Syllabus for Statistics

Course Information

Semester & Year: Spring 2023
Course ID & Section #: MATH-15-E4879 (054879)
Instructor's name: Trevor Keiber
Day/Time of required meetings: Tu: 6:05am – 8:10pm & Tr: 6:05am – 8:10pm
Location: Science Building: Room # 204
Course units: 4

Instructor Contact Information

Office location: Academic Support Center
Office hours: M: 12:30-5:00pm W: 12:30-5:00pm Th:12:30-5:00pm
Email address: trevor-keiber@redwoods.edu

Catalog Description

An introduction to basic concepts of descriptive and inferential statistics, with emphasis on the meaning and use of statistical significance. Students will use probability techniques to make decisions via hypothesis testing and will estimate parameters using confidence intervals. The course includes applications from a variety of technical and social science fields.

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

1. Accurately communicate statistical ideas using correct statistical notation, graphs, and vocabulary.
2. Use descriptive and inferential statistics to better understand real-world problems.
3. Demonstrate appropriate use of technology in making decisions based upon real-world data.
4. Read and interpret information that contains statistical analysis and be able to communicate these results.
5. Judge the validity of research reported in the mass media and peer reviewed journals.

Prerequisites/co-requisites/ recommended preparation

There is no prerequresit math course required to enroll in Math 15. However, it is expected that students will have familiarity with certain prealgebra math concepts including but not limited to: understanding fractions, order of opperations, decimals, percent, negative numbers and graphing. If you do not feel confident in your math skills, it is recommended that you consider also enrolling in Math 252 which is a one unit, online, ungraded course designed to help students learn essential math skills in a timely way. Here is the catalog description of th class: *A course which offers drop-in instructional support and review of mathematical topics. This course supports mathematics courses and classes that contain mathematical material. Students receive one-on-one and small-group instruction in a self-paced lab environment on a drop-in basis to enhance success in mathematics across the curriculum.*

Accessibility

If you have a disability or believe you might benefit from disability-related services and accommodations, please contact me ASAP or stay a few minutes after the first lecture to talk. You can also contact the Disability Services and Programs for Students (DSPS).
If you have a written accommodation please presnt it at least one week before the needed accommodation so that necessary arrangements can be made. Last minute arrangements or post-test adjustments may not be accommodated.
Students may make requests for alternative media by contacting DSPS based on their campus location:

- Eureka: 707-476-4280, student services building, 1st floor

Student Support

Internet: Reliable accesss to the internet is essential since there is weekly online homework and we use Canvas.

Textbook: We are using OpenStax Statistics which you can download the book for free with this link. https://openstax.org/details/books/introductory-statistics

Evaluation & Grading Policy

Your grade is based off of points earned from online homework, written homework, class participation activities, exams, and possibly projects. All points from the class are equally weighted; your final score is the ratio the points you earned out of the total points possible.
Letter grades are assigned based on the following (generous) criteria:
A 100-90% , A- 89-87% , B+ 83-86% , B 78-82% , B- 75-77% , C+71-74% , C 67-73% , D/F 0-66%
Every week a new module will available for you to view in Canvas. There are two different types of content in each module: resource and assignments. Under resources, I will post the required textbookreading, supplemental videos, lecture notes and other useful information. In the assignments section, there will be critical thinking exercises, written homework assignments, links to online homework assignments and class activities

Class Participation

Since this class is face-to-face and is held in a room on campus, it is expected that you attend class unless you have a valid reason not to be there such as medical, sports, family emergency ect. Instead of taking attendance, there will be an activty of some kind every day where you turn in someting which will be graded for credit. The class activities may or may not be uploaded to canvas, so missing class might result in you getting zeros on certain activities.

Exams

There will be two midterms and a final exam. Exams will account for approximatel 30-40% of your total grade in the class. It is possible that one or more exam has a takehome component. If a takehome exam is assigned, then you will need to write your answers using and show your work. Please work independently on the takehome exams; it is not acceptable to ask friends online tutors or other students to complete the problems for you. If you anticipate missing an in-person exam, please let me know beforehand so that I can make accomadatiosn for your at the tutoring center. You should plan on going there at the earliest opportunity to take the test after you missed it.

Late Work Policy

To be succesful, you should turn in your assigments by the due date so that you do not fall behind in the class. That being said, I would rather you turn in something late, then to not do it at all, which is why I allow most work to be turned in anytime before the end of the semester. Assignments which should not be turned in late include exams, surveys, projects involving other students, etc.

With regards to late penalites, Canvas will deduct two percent off your score for every day the assignment is late to a maximum of 75%. If you turn in an assignmen one week late, the highest scoe you could earn is 86%, if your assignment is two weeks or a month late, you can earn at most 75%. Zeros on assignments are the silent grade killers, so it is almost always worth it to turn something in, even if it is late and somewhate incomplete. Send me a message via canvas if you feel that the penalty should be waived for a certain assignment and I can make changes.

I want you to be present and engaged in each lecture, if you are completing late assignments during class, this makes paying attention to the new material nearly impposible. Furthermore, since we will have group activities every class, by working on other assignments, you are letting your group down by not contributing.

The late penalties for assignments are not nearly significant enough to justify not participating in class, you should come to class expecting to learn new concepts. If you come to my office hours, I will help you manage and prioritize your late work so that, hopefully, you will be able to catch up.

Academic dishonesty

The following words are from the default course syllabus. I have added more details after the passage:

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.

There are many different ways to cheat, so it is important to clarify what is cheating and what is not.
Encouraged - Using Statistics Programs :
Statistics requires technology, to do the tests in a timey way, a computer or calculator is not optional, it is necessary. Some of the available programs make it extreamly easy to conduct these tests, so with just a few input parameters, you get graphs with shaded areas, dozens of numeral answers and even brief written summaries. Programs or apps like this might seem like cheating, but it is not, even for takehome exams.
Acceptable: Working with other students on written homework assignments. This is not cheating if you are not copying and do not turn in identical papers.
Not Acceptable**:** Copying other students assignments, turning in identical work. If this comes to my attention, nobody involved will get credit. You will get a warning, but I will not report the incident.
Not Acceptable**:** Using computer software to read problems and give AI generated answers. I have seen this fail badly for students. Using technology to solve math problems works okay for algebra, but stats

requires detailed analysis and interpretation which can lead to AI giving meaningless or incorrect answers. If you make regular use of this, I will know and then give zeros for all associated assignments. Reportable: If you have multiple attempts at cheating, I have no coice to report the behavior to the administration.

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.

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.
Statistics is about counting and categorizing things and sometimes the categories chosen by textbook authors are cringeworthy. I will try to avoid examples and problems which would make people uncomforatable, or try to reframe them in a more inclusive way. For example, you will see that the textbooks default binary division of people is male / female.

Relevant administrative dates for Math 15

These are important dates for the class. There are two holidays on Monday, so courses meeting MW will have one week less instruction. Since I am teaching two statistics classes this year, there will not be sychronicity of assignment due dates between my classes due to this. If you are in my MW class, this also means that we will need to be more consistently focused on covering required topics and will have less time for student projects.
Spring 2023 Dates

- *Martin Luther King's Birthday (all campuses closed): 01/16/23* ***(Monday)***
- *Last day to add a class: 01/20/23*
- *Last day to drop without a W and receive a refund: 01/27/23*
- *Census date: 01/30/23*
- *Last day to petition to file P/NP option: 02/10/23*
- *President's Day (all campuses closed): 02/20/23* ***(Monday)***
- *Spring Break (no classes): 03/13/23 – 03/18/23*
- *Last day for student or faculty initiated W (no refund): 03/31/23*
- *Final examinations: 05/06/23 – 05/12/23*

Weekly Schedule

This is the tentative schedule for the course this semester. The order topics are pesented is subject to change, and will be slightly different for each section that I am teaching this semester.

You will notice there is some deviation from the textbook in the order that topics will be introduced. I think the textbook mostly introduces topics in a reasonable way, but have changed around a few thins especially related to hypothiesis testing, to reflect the importance given to this in the core outline of record for the class. Use this schedule only as a rough guid to anticipate what is next, the actual due dates for assignments and required readings will all be posted weekly on Canvas.

Week #	Date	Chapter Sections	Topic & Notes
1	1/16	1.1,1.3,2.1-2.3	Introduction, Definitions, Frequency Plots, Histograms
2	2/23	2.4-2.7	Center and Spread of Data, Boxpots, Standard Deviation
3	1/30	1.2,1.4	Sampling, Experimental Design, Intro to Hypothesis Testing (Start CH 3, time permitting)
4	2/6	3.1-3.5	Probabilitiy: Terminology, Rules, Contingency Tables, Venn and Tree Diagrams,
5	2/13	4.1-4.4 Exam 1	Probabiity: Discrete PDFs, Binomial Distribution, Geometric Distribution, Others??
6	2/20	5.1-5.3, 9.1,9.2	Continuous PDFs, Uniform, Exponenial, Introduction to Hypothosis Tests
7	2/27	6.1,6.2	Normal Distribution
8	3/6	7.1-7.3,8.1	Central Limit Theorm, Confidence intervals for means
NA	3/13	NA	Spring Break
9	3/20	8.2,8.3	Proportions and Student t distribution: Confidence intervals
10	3/27	9.3,9.4,10.1,10.2	Hypothesis testing + Intro to two sample tests
11	4/3	10.3-10.5 Exam 2	Two Sample tests for means and proportions.
12	4/10	11.1-11.5	Chi squared distribution and tests
13	4/17	12.1-12.4	Linear Regression
14	4/24	12.5,12.6, 13.1	Linear Regression Continued + One-Way ANOVA
15	5/1	13.2-13.4	F Distribution, Test of two variances, + Review
16	5/8	Final Exam	Finals Week

The remainder of this syllabus is mostly filled with generic content from CR which you might see in the syllabi for your other courses. If this information is redundant for you, then there is no need to continue reading. You can always reference this later if needed, so I suggest you keep these pages.

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
- Online Tutoring Resources

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.
- CalWORKS – assists student parents with children under the age of 18, who are receiving cash assistance (TANF), to become self-sufficient.

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)

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.

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.

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.

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.

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