



# Syllabus for FNR 52 Intro to Surveying

## Course Information

Semester & Year: Fall 2022

Course ID & Section #: FNR-52-E3748

Instructor's name: Dr. Tim Baker

[if synchronous] Day/Time of required meetings: W/F 11:40-12:45 Lectures W/F 1:15-4:25 Labs

[if in-person] Location: AT 127

[if needed] Number of proctored exams:

Course units: 4

## Instructor Contact Information

Office location or \*Online: [Timothy-Baker@redwoods.edu](mailto:Timothy-Baker@redwoods.edu) or through Canvas

Office hours: by appointment

Phone number:

Email address: [Timothy-Baker@redwoods.edu](mailto:Timothy-Baker@redwoods.edu)

## Catalog Description

An introduction to the various techniques for planning and conducting land surveys. Lab exercises progress from compass and pacing through the use of Total Stations. Basic mapping exercises are conducted using field data. Discussions cover the theory of surveying, associated math principles, and the various methods of legal property description

## Course Student Learning Outcomes *(from course outline of record)*

1. *Solve basic land surveying problems.*
2. *Read, and use various kinds of maps and boundary descriptions.*
3. *Labs Specific Outcome: Use basic surveying equipment to gather appropriate field data.*
4. *Lab Specific Outcome: Analyze field data and generate appropriate maps and reports.*

## Prerequisites/co-requisites/ recommended preparation

[If applicable]

## Accessibility

College of the Redwoods is committed to making reasonable accommodations for qualified students with disabilities. If you have a disability or believe you might benefit from disability-related services and accommodations, please contact your instructor or [Disability Services and Programs for Students](#) (DSPS). Students may make requests for alternative media by contacting DSPS based on their campus location:

- Eureka: 707-476-4280, student services building, 1<sup>st</sup> floor
- Del Norte: 707-465-2324, main building near library
- Klamath-Trinity: 530-625-4821 Ext 103

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.

## **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**

Module quizzes	20%
Problem sets	20%
Final Exam	10%
Lab assignments	35%
Final field project	15%

Late assignments will be penalized. Module quizzes will have deadlines after which the quiz can't be taken.

## **Admissions deadlines & enrollment policies**

### **Fall 2022 Dates**

- *Classes begin: 8/20/22*
- *Last day to add a class: 8/26/22*
- *Last day to drop without a W and receive a refund: 9/02/22*
- *Labor Day Holiday (all campuses closed): 09/05/22*
- *Census date: 9/06/22 or 20% into class duration*
- *Last day to petition to file P/NP option: 09/16/22*
- *Last day to petition to graduate or apply for certificate: 10/27/22*
- *Last day for student-initiated W (no refund): 10/28/22*
- *Last day for faculty-initiated W (no refund): 10/28/22*
- *Veteran's Day (all campuses closed): 11/11/22*
- *Fall Break (no classes): 11/21/22 – 11/25/22*
- *Thanksgiving Holiday (all campuses closed): 11/23/22 – 11/25/22*
- *Final examinations: 12/10/22 – 12/16/22*
- *Semester ends: 12/16/22*
- *Grades available for transcript release: approximately 01/06/23*

## **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**

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 <https://redwoods.instructure.com>

Password is your 8 digit birth date

For tech help, email [its@redwoods.edu](mailto:its@redwoods.edu) or call 707-476-4160

Canvas Help for students: <https://webapps.redwoods.edu/tutorial/>

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](mailto: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](mailto: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.

### Del Norte Campus Emergency Procedures

Please review the [Crescent City campus emergency map](#) for campus evacuation sites, including the closest site to this classroom (posted by the exit of each room). For more information, see the [Redwoods Public Safety Page](#).

### 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 [CR Police Department-Public Safety](#). 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.

## **Klamath Trinity Campus Emergency Procedures**

Please review the responsibilities of, and procedures used by, the College of the Redwoods, Klamath-Trinity Instructional Site (KTIS) to communicate to faculty, staff, students and the general public during an emergency. It is the responsibility of College of the Redwoods, Klamath-Trinity Instructional Site (KTIS) to protect life and property from the effects of emergency situations within its own jurisdiction.

1. In the event of an emergency, communication shall be the responsibility of the district employees on scene.
  - a. Dial 911, to notify local agency support such as law enforcement or fire services.
  - b. If safe to do so, notify key administrators, departments, and personnel.
  - c. If safe to do so, personnel shall relay threat information, warnings, to ensure the school community is notified.
  - d. Contact 530-625-4821 to notify of situation.
  - e. Contact Hoopa Tribal Education Administration office 530-625-4413
  - f. Notify Public Safety 707-476-4111.
2. In the event of an emergency, the responsible district employee on scene will:
  - a. Follow established procedures for the specific emergency as outlined in the College of the Redwoods Emergency Procedure Booklet.
  - b. Lock all doors and turn off lights if in lockdown due to an active shooter or similar emergency.
  - c. Close all window curtains.
  - d. Get all inside to safe location Kitchen area is best internal location.
  - e. If a police officer or higher official arrives, they will assume command.
  - f. Wait until notice of all is clear before unlocking doors.
  - g. If safe to do so, move to the nearest evacuation point outside building (Pooky's Park), directly behind the Hoopa Tribal Education Building.
  - h. Do not leave site, unless it has been deemed safe by the person in command. Student Support Services (required for online classes)

## **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

- [Academic Support Center](#) for instructional support, tutoring, learning resources, and proctored exams. Includes the Math Lab & Drop-in Writing Center
- [Library Services](#) to promote information literacy and provide organized information resources.
- [Multicultural & Diversity Center](#)

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

## General Course Information

**Course structure:** The course for Fall 2022 is built around in-person lectures that cover the background and theory of common land surveying techniques and how they are applied and then we'll practice how these things work in the field labs with a variety of surveying equipment from antiques to current state-of-the-art technology.

The Module structure follows a pattern of a series of Pages in Canvas that provide the text support for the lectures and explain the topic. Then Problem sets are assigned to be completed and submitted through Canvas (*pay attention to due dates!*).

Labs are then developed to support the Module topic complete with data acquisition (recorded in a field book) and analysis and (usually) a hand-drawn map generated from the data. Each Lab assignment will have 2 or 3 parts to be submitted depending on the specific assignment — copy of the field data, data analysis when appropriate, and a map. We'll go over the details of this in class. Labs are twice a week and are an essential part of the course.

Finally there will be a Module Quiz that you'll take online through Canvas.

**COVID Rules:** While most mandates have been relaxed because of the evolving nature of the pandemic as it moves into an endemic disease, we'll still try to practice good behaviors to minimize the chance of an infection. Masks are still recommended indoors but the College does not currently require them. If you are ill or have been in close contact with someone that has COVID, stay home and contact me. The Module structure of the course is designed to let you keep up even if you have to miss a lecture or two. We can discuss options for making up labs.

**Drop Policy:** You may be dropped from the class if you miss 3 or more labs without an acceptable excuse or fail to complete 2 or more Module quizzes before the 10th week of the semester.

**Field Equipment:** You will need appropriate clothing and closed-toe footwear for the conditions. A field notebook (Rite-n-Rain Transit field book), and whatever miscellaneous items you need (e.g. sunscreen, bug repellent, water, etc.). You will also need various drafting supplies including 8x8 or 10x10 graph paper, pencils, rules or straight edges, drawing compass, and guides. **A calculator with trig functions is essential.**

**Texts:** Surveying 6th Edition by McCormac et al. (ISBN 978-470-49661-9) this text is strongly recommended as a reference but it's also expensive. You can pass the course without it but you'll have to do a lot more searching for supporting information on your own if you do not have the text.

**Course objective:** You will be introduced to the basic concepts of surveying and mapping through a combination of classroom discussions and field exercises. The major concepts include the use of trigonometry, compass, levels, transits, tapes, and Total Stations. The dominant surveying and mapping systems will be introduced but we will not cover all the legal aspects of boundary surveys.

Topics should include:

- History and background of surveying
- Surveying units, terms, and definitions
- Plane vs. geodetic surveys
- Topographic surveys
- Leveling
- Coordinate systems
- Using trigonometry and geometry to solve surveying problems (traverse calculations)
- Boundary descriptions including the Public Land Survey System
- Geographic Information Systems and Global Positioning System overview
- Deeds and records searches

### **Final Project:**

During the last 4 weeks of the semester (depending on weather), each student will participate in a small-group surveying project. This semester teams of 2 or 3 will choose a project location on campus in consultation with the instructor to conduct a comprehensive survey using the techniques covered in class. The final project has multiple products: 1) Executive Summary (3-5 pages) which provides the details of the project as well as the methods and equipment, data analyses, and any problems encountered; 2) a large (approximately 24" x 36") map of the project with appropriate labels and legends, 3) complete data analysis of precision, area enclosed, with a goal of exceeding 1:10,000 precision, and 4) field data notebook and sketch map.