

Math 15: 8891

Elementary Statistics

Spring 2021

Instructor Information

Name: Justin Davis

Office: [Office Hours Zoom Link](#)

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Office Hours: MW 1:00 - 1:30pm, T 3:30 - 5:00pm, Th 10:00 - 12:30pm

Class Information

Dates: 1/20 – 5/19 (+ Finals week!)

Time: MW 1:30 - 3:30PM

Location: [Class Meeting Zoom Link](#)

Prerequisites

Completion of MATH 161 OR MATH 156 OR MATH 154 OR MATH 155 or appropriate placement based on AB 705 mandates.

Course Description, [Link to Course Outline of Record](#)

Exploration of concepts in statistics, descriptive statistics, probability theory, Central Limit Theorem, estimation of population parameters from a sample, hypothesis testing, correlation and linear regression, introduction to analysis of variance, and computer simulations.

Student Learning Outcomes

Upon completion of the course, students will be able to:

- Use numerical and graphical methods to summarize, display, and interpret data sets.
- Estimate population parameters from sample statistics.
- Perform one and two sample hypothesis tests for population means and proportions.

Course Objectives

During this course, students will:

- Create and use graphic displays of data and frequency distributions.
- Identify the standard methods of obtaining data and identify advantages and disadvantages of each method.
- Distinguish among different scales of measurement and their implications.

- Define mean, median, mode, percentiles, variability and standard deviation, and compute each for sets of data.
- Use laws of probability.
- Apply concepts of sample space and probability distributions, including calculation of the mean and variance of a discrete distribution, and calculation of probabilities using normal and t distributions.
- Distinguish between sample and population distributions, and apply the Central Limit Theorem to calculate sampling distributions of means, proportions and standard error.
- Compute and interpret confidence intervals and required sample size.
- Identify the basic concept of hypothesis testing including Type I and II errors.
- Select the appropriate technique for testing a hypothesis and interpret the result.
- Perform hypothesis testing for mean, proportion and variance.
- Determine and interpret levels of statistical significance including p-values.
- Implement goodness of fit test, and the test for independence.
- Use linear regression and Analysis of Variance (ANOVA) for estimation and inference, and interpret the associated statistics.
- Use statistical software for evaluation of data and inference.
- Process data sets from disciplines including business, social sciences, psychology, life sciences, health sciences and education.

Textbook, Calculators, & Software

Textbook: We will use OpenStax Introductory Statistics, a free open resource textbook available for download [here](#):

You can purchase a hard copy of the textbook from the bookstore if you really need one. The textbook is also available at the Reserve Desk in the library: QA276.12 O64 2013

Calculator: You can get a TI calculator that does statistics (TI 83 Plus, 84). You will be using this calculator to assist you on your homework, quizzes and exams. You may not use a calculator that does symbolic logic on quizzes and exams (TI - 89). If you do not have a TI - 83 Plus or TI - 84, you may be able to get by with online stats calculators this semester with remote learning. **I will also share links to various online calculators that we can use for this class.**

Homework

You will access the online homework assignments *directly* in our Canvas course. Most of the time they will be due weekly by 11:59pm on Friday night. **THERE ARE NO EXTENSIONS OR MAKE-UPS!! BECAUSE OF THIS, YOUR LOWEST 3 HOMEWORK ASSIGNMENTS WILL NOT COUNT TOWARD YOUR FINAL HOMEWORK GRADE.**

*Note: You will most definitely encounter exercises during homework that are more difficult than examples we have seen in class. This is good. It is extremely important for your learning to focus on these (and even struggle a bit). Of course, I am here to support you in class and in office hours. The SRJC Math Lab is also a great place to get help.

Labs, Mini-Projects, & In-Class Assignments

There will be various labs, mini-projects, and in-class assignments throughout the semester. This is why it is crucial that you attend a participate every class session. **Again, there are no make-ups or extensions for these assignments,so I will drop the lowest score in this category.**

Exams

There will be 3 timed exams and a final exam all done in Canvas (so 4 exams total).

If it is beneficial, your final exam percentage will replace your lowest midterm percentage provided you take all of the exams.

Class Attendance and Participation

It is essential to your success in this course that you attend each lecture and participate in the discussions. Therefore, you are expected to attend each lecture and to show up on time. You are responsible for any material covered, any work assigned, or any course changes made during the lecture.

Grading

The course grade is determined by the following components:

Midterm Exams (3)	50%
Final	20%
Labs, Mini Projects, In-Class Assignments	20%
Homework	10%

Final grades will be assigned according to the following scale:

A	90% – 100%
B	80% – 89%
C	70% – 79%
D	60% – 69%
F	0% – 59%

*Note: If you are <1% away from the next letter grade up, I do round this up.

Topics

We will cover most of chapters 1 - 13 in the OpenStax Introductory Statistics book.

Important Dates

- January 31: Last day to drop semester length class and be eligible for a refund.
- February 7: Last day to drop a semester length class without “W” symbol.
- April 25: Last day to drop a semester length class with “W” symbol.
- May 26: Final Exam

Getting Help

Be proactive about your success in the course! If you need help, there are many resources available to help you. Your first primary contact for help is the instructor. If you are struggling, attend office hours or send an email. Do not wait to bring issues, course related or otherwise, to the attention of the instructor. If you cannot attend office hours, send an email to the instructor to try to make other arrangements.

Tips for Success

- Be proactive about your success in the course.
- Do not procrastinate! Begin your assignments and studying early!
- Attend every class meeting.
- Ask questions whether it is during class, recitation, office hours, at the math clinic or via email to your instructor.
- Form a study group! Working together will help you and others better understand the course material as you can work through different difficulties and offer each other clarifications on concepts.
- Do problems! Reading through your notes is not enough. Seek out new problems and work through them carefully. When you are done, check your answer. If you are wrong, examine carefully what misunderstanding occurred and how to avoid it in the future.
- Every time you approach a new concept, carefully think how it could be applied in your own field of study.

Special Needs

If you believe that you may need an accommodation based on the impact of a disability, please contact Disability Resources as early in the semester as possible, in order to discuss your specific needs and to determine a reasonable accommodation plan. You may contact Disability Resources Office in Bertolini Student Center, 3rd Floor (disabilityinfo@santarosa.edu, phone: 707-527-4278).

Academic Honesty

Academic honesty and integrity is expected at all times. Cheating will not be tolerated. Cheating includes plagiarism of any sort, as well as receiving or providing unauthorized assistance on any type of assignment. Minimum consequences for cheating will be a grade of zero for the assignment or exam with possible consequences of an F in the course or expulsion from school. Furthermore, any incidence of cheating will result in a note of explanation being placed in your disciplinary file. Please carefully read the full policy on academic integrity in the Santa Rosa Junior College catalog. All course materials for Santa Rosa Junior College courses are the exclusive property of the individual(s) who created them. It is illegal to share or sell any course materials you may obtain as a student in this class, whether on paper or in digital form. Unauthorized reproduction and distribution of SRJC course materials may be grounds for disciplinary and/or legal action.

Student Conduct

We will conduct ourselves in a manner which reflects our awareness of common standards of decency and the rights of others. All students are expected to know the Student Conduct Policy and adhere to it in this class. Students who violate the code may be suspended from 2 classes and may be referred to the Conduct Dean for discipline.

Remote Learning Etiquette & Expectations

- Stay focused. Please stay engaged in class activities. Close any apps on your device that are not relevant and turn off notifications.
- Turn on your video when possible. It is helpful to be able to see each other, just as in an in-person class.
**Exceptions: If you have limited internet bandwidth or no webcam, it is ok to not use video. If you're unable to find an environment without a lot of visual distractions, it is also ok to turn off your video.*
- Keep it clean. Don't share anything you wouldn't put up on the projector in class!
- Mute your microphone when you are not talking. This helps eliminate background noise.
- Use a headset when possible. If you own headphones with a microphone, please use them. This improves audio quality.
- Be in a quiet place when possible. Find a quiet, distraction-free spot to log in. Turn off any music, videos, etc. in the background.
- Stay on topic. Use the chat window for questions and comments that are relevant to class. The chat window is not a place for socializing or posting comments that distract from the course activities. If you fill it up with random comments, I will be unable to sort through the information quickly to address students' real questions/concerns about the course.

- No disrespect or hate speech. Just like in our in-person class, respectful behavior is expected. Consider Zoom a professional environment, and act like you're at a job interview, even when you're typing in the chat