Syllabus for
Geospatial Concepts

Course Information

Semester & Year: Spring 2025
Course ID & Section #: FNR-31-E8781
Instructor's name: Madeleine Lopez
Location: AT 107 and Online
Day/Time of required meetings: Friday 10:05- 1:10 pm
Course units: 3.00

Instructor Contact Information

Office location: AT 123 or *Online: ZOOM*
Office hours: Tues. 4:25 – 5:30 pm, Fri. 1:10- 3:10 pm, by appointment
Phone number: (707) 476-4131
Email address: Madeleine-lopez@redwoods.edu

Catalog Description

An introduction to geospatial concepts. Students will learn the theory and application of GPS technology, cartography, GIS software, and remote sensing techniques.

Course Student Learning Outcomes

1. Discuss acquisition and utilization of geospatial data from various sources and integration into geographic information systems.
2. Discuss common geospatial characteristics of maps including projection systems, landmarks and features, scales, and frame of reference.
3. Analyze strengths and weaknesses of global positioning system (GPS) data and discuss basic operational parameters of the various systems in current use.
4. Apply discipline-specific vocabulary, principles, methodologies and ethics to social science inquiry and identify connections between social, political and economic events.
5. Lab Specific Outcome: Use software to develop maps from data acquired from various sources.

Required Materials

Textbook title: Geospatial Concepts: The Fundamentals of Geospatial Science
Edition: Second Edition
Author: Nicholas Malloy and Amy Rock
ISBN: 979-8577591878
*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.

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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 sign up using the link provided in Canvas.***

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 your computer is capable of running the software, please download it. College of the Redwoods also has virtual lab access for those that cannot run the software.
- **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
Speakers	Required (or headphones)
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.

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 ArcGIS PRO please plan to use the computers available in the library.

Advisory preparation

Experience and competence working with modern computers and navigating external software. Students may struggle to succeed without a basic understanding of computer technology and the internet.

Course 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 FNR31 is a 'Hybrid' modality- which includes a synchronous 3-hour period and an asynchronous 2-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.

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 31 _additional info_"** to ensure your email gets flagged. Please email directly from your CR email- NOT Canvas.

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Evaluation & Grading Policy

Grading

Type	Percentage of final grade
Lab assignments	40%
In-class activities/ Discussions	10%
Exams & Final Project	25%
Quizzes	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. If a serious and compelling issue should arise and prevent you from turning in an 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.

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.

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, or bipolar disorder
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
Neurodevelopmental disorders such as a learning disability, intellectual disability, autism, acquired brain injury, or ADHD
Vision, hearing, or mobility conditions

Available services include extended test time, quiet testing environments, academic assistance and tutoring through the LIGHT Center, counseling and advising, alternate formats of course materials (e.g., audio books, braille, E-texts), assistive technology, learning disability assessments, approval for personal attendants, interpreters, priority registration, on-campus transportation, adaptive physical education and living skills courses, 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 Student Accessibility Support Services (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 SS113

Del Norte campus

- Phone: 707-465-2353
- Location: main building, near 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:

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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

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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.

Basic Needs Center

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

Introduction - Library Services for Students - LibGuides at College of the Redwoods 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

Technical Support provides students with assistance around a variety of tech problems.

Extended Opportunity Programs and Services (EOPS)

EOPS/CARE (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 Veterans 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

Spring 2025 Dates

Date	To Remember
January 17	Last day to register for classes (day before the first class meeting)
January 18	Classes begin
January 20	Martin Luther King's Birthday (All Campuses Closed)
January 24	Last Day to add a class
January 31	Last Day to Drop & Receive a Refund
February 2	Last Day to Drop w/out a "W"
February 3	Census Date (20% of class)
February 14	Lincoln's Birthday (All Campuses Closed)

Date	To Remember
February 17	President's Day (All Campuses Closed)
March 6	Last Day to Petition to Graduate & Petition for Certificate
March 17 - 22	Spring Break (No Classes)
March 28	Last Day for Student/Faculty Withdrawal
March 31	Cesar Chavez Day (All Campuses Closed)
May 10 - 16	Final Examinations
May 16	Last Day to File P/NP Option
May 16	Semester Ends
May 23	Grades Due
May 26	Memorial Day (All Campuses Closed)
May 30	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 2024-2025 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 2024-2025 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.

Course Outline and Objectives

Course Objectives

- Understanding the electromagnetic spectrum and its uses in remote sensing technology.
- Learning how to identify and measure features with image interpretation and photogrammetry.
- Design a cartographically correct map.
- Understand GPS technology by collecting, analyzing, and displaying data.
- Learn basic skills in the use of ArcGIS by gathering, loading, analyzing, and interpreting spatial data.

Course Outline for lecture and lab

CONCEPTS: What terms and ideas will students need to understand and be conversant with as they demonstrate course outcomes? 1. Basic features of a cartographically correct map. 2. Understand map projections and the use of various scales to investigate Earth surface features. 3. Understand the the technology of the global navigation satellite systems which include the global positioning system. 4. Determine the correct type of remotely sensed data to use for a particular application (aerial vs. space, true color vs. color-infrared). 5. Develop electronic file management skills to efficiently work with database management and spatial database management systems. THEMES & ISSUES: What motifs, if any, are threaded throughout the course? What primary tensions or problems inherent in the subject matter will students engage? 1. Rectifying positional and spatial data in different projection systems. 2. Disparity in quality of the remotely-sensed data can affect natural resource management. 3. Using technology appropriately for intelligent decision making in natural resources. 4. Using appropriate colors, visuals, and text to clearly convey information via maps. SKILLS: What abilities must students use

to demonstrate course outcomes? (e.g., use a scientific calculator, read college-level texts, safely use power tools, etc.) 1. Use of GPS units to gather data. 2. Transfer and manage positional data with software. 3. Stereoscopy of aerial photographs. 4. Obtaining measurements and interpretations from remotely sensed data. 5. Using a calculator to determine scales and measurements. 6. Use software to access and analyze data. 7. Develop maps and reports. 8. Using the internet to gather spatial data.