| **Syllabus for Introduction to Statistics** – Online | | |
|---|---|---|
| **Semester & Year** | Summer 2017 | |
| **Course ID and Section #** | Math 15 V4337 | |
| **Instructor's Name** | Michelle Moreno | |
| **Day/Time** | Online | |
| **Location** | Canvas | |
| **Number of Credits/Units** | 4 | |
| **Contact Information** | *Office Location* | Online |
| | *Office hours* | By appointment |
| | *Email address* | moreno.cr.math@gmail.com<br>michelle-moreno@redwoods.edu |
| **Textbook Information** | *Title & Edition* | Interactive Statistics, 3rd ed. |
| | *Author* | Aliaga & Gunderson |
| | *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, chi-square 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 707-476-4280.

**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/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 at: www.redwoods.edu/district/board/new/chapter5/documents/AP5500StudentConductCodeandDisciplinaryProceduresrev1.pdf 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; 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, he or she 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: www.redwoods.edu/district/board/new/chapter5/documents/AP5500StudentConductCodeandDisciplinaryProceduresrev1.pdf
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 Eureka campus:**

Please review the campus evacuation sites, including the closest site to this classroom (posted by the exit of each room). The Eureka **campus emergency map** is available at: (http://www.redwoods.edu/Eureka/campus-maps/EurekaMap_emergency.pdf). For more information on Public Safety, go to http://redwoods.edu/safety/ In 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 Incident Commander or campus authorities. (CR's lower parking lot and Tompkins Hill Rd are within the Tsunami Zone.)

**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 at 707-476-4112 or 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.***

Instructor: Michelle Moreno

Contact Info: michelle-moreno@redwoods.edu or moreno.cr.math@gmail.com (for faster reply)

Time & Location: Online via Canvas: http://redwoods.intructure.com

Prerequisite: Math 120, Math 194, or Math 102 (with a grade of C or better) or satisfactory performance on math placement exam.

Required Materials: Interactive Statistics, 3rd ed. by Aliaga & Gunderson ISBN: 0-13-149756-1
TI-83/84 Calculator (no other calculator will be supported) or Microsoft Excel

Couse Objectives: This is an introductory course to the science of statistics. Statistics is about making sense out of data. At the most basic level statistics is how to organize data. At the other end of the spectrum is inferential statistics where you make decisions/inferences based upon the data. There are two primary goals for this course:

1. Properly collect and analyze a set of data.
2. Critically examine statistical information presented both in the media and in peer-reviewed journals.

Course Structure: This course runs for 8 weeks, from June 19 to August 10 and will operate fully online.

**To be successful in this class, you must be present! That means, participating in discussions, keeping up with assignments, and asking questions.**

**Discussion Forum** – There will be a minimum of two discussion forums each week, one for the **Topic of the Week** the other for **Homework Questions**.

You are **required to participate, each week**, in a meaningful and respectful way in both forums. If you do not have Homework Questions, then you should assist your classmates with their questions. When assisting with homework questions, do NOT just provide answers. In order to receive participation credit, you must provide detailed explanations. You should not be in this class, or any class, to just punch your card. It is my goal, and hopefully yours as well, for you to truly learn these concepts that are applicable to your everyday life, the premier concept being critical thinking.

**Lecture Videos** – There is a lecture video for each chapter in which I go over the Let's Do It (LDI) problems from the textbook. In the lecture videos I will teach you both the concepts and how to use your calculator. However, I will also provide an Excel spreadsheet (once we get to Chapter

4) so that you can also learn to utilize Excel to make graphs and calculations. You may use Excel or your calculator. While there are better statistics software packages, Excel is the tool widely used in the business realm.

If something in the video or Excel spreadsheets are unclear to you, please post those questions in the discussion forum for that week.

**Homework** – After going through the lecture video, do the assigned homework. As you are working through the problems, post any questions you may have in the discussion forum. Do not rely on the back of the book, particularly this book. It is far more important that you learn than just get the right answers. Do NOT get behind on the homework. This class is going to go very fast.

Solutions will be posted after the due date and it is imperative that you go through those solutions and make sure you understand anything you might have missed. However, if you are using the discussion forum properly, you should get all of the questions right.

**Exams** – There will be 3 Exams including the final.

**Exam 1** – Read the book, *How to Lie with Statistics* by Darrel Huff. A pdf of the book is provided in Canvas. The exam will consist of 16 questions about the book and be given in Canvas. You must actually read the book in order to be able to answer the questions. This exam will be available on Canvas from Thursday June 22 – Sunday June 25. You will have two hours to complete it and it must be done all at once. Please do not open the test until you are prepared to spend two, uninterrupted hours on it.

**Exam 2** – You will be given detailed instructions including an article from the media and the actual scientific study the media was written about. Your job will be to do an analysis of the media vs. the science. You will have a couple of weeks to work on this. It will not be timed.

**Final Exam** – The final will be given in two parts.

1. You will be given a set of data that you must analyze. You will write a scientific style paper that includes an explanation of the data analysis and results. You will have a couple of weeks to work on this. It is due on August 10 at 11:59pm.

2. Part 2 will be given on Canvas on Thursday August 10. It will consist of essay type questions as well as problems in which you must make calculations. The best way to prepare for this is to do and make sure you understand the homework. You will have two hours to

complete this test on Canvas. It will ONLY be given on Thursday August 10 – plan accordingly. The test will be available all day. However, do not open the exam until you are prepared to sit down and complete it.

| | | |
|---|---|---|
| Grading: | Discussion Forum | 15% |
| | Homework | 15% |
| | Exam 1 | 20% |
| | Exam 2 | 20% |
| | Final Exam | 30% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| >92% | A | 87-89 | B+ | 77-79 | C+ | 60-69 | D |
| 90-92 | A- | 83-86 | B | 70-76 | C | <60 | F |
| | | 80-82 | B- | | | | |