Syllabus
Intro to Geographic Information Systems

Course Information

Semester & Year: Fall 2023
Course ID & Section #: FNR-32-E6466
Instructor's name: Madeleine Lopez
Location: AT 107 and Online
Day/Time of required meetings: Tuesday 6:05- 8:00 pm
Course units: 3.00

Instructor Contact Information

Office location: AT 123 or *Online: ZOOM*
Office hours: Tues. 12:45- 2 pm, Fri. 10- 11:30 am, or by appointment
Phone number: (707) 476-4131
Email address: Madeleine-lopez@redwoods.edu

Catalog Description

(GIS). Students will learn the basic theory and application of spatial data and develop skills with computer software to analyze and display locational data. After completion of this course students will be able to answer complex spatial and aspatial questions.

Course Student Learning Outcomes

1. Explain fundamental GIS concepts, principles, and define technical terms.
2. Acquire, import, reference, and analyze geographic data and communicate findings via maps.
3. Discuss application of GIS techniques to solve natural resource problems.
4. Lab Specific Outcome: Utilize specific software tools to manage and analyze spatial data and develop map products.

Prerequisites/co-requisites/ recommended preparation

FNR-31 Geospatial Concepts

The students must have a basic grasp of geospatial concepts and relevant software before attempting the FNR-32 course. Ability to understand and apply different map projections. Basic familiarity with ESRI's ArcGIS software. Ability to interpret and apply metadata.

CR COLLEGE OF THE REDWOODS

Required Materials

Textbook title: Essentials of Geographic Information Systems
Edition: Open-source, available via the link provided above
Author: Campbell and Shin
ISBN: 9781453321966
*Other required readings will be made available via Canvas

USB flash drive: minimum of 12 GB storage space, but I recommend a 32 GB flash drive to hold all of your lab information as you go from class computers to your personal computer.

Technical Requirements

To work from home, you will you need reliable internet access (broadband or DSL) and a browser installed on your computer. Should problems with the internet connection arise while working on this course, it is the responsibility of the student to find an alternative internet access point, such as a public library. The **Chrome** browser is the recommended browser for interacting with the course. Note: Cookies and JavaScript must be enabled. Pop-up blockers should be configured to permit new windows from the Geospatial Institute and CR websites. Other browsers, such as Safari, Edge, and Microsoft Explorer are **not recommended for** this course.

If you do not have a personal computer, please refer to the College of the redwoods online support page. Additionally, if your computer is not compatible with the GIS software there is potential virtual lab access. I will announce how to access the virtual lab for those students who require it. The virtual lab has limited space and will be reserved for students who do not have access to a personal computer that is capable of handling course software and materials. *If you think that you may need access to the CR virtual lab, please contact me during the first week of the course.*

Students working from personal computers that do not need the CR virtual lab are encouraged to install or have access to the following software:

- **ArcGIS Desktop Student Edition** (ArcGIS student licenses are available for all students currently enrolled in a geospatial class.) If you have a personal computer capable of running the software, please be sure to download ArcGIS Pro. Currently CR has an extremely limited access to the virtual lab, and students will need to run the ArcGIS software from their personal computers to be able to participate in this course, *it is required*.

- **7-Zip** (7-Zip (Links to an external site.) is a free, open-source file compression/decompression utility) Installing 7zip on Windows 10 (Links to an external site.)

- Microsoft Office (Links to an external site.)
- Adobe Acrobat Reader (Links to an external site.)
- Zoom (Links to an external site.)

Additional requirements if you are using your own computer: (See this link from ESRI)

Operating System	Windows 10, Windows 11, Pro and Enterprise (64 bit)
Processor	2 GHz or higher
Memory	Recommended 32 GB of RAM
Graphics Card	NVIDIA or AMD is required to work properly with some of the ESRI ArcGIS extensions.
Hard Drive Space	60GB free disk space
Plug-ins	Adobe Reader [Download from Adobe]
Additional Software	Java 1.7 or later (https://java.com/en/download/), Adobe Acrobat Reader
Browser	The **Chrome** browser is the recommended choice. Note: Cookies and JavaScript must be enabled. Other browsers, such as Safari, Edge, and Microsoft Explorer are **not recommended for** this course.
Monitor	Capable of at least 1024 x 768 resolution

Accessing the Software

Access to software is the responsibility of individual students. If you will be working in the field, or other environment with intermittent internet access, please contact me about other methods for acquiring the requisite course software.

Access to a reliable internet connection is required. Problems with internet access are not valid excuses for late, missing, or incomplete coursework. If students encounter problems with their internet connection while working on this course, it is their responsibility to find an alternative internet access point, such as a public library.

Computers on Campus

There are computers with ArcGIS software available to use in the library on campus. If your computer is not able to run Pro please plan to use the computers available in the library. There is potential virtual lab access, and I will announce how to access the virtual lab for those students who require it. The virtual lab has limited space and will be reserved for students who do not have access to a personal computer that is capable of handling course software and materials.

Student Support

Good information and clear communication about your needs will help you be successful. Please let your instructor know about any specific challenges or technology limitations that might affect your participation in class. College of the Redwoods wants every student to be successful.

Evaluation & Grading Policy

Grading

Type	Percentage of final grade
Lab assignments	40%
In-class activities/ Discussions	10%
Exams & Quizzes	25%
Project	20%
Participation/Professionalism	5%
Grand total	**100%**

Grading Scheme

A: 94-100, A-: 90-<94, B+: 87-<90, B: 84-<87, B-: 80-<84, C+: 77-<80, C: 70-<77, D: 60-<70, F: <60

Late/missing work policy: Assignments and quizzes are to be completed and turned in by the date indicated. Please plan ahead, as late assignments will be penalized and lose 5% for each day they are late up. No late work will be accepted after 10 days past the due date. All exams must be completed within 1.5 hours and the Final exam must be completed within two hours. If a serious and compelling issue should arise and prevent you from turning in the assignment on time (e.g. death in the family, hospitalization), please contact me in advance and we will work out an alternative plan. Please see me immediately if something in the foreseeable future is approaching. Deadline extensions are granted in the case of a legitimate excused absence, please reach out 48 hours before the deadline for an extension. My goal is to help every student effectively learn and grow in this course, as such, I will remain open and flexible.

Final Exam and the Final Project cannot be turned in late. The final exam will take place in class at the scheduled time and date. **Ensure you are present, as this exam will be interactive and not re-creatable in nature.** Deadline extensions for the project will only be granted in the event of legitimate excused absences. An excused absence means that you have a) notified me in advance and received confirmation from me that your notice has been accepted or b) provided a written medical excuse. Failure to be aware of exam dates because of class absence does not constitute an excuse – any changes will be posted on Canvas.

Drop Policy: You may be dropped from the class if you miss 3 or more weeks of class participation, discussion, assignments or labs prior to the end of week 10.

Academic Dishonesty: All assignments must be completed individually and should represent your own effort and understanding. Instances where it is clear that work has been shared and copied, or otherwise derived from other's work, will result in both students receiving a clear warning and a zero on the assignment. A second instance will result in failure of the class and reported to the University.

Other information:

Course Format: Each week we will review concepts and labs from the required text. You will typically have a module quiz, a discussion (in class activity or online), and a lab assignment due each week. Please be sure to check the Canvas Modules for the most current due dates.

This semester FNR32 is a 'Hybrid' modality- which includes a synchronous 2.5-hour period and an asynchronous 2.5-hour period each week. My goal is to use our scheduled time together to cover the most important portions of the course, as such, the in-person sessions may vary in format by week. Check Canvas for the asynchronous portion, it will be completed online and may be in the format of flipped lecture, additional reading requirements, videos, or discussion. Always be sure to attend our in-person sessions, as well as complete the asynchronous portion of the class, both are imperative to your success in this course.

The expected workload for CR Courses is calculated at 3 hours per week for each unit in a standard 16-week course. For the combined lecture and lab, this amounts to nine hours per week. This may be more or less hours depending on your learning style and inevitable technical challenges with internet/software etc.

Lab activities: The course activities are designed to reinforce the class material using GIS software and intended to strengthen the concepts in the reading material. Each module has one or more associated lab activity.

Quizzes: Each module will be concluded with a module quiz that will cover topics learned in tutorials, activities, readings, writing assignments, lessons, and labs.

Writing assignments: These often involve some level of research and reading. Writing assignments, including lab reports, must be turned in as an MS Word document (.docx) file using College of the Redwoods Canvas system.

Final Project: The purpose of the final project is to synthesize the information learned in this course and demonstrate your skill in cartographic design. Students will carry out an original mapping project that may be focused on one or more geospatial sciences, including Cartography, Mobile Mapping, Remote Sensing, or GIS.

Emails: Please reach out whenever you have questions, get stuck, or need to communicate with me directly. When sending an email, please be sure to **label the Subject line as "FNR 32 _additional info_"** to ensure your email gets flagged.

Course Outline and Objectives

Course Objectives

- Student should be able to understand geodesy and the various ways to model the surface of the Earth.
- Student should be able to understand geographic and projected coordinate systems along with their uses and shortcomings.
- Student should be able to understand map projections, how these projections can distort real-life, and the various correct applications of these projections.
- Student should be able to understand spatial datums and how to switch between earth-centered and local datums to correctly display and manipulate their data.
- Student should be able to understand what a data model is and the various types (vector, raster, TIN) that this field uses to convey the real world on a computer.
- Student should be able to understand the various spatial data analysis tools within the ArcGIS software to manipulate the data to answer complex spatial questions.
- Student should be able to understand how to create a cartographically correct map that visually conveys their analyses.

Course Outline

- Working with Data
- Tables and External Data
- Queries
- Projections, Datum, Spatial Reference
- Presenting Data
- Error and Uncertainty/Spatial
- Vector Analysis
- Creating Spatial Data
- Raster Analysis
- Terrain Analysis
- Disseminating GIS
- Geocoding/3D Visualization
- GIS + Career
- Spatial Thinking

Educational Accessibility & Support

College of the Redwoods is committed to providing reasonable accommodations for qualified students who could benefit from additional educational support and services. You may qualify if you have a physical, mental, sensory, or intellectual condition which causes you to struggle academically, including but not limited to:

- Mental health conditions such as depression, anxiety, PTSD, bipolar disorder, and ADHD
- Common ailments such as arthritis, asthma, diabetes, autoimmune disorders, and diseases
- Temporary impairments such as a broken bone, recovery from significant surgery, or a pregnancy-related disability
- A learning disability (e.g., dyslexia, reading comprehension), intellectual disability, autism, or acquired brain injury
- Vision, hearing, or mobility challenges

Available services include extended test time, quiet testing environments, tutoring, counseling and advising, alternate formats of materials (e.g., audio books, E-texts), assistive technology, on-campus transportation, and more. If you believe you might benefit from disability- or health-related services and accommodations, please contact Disability Services and Programs for Students (DSPS). If you are unsure whether you qualify, please contact DSPS for a consultation: dsps@redwoods.edu.

- Eureka: 707-476-4280, Student Services Building, 1st floor
- Del Norte: 707-465-2324, Main Building, near the library
- Klamath-Trinity: 707-476-4280

If you are taking online classes DSPS will email approved accommodations for distance education classes to your instructor. In the case of face-to-face instruction, please present your written accommodation request to your instructor at least one week before the needed accommodation so that necessary arrangements can be made. Last minute arrangements or post-test adjustments usually cannot be accommodated.

Admissions deadlines & enrollment policies

Fall 2023 Dates
- August 18th: Last day to register for classes (day before the first class meeting)
- August 19th: Classes begin
- August 25th: Last day to add a class
- September 1st: Last day to drop without a "W" and receive a refund
- September 4th: Labor Day Holiday (All Campuses Closed)
- September 5th: Census Date (20% of class)
- October 26th: Last day to petition to graduate
- October 27th: Last day for student initiated withdrawal (62.5% of class)

- October 27th: Last day for faculty initiated withdrawal (62.5% of class)
- November 11th: Veterans Day (All Campuses Closed)
- November 20th-25th: Thanksgiving break (no classes)
- November 22nd-24th: No Classes, all campuses closed
- December 9th-15th: Final Examinations
- December 15th: Last day to file for P/NP option
- December 15th: Semester Ends
- December 22nd: Grades due
- January 5th: Grades available

Academic dishonesty

In the academic community, the high value placed on truth implies a corresponding intolerance of scholastic dishonesty. In cases involving academic dishonesty, determination of the grade and of the student's status in the course is left primarily to the discretion of the faculty member. In such cases, where the instructor determines that a student has demonstrated academic dishonesty, the student may receive a failing grade for the assignment and/or exam and may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct (AP 5500) is available on the College of the Redwoods website. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the College Catalog and on the College of the Redwoods website.

Disruptive behavior

Student behavior or speech that disrupts the instructional setting will not be tolerated. Disruptive conduct may include, but is not limited to: unwarranted interruptions; failure to adhere to instructor's directions; vulgar or obscene language; slurs or other forms of intimidation; and physically or verbally abusive behavior. In such cases where the instructor determines that a student has disrupted the educational process, a disruptive student may be temporarily removed from class. In addition, the student may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct (AP 5500) is available on the College of the Redwoods website. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the College Catalog and on the College of the Redwoods website.

Inclusive Language in the Classroom

College of the Redwoods aspires to create a learning environment in which all people feel comfortable in contributing their perspectives to classroom discussions. It therefore encourages instructors and students to use language that is inclusive and respectful.

Setting Your Preferred Name in Canvas

Students have the ability to have an alternate first name and pronouns to appear in Canvas. Contact Admissions & Records to request a change to your preferred first name and pronoun. Your Preferred

Name will only be listed in Canvas. This does not change your legal name in our records. See the Student Information Update form.

Canvas Information

Canvas Information

If using Canvas, include navigation instructions, tech support information, what Canvas is used for, and your expectation for how regularly students should check Canvas for your class.

Log into Canvas at My CR Portal

For help logging in to Canvas, visit My CR Portal.

For help with Canvas once you're logged in, click on the Help icon on the left menu.

For tech help, email its@redwoods.edu or call 707-476-4160

Canvas online orientation workshop: Canvas Student Orientation Course (instructure.com)

Community College Student Health and Wellness

Resources, tools, and trainings regarding health, mental health, wellness, basic needs and more designed for California community college students, faculty and staff are available on the California Community Colleges Health & Wellness website.

Wellness Central is a free online health and wellness resource that is available 24/7 in your space at your pace.

Students seeking to request a counseling appointment for academic advising or general counseling can email counseling@redwoods.edu.

Emergency procedures / Everbridge

College of the Redwoods has implemented an emergency alert system called Everbridge. In the event of an emergency on campus you will receive an alert through your personal email and/or phones. Registration is not necessary in order to receive emergency alerts. Check to make sure your contact information is up-to-date by logging into WebAdvisor https://webadvisor.redwoods.edu and selecting 'Students' then 'Academic Profile' then 'Current Information Update.'

Please contact Public Safety at 707-476-4112 or security@redwoods.edu if you have any questions. For more information see the Redwoods Public Safety Page.

In an emergency that requires an evacuation of the building anywhere in the District:
- Be aware of all marked exits from your area and building
- Once outside, move to the nearest evacuation point outside your building
- Keep streets and walkways clear for emergency vehicles and personnel

Do not leave campus unless it has been deemed safe by the campus authorities.

Eureka Campus Emergency Procedures

Please review the campus emergency map for evacuation sites, including the closest site to this classroom (posted by the exit of each room). For more information on Public Safety go to the Redwoods Public

Safety Page It is the responsibility of College of the Redwoods to protect life and property from the effects of emergencies within its own jurisdiction.

In the event of an emergency:

1. Evaluate the impact the emergency has on your activity/operation and take appropriate action.
2. Dial 911, to notify local agency support such as law enforcement or fire services.
3. Notify Public Safety 707-476-4111 and inform them of the situation, with as much relevant information as possible.
4. Public Safety shall relay threat information, warnings, and alerts through the Everbridge emergency alert system, Public address system, and when possible, updates on the college website, to ensure the school community is notified.
5. Follow established procedures for the specific emergency as outlined in the College of the Redwoods Emergency Procedure Booklet, (evacuation to a safe zone, shelter in place, lockdown, assist others if possible, cooperate with First Responders, etc.).
6. If safe to do so, notify key administrators, departments, and personnel.
7. Do not leave campus, unless it is necessary to preserve life and/or has been deemed safe by the person in command.

Student Support Services

The following online resources are available to support your success as a student:
- CR-Online (Comprehensive information for online students)
- Library Articles & Databases
- Canvas help and tutorials
- Online Student Handbook

Counseling offers assistance to students in need of professional counseling services such as crisis counseling.

Learning Resource Center includes the following resources for students

- Library Services to promote information literacy and provide organized information resources.
- Multicultural & Diversity Center
- Academic Support Center – offers tutoring and test proctoring for CR students.
- Student Tech Help – provides students with assistance around a variety of tech problems.

Special programs are also available for eligible students include

- Extended Opportunity Programs & Services (EOPS) provides services to eligible income disadvantaged students including: textbook award, career academic and personal counseling, school supplies, transportation assistance, tutoring, laptop, calculator and textbook loans, priority registration, graduation cap and gown, workshops, and more!
- The TRiO Student Success Program provides eligible students with a variety of services including trips to 4-year universities, career assessments, and peer mentoring. Students can apply for the program in Eureka or in Del Norte
- The Veteran's Resource Center supports and facilitates academic success for Active Duty Military, Veterans and Dependents attending CR through relational advising, mentorship, transitional assistance, and coordination of military and Veteran-specific resources.
- Klamath-Trinity students can contact the CR KT Office for specific information about student support services at 530-625-4821