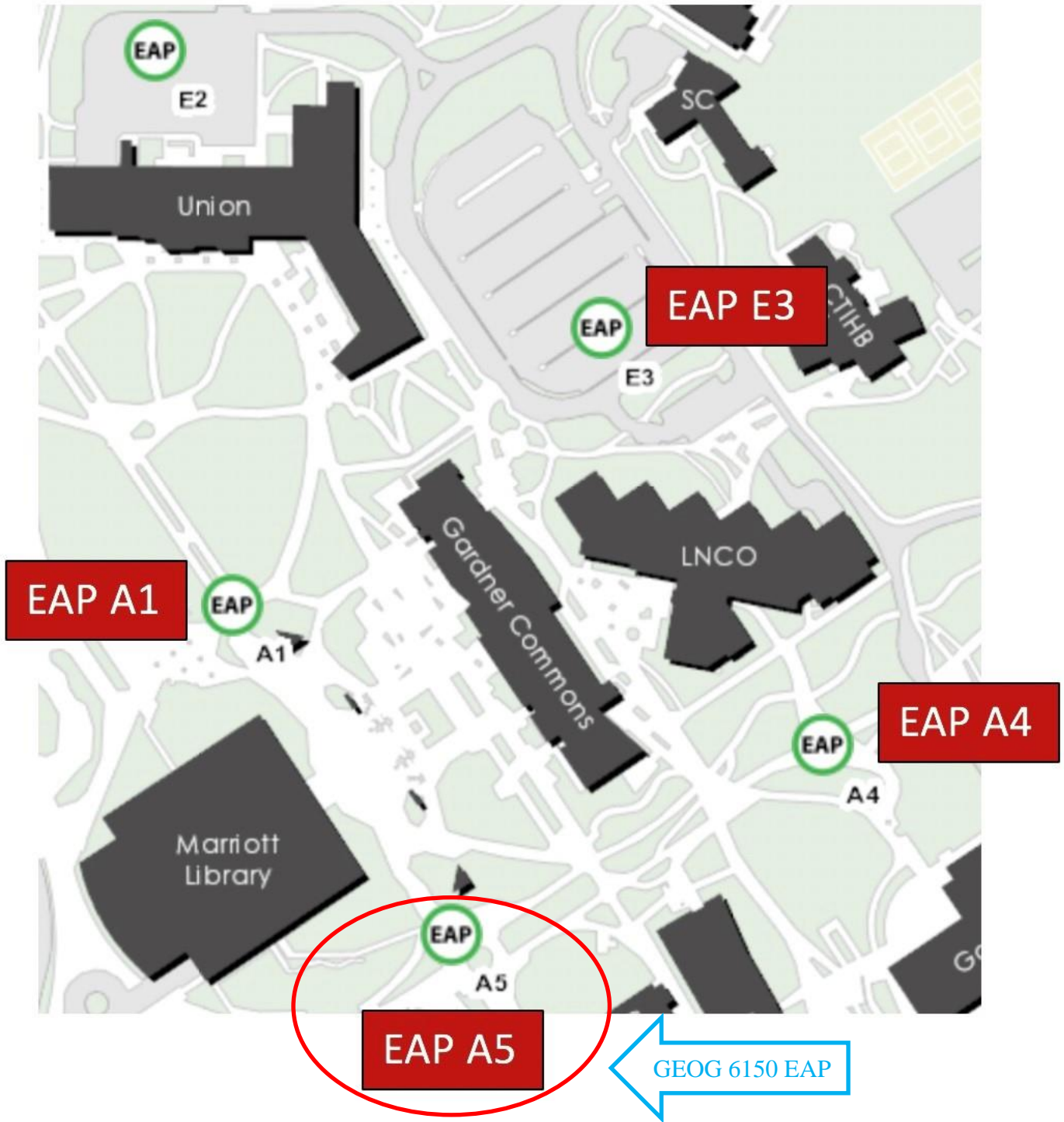
This course has a zero tolerance policy for academic misconduct. Students will be required to meet with the lab instructor and Department of Geography’s academic advisor (or the academic advisor of their respective department) to discuss any potential instance of academic misconduct. The resulting academic sanction will be a score of zero for any coursework in which it is demonstrated that a student engaged in academic misconduct. Additionally, an account of the student’s academic misconduct will be entered into the U of U database for misconduct tracking. See the Student Code for additional information on academic sanctions.

Disability Accommodation:

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability & Access, 162 Olpin Union Building, 801-581-5020 (V/TDD). CDA will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability & Access.

Note: This document is not a binding legal contract. It may be modified by the instructor when the student is given reasonable notice of the modification, particularly when the modification is done to rectify an error that would disadvantage the student.

GEOG 5150 Lab Emergency Assembly Point



Safety & Wellness:

Your safety is our top priority. In an emergency, dial 911 or seek a nearby emergency phone (throughout campus). Report any crimes or suspicious people to 801-585-COPS; this number will get you to a dispatch officer at the University of Utah Department of Public Safety (DPS; dps.utah.edu). If at any time, you would like to be escorted by a security officer to or from areas on campus, DPS will help — just give a call. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.

The University of Utah seeks to provide a safe and healthy experience for students, employees, and others who make use of campus facilities. In support of this goal, the University has established confidential resources and support services to assist students who may have been affected by harassment, abusive relationships, or sexual misconduct. A detailed listing of University Resources for campus safety can be found at <https://registrar.utah.edu/handbook/campussafety.php>

Your well-being is key to your personal safety. If you are in crisis, call 801-587-3000; help is close.

The university has additional excellent resources to promote emotional and physical wellness, including the Counseling Center (<https://counselingcenter.utah.edu>), the Wellness Center (<https://wellness.utah.edu>), and the Women's Resource Center (<https://womenscenter.utah.edu>). Counselors and advocates in these centers can help guide you to other resources to address a range of issues, including substance abuse and addiction.