STAT 300 LOS RIOS/CRC
INTRODUCTION TO PROBABILITY AND STATISTICS SPRING 2021
4 UNIT(S) SECTION # 13961, 13966

THIS SYLLABUS WAS UPDATED ON JANUARY 20, 2021

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Email is the primary and the most reliable way of contacting the instructor. Either address should work. When emailing, please always specify your real name (the same one as in the roster) and which class you are inquiring about. Emails omitting this information may fail to be processed.

Online Instruction: All in-person meetings are conducted via Zoom: `https://zoom.us/j/4252516500`
If you would prefer not to use proprietary software while taking this class, contact the instructor as soon as possible, as there may be ways to accomodate.

Office: MTWT 12 – 1 pm. Let the instructor know if these hours do not work for you, and we can try to set up an appointment (allow 2 business days for reply).

Class Meetings: All meetings are held via Zoom: `https://zoom.us/j/4252516500`
Lecture: MW 1:30 - 2:50 pm
Lab: TuTh 1:30 - 2:50 pm

Required Materials: *Introductory Statistics*, current edition, by OpenSTAX. The students are responsible for obtaining the text (digital/online version is OK) and reading every section covered in class and/or assigned for homework.

You are required to obtain a **printed** copy of *Statistics Lab Manual*. You are also responsible for bringing the relevant portions of the lab manual to every class meeting.

Catalog Description: This course is an introduction to probability and statistics. Topics include: elementary principles and applications of descriptive statistics, elementary probability principles, probability distributions, estimation of parameters, hypothesis testing, linear regression and correlation, and ANOVA. Scientific calculators with two-variable statistics capabilities may be required.

Prerequisites: MATH 120 (Intermediate Algebra), MATH 125 (Intermediate Algebra for Statistics and Liberal Arts), or STAT 100 (Pre-Statistics) with a grade of "C" or better, or equivalent skills demonstrated through the assessment process.

Methods of Instruction: Class meetings will feature a mix of lecture, discussion, quizzes/labs, and group assignments. The instructor may assign students into teams for group assignments, and reassign teams at any time during the semester.

Attendance: This course will host live Zoom sessions during the stated class times. Students are required to be present for the entirety of all classes via Zoom, and all tests/quizzes/labs are required to be taken when assigned during the class session. Students are required to be present on the first day of class via Zoom, with camera on. If a student is unwilling or unable to utilize Zoom, but would prefer a free and open-source replacement, the instructor will accommodate on a case-by-case basis.

To succeed in this course, it is crucial that you attend every class session, alert and prepared to learn. Roll will be taken for each class session, usually at the beginning of the class. If you arrive after the class has started, you may have to wait until the instructor has the time to admit you.

By default, only the students enrolled in this class can attend the class sessions. If you are planning on bringing a visitor, you should try to notify the instructor in advance. Exceptions will be made at the instructor's discretion on a case-by-case basis.

Participation: If you miss the total of 6% of class time or more, you may be dropped from the class (missing one whole week will put you over 6% in most cases). These absences need not to be consecutive, and **any** class time you miss may be added to the total. Exceptions to this policy will be made **at the instructor's discretion** for documented cases of grave illness and/or family emergency. In other words, the instructor reserves the right to drop you at any time after your unexcused absences total 6% or more, regardless of any other circumstances.

- If you miss more than a half of a class session for any reason, you will be considered absent for that whole session.
- If you miss the first class meeting without notifying the instructor or the division administrator in advance, you may be dropped from the class. If you have to be removed from the first class meeting due to a discipline issue, you may be dropped from the class.
- If you fail to submit an in-class assignment such as a quiz or a lab by the specified deadline, you may be marked as absent for that class meeting, due to the lack of participation.

`https://crc.losrios.edu/admissions/enroll-in-classes/grading-policies-and-academic-regulations`

Written Assignments: All written assignments, including but not limited to the homework and labs, should be done in **dark shades**; black, **dark gray**, **dark blue**, and **deep purple** are preferred. Fancy colors such as **green**, **red**, or pink can only be used to augment graphs and illustrations.

Homework: Homework serves as practice and will prepare you to do your best on labs and tests. Homework is crucial for learning the material as well as for succeeding in this class. Doing all homework is probably the most effective way to raise your test grades. You are welcome to work in groups while solving the homework, but you must submit your own work.

The title page should list the homework name, your name, and your class. Solutions to exercises should be presented in the order they are assigned. Textbook sections must start a new page:

what the homework should look like

7.5, 7.6 ← **assigned section(s)**

your name, class, date → Simpson, Lisa
Math 100
July 4

(7.5) ← **textbook section**

15. $1+2=3$
17. $(2x^2)' = 4x$

page ends here

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new page starts

(7.6) ← **next textbook section starts a new page of paper**

1. $(x+1)^2 = x^2+2x+1$
2. $(-0.5x^{-2}y^{-1})^{-3} = -8x^6y^3$

⋮

Homework in this class is not intended as the primary means of feedback. The students are expected to check and judge their own work by using answers, whenever the textbook provides them, and/or by discussing the homework with the instructor during the office hours. Typically, the instructor will only check a very small and somewhat random portion of the homework for accuracy.

Late homework will be accepted with a simple fixed 5% penalty per day past due. About 20% of the lowest homework grades will be dropped.

Quizzes/Labs: In-class assignments will be given during some class sessions, typically without any advance warning. **No make-up quizzes/labs will be given for any reason.** 20% or so of the lowest scores will be dropped.

Projects: There will be several projects, each involving working at home as well as an in-class presentation. **Projects cannot be made up.** If you miss a project due to a documented case of grave illness and/or family emergency, you will have an option to use your final project grade to replace that zero, but only **at the instructor's discretion**.

Final: The 2 hour comprehensive final exam will be given on the date determined by the official final exam schedule:

`https://crc.losrios.edu/admissions/academic-calendar-and-deadlines/final-exam-schedule`

The final date and time is determined by the College District before the semester starts. You must plan to be present at the final. If your schedule precludes you from being present at the final, you must inform the instructor in writing during the first two weeks of instruction. If you are not present at the final, "F" will be entered as your grade for the class.

Grading:

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

Grade Breakdown	
Labs/Quizzes	50%
Homework	10%
Projects	30%
Final	10%

Extra Credit: One way to get extra credit in this class is to be first to point out a typo or an error in any of the typed materials created by your instructor. Getting more than 1% of the total class grade from extra credit is extremely rare. The instructor reserves the right to set or change the maximum allowed amount of extra credit per student, and can do so at any time during the semester.

Getting Help: If you have a question or a concern not addressed in this syllabus, please contact your instructor via email (allow 2 business days for reply). Moreover, the campus provides some resources to help you study:

`https://crc.losrios.edu/student-resources`

Tutoring: The CRC Tutoring Center provides academic support services to CRC students. The Center facilitates drop-in tutoring, study skills coaching, study groups, and more.

`https://crc.losrios.edu/student-resources/tutoring`

Additional tutors are available at the Math Center, which helps students to develop confidence and proficiency in their math skills. You must enroll in a variable unit course in order to use the Math Center.

`https://crc.losrios.edu/student-resources/tutoring/math-center-at-crc`

Computers: The use of computers and tablets during regular class meetings is OK as long as they are used for class work. While taking tests and the final, only the approved non-networked calculators

and/or computers running approved software will be allowed. If in doubt, you should consult with the instructor and get your devices pre-approved prior to the test date. **Using tablets or computers for anything but the current assignment in this class may result in you being removed from the classroom until the end of the session, which will count as an unexcused absence.**

Required Tech: A computer with R software or a calculator with statistical functions. All examples of statistical computation given in class will utilize R software, so calculator users assume full responsibility for learning how to use that technology for solving class assignments.

This online course uses Canvas, a Learning Management System. Students must have access to the internet and Los Rios Gmail. To complete labs/quizzes/exams for this class, students must have access to a laptop or a desktop, a webcam and microphone (built-in or external), and an internet connection with upload speeds of 0.092 Mbps - 0.244 Mbps.

Recommended Tech: A great way to type up your assignments is by using LibreOffice, a free and open-source productivity suite. If you would rather submit hand-written assignments, a scanner may be useful.

Accommodations: Disability Support Programs & Services (DSP&S) provides equal educational opportunity for students with physical, psychological, or learning disabilities. Counseling, support services, and academic accommodations are provided to students who are eligible for the program.

The Cosumnes River College Learning Disabilities Program can provide support services and academic accommodations to students who have documentation of a specific learning disability from another school or professional. In addition, Diagnostic Assessment may be available for appropriately referred students who come to the DSP&S program for an orientation appointment.

If you have a learning disability, a physical disability, or other special needs, please let the instructor know as soon as possible if you need special accommodations.

Students have the right to request reasonable modifications to college requirements, services, facilities or programs if their documented disability imposes a functional educational limitation or impedes access to such requirements, services, facilities, or programs. A student with a disability who will be requesting modification, accommodation, or access to an auxiliary aid is required and responsible for identifying himself/herself to the instructor and, if desired, to the Disabled Students Programs and Services (DSP&S office). In either event, **the student is responsible for providing appropriate documentation of his/her disability before we can accommodate**. Students who consult or request assistance from the DSP&S office regarding specific modifications, accommodations or use of auxiliary aid will be required to meet timelines and procedural requirements established by the DSP&S office.

`https://crc.losrios.edu/student-resources/support-services/disability-support-programs-and-services`

Academic Honesty: Any instance of plagiarism and/or cheating will result in the score of zero for that homework, quiz, or test, and will be reported to the Vice President's office.

`https://crc.losrios.edu/about-us/our-values/student-rights-and-responsibilities/plagiarism-and-cheating`

Meta: The instructor reserves the right to make changes to this syllabus throughout the semester. All relevant changes will be announced in class, and an updated version of the syllabus will be published online. Students are responsible for keeping up with these changes.

Student Learning Outcomes: This section is here for reference only. It may be useful to consult as you are preparing for the final exam. Upon successful completion of this course, the student will be able to

- ORGANIZE, DISPLAY, DESCRIBE AND COMPARE REAL DATA SETS.
  - Recognize data types and data sources: develop basic statistical terminology including population parameters & sample statistics; identify common sampling methods used for obtaining data and identify advantages & disadvantages of each; recognize bias in sampling; compare principles of good experimental design.
  - Organize and display data appropriately by preparing tables and graphs.
  - Analyze data by computing measures of central tendency, measures of dispersion, and measures of position.
  - Analyze bivariate data for linear trends using the least-squares regression model and the correlation coefficient.
- DISTINGUISH BETWEEN PROBABILITY MODELS APPROPRIATE TO DIFFERENT CHANCE EVENTS AND CALCULATE PROBABILITY ACCORDING TO THESE METHODS.
  - Compute probabilities using sample spaces, the addition & multiplication rules, conditional probability, and complements.
  - Develop and apply probability distributions for discrete random variables; compute probabilities and expected value.
  - Analyze both discrete and continuous probability distributions by considering areas under the graph of a function or a histogram.
  - Use the normal and binomial probability distributions to compute probabilities.
- APPLY INFERENTIAL STATISTICAL METHODS TO MAKE PREDICTIONS, DRAW CONCLUSIONS ABOUT HYPOTHESES AND COMPARE POPULATIONS.
  - Create and interpret confidence interval estimates for population mean and population proportion based on appropriate probability models.
  - Select the appropriate hypothesis test, perform the necessary computations and comparisons to test hypotheses about on one population mean or one population proportion and explain the conclusion of the test.
  - Create and interpret confidence interval estimates for the difference in two population means (independent and dependent sampling) or two population proportions.
  - Select the appropriate hypothesis test, perform the necessary computations and comparisons to test hypotheses about two-population means (independent & dependent sampling), more than two population means, and two or more population proportions and explain the conclusion of the test.
  - Test significance of correlation and make predictions based on linear trends using the least-squares regression model.
- USE APPROPRIATE STATISTICAL TECHNIQUES TO ANALYZE AND INTERPRET APPLICATIONS OF DATA including all of the following: business, economics, social sciences, psychology, life science, health science and education.