

# Fall 2020 Course Syllabus

## Math 15 Elementary Statistics

Section #2305, TTH 3:00-5:00PM, *online*

## Math 215 Stat Concurrent Support

Section #2316, TTH 5:00-6:00PM, *online*

### Instructor Information

Instructor: Cortney Schultz

Office location: Kunde Hall 219

Office hours: MW 2-3PM & TTH 1:30-3PM

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**Prerequisite/Corequisite:** Completion of MATH 161 OR MATH 156 OR MATH 154 OR MATH 155 or appropriate placement based on AB 705 mandates.

The section #2305 of Elementary Statistics is linked to a Continued Support Course, Math 215, section #2316. You will be automatically enrolled in both sections.

Note that if you drop one section, you will automatically be dropped from the other.

**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.

**Math 215 Course Description:** A review of the core prerequisite skills, competencies, and concepts needed in statistics. Intended for students who are concurrently enrolled in (MATH 15) Elementary Statistics. Topics include concepts from arithmetic, pre-algebra, elementary and intermediate algebra, and descriptive statistics that are needed to understand the basics of college-level statistics. Additional emphasis is placed on solving and graphing linear equations and modeling with linear functions.

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

[https://portal.santarosa.edu/srweb/SR\\_CourseOutlines.aspx?CVID=48790&Semester=20195](https://portal.santarosa.edu/srweb/SR_CourseOutlines.aspx?CVID=48790&Semester=20195)

Here is the link for Math 215 course outline at SRJC.

[https://portal.santarosa.edu/srweb/SR\\_CourseOutlines.aspx?CVID=48774&Semester=20195](https://portal.santarosa.edu/srweb/SR_CourseOutlines.aspx?CVID=48774&Semester=20195)

### Grading for Math 15

Traditional Grading Scheme

		A $\geq$ 90
Chapter Reviews	10%	$80 \leq B < 90$
Homework	15%	$70 \leq C < 80$
Exams (3 @ 20% each)	60%	$60 \leq D < 70$
<u>Comprehensive Final Exam</u>	<u>15%</u>	F < 60
	100%	

### Grading for Math 215

Pass/No Pass

Exam Reflections (3 @ 10% each)	30%	
Math 215 Canvas Assignments	50%	PASS $\geq$ 70
<u>Final Exam Review Packet</u>	<u>20%</u>	NO PASS < 70
	100%	

## 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*, 3<sup>rd</sup> edition, by William Navidi and Barry Monk

**ConnectMath Online Homework:** Homework will be completed and submitted and graded online.

**Course Code:** GWFMF-CVQQL

Here are three purchasing options:

Option #1: Purchase the hardback textbook and the ConnectMath access code (E-textbook included).

Option #2: Purchase the loose-leaf textbook and the ConnectMath access code (E-textbook included).

Option #3: Purchase only the ConnectMath access code (E-textbook included).

With the following access code, you will receive 2 weeks of temporary access.

Before the 2 weeks expire, you will be expected to purchase access to the course for the rest of the semester,

**Temporary Access Code:** 6E6A1-E5B3B-DEEC6-12530

## Exams

Exams will be proctored. You will be required to share video of yourself and your workspaces while taking exams. You will be required to write out solutions for problems, take pictures of your solutions, and upload your work to Canvas.

Three midterm exams and a comprehensive final exam will be given during the semester, and all exams must be taken on the scheduled dates. If you miss an exam, you must contact me within 24 hours. If the absence is excused, your final exam score will replace your missed midterm score.

Make-up exams are not given.

## Extra Credit

You may earn a 2% grade boost on each exam if you consistently participate in tutoring. If you provide proof that you've met with an SRJC tutor on two separate occasions before an upcoming exam, you will receive a 2% grade boost on that exam.

For instance, if you go to tutoring twice before the first exam, you will get a 2% grade boost on Exam 1. If you only make it to tutoring once before the second exam, you will not receive a boost on Exam 2.

## Canvas

Throughout the course, I will post notes, handouts, exam keys and other resources on Canvas. You may also keep up with your current grade by using Canvas.

## Class Meetings

Our class will meet every Tuesday and Thursday at 3PM for the duration of the semester. Students are expected to watch online lecture videos before class. Class time will be reserved for working on practice problems, collaborating in groups, answering questions, and taking exams.

## Chapter Review Assignments

When we finish a textbook chapter, a review assignment will be posted in Canvas. You will be required to write out solutions for problems, take pictures of your solutions, and upload your work to Canvas.

## Homework Grading/Late Homework

Select homework sections will be due twice a week (generally Tuesdays and Thursdays). You have 3 *attempts* at answering a homework question.



Connect with the math lab using this link: <https://mathematics.santarosa.edu/online-math-lab-tutoring>

### Tutorial Center

Students can access **SRJC Tutorial Centers** through their cubby by logging-in and choosing **SRJC Tutoring** the **Quick Links** section on the right side.

**SRJC Tutorial Centers** can also be accessed through the website: <https://college-skills.santarosa.edu/srjc-tutorial-centers>

Live drop-in tutoring is available during Fall 2020 term:

- Monday – Thursday 8:00 AM – 7:00 PM
- Friday 8:00 AM – 4:00 PM

### **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 Fall 2020 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/Reserve>

### **Schedule of Topics By Date & Textbook Section:**

- Week 1 (8/18)
  - 1.1 Sampling (Simple random samples, statistics vs. parameters)
- Week 1 (8/20)
  - 1.1 Sampling (different types of sampling, samples of convenience)
  - 1.2 Types of Data
- Week 2 (8/25)
  - 1.3 Design of Experiments
- Week 2 (8/27)
  - 1.4 Bias in Studies
  - 2.1 Graphical Summaries for Qualitative Data
- Week 3 (9/1)
  - 2.2 Graphical Summaries for Quantitative Data
- Week 3 (9/3)
  - 2.3 More Graphs for Quantitative Data
- Week 4 (9/8)
  - **NO CLASS**
- Week 4 (9/10)
  - 2.4 Graphs Can Be Misleading
  - 3.1 Measures of Center (mean, median, mode)
- Week 5 (9/15)
  - 3.1 Measures of Center (mean of freq distr, weighted mean)
  - 3.2 Measures of Spread (range, variance, standard deviation, coefficient of variation)
- Week 5 (9/17)
  - 3.2 Measures of Spread (Empirical Rule, Chebyshev's Inequality)
- Week 6 (9/22)
  - **EXAM 1**
- Week 6 (9/24)
  - 3.3 Measure of Position
  - 4.1 Correlation (scatterplots & correlation vs causation)
- Week 7 (9/29)
  - 4.1 Correlation (correlation coefficient)

- 4.2 Least-Squares Regression Line
- Week 7 (10/1)
  - 5.1 Basic Concepts of Probability
  - 5.2 Additional Rule and Rule of Complements (general addition rule)
- Week 8 (10/6)
  - 5.2 Additional Rule and Rule of Complements (rule of complements)
  - 5.3 Conditional Probability and the Multiplication Rule
- Week 8 (10/7)
  - 6.1 Random Variables
- Week 9 (10/13)
  - 6.2 Binomial Distribution
- Week 9 (10/15)
  - 7.1 Standard Normal Curve
- Week 10 (10/20)
  - 7.2 Applications of Normal Distribution
  - 7.3 Sampling Distribution and Central Limit Theorem (sampling distribution)
- Week 10 (10/22)
  - 7.3 Sampling Distribution and Central Limit Theorem (CLT applications)
  - 7.4 The Central Limit Theorem for Proportions
- Week 11 (10/27)
  - 8.1 Confidence Intervals Pop. Mean w/ Pop. SD known (intro & calculate basic interval)
- Week 11 (10/29)
  - **EXAM 2**
- Week 12 (11/3)
  - 8.1 Confidence Intervals Pop. Mean w/ Pop. SD known (applications of intervals, min sample size)
  - 8.2 Confidence Intervals Pop. Mean w/ Pop. SD unknown
- Week 12 (11/5)
  - 8.3 Confidence Intervals Pop. Proportion
- Week 13 (11/10)
  - 9.1 Basic Principles of Hypothesis Testing
  - 9.2 Hypothesis Testing Mean (intro & hyp test)
- Week 13 (11/12)
  - 9.2 Hypothesis Testing Mean (application problems)
  - 9.3 Hypothesis Testing Mean w/ Pop. SD unknown
- Week 14 (11/17)
  - 9.4 Hypothesis Tests for Proportions
  - 11.1 Hypothesis Tests for the Difference Between 2 Means - Independent Samples
- Week 14 (11/19)
  - 11.2 Hypothesis Tests for the Difference Between Proportions
  - 11.3 Hypothesis Tests for the Difference Between 2 Means - Dependent Samples (intro & hyp test)
- Week 15 (11/24)
  - 11.3 Hypothesis Tests for the Difference Between 2 Means - Dependent Samples (application problems)
  - 12.1 Testing Goodness of Fit (chi-squared distr, intro to test)
- Week 15 (11/26)
  - **NO CLASS**
- Week 16 (12/1)
  - 12.1 Testing Goodness of Fit (application problems)
- Week 16 (12/3)
  - **EXAM 3**
- Week 17 (12/8)
  - 12.2 Testing for Independence
- Week 17 (12/10)
  - 14.1 One-Way Analysis of Variance
- **FINAL EXAM** (Math 15) Tuesday, December 15<sup>th</sup> (1 – 3:45PM)
- **FINAL EXAM** (Math 215) Tuesday, December 15<sup>th</sup> (4 – 6:45PM)