

Syllabus

Geographic Information Systems

Course Information

Semester & Year: Fall 2024

Course ID & Section #: FNR-32-E7517

Instructor's name: Madeleine Lopez

Location: AT 107 and Online

Day/Time of required meetings: Friday 11:40- 2:40 pm

Course units: 3.00

Instructor Contact Information

Office location: AT 123 or *Online: ZOOM*

Office hours: Tues. 5- 6 pm, Fri. 10- 11:30 am, by appointment

Phone number: (707) 476-4131

Email address: Madeleine-lopez@redwoods.edu

Available via Pronto

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.



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 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. There is a sign up sheet on Canvas, ***please sign up during the first week of the course*** if you need access. 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.

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). NOT required, but helpful and free!
- [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. Work submitted 10 or more days past the deadline will receive a 50% deduction. No late work is accepted after 20 days past the due date. All exams must be completed within 1.5 hours and the final exam must be completed within 2.5 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. Our meetings will largely be dedicated to your labs. Check Canvas for the asynchronous lecture portion of the course, it will be completed online and may be in the format of readings, lecture recording and slides, additional videos, accompanied by a discussion or quiz. 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.

Course workload: 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.

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.

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. 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.

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

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.

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
- Spatial Data
- Raster Analysis
- Terrain Analysis
- Disseminating GIS
- 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 (such as 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 (such as audio books or 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 [Student Accessibility Support Services \(SASS\)](#). If you are unsure whether you qualify, please contact SASS for a consultation: sass@redwoods.edu.

SASS office locations and phone numbers

Eureka campus

- Phone: 707-476-4280
- Location: Student Services Building, first floor

Del Norte campus

- Phone: 707-465-2324
- Location: Main Building, next to the library

Klamath-Trinity campus

- Phone: 707-476-4280

Student Support Services

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.

The following online resources are available to support your success as a student:

[CR Online Learning Support](#)



Tech support, laptop loans, guides to using Canvas, installing Office 365 for free, and more.

[Library Articles & Databases](#)

Find the best library databases for your research.

[Online Tutoring Resources](#)

Participate in tutoring over Zoom.

To learn more about the resources available to you, click on a title bar below, or click the down arrow to expand them all.

Klamath-Trinity students can contact the CR Klamath-Trinity Office for specific information about student support services at 530-625-4821.

Community College Student Health and Wellness

[National Suicide Prevention Lifeline](#)

If you are in distress or are with someone at risk right now, call or text the National Suicide Prevention Lifeline.

Call the National Suicide Prevention Lifeline
1-800-273-TALK (8255)

Text the National Suicide Prevention Lifeline
741-741

[Timely Care](#)

When you're not feeling well physically or distressed mentally, Timely Care can offer the help you're looking for in just a few quick taps. Students can schedule an appointment anytime via phone, video, and chat. [Log in or set up an account with Timely Care.](#)

[Mental Health Counseling](#)

Students should text, email, or fax Shawna Bell directly for scheduling and/or services.

Text: 707-496-2856
Email: shawnabmft@gmail.com
Fax and voicemail: 707-237-2318

[Wellness Central](#)



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 [Wellness Central](#).

Counseling

[Counseling and Advising](#) can assist students in need of academic advising and professional counseling services. Call, email or stop by one of our offices to make an appointment!

Counseling and Advising office locations and contact info

Eureka campus

- Phone: 707-476-4150
- Location: Student Services Building, first floor
- Email: counseling@redwood.edu
- Hours: Monday through Friday, 9am to 4pm. Summer hours may vary

Del Norte campus

- Phone: 707-476-2300
- Location: Main Building, next to the library
- Hours: Summer hours may vary

Klamath-Trinity campus

- Phone: 530-625-4821
- Email: KT-staff@redwoods.edu
- Hours: Summer hours may vary

Basic Needs Center

[The Basic Needs Center](#) provides for the health and safety of students by providing access to healthy food, financial resources, and referrals to safe and secure housing. [Submit a request for services and information](#).

Basic Needs Center contact info

- Phone: 707-476-4153
- Email: the-grove@redwoods.edu

Learning Resource Center

The Learning Resource Center includes the following resources for students:

Library Services

[Library Services](#) promotes information literacy and provides organized information resources.



Multicultural and Equity Center (MCE)

The [Multicultural and Equity Center](#) is a dynamic and inclusive place that supports all students in their academic and personal journeys at the college. We do this by creating community, home away from home, and a safe place for cultural expression, cross-cultural learning, access to college and dignity resources, and social justice work opportunities. The MEC is committed to retention and student success by offering activities related to leadership development, student connectedness and student equity. We are a student-centered program that fosters respect for all people.

Academic Support Center

The [Academic Support Center](#) offers tutoring and test proctoring for CR students.

Student Tech Help

[Student Tech Help](#) provides students with assistance around a variety of tech problems.

Extended Opportunity Programs and Services (EOPS)

[Extended Opportunity Programs and Services](#) (EOPS) provides services to eligible income disadvantaged students including: textbook awards, grants, career academic and personal counseling, transportation assistance, tutoring, laptop, calculator and textbook loans, priority registration, graduation cap and gown, workshops, and more!

TRiO Student Success Program

The TRiO Student Support Services Program provides eligible students with a variety of services including academic advising, career assessments, assistance with transfer, and peer mentoring. Students can apply for the program with the [Eureka TRiO office](#) or the [Del Norte TRiO office](#).

Veterans Resource Center

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.

CalWORKS

California Work Opportunity & Responsibility to Kids ([CalWORKs](#)) provides supportive services to student parents with children under the age of 18, who are receiving cash assistance (TANF benefits), to become self-sufficient. Services include: transportation assistance, basic student supplies, tutoring, priority registration, laptop and calculator loans, career, academic, and personal counseling, and more!

Admissions deadlines & enrollment policies

Fall 2024 Dates

Date	To Remember
August 23	Last day to register for classes (day before the first class meeting)
August 24	Classes begin
August 30	Last day to add a class
September 2	Labor Day Holiday (district wide closure)
September 6	Last Day to Drop & Receive a Refund
September 8	Last Day to Drop w/out a "W"
September 9	Census Date (20% of class)
October 31	Last Day to Petition to Graduate & Petition for Certificate
November 1	Last Day for Student/Faculty Withdrawal
November 11	Veteran's Day Holiday (District Wide Closure)
November 25-26	Fall Break (No Classes)
November 27-29	Thanksgiving Holiday (District Wide Closure)
December 14-20	Final Examinations
December 20	Last Day to File P/NP Option
December 20	Semester Ends
December 27	Grades Due
January 3	Grades Available for Transcript Release

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 [2023-2024 College Catalog](#) and [CR Board and Administrative Policies](#).

AI Use Class Policy

Recent advancements in generative artificial intelligence (AI) have made large language models such as ChatGPT and Google's Bard widely available. However, overuse of these tools in this class can undermine your learning and curtail the development of your critical and creative thinking skills. In addition, AI outputs are often unreliable and frequently subject to bias. For these reasons, the policy of this class is that AI cannot be used at any point in the completion of class assignments, including discussion posts. Any or all of your assignment submissions and discussion posts may be screened by AI detection software, but the real penalty for AI misuse is that you will miss out on an opportunity to learn.

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. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the [2023-2024 College Catalog](#) and [CR Board and Administrative Policies](#).

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

Log into Canvas at [My CR Portal](#)

For help logging in to Canvas and general tech help, visit [Student Technical Support](#)

Once you're logged in to Canvas, you click on the Help icon on the left menu

Canvas online orientation workshop: [Canvas Student Orientation Course](#)

Setting Your Preferred Name and Pronouns in Canvas

Students have the ability to display personal pronouns and an alternate first name in Canvas. Students may change their pronouns on their own in Canvas (Account :: Settings :: Edit Settings). To request a change to your preferred list name, contact [Admissions & Records](#). 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 \(pdf\)](#).

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](#) 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 visit [Redwoods Public Safety](#).

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.