

Syllabus for Introduction to Statistics

Course Information

Semester & Year: Fall 2020

Course ID & Section #: Math 15 E9918-2020F

Instructor's name: Dr. Trevor Keiber

Day/Time of required meetings: Supplemental section meets Tuesday 8:20 pm -9:45 pm and Thursday 8:20 pm -9:45 pm

Course units: 4

Instructor Contact Information

Office location: Online

Office hours: Thursday 7-8 pm or by appointment

Phone number: NA

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. Note: A TI-83 or TI-84 graphing calculator is required. The MATH-15S support course is strongly recommended to take concurrently for students without previous mathematical experience in courses such as Algebra II or Pathway to Statistics.

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. Use mathematical skills and techniques when arguing a position on a contemporary issue.

Prerequisites/co-requisites/ recommended preparation

Recommended: Pre-algebra Co-requisite Math 15 Required

Accessibility

Students will have access to online course materials that comply with the Americans with Disabilities Act of 1990 (ADA), Section 508 of the Rehabilitation Act of 1973, and College of the Redwoods policies. Students who discover access issues with this class should contact the instructor.

College of the Redwoods is also 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 <u>Disability Services and Programs for Students</u> (DSPS). Students may make requests for alternative media by contacting DSPS based on their campus location:

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

During COVID19, approved accommodations for distance education classes will be emailed to the instructor by DSPS. In the case of face to face instruction, please present your written accommodation request to your instructor at least one week before the first test so that necessary arrangements can be made. Last-minute arrangements or post-test adjustments cannot usually be accommodated.

Support for online learners during COVID-19

In response to COVID-19, College of the Redwoods moved the majority of its courses online to protect health and safety. As the faculty and students adjust to this change, clear communication about student needs will help everyone be successful. Please let me know about any specific challenges or technology limitations that might affect your participation in class. I want every student to thrive.

Math trauma is a real thing, it manifests as anxiety or dread, a debilitating fear of being wrong. After struggling to complete a timed mathematics test, most people experience fear, which shuts down their working memory on further trials. This makes it all but impossible to think which reinforces the idea that a person just can't do math – that they are not a math person. This fear limits access to life paths for many people, including school and career choices. One of my goals while teaching math is to help cleanse the lingering bitter taste mathematics might have left on your palate after any number of negative experiences during high/low schools.

No one can force you to love math when you don't, but you can condition yourself not to fear it. The course is designed to have numerous "low stakes" assessment tasks which require participation several times per week, instead of one or two "high stakes" exams. Unlike other math courses, we will have few anxiety producing "tests" in this course, instead, most of the points come from numerous discussions and homework. I will let you know now that I am not a hard grader. I want you to pass this class so that you can move on with your educational goals. I have been an instructor for three semester at CR now, and I have found that every student who completed most of the assignments, ended up passing the class. Those that failed, almost always stopped submitting assignments before the end of the semester, or did not do most of the homework. If you are falling behind, and need encouragement or guidance, contact me via a message and I can let you know what you need to do to succeed.

This online course probably requires more of your involvement than it traditionally would. I anticipate that between reading the text, responding to discussions, doing the homework and possibly going to the office hours you will probably require around 12 hours of your time each week doing algebra. However, the amount of time you would normally spend commuting to a campus, waiting for class to start, and then commuting home plus homework, would probably add up to more than that.

Taking an online course for the first time can be a daunting undertaking. Compared to traditional on-campus courses, they have their pros and cons. This course is primarily asynchronous, which means students and the instructor are not necessarily online at the same time. An obstacle to online learning is the lack of physical interaction that occurs in a traditional course. On the bright side, many personal and individual biases are eliminated because we can't see each other (unless you opt to post a picture of yourself). It is possible for a person who is normally inhibited in a traditional class is very active in an online class. Also with this asynchronous model there can be multiple "conversations" happening simultaneously. You can respond to any or all of the discussion threads at any time, something that is impossible in the traditional classroom. As a result, you may get to know your fellow classmates much better than any lecture class you have taken or will take most lecture classes. But, when your interaction is lacking, the entire class suffers. You have to be an active member of the class.

Evaluation & Grading Policy

Your letter grade for this course is calculated from the scores you receive the written homework assignments, My Open Math homework assignments, class discussions, and exams. A point on Canvas contributes the same amount to the final grade regardless of which unit or type of assignment it is earned from. Another way to say this would be that the assignment categories are not weighted. The approximate breakdown of points is subject to change, but I will aim for the following distribution:

| My Open Math Homework | (40%) |
|------------------------|-------|
| Written Homework | (25%) |
| Discussions | (20%) |
| Midterm and Final Exam | (15%) |

Letter grades are assigned based on the following generous (non-standard) criteria:

A 100-92%, A-91-88%, B+87-86%, B 80-85%, B-78-79%, C+75-77%, C 67-74%, D/F 0-66%

Class Participation and Attendance Policy

For better or worse, you are not required to be present at any particular time in order to be successful. This is part of the freedom that comes with taking an online class, enjoy it while you can. Since assignments are due multiple times per week, if you go on vacation or have an emergency and do not turn in assignments for some time, your grade will quickly start to suffer. If you know you will be missing class for some time, send me a message so we can arrange something in advance.

Each week there will be a weekly discussion forum on a topic relevant to what we are learning. Points will be awarded for your initial post and your responses to other student's. Try to add your content early in the week so people will have a chance to read and respond to what you have posted.

There will also be an optional forum open each unit where you can ask questions about the material we are covering including advice for solving homework problems. You may earn extra credit for meaningfully responding other students in these forums, the intent is for you to help with the learning process and not post solutions without explanations.

I will hold an office hour once per week on Thursday at 7pm via ConferZoom meetings which anyone enrolled in the class can join. What we actually talk about will depend on how many people attend the meeting and what seems the most relevant to talk about. These synchronous class meetings are optional and are not required for success in the class. I can also meet at other times during the week by appointment if you have send me a message to schedule in advance. I encourage everyone to see what services the Math Lab still offers, it was formerly a good source of free tutoring.

If you will be gone for finals week for some reason, let me know in advance to avert a possible disaster.

Homework and Late Work Policy:

I urge you to be responsible with that freedom by keeping up with assignments by turning things in on time. Some assignments are more important to turn in on time than others, specifically, it is important that you complete projects or discussions with your fellow students in a timely way since people are depending on you. The idea is for you to have a meaningful discussion with the other members of the class, it is not beneficial to the other students to allow late posts which no one will read. For this reason, late response to discussion sections will receive a substantial penalty, in contrast to the regular homework assignments which have a very forgiving late policy.

This course utilizes homework problems from the external website MyOpenMath, which is set up to run in Canvas. Your score on the MyOpenMath assignments will be visible on Canvas immediately after they have been graded completed by you. You can generally repeat the online homework to improve your score. The formal due date for online homework is will generally be on Sunday night. Your My Open Math Scores will be available to you as you complete the homework. The written assignments are also due sometime later in the week.

Late work will be accepted at any time before the end of the semester, penalties will accrue the longer you take to turn it in. You can expect at least a 10% deduction in points. It will not be possible to turn in the Midterm or Final Exam late. Your written work and exams will be graded several days after they are submitted. If you turn in an assignment late, it may take me a long time to grade it since I will need to go back and address your work individually.

Required Materials

Textbook Title: Introduction to Statistics (Free Online Textbook)

Edition: 1st - Open Stax

Author: Barbara Illowsky, Susan Dean + Others

ISBN-13: 978-1-947172-05-0

Website: https://openstax.org/details/books/introductory-statistics

Tenative Course Schedule

This schedule includes the tentative dates, assignments, and topics for each week of the course.

| Week | Start | Unit | Chapter | Subject |
|------|-------|------|-----------------------------|--------------------------------------|
| | Date | | | |
| 1 | 08/22 | 1 | 1.1,1.2 | Sampling |
| 2 | 08/31 | 2 | 1.3,1.4,1.5,2.1,2.2,2.3,2.4 | Organizing Data |
| 3 | 09/07 | 3 | 2.5,2.6,2.7 | Summary of Statistics |
| 4 | 09/14 | 4 | 3.1,3.2,4.1,4.2 | Discrete Random Variables |
| 5 | 09/21 | 5 | 4.3 | Binomial Distribution |
| 6 | 09/28 | 6 | 5.1,5.2,6.1 | Continuous Random Variables |
| 7 | 10/05 | 7 | 6.2 | The Normal Distribution |
| 8 | 10/12 | 8 | 7.1,7.2,7.3 | The Central Limit Theorem |
| 9 | 10/19 | 9 | 8.1,8.2 | Confidence Intervals for Means |
| 10 | 10/26 | 10 | 8.3 | Confidence Intervals for Proportions |
| 11 | 11/2 | 11 | 9.1,9.2 | Hypothesis Testing: Part 1 |
| 12 | 11/9 | 12 | 9.3,9.4 | Hypothesis Testing: Part 2 |
| 13 | 11/16 | 13 | 11.1,11.2,11.3 | Goodness of Fit |
| 14 | 11/23 | NA | | Thanksgiving Break |
| 15 | 11/30 | 14 | 12.1,12.2 | Linear Correlation |
| 16 | 12/7 | 14 | 13.1,13.2,13.3,13.4 | F Distribution and Anova |
| 17 | 12/14 | NA | | Finals Week |

Student feedback policy

I will respond within 24 hours to emails or messages on Canvas: Monday through Friday.

Graded work will be returned in a timely way. Your written work and projects will be graded several days after they are submitted. The online MyOpenMath assignments will be graded immediately.

The discussion board is a forum where you can ask questions about the reading or homework, and get help from me or your classmates. The idea is to have the class operate like a study group - with all of you working together to further your learning. This is what distinguishes an online class from a traditional distance learning or math lab course.

Use the Discussion Board to ask for help on problems you don't understand how to do. If you do understand how to do the problems, help out your classmates by answering questions on the discussion board.

I will monitor the homework discussion boards, and will respond to questions if they go unanswered, or if someone provides an incorrect response. If you have additional questions, didn't understand the answer someone gave you, or have a question that has gone unanswered, don't hesitate to email me and ask questions. However, please use the discussion boards first, so that others can benefit from your questions.

I can't stress enough that without being able to see the expression on your face, there's no way for me to judge if you understand my or a fellow student's explanation to your questions. So, you need to be proactive about your learning, and ask for more explanation when you need it. Again, you can do this via email to me, or in the discussion boards.

Admissions deadlines & enrollment policies

Fall 2020 Dates

- Classes begin: 8/22/20
- Last day to add a class: 8/28/20
- Last day to drop without a W and receive a refund: 9/4/20
- Labor Day (all-college holiday): 9/7/20
- Census date: 9/8/20 or 20% into class duration
- Last day to petition to file P/NP option: 9/18/20
- Last day to petition to graduate or apply for certificate: 10/29/20
- Last day for student-initiated W (no refund): 10/30/20
- Last day for faculty initiated W (no refund): 10/30/20
- Veteran's Day (all-college holiday): 11/11/20
- Fall break (no classes): 11/23/20-11/28/20
- Thanksgiving (all-college holiday): 11/25/20-11/27/20
- Final examinations: 12/12/20-12/18/20
- Semester ends: 12/18/20
- Grades available for transcript release: approximately 1/8/21

Students who have experienced extenuating circumstances can complete & submit the *Excused Withdrawal Petition* to request an Excused Withdrawal (EW) grade instead of the current Withdrawal (W) or non-passing (D, F & NP) grades. The EW Petition is available from the Admissions and Records Forms Webpage. Supporting documentation is required.

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 <u>Admissions & Records</u> to request a change to your preferred first name and pronoun. Your Preferred Name will only be listed in Canvas. It does not change your legal name in our records. See the <u>Student Information Update form</u>.

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 or call 707-476-4160

Canvas Help for students: https://www.redwoods.edu/online/Help-Student

Canvas online orientation workshop: https://www.redwoods.edu/online/Home/Student-Resources/Canvas-Resources

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.

<u>Wellness Central</u> 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.

Del Norte Campus Emergency Procedures

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

Eureka Campus Emergency Procedures

Please review the <u>campus emergency map</u> 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 <u>Redwoods Public Safety Page</u> It is the responsibility of College of the Redwoods to protect life and property from the effects of emergency situations 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 Jolene Gates 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:

- <u>CR-Online</u> (Comprehensive information for online students)
- Library Articles & Databases
- Canvas help and tutorials
- Online Student Handbook

<u>Counseling</u> offers assistance to students in need of professional counseling services such as crisis counseling.

Learning Resource Center includes the following resources for students

- <u>Academic Support Center</u> for instructional support, tutoring, learning resources, and proctored exams. Includes the Math Lab & Drop-in Writing Center
- <u>Library Services</u> to promote information literacy and provide organized information resources.
- Multicultural & Diversity Center

Special programs are also available for eligible students include

- <u>Extended Opportunity Programs & Services (EOPS)</u> provides financial assistance, support and encouragement for eligible income disadvantaged students at all CR locations.
- The TRiO Student Success Program provides eligible students with a variety of services including trips to 4year universities, career assessments, and peer mentoring. Students can apply for the program in <u>Eureka</u> or in <u>Del Norte</u>
- The <u>Veteran's Resource Center</u> 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