Syllabus for Math 15, Introduction to Statistics – Del Norte Education Center

Semester & Year	Spring 2018
Course ID and Section #	Math 15 D3410
Instructor's Name	Levi Gill
Day/Time	TTh 5:15PM-7:20PM
Location	DN Room 2
Number of Credits/Units	4

Contact Information	*Office location*	E2
	Office hours	MW 10:30AM-11:30AM
	Phone number	707-465-2361
	Email address	levi-gill@redwoods.edu
Textbook Information	*Title & Edition*	*Interactive Statistics*, 3rd ed.
	Author	Aliaga and Gunderson
	ISBN	ISBN: 0-13-149756-1.

Course Description

The study of statistical methods as applied to descriptive statistics and inferential statistics. An emphasis on the meaning and use of statistical significance will be central to the course. Students will use probability techniques to make decisions via hypothesis testing and will estimate parameters using confidence intervals. Topics include descriptive statistics; probability and sampling distributions; statistical inference; correlation and linear regression; analysis of variance, chisquare and t-tests; and application of technology for statistical analysis including the interpretation of the relevance of the statistical findings. The course includes applications using data from disciplines including business, social sciences, psychology, life science, health science, and education.

Student Learning Outcomes
1. Accurately communicate statistical ideas using correct statistical notation, graphs, and vocabulary.
2. Use descriptive and inferential statistics to solve 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.

Special Accommodations

College of the Redwoods complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written accommodation request at least one week before the first test so that necessary arrangements can be made. No last-minute arrangements or post-test adjustments will be made. If you have a disability or believe you might benefit from disability related services and may need accommodations, please see me or contact Disabled Students Programs and Services. Students may make requests for alternative media by contacting DSPS at 707-465-2352.

Academic Support

Academic support is available at Counseling and Advising and includes academic advising and educational planning, Academic Support Center for tutoring and proctored tests, and Extended Opportunity Programs & Services, for eligible students, with advising, assistance, tutoring, and more.

Academic Honesty

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 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 at: http://www.redwoods.edu/board/Board-Policies/Chapter-5-Student-Services. 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 Classroom 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; 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, he or she may be reported the Chief Student Services Officer or designee. The Student Code of Conduct (AP 5500) is available on the College of the Redwoods website at:
http://www.redwoods.edu/board/Board-Policies/Chapter-5-Student-Services.
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.

Emergency Procedures for the Del Norte campus:

Please review the campus evacuation sites, including the closest site to this classroom (posted by the exit of each room). The Crescent City campus emergency map is available at (http://www.redwoods.edu/delnorte/Maps-and-Directions; scroll down to the Safety Map). For more information on Public Safety, go to http://redwoods.edu/publicsafetyIn an emergency that requires an evacuation of the building:
- 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.

    RAVE – College of the Redwoods has implemented an emergency alert system. In the event of an emergency on campus, you can receive an alert through your personal email, and/or phones at your home, office, and cell. Registration is necessary in order to receive emergency alerts. Please go to https://www.GetRave.com/login/Redwoods and use the "Register" button on the top right portion of the registration page to create an account. During the registration process you can elect to add additional information, such as office phone, home phone, cell phone, and personal email. Please use your CR email address as your primary Registration Email. Your CR email address ends with

"redwoods.edu." Please contact Public Safety, 707-476-4112, security@redwoods.edu, if you have any questions.

College of the Redwoods is committed to equal opportunity in employment, admission to the college, and in the conduct of all of its programs and activities.
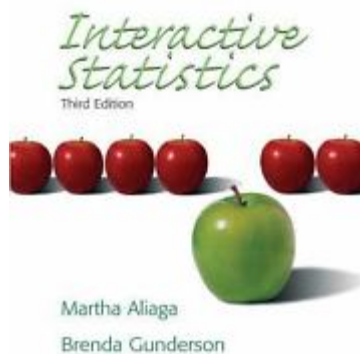
Things You'll Need

Textbook

Interactive Statistics, 3rd ed., Martha Aliaga & Brenda Gunderson.

ISBN: 0-13-149756-1.

(Be aware that there is a "Redwoods Edition" of that is not an acceptable substitute for the current course textbook.)
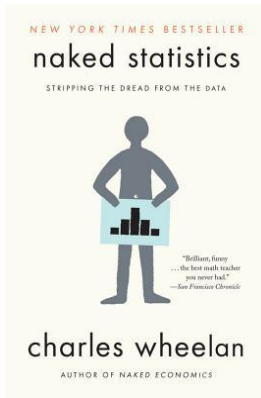

 Another book

You will have to read **one additional** book for this class. Here are your options.

Naked Statistics by Charles Wheelan
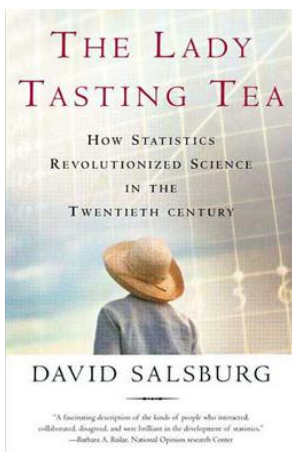
ISBN: 039334777

If you've read this book already (example Math 102 students), then you can't use this one. Otherwise, this is a book is a good introduction to the topic of statistics as it's used in society today. It will reinforce and further inform you on the topics we discuss in this class

naked statistics

STRIPPING THE DREAD FROM THE DATA

"Brilliant, funny
...the best math teacher
you never had."
—San Francisco Chronicle

charles wheelan

AUTHOR OF NAKED ECONOMICS

*The Lady Tasting Tea: How Statistics Revolutionized Science in the Twentieth Century* by David Salsburg

ISBN: 0805071342

One of the neat things about statistics is that it is relatively new discipline. Most everything you would learn in algebra has been known for hundreds if not thousands of years. But statistics has been developed over the last one hundred years. In this book, David Salsburg weaves the topics of statistics together with the stories the people who created them.

THE LADY TASTING TEA

HOW STATISTICS
REVOLUTIONIZED SCIENCE
IN THE
TWENTIETH CENTURY

DAVID SALSBURG

"A fascinating description of the kinds of people who interacted, collaborated, disagreed, and were brilliant in the development of statistics."
—Barbara A. Bailar, National Opinion research Center

Statistics Done Wrong: The woefully complete guide by Alex Reinhart

If you are going to use statistics after this class, then this is the book for you. It will build on the concepts we're learning and explain the boundaries and limits of the methods. It will also help you recognize when a study is using statistics improperly.

STATISTICS
DONE WRONG

THE WOEFULLY COMPLETE GUIDE

ALEX REINHART
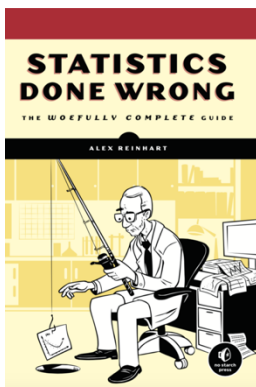
Composition Notebook (optional, but strongly recommended)

StatCrunch

We'll be using this software for statistical calculations and analyzing data. You can purchase a 6-month license $13.75 at www.statcrunch.com/get-access

We <u>won't</u> be using a graphing calculator.

Other Supplies

- Pencils or erasable pens
- Notebook

What You'll Need To Do

Attendance: Daily attendance is required to be successful for this class. Missing three or more classes without instructor approval will most likely result in being withdrawn from the course, and you will receive a W on your transcripts. If you miss a day, please check with a classmate to see what you missed. I also post lecture slides on Canvas. You are responsible for knowing the class material.

Homework: I am grading homework for neatness and completeness. Include all the problems and show organized work. <u>Answers are in the back of the book</u>. If you do not understand a problem, then you can get help from tutors, peers, or me. I will always allow time in class for homework questions.

Keep a file of your homework after I have returned them!

Exams: There will be two midterms and a cumulative final exam.

Midterm 1 will cover chapters 1-5

Midterm 2 will cover chapters 7-10

The Final Exam will have two parts. The first part will focus on calculations from chapters 11-15. The second part will be essay questions asking you to explain key concepts from the course.

> You'll have a general idea of when an exam is coming by where we are at in the material, and I will give notice the week before the exam. Exams are held during the class hours and regardless of the time you begin the exam, the deadline is at the end of the scheduled class time. If you are using the test proctoring, please contact me before the exam. There will be no make-up exams offered without prior consent.

Reading: The content of our textbook is focused on the theoretical/computational side of statistics, but it does not spend a lot of time discussing the various applications of the field. To that end, I've curated a list of books (see "another book" above) that will supplement the textbook. You will submit three reports, each due by the time of an exam (you can always submit them early). Each report will cover 1/3rd of the book that you have read.

Here is the Reading Report form that you will submit for each section. The reports will be submitted on Canvas.

Reading Report   Name:_____

Book you are Reading:

Chapters you are discussing:

Give a two-page* discussion about the portion of the book that you have read. Provide an overview of the main arguments, and then discuss important details and concepts demonstrated in the book. You can also discuss things that you found helpful, things that you didn't understand, or things that you disagreed with. What I am looking for is evidence that you have read and interacted with the assigned text.

Percentage of this portion that you have read:_____

If incomplete, which chapters do you need to finish? _____

*Double space, Times New Roman, 12 point font. I want two full pages. Incomplete reports will be returned for resubmission with a half-page penalty.

Late Reading Reports: If you did not finish the reading for that portion of the book, you can push it forward to the next report. However, your current report still has to be two pages long, and your next report will be extended by half a page *per chapter missed*

(exception: for Lady Tasting Tea the report will be extended by half a page *per three chapters missed* because they are shorter chapters)

If you do not turn in the report by the day of the exam, all chapters will be counted as missed, and your next report extended.

Final Project: There will be a final project during the last month of the semester. I will give you a dataset and you will analyze it using techniques we've learned in class, and then write an academic report discussing your methods and results. The project will be assigned in four steps, with Steps 2, 3, and 4 building on each other.

> Step 1 (10 pts): Learning how to write an academic a report
>
> Step 2 (10 pts): Background research of the variables
>
> Step 3 (10 pts): Analysis of the data
>
> Step 4 (30 pts): Final report

The final report needs to incorporate any feedback I give you from the previous steps.

Reference Notebook: Statistics is notorious for its various formulas that can only be applied when specific requirements are met. During the semester, you will create your own personal Statistics Reference Book. In your Reference Book, you will write definitions, examples, and instructions of things that you learn in this course.

This is notebook is *not* intended for taking notes during lecture, but for synthesis after you have read the material and have started doing the homework. It isn't until then that you will really know what is important to write down.

**You will be allowed to use your composition notebook for the Midterms. On the Final Exam, you may use your composition notebook for the computational part of the exam. However, you may not use it for the essay portion of the Final Exam. **.

Since you will have your composition notebook for the midterms and final exams, I will <u>not</u> be providing any of the formulas.

Category Weights

      Homework   25% of the grade

        Reading   25% of the grade

         Exams   25% of the grade

     Final Project   25% of the grade

Grading Scale

A $94 \leq Grade$
A- $90 \leq Grade < 94$
B+ $87 \leq Grade < 90$
B $82 < Grade < 87$
B- $80 \leq Grade \leq 82$
C+ $78 \leq Grade < 80$
C $70 \leq Grade < 78$
D $60 \leq Grade < 70$
F $Grade < 60$

Automatic Failing

Each part of the class is important for understanding Statistics.

      If the average of any one category (Homework, Reading, Exams, Final Project) falls below 70% then you automatically get a D.

      If the average of any two categories falls below 70%, then you automatically get an F.

This may seem harsh at first, but this allows me to distribute the weight of the categories evenly so that homework is just as important as your exams, instead of making the exams the bulk of the grade.

Things You Need to Know

Appealing a Grade: If you believe you have received the wrong (or an unfair) grade for an assignment, please come talk! I am completely open to discussing that with you.

Class Rules: As a general rule, *be respectful to your classmates and help provide a healthy environment for learning*.

Please do not talk unnecessarily during class, arrive on time and leave when class is dismissed. When you attend, give your attention to the material or activities we are working on. Please do not use class time to work on other projects. Do not come to class stoned, drunk or otherwise chemically compromised.

Technology: We are using computers. Please don't distract yourself or others by surfing the web. Same goes for cell phones. I'm not going to police usage, but if I start to feel like you or others are being distracted by them, then I will ask you to leave class.

Important Dates:

Last day to drop a course without a 'W' and with a refund	January 26
No Class (out of town retreat)	February 1
Scholarship Applications Due	February 6
President's Weekend (no classes, but this won't affect us)	February 16, 19
Last Day to Petition to Graduate or Apply for Certificate	March 9
Spring Break (no classes)	March 12-16
Last day to drop a course with a 'W' and without a refund	March 30
Last day for faculty-initiated withdrawal without a refund	March 30
Final Exam Week	May 7-11

Assistance: If you have a documented disability or believe you can benefit from any of the services offered by Disabled Student Programs & Services (DSP&S), please contact the DSP&S office 476-4280.

Due to the unpredictability of life, course flexibility may be required. I reserve the right to make appropriate changes at any moment. These changes will be announced in class. If you are absent, it is your responsibility to check with other students in the class for the updates.