SANTA ROSA JUNIOR COLLEGE

Fall 2021 MATH 15: *Elementary Statistics (1092)– 4.0 units*

When: Monday & Wednesday 12:00 pm – 1:30 pm & at least 1 hour asynchronous

Where: Barnett 1286

Instructor: Kat Valenzuela

Email: *Kvalenzuela@santarosa.edu*

- Please use proper English and grammar in all emails. Text language, emotions, and emojis are <u>not</u> considered proper English.
- I will reply within 24 hours to emails received Sunday 5:00 pm - Thursday 5:00 pm.
- I will reply by Monday at 5:00 pm to emails received between Thursday (after 5:00 pm) and Sunday (before 5:00 pm).
- I will reply within 24 hours of the next working day if emails were received during holiday.

Phone: 707-778-2474

Office Hours: Kunde Hall 213. Office hours will be asynchronous meaning via email or by appointment.

Content: 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: Completion of MATH 161 OR MATH 156 OR MATH 154 OR MATH 155 or AB705 placement into Math Tier 1 or higher

Course Outline of Record: is available online: go to the SRJC homepage and search for course outline and the type in MATH 15 under the course.

Required Materials:
- Textbook: Statistics: Informed Decisions Using Data 5/e Michael Sullivan, III. Pearson. I will be teaching the course with the 5th edition of our textbook. If you choose an earlier/different version, it is up to you to reconcile the differences between editions.
- A graphing calculator without a computer algebra system (CAS). You can use any technology you choose to complete the homework; however, that is not a substitution for not understanding the mathematics behind the computations. On the Exams the allowable technology will be specified.

Class Structure:
- Give yourself the best chance of succeeding by:
  - Meeting the prerequisites
  - Providing a good-faith effort
  - Communicating often and taking the time to formulate good questions
  - Having patience
  - Exhibiting academic integrity
  - Attend class each day, work on the homework, and weekly assignments
  - Read the text before attempting the homework
  - Know when the due dates for assignments are
  - Strive to be "impossible to be misunderstood"

This syllabus is intended to give the student guidance to what/how/when topics will be covered and assessed during the semester and will be followed as closely as possible. However, I reserve the right to modify, supplement, or make changes to the syllabus as needed. Your enrollment in this MATH 15 class indicates your agreement to all of the policies in the syllabus and all SRJC student-related policies.

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- o Realizing that your work will be graded in accordance with a college transfer level, math class

- You will be spending at least 1 hour each week working on weekly assignments (asynchronous work). This may come in the form of worksheets, readings, bookwork assignments, exercises, etc. The weekly assignments will be announced each week.

- Our class is a place reserved for learning. Being kind, open-minded, respectful, patient, and tolerant are qualities conducive to learning. It is expected that you will be prepared to learn and exhibit these behaviors.

- It is critical that students work on homework frequently throughout the term.

- The written exams in **our class will be graded according to mathematical standards that accompany a college transfer level math class**.

- When developing a logical argument or asking a question, please make it a goal to be **"impossible to be misunderstood" and take the care and time to formulate good questions**, before asking them.

- Read all the emails, homework, quizzes, exams, assignments and any communications you have from me **carefully**.

- This class will be utilizing technology; however, that is not a substitution for not being able to utilize mathematical notation correctly, appropriately, and efficiently.

Academic Integrity

All work is to be original; verifiable plagiarism or academic dishonesty of any kind will result in recording an F for the class or being dropped from the class. Students who plagiarize or cheat may also be referred to the Vice President of Student Services for discipline sanction, in cases of egregious violation.

Accommodations for Students with Disabilities

Please contact me privately regarding concerns about accommodations. If you have not received authorization from DRD, it is recommended that you contact them directly. DRD's link: https://drd.santarosa.edu

Your Responsibility: A college transfer level math class requires a great amount of discipline and continual self-monitoring. In order to be successful each student is expected to:
1. Attend office hours regularly.

2. Be respectful of your fellow classmates. You will be asked to leave the class if you are not ready to learn.

3. We will listen respectfully when someone else is talking, we will be respectful and polite even when we disagree with another's viewpoint.

4. Be an active participate during class.

5. Quietly listen to lecture and actively take notes.

6. Class is a place reserved for learning. Being kind, open-minded, respectful, patient, and tolerant are

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qualities conducive to learning. It is expected that you are prepared to learn and exhibit these behaviors.

7. Read each section in the book before attempting the homework. You will be surprised how much you understand in class, and feels easier when you do this!

8. It is critical that students work on homework frequently during the semester. Students are expected to work on homework exercises out of the text.

9. This class will be utilizing technology; however, that is not a substitution for not being able to utilize mathematical notation correctly, appropriately, and efficiently.

10. The written exams in our class will be graded according to mathematical standards that accompany a college transfer level math class.

11. When developing a logical argument or asking a question, please make it a goal to be "impossible to be misunderstood" and take the care and time to formulate good questions, before asking them.

12. Read all the emails, homework, quizzes, exams, assignments and any communications you have from me carefully.

13. Know where to the Mathematics & Computer Lab, & office hours are and visit as often as you need or want.

14. Review previous sections. Continual studying is much more rewarding and less stressful than cramming.

15. Study early and study often!

16. Check your email regularly!

17. Be aware of the date of the quizzes, exams, assignments, and final.

18. Problems you got wrong or partial credit on from your exams and quizzes is your responsibility to understand why. Try to work the problem out at home first and if you are still struggling come talk to me if you have questions.

19. Be patience with yourself and keep at it. Persistence, and hard work leads to success. You may need to find your own mental fortitude.

Fortitude Definition:

strength of mind that enables a person to encounter danger or bear pain or adversity with courage, strength.

20. Come talk to me for any reason! If you are having trouble, problems with something or cannot make class let me know as soon as you can. I am more willing to help you when you let me know early and have an open communication with me. I am less likely to accommodate circumstances when things arise at the last minute.

21. Students are required to have a text for our course. Our text is available nowadays in many different forms; e.g., as a traditional textbook, in electronic format, etc. You are welcome to choose the one that works best for you; you may have a preference or there may be cost savings with one format versus another.

22. I will be teaching the course with the 5th edition of our textbook. If you choose an earlier/different version, it is up to you to reconcile the differences between editions.

23. Preparedness: AB705 eliminates the requirement of taking a prerequisite course, in our case Intermediate Algebra. However; students are responsible for this prerequisite material. You are responsible for knowing the concepts taught in Intermediate Algebra and Beginning Algebra. In order to be successful, you will need to spend extra time outside of class reviewing the prerequisite material you are missing, on top of the material related to this course.

Late Work: Quizzes, exams, assignments, and the final will **NOT** be taken late. NO EXCEPTIONS!

Attendance: Attending class regularly greatly increases the likelihood of success in the course; however, I believe that adult college students know this (or, are learning this), and will make their own choice regarding attendance. There are no points associated with attendance. I am required to follow College Policy regarding attendance: A student may be dropped from any course when that student's absences exceed ten percent (10% constitutes an "excessive" number of absences for this course) of the total hours of class time. Students who fail to attend the first day & week of class may be dropped from the course.

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MATH 15 GRADE BREAKDOWN

Activity (NO LATE WORK ACCEPTED; ALLOWED RESOURCES WILL BE DESCRIBED IN THE INSTRUCTIONS FOR EACH ACTIVITY)	Points Possible	Your Points	Your Cumulative Points	Cumulative Points Possible	Your Cumulative Percentage
Quiz #1 Monday, September 13th	50			50	
Exam #1 Monday, September 27th	100			150	
Quiz #2 Monday, October 25th	50			200	
Exam #2 Monday, November 8th	100			300	
Quiz #3 Monday, November 29th	50			350	
Take out lowest Quiz Score	-50			300	
Weekly Assignments	150			450	
Final Exam Wednesday, December 15th 10:00 am – 12:45 pm	150			600	

Grading Policy
Letter grades will be assigned on a scale no stricter than the following:

Letter Grade	Percentage
A	90 to 100
B	80 to 89
C	70 to 79
D	60 to 69
F	0 to 59

Activity Details
Weekly Assignments (15 at 10 points each; 150 points total)
You will be spending at least 1 hour each week working on weekly assignments (asynchronous work). This may come in the form of worksheets, readings, bookwork assignments, exercises, etc. The weekly assignments will be announced each week.

Homework Quizzes (Three at 50 points each; only two count toward your grade)
These quizzes will be held in class. You will only be allowed to use completed homework on this quiz. Only your top two quiz scores will be counted toward your grade. No quiz make-ups are available. Quizzes are usually returned, graded, no later than one week of the quiz date. Students are asked to review their graded quizzes and wait at least 48 hours to discuss questions and ask for further feedback on graded quizzes.

Exams (Two at 100 points each)
These will be taken in our classroom on **Monday** of week 7 and week 13. You will be notified of the exam topics and the materials you can use on the exams prior to each exam. These exams may only be taken at a different time with advanced notice and must be taken prior to the original scheduled date. Exams are usually graded and returned no later than one week of the exam date. Students are asked to review their graded exams and wait at least 48 hours to discuss questions and ask for further feedback on graded exams.

Final Exam (150 points)
Be prepared for a mostly cumulative final exam. It will be written to take about 2.75 hours and will be given at the College-designated time. You will be notified of the exam topics and the materials you can use on the final prior to the final. The final can only be taken at a different time with advanced notice and must be taken prior to the original scheduled date. Final exams are not returned to the students; however, you are welcome to come by during the following semester to review your final exam.

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Tentative Schedule

(Note that the ideal schedule is just that—ideal. Our actual pace may cause us to run a little behind or ahead of the ideal schedule throughout the semester... hopefully we stay ahead more often than behind!)

Week Number	Date (Week Beginning...)	Section Number and Title. Read these sections before they are covered.
1	August 16	Read & work on your own: • *1.1: Intro. To the Practice of Statistics* • *1.2: Observational Studies vs. Designed Experiments* • *1.3: Simple Random Sampling* • *1.4: Other Effective Sampling Methods* • *1.5: Bias in Sampling* • *1.6: The Design of Experiments* 2.1: Organizing Qualitative Data 2.2: Organizing Quantitative Data
2	August 23	2.3: Additional Displays of Quantitative Data 3.1: Measures of Central Tendency 3.2: Measures of Dispersion
3	August 30	3.3: Measures of Central Tendency and Dispersion from Grouped Data 3.4: Measures of Positions and Outliers 3.5: The Five-Number Summary and Boxplots
4	September 6	*Monday: Labor Day NO CLASS* 4.1: Scatter Diagrams and Correlations
5	September 13	*Monday: Quiz #1* 4.2: Least-Squares Regression 5.1: Probability Rules
6	September 20	5.2: The Addition Rule and Complements 5.3: Independence and the Multiplication Rule *Review*
7	September 27	*Monday: Exam #1* 5.4: Conditional Probability and the General Multiplication Rule 5.5: Counting Techniques *5.6 is a great section to study for more practice
8	October 4	6.1: Discrete Random Variables 6.2: The Binomial Probability Dist. 7.1: Properties of the Normal Dist.
9	October 11	7.2: Applications of the Normal Dist. 8.1: Dist. Of the Sample Mean
10	October 18	8.2: Dist. Of the Sample Proportion 9.1: Estimating a Population Proportion 9.2: Estimating a Population Mean
11	October 25	*Monday: Quiz #2* 10.1: The Language of Hypothesis Testing
12	November 1	10.2: Hyp. Tests for a Pop. Proportion *Review*
13	November 8	*Monday: Exam #2* *Wednesday: NO CLASS*

14	November 15	10.3: Hyp. Tests for a Pop. Mean 11.1: Inference about two Pop. Proportions 11.2: Inference about Two Means: Dependent Samples
15	November 22	11.3: Inference about Two Means: Independent Samples 12.1: Goodness-of-Fit Test *Thursday: NO CLASS*
16	November 29	*Monday: Quiz #3* 12.2: Tests for Independence and the Homogeneity of Proportions 13.1: Comparing Three or More Means Review
17	December 6	*Review*
Finals	December 13	*Final Exam Wednesday, December 15th 10:00 am – 12:45 pm*

Chapter 1
1.1: 2 – 7, 9, 15, 17, 19, 20, 21, 23, 25, 27, 29, 39, 41, 43, 49, 53
1.2: 9, 11, 13, 15, 17, 19, 24
1.3: 4, 7, 13, 15
1.4: 4, 5, 6, 8, 9, 10, 11, 13, 15, 17, 19, 20, 21, 23, 27, 29, 37
1.5: 2, 4, 5, 7, 9, 13, 17, 19, 37
1.6: 1, 4, 7, 9, 11, 12, 17, 20, 27, 29

Chapter 2
2.1: 7, 13, 15, 21
2.2: 7, 8, 9, 12, 21, 25, 29 (a-e), 31, 33, 35
2.3: 5, 7, 11, 12

Chapter 3
3.1: Using appropriate sigma notation when necessary: 7, 9, 12, 14, 15, 17, 18, 21, 32, 33, 45
3.2: 1, 2, 3, 4, 5, 7, 11, 13, 15, 16, 29, 31, 33, 35, 36, 43, 46 (a-c)
3.3: 3, 5, 7, 10
3.4: 1 - 4, 7, 9, 13, 17, 21 ($\bar{x} = 38.78, s = 3.42$), 25
3.5: 2, 3, 5, 8, 11, 20

Chapter 4
4.1: 9, 11, 13, 17, 19, 21, 25 ($\bar{x} = 43.9, s_x = 35, \bar{y} = 66.93, s_y = 1.71$)
4.2: 5, 7 (a-e), 9 (a-e), 15, 17

Chapter 5
5.1: 9, 15, 23, 25, 30, 33, 35, 38, 44, 45
5.2: 2, 3, 11, 13, 15, 17, 19, 21, 23, 26, 29, 31, 32, 33, 40, 42
5.3: 2, 3, 7, 11, 13, 15, 17, 19, 24, 25, 26, 28
5.4: 1, 3, 5, 7, 11, 13, 15, 18, 19, 20, 21, 23, 27, 28, 29, 39
5.5: 1, 2, 7, 11, 19, 31, 33, 37, 39, 40, 41, 43, 44, 45, 47, 50, 53, 58, 59, 61, 62, 63, 64, 65, 66, 69, 70

Chapter 6
6.1: 5, 9, 11, 15, 19, 21, 23, 25, 29, 31
6.2: 1, 3, 5, 7, 9, 11, 15, 17, 21, 23, 25, 29 (c-d), 31 (c-d), 33(c-d), 39, 41, 43, 45, 47
6.3: 3, 5, 7, 9, 13, 21

Chapter 7
7.1: 3, 5, 6, 13, 17, 19, 21, 23, 24, 25, 27, 31, 33, 35
7.2: 4, 5, 7, 9, 10, 11, 13, 15, 17, 19, 21, 23, 25, 27, 33, 35, 36, 37, 38, 39, 41, 47, 49

Chapter 8
8.1: 2, 3, 4, 9, 13, 15, 17, 19, 21, 22, 25, 27, 29
8.2: 11, 13, 15, 17, 19

Chapter 9
9.1: 2, 3, 5, 6, 7, 9, 17, 22, 25, 29, 37, 39, 41, 47
9.2: 1, 6, 7, 9, 11, 15, 23, 29, 33, 40, 41

Chapter 10
10.1: 2, 7, 9, 11, 13, 15, 17, 35, 36, 37, 42
10.2: 5, 7, 9, 15, 17, 21, 23, 24, 26
10.3: 1, 5, 7, 9, 13, 15, 19, 21, 23, 25, 27, 29

Chapter 11
11.1: 1, 2, 3, 5, 7
11.2: 3, 5, 9(c), 10 (b), 12
11.3: 1, 3, 5, 7, 9, 11

Chapter 12
12.1: 5, 7, 9, 11, 15
12.2: 3, 5, 13 (a-e, & f), 15 (a-b)

Chapter 13
13.1: 7, 9, 13 (a – c), 15 (a-e).

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