

# GEOL 430 1002 / GEOL 630 1002 – GIS: Theory and Applications Lab

## Spring 2018 Tues. 5:30-8:15 pm, Technology Building (TEC) 113

**Faculty:** Dr. Gabriel Judkins  
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 Office Hours: Monday 1-2pm and Tuesday 10-11am, and by appointment

**Graduate TA:** Jayson Medema  
 Email: [medema@unlv.nevada.edu](mailto:medema@unlv.nevada.edu)  
 Office Hours: Tues and Thurs 4-5pm in the TEC computer lab

**Course Format:** Weekly lab with pre-lab and semester group research poster project

**Required Textbook:** Mastering ArcGIS, 7<sup>th</sup> edition by Maribeth Price (Lab Manual)

**Prerequisites:** MATH 127 or 128

### Purpose of this class:

The purpose of this GIS lab is to become acquainted with and proficient in the basic use of ESRI ArcGIS, given its dominance as the primary industry, research and public sector GIS software package in use in the world. This lab provides the opportunity to put into practice the conceptual topics gleaned from the lecture portion of the course that focuses primarily on the larger topic of GIScience.

### Learning outcomes of this class:

- Demonstrate basic mastery of ESRI ArcGIS through the completion of 15 standardized labs covering the basic structure, functions and analytical capabilities of this particular software package
- Gain practical experience in the use of a GPS device to capture geospatial data
- Demonstrate the capability of uploading GPS waypoints data into a GIS and a practical comprehension of the characteristics of primary geospatial data
- Complete a group research project that makes use of some of the methods and GIS analysis techniques learned during the course of the semester
- Compose and produce a research poster of the caliber to present at the annual UNLV Geoscience Geosymposium and present that poster as part of the graduate-student run research conference

**Grading Policy:** (Final grades are rounded to nearest whole number)

<u>Grade</u>	<u>Semester average</u>	<u>Grade</u>	<u>Semester average</u>
A	≥93	C	73-76
A-	90-92	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	less than 60

  

Weekly labs (14 labs, 25 pts each)	350 pts	87.5%
Pre-lab Assignment	( 5 pts)	
Lab Assignment		
Screen shots and questions	(15 pts)	
Post-lab question(s)	( 5 pts)	
GPS Lab (Completed during Lecture)	50 pts	12.5%
Total Points	400 pts	100%

**Pre-lab Questions:** Prior to attending lab, each student must carefully review the “Mastering the Concepts” section for each of assigned lab chapter(s). In addition, each student must answer the Chapter Review Questions that appear at the end of each Mastering the Concepts section of the lab book as identified in the Pre-lab (posted on WebCampus) and submit their answers as a printed hard copy at the start of their assigned lab day/time for the TA to grade. Late items will not be graded and will impact your final course grade for GEOL 430/630.

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**Weekly Labs:** Each week, one chapter lab will be covered during the lab period. Students are responsible for completing all the steps to each lab as instructed by the TA. This work is critically important for helping the students to learn the ESRI ArcGIS application and gain the practical experience necessary to incorporate this learning into future research projects and/or future employment opportunities. Grading for these weekly labs is comprised of submitting a document displaying the screen shots of their work for every ten steps covered in each lab as well as the actual lab questions you are prompted to answer (15 points). Lastly, student will need to answer the assigned exercise question(s) at the end of each lab (5 points) as part of their overall lab submission. The lab TA will identify the specific deliverables and exercise questions to be submitted as part of the WebCampus posted Pre-lab and Lab Assignments.

**Syllabus:** Should there need to be changes in the timing, order or subject of materials, we will do our best to use the announcement function to notify all the students of changes. Significant changes may require a revised syllabus to be made available.

### LAB SCHEDULE

Date	Labs	
Week 1		
Jan. 16	Lab 1	Chapter 1: GIS Data
Week 2		
Jan. 23	Lab 2	Chapter 2: Managing GIS Data
Week 3		
Jan. 30	Lab 3	Chapter 3: Coordinate Systems
Week 4		
Feb. 6	Lab 4	Mapping GIS Data
Week 5		
Feb. 13	Lab 5	Chapter 5: Presenting GIS Data
Week 6		
Feb. 20	Lab 6	Chapter 6: Attribute Data
Week 7		
Feb. 27	Lab 7	Chapter 7: Basic Editing
Week 8		
Mar. 6	Lab 8	Chapter 8: Queries
Week 9		
Mar. 13	Lab 9	Chapter 9: Spatial Joins
Week 10		
Mar. 20	Lab 10	Chapter 10 Map Overlay and Geoprocessing
Week 11		
Mar. 27	<b>Spring Break (No Lab)</b>	
Week 12		
Apr. 3	Lab 11	Chapter 11: Raster Analysis
Week 13		
Apr. 10	Lab 12	Chapter 12: Editing and Topology
Week 14		
Apr. 17	<b>Geosymposium April 20<sup>th</sup> (No Lab but Mandatory Attendance at Geosymposium)</b>	
Week 15		
Apr. 24	Lab 13	Chapter 13: Geodatabases
Week 16		
May 1	Lab 14	Chapter 14: Metadata

### Logistics and policies

#### 1. Participation

Students in this class will have different backgrounds and levels of educational training. As a result, you may find some material difficult, feel that you are already familiar with some concepts, or have personal experiences that can inform us all. Whatever your situation, please share your position with us through class participation. Most importantly, however, if you are confused about a concept, **please ask questions** in class for clarification and further explanation. You will not be alone in your confusion. There are many ways to present this material, and I will attempt to find one that works for you. If you do not feel comfortable asking questions in class, please contact me.

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### **2. Attendance**

It is important that you attend lab daily because each lab covers a lot of material and having the TA present gives you the opportunity of receiving help on the labs as well as your term GIS project. Additionally, prelabs must be submitted in person with a printed copy at the start of each lab. This is intended to ensure that you have reviewed the lab materials prior to coming to class. **Make-up or late labs will not be given** without a medical, military, or university excuse. If a make-up or late lab is permissible, the nature of the make-up material will be at my discretion.

### **3. Academic Misconduct**

Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Student Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution.

An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the *Student Academic Misconduct Policy* (approved December 9, 2005) located at: <http://studentconduct.unlv.edu/misconduct/policy.html>.

### **4. Administrative Drops**

You are required to be familiar with university policies and procedures in the current UNLV Undergraduate Catalog. Importantly, we follow the policies on Cheating, Plagiarism, and Academic Dishonesty that are stated in the most recent UNLV Undergraduate Catalog. Any student that does not comply with these requirements and conducts themselves in a manner that is disruptive and interferes with the right of other students to learn or of the instructor to teach will be administratively dropped from the course.

### **5. Classroom Conduct**

Students have a responsibility to conduct themselves in class and in the libraries in ways that do not interfere with the rights of other students to learn or of instructors to teach. Use of electronic devices such as pagers, cellular phones, or recording devices, or potentially disruptive devices or activities, are permitted only with the prior explicit consent of the instructor. The instructor may rescind permission at any time during the class. If a student does not comply with established requirements or obstructs the functioning of the class, the instructor may initiate an administrative drop.

### **6. Classroom Surveillance**

Nevada Revised Statutes (State Law) 396.970 Surreptitious electronic surveillance on campus; exceptions. [Effective January 1, 2017.]

1. Except as otherwise provided in subsection 2, it is unlawful for a person to engage in any kind of surreptitious electronic surveillance on a campus of the System without the knowledge of the person being observed.
  2. Subsection 1 does not apply to any electronic surveillance:
    - (a) Authorized by a court order issued to a public officer, based upon a showing of probable cause to believe that criminal activity is occurring on the property under surveillance;
    - (b) By a law enforcement agency pursuant to a criminal investigation;
    - (c) By a peace officer pursuant to NRS 289.830;
    - (d) By a uniformed peace officer of the Nevada Highway Patrol Division of the Department of Public Safety pursuant to NRS 480.365;
    - (e) Which is necessary as part of a system of security used to protect and ensure the safety of persons on the campus; or
    - (f) Of a class or laboratory when authorized by the teacher of the class or laboratory.
- (Added to NRS by 1993, 2138; A 2015, 575, 3668, effective January 1, 2017)

### **7. Recording Lectures**

Absolutely **no electronic recording or posting** of lectures or other materials will be allowed without my prior approval.

### **8. Bringing children/guests to class**

Students are not generally allowed to bring guests, including children to lecture. Please see me with any questions.

### **9. Disability Resource Center (DRC)**

The UNLV Disability Resource Center (SSC-A 143, <http://drc.unlv.edu/>, 702-895-0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with a Disabilities Specialist at the DRC to discuss what options may be available to you.

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If you are registered with the UNLV Disability Resource Center, bring your Academic Accommodation Plan from the DRC to the instructor during office hours so that you may work together to develop strategies for implementing the accommodations to meet both your needs and the requirements of the course. Any information you provide is private and will be treated as such. To maintain the confidentiality of your request, please do not approach the instructor in front of others to discuss your accommodation needs.

#### **10. Library Resources**

Students may consult with a librarian on research needs. Subject librarians for various classes can be found here: [https://www.library.unlv.edu/contact/librarians\\_by\\_subject](https://www.library.unlv.edu/contact/librarians_by_subject). UNLV Libraries provides resources to support students' access to information. Discovery, access, and use of information are vital skills for academic work and for successful post-college life. Access library resources and ask questions at <https://www.library.unlv.edu/>.

#### **11. UNLV Writing Center**

One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 702-895-3908. The student's Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at: <http://writingcenter.unlv.edu/>.

#### **12. Tutoring and Coaching**

The Academic Success Center (ASC) provides tutoring, academic success coaching and other academic assistance for all UNLV undergraduate students. For information regarding tutoring subjects, tutoring times, and other ASC programs and services, visit <http://www.unlv.edu/asc> or call 702-895-3177. The ASC building is located across from the Student Services Complex (SSC). Academic success coaching is located on the second floor of the SSC (ASC Coaching Spot). Drop-in tutoring is located on the second floor of the Lied Library and College of Engineering TEB second floor.

#### **13. Religious Holiday Policy**

Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor **within the first 14 calendar days of the course for fall and spring courses (excepting modular courses), or within the first 7 calendar days of the course for summer and modular courses**, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. For additional information, please visit: <http://catalog.unlv.edu/content.php?catoid=6&navoid=531>.

#### **14. Transparency in Learning and Teaching**

The University encourages students to use a transparency template to discuss with their instructors how assignments and course activities benefit student success: [https://www.unlv.edu/sites/default/files/page\\_files/27/TILT-Framework-Students.pdf](https://www.unlv.edu/sites/default/files/page_files/27/TILT-Framework-Students.pdf).

#### **15. Official extracurricular activity**

All students who represent UNLV at any official extracurricular activity have the opportunity to make up an assignment. However, you must provide written notification to me at least 1 week prior to the missed class(es).

#### **16. Nondiscrimination**

The University of Nevada Las Vegas does not discriminate on the basis of race, color, creed, religion, national or ethnic origin, gender, age, sexual orientation, disability, or veteran status.

#### **17. Copyright**

The University requires all members of the University Community to familiarize themselves **with** and to follow copyright and fair use requirements. **You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you nor assume any responsibility for employee or student violations of fair use laws.** Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: <http://www.unlv.edu/provost/copyright>.

#### **18. Rebelmail**

By policy, faculty and staff should e-mail students' Rebelmail accounts only. Rebelmail is UNLV's official e-mail system for students. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. Students' e-mail prefixes are listed on class rosters. The suffix is always [@unlv.nevada.edu](mailto:@unlv.nevada.edu). **Emailing within WebCampus is acceptable.**

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**19. Incomplete Grades**

The grade of I – Incomplete – can be granted when a student has satisfactorily completed three-fourths of course work for that semester/session but for reason(s) beyond the student's control, and acceptable to the instructor, cannot complete the last part of the course, and the instructor believes that the student can finish the course without repeating it. The incomplete work must be made up before the end of the following regular semester for undergraduate courses. Graduate students receiving "I" grades in 500-, 600-, or 700-level courses have up to one calendar year to complete the work, at the discretion of the instructor. If course requirements are not completed within the time indicated, a grade of F will be recorded and the GPA will be adjusted accordingly. Students who are fulfilling an Incomplete do not register for the course but make individual arrangements with the instructor who assigned the I grade.

**20. Final Examinations**

The University requires that final exams given at the end of a course occur at the time and on the day specified in the final exam schedule. See the schedule at: <http://www.unlv.edu/registrar/calendars>.