Syllabus for Math 15

Course Information

Semester & Year: Fall 2019
Course ID & Section #: Math-15-E7276 047276
Instructor's name: Dr. Ken Owens
Day/Time : MW 6:05pm -8:10pm
Location : Eureka campus building SCSC 208
Number of units: 4.0

Instructor Contact Information

Office location : SCSC 208
Office hours: MW 8:10 – 8:30pm
Phone number: 707-826-4249
Email address: ken.owens@redwoods.edu

Required Materials

Textbook Title: OpenIntro Statistics
Edition: 4th
Author: David Diez
ISBN: 978-1943450077. Free download at openintro.org/os.
Other requirements: materials, equipment or technology skills

Catalog 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.

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 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.

Evaluation & Grading Policy

Homework 20%, Projects 30% and Final Exam 50%. Homework problems will be assigned from the textbook. Problems will be posted on canvas and are to be completed on paper and turned in by the due date. There will be two projects and a Final Exam. The Final Exam will be comprehensive. You will be allowed one sheet of notes for each chapter covered. Final exam date and time: Monday December 16th of Final Exam Week from 5:30pm – 7:30pm

Prerequisites/co-requisites/ recommended preparation

Prerequisite: MATH-120 or MATH-194 or MATH-102. Recommended Prep: ENGL-150 or ENGL-102

Special accommodations statement

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.

Student feedback policy

Students will receive feedback in class during various statistical testing activities, from graded homework and projects.

Student Accessibility Statement and Academic Support Information

Students will have access, as required by federal regulation, to course material that complies with the Americans with Disabilities Act of 1990 (ADA), Section 508 of the Rehabilitation Act of 1973, and College of the Redwoods policies. Course materials will include a text equivalent for all non-text elements; videos will include closed captioning, images will include alt-tags, hyperlinks will use descriptive/meaningful phrases instead of URLs and audio files will include transcripts. All text will be formatted for use with screen readers and all course materials will be understandable without the use of color. Students who discover access issues with this class should contact the instructor.

About Learning Statistics

To learn statistics, you must learn a lot of new terminology (including "old" vocabulary with new meanings), special symbols, formulas, relationships, and concepts. And that's not all! You also must learn how and when to apply which formulas, and how to interpret your statistical results. It isn't enough to just know how to do the algebraic manipulations, or how to find things on your calculator. You will need to learn which are the correct formulas (or statistical tests), that are appropriate to use in the given situation. Also, unlike the majority of your previous math experience, there often is not just one "right" answer. You will need to understand the assumptions behind the different answers and how to assess which you feel is best for that particular case.

Some statistics students feel like the whole class is full of word problems and sometimes even students with excellent algebraic skills struggle with the statistical concepts and interpretations. On the other hand, some people who have had bad prior experiences with math classes really enjoy the way statistics is much more real and meaningful and applicable to the real world.

Materials you will need in addition to the text:

- **Graphing Calculator**: A Graphing Calculator, such as a TI-83 Plus, TI-84, or TI-89 or a cell phone application that emulates one of these. For android phones Wabbitemu is a free download. I have found that the TI 83 works best. For I-Phone users there is a TI-84 emulator for sale at $4.99. A limited number are available **for rent** – in the Math Lab which is in the back part of the Library.
  Time. Lots!! In your own weekly schedule please make sure that you have blocked out at least 15 hours *(possibly as much as 20 hours)*, per week, to devote to this class.
- **Paper**: Homework Paper and scratch paper, lots of it! It is fine with me if you RE-USE paper. Paper that's only been used on one side is still fine (in general) on the other side. You will also need some graph paper. Get it in a pad or a package of loose-leaf sheets (rather than stuck in a notebook), or print it from the web. Many people find it helpful to get graph paper with heavier lines on every fifth line to make counting easier.

- **Pencils**: Lots. Math problems should be done in pencil in this class (as in math classes in general). If you like softer lead (I find it writes darker easier) then you might like "2B" mechanical pencil lead (I prefer "2B" to "HB" which I find not as easy to work with).
- **Erasers**: At least one.
- **A ruler**: Important for drawing tables and graphs carefully and correctly.
- **Computer Access** for:
  - **Email:** I expect you to have access to a computer and expect to be able to contact you easily. The College uses your "mycr.redwoods.edu" email address to communicate with you so it is important that you receive those email messages; you can set it up to autoforward those emails to another email address if you prefer.
  - **Canvas course materials**. Course materials will be available using the "Canvas" course system. (This is a separate thing from your email but you need access to a computer for this also.)
  - **Homework**. Problems will be assigned on canvas. You will need a calculator for most of the homework.
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Participation in Class Activities: Attendance and participation are essential to the learning process. In addition, everyone benefits from your input and participation, and some work we do will be in groups! One important aspect of this course is the incorporation of active learning in class; this requires everyone's participation, particularly during in-class activities. Also, the best way to insure having a successful experience in any course is to come to every class meeting and keep up with the assignments. If you miss more than four class sessions, you may be dropped from the course.

I realize that sometimes things come up and getting to class is impossible. In those cases, just communicate with me as soon as you possibly can. This is especially important if you are missing class on a day we are scheduled to have an exam!

Note that ALL students remain responsible for ALL assignments given and that those assignments are expected to be turned in ON TIME. If you miss a class, the assumption is that you will get the necessary information to complete the assignment by the due date and be prepared to continue in the normal flow of the course.

CAUTION: the material builds from one week to the next and so
IT IS STRONGLY URGED THAT ALL STUDENTS ATTEND ALL CLASSES.

Problem Sets, assigned from the textbook: Problems will be assigned on canvas and are to be completed on paper and turned in by the due date.

Data Projects There will be two assignments that involve collecting and analyzing data, turning in written report and/or making an oral presentation. Details will be provided separately.

Projects and Exams: There will be **two projects** and a **Final Exam**. The Final Exam will be comprehensive and given at the date and time above. You will be allowed one sheet of notes for each chapter covered.

HELP?! If you have questions, please get help! It is ***your*** responsibility to seek help if you need it. I will answer questions in class and during office hours. You may also go to the learning center in the library.

Academic Misconduct: Cheating, plagiarism, collusion, abuse of resource materials, computer misuse, fabrication or falsification, multiple submissions, complicity in academic misconduct, and/ or bearing

false witness will not be tolerated. Violations will be dealt with according to the procedures and sanctions proscribed by the College of the Redwoods. Students caught plagiarizing or cheating on exams will receive an "F". The student code of conduct is available at: http://www.redwoods.edu/District/Board/New/Chapter5/Ap5500.pdf

DUE DATES and LATE WORK: Caveat on "due dates": While we are by necessity, confined within a certain time framework, it is important to me that you understand the material – given that, if you have made progress on an assignment but are having trouble completing it by the due date, communicate with me to make appropriate arrangements.

Math 15 Learning Units — *What material will we cover?*

The course material is organized into Learning Units. Each Unit includes more than one Chapter.

Unit	Chapters and Exams
1	Chapter 1: Introduction to Data Chapter 3: Normal Distribution Chapter 5: Foundations for Inference
2	Project I Chapter 6: Inference for Categorical Data Chapter 7: Inference for Numerical Data
3	Project II Chapter 7: Introduction to Linear Regression ANOVA
4	Project Poster Session Review Final Exam