Course Syllabus
Math 15 Elem Statistics, Fall 2023

Section #1103
T&TH 1:00-3:00 in Bussman 1454

Instructor Information

Instructor: Cortney Schultz
Email: cschultz@santarosa.edu

Office location: Kunde Hall 219
Phone: (707) 527–4705

Office Hours: All office hours are in person.

Monday & Wednesday: 11-12PM (Kunde 219)

Tuesday & Thursday: 3-4PM (Kunde 219) and 5-5:30PM (Kunde 202)

You may schedule an appointment if you have a schedule conflict with the times listed above

Email Expectations: The best way to contact Prof. Schultz is by email cschultz@santarosa.edu or by sending a message through Canvas. During the week, you can expect an email response within 24 hours. You may get a response sooner, but there is no guarantee. If you email Prof. Schultz during the weekend, you can expect a response on Monday.

Math 15 Course Description: 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.

Prerequisite/Corequisite: Completion of MATH 161 OR MATH 156 OR MATH 154 OR MATH 155 or AB705 placement into **Math Tier 1 or higher**

Student Learning Outcomes: Here is the link for Math 15 course outline at SRJC.

At the conclusion of this course, the student should be able to:

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

Grading for Math 15

Traditional grading scheme

Stats R Projects	15%	$A \geq 90$
Homework	10%	$80 \leq B < 90$
Exams (3 @ 20% each)	60%	$70 \leq C < 80$
Comprehensive Final Exam	15%	$60 \leq D < 70$
	100%	$F < 60$

Required Course Materials

Calculator: A graphing calculator is required for this course. I recommend using a TI–83, 83+, 84, or 84+.
I will be demonstrating on a TI-84+.
Graphing Calculators are available to check out at the Mahoney Library for FREE all semester with a student ID.

Textbook: *Elementary Statistics,* ***3th edition***, by William Navidi and Barry Monk

Purchasing options:

- Option #1: Purchase/Rent the hardback textbook (ISBN13: 9781259969454)
- Option #2: Purchase/Rent the loose-leaf textbook (ISBN13: 9781260373523)
- Option #3: Purchase/Rent the E-textbook

Exams

Three midterm exams and a comprehensive final exam will be given IN PERSON during the semester. Make-ups are not given, and all exams must be taken on the scheduled dates.

If you miss an exam, contact me within 24 hours. If it is an excused absence, your final exam score will replace that missed midterm score.

Stats Project

You will complete multiple statistics projects throughout the semester.

These projects will be completed using R, which is a statistical software used by statisticians, scientists, economists, and more. This project is meant to give you hands-on experience with collecting, analyzing, and presenting data as well as a little bit of coding.

Homework

You will be completing homework in this class the old-fashioned way.
Problem sets and due dates will be assigned weekly and it is your responsibility to record that information and submit your homework on time.

Canvas

Throughout the course, I will be posting notes, handouts, chapter review keys, and exam keys on Canvas.
You may also keep up with your current grade by using Canvas.

Attendance

Daily attendance is essential. You may be dropped from the course if you have more than 4 absences. Arriving late or leaving class early may count as an absence.

Class Behavior Rules

- Students are to act respectfully and pay attention while in class.
- Please arrive on time and stay for the entire class period.
- Cell phones are to be turned off or set to silent mode.
- Students are expected to read the textbook.
- Students are expected to ask questions.
- Students are expected to be active participants in their education and do their best every day.

Important Academic Calendar Dates

- Monday, August 14th — Fall semester begins
- Sunday, August 27th — Last day to drop a class and receive a refund
- Sunday, September 3rd — Last day to drop a class without a "W" symbol
- **Sunday, November 12th — Last day to drop a class with a "W" symbol**
- **FINAL EXAM: THURSDAY, DECEMBER 14TH (10:00AM - 12:45PM)**

Cheating/Plagiarism

Please read SRJC's policy/procedure on academic integrity at
http://www.boarddocs.com/ca/santarosa/Board.nsf/goto?open&id=A63TMC78051C

All quizzes & exams (including the final) must be done by the student alone. Any student who violates this rule will receive a zero and may be reported to academic affairs for their offense. A student who commits a second offense may receive a failing grade in the class.

Accommodations for Disabilities

Please provide the Authorization for Academic Accommodations (AAA letter) from the Disability Resources Department (DRD) to me as soon as possible. You may also speak with me privately during office hours about your accommodations.

Emergency Evacuation

In the event of an emergency during class that requires evacuation of the building, please leave the class immediately and calmly. If you are a student who may need assistance in an evacuation, please see me as soon as possible to discuss an evacuation plan.

Tutoring

Free tutoring is available to all registered SRJC students.

- **SRJC Tutorial Centers** can be accessed through the website: https://college-skills.santarosa.edu/srjc-tutorial-centers
- **Math Lab Tutorial Center**: https://mathematics.santarosa.edu/online-math-lab-tutoring

Calculator & Laptop Rentals

Students may place online requests for Reserve items, including textbooks, calculators and laptops. This curbside pick-up service will be available by appointment. Loan periods will be for the entire Spring 2023 semester. Reserve item check-outs to students will be on a first-come, first-served basis, until all physical copies are gone. Students will keep Reserve items for the entire semester.

Use this link to find more information about rentals: https://libguides.santarosa.edu/RemoteAccess

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
		1:00-3:00PM		1:00-3:00PM
Week 1 Aug 14-17		*Syllabus/Intro* **1.1** Sampling		**1.1** Sampling **1.2** Types of Data
Week 2 Aug 21-24		**1.3** Design of Experiments **1.4** Bias in Studies		**2.1** Graphical Summaries for Qualitative Data **2.2** Graphical Summaries for Quantitative Data
Week 3 Aug 28-31		**2.2** Graphical Summaries for Quantitative Data		**2.3** More Graphs for Quantitative Data **2.4** Graphs Can Be Misleading
Week 4 Sept 4-7	**NO CLASS**	**3.1** Measures of Center (mean, median, mode)		**3.2** Measures of Spread (Empirical Rule, Chebyshev's Inequality)
Week 5 Sept 11-14		**3.3** Measure of Position		**EXAM 1**
Week 6 Sept 18-21		**4.1** Correlation **4.2** Least-Squares Regression Line		**4.2** Least-Squares Regression Line **5.1** Basic Concepts of Probability
Week 7 Sept 25-28		**5.2** Additional Rule and Rule of Complements **5.3** Conditional Probability and the Multiplication Rule		**5.3** Conditional Probability and the Multiplication Rule
Week 8 Oct 2-5		**6.1** Random Variables		**6.2** Binomial Distribution
Week 9 Oct 9-12		**7.1** Standard Normal Curve		**7.2** Applications of Normal Distribution **7.3** Sampling Distribution and Central Limit Theorem

Week 10 Oct 16-19		**EXAM 2**		**7.3** Central Limit Theorem applications **7.4** The Central Limit Theorem for Proportions
Week 11 Oct 23-26		**8.1** Confidence Intervals Pop. Mean w/ Pop. SD known		**8.1** Confidence Intervals Pop. Mean w/ Pop. SD known **8.2** Confidence Intervals Pop. Mean w/ Pop. SD unknown
Week 12 Oct 30-Nov 2		**8.3** Confidence Intervals Pop. Proportion		**9.1** Basic Principles of Hypothesis Testing
Week 13 Nov 6-9		**9.2** Hypothesis Testing Mean (application problems) **9.3** Hypothesis Testing Mean w/ Pop. SD unknown		**9.4** Hypothesis Tests for Proportions
Week 14 Nov 13-16		**11.1** Hypothesis Tests for the Difference Between 2 Means - Independent Samples		**EXAM 3**
Week 15 Nov 20-23		**11.2** Hypothesis Tests for the Difference Between Proportions		**NO CLASS**
Week 16 Nov 27-30		**11.3** Hypothesis Tests for the Difference Between 2 Means - Dependent Samples		**12.1** Testing Goodness of Fit **12.2** Testing for Independence
Week 17 Dec 4-7		**12.2** Testing for Independence		**14.1** One-Way Analysis of Variance
Finals Week Dec 11-14	**FINAL EXAM: Thursday, Dec. 14 (10AM-12:45PM)**			

Note: Schedule is subject to change throughout the semester