STAT 300 LOS RIOS/CRC
INTRODUCTION TO PROBABILITY AND STATISTICS SPRING 2020
4 UNIT(S) SECTION # 14702, 14707

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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.

Office: LRC 150, (916) 691-7086

- Monday and Wednesday: 12:15 – 1:15 pm and 15:45 – 16:45 pm
- Tuesday and Thursday morning: by appointment

Please 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:
Lab: TTh 10:30 - 11:50 am, Library 313
Lecture: TTh 12:00 - 1:20 pm, Library 300

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*, which should be available at the college book store. 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) or 125 (Intermediate Algebra with Applications) 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. Several in-class tests will be given.

Attendance: To succeed in this course, it is crucial that you attend every class session, alert and prepared to learn. Roll will be taken at the beginning of each class. If you arrive after the class has started, please enter the room quietly and get on the roster at the end of the class. 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 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 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.

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.

`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, tests, labs, and the final, should be done in **dark pencil or pen**; **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.

Once assignments are graded, the instructor will bring them to class and distribute them back to students. If you are not present on that day, then you can pick up your graded assignments during the office hours. **All written assignments except for the final exam will be securely destroyed after your class grades are submitted to the district.**

Homework: Homework serves as practice and will prepare you to do your best on labs and tests. About 20% of the lowest homework grades will be dropped. 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.

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 sheet starts

(7.6) ← **next textbook section starts a new sheet 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 for 50% credit if it is less than 1 week late, and for 25% credit otherwise. Late homework will **not** be collected or accepted during class meetings. One way to submit the late homework is by bringing it to the instructor's office during the scheduled office hours.

Unless otherwise stated, all homework should be submitted on paper. If multiple sheets of paper are used, they must be stapled, clamped, or clipped together. 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 sheet of paper.

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.

Tests: There will be several tests. **No make-up tests will be given for any reason.** If you are not present for the test, zero will be entered as your grade for that test. If you miss a test due to a documented case of grave illness and/or family emergency, you will have an option to use your comprehensive final exam 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	
Tests	45%
Homework	10%
Labs/Quizzes	10%
Final	35%

Extra Credit: The only ways to get extra credit in this class are:

(1) visit the instructor's office hours

(2) be first to point out a typo or an error in any of the printed 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 and are completely silent. 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.

Forbidden Tech: Spyphone/smartphone use is prohibited while the class is in session. In particular, they can never be used as calculators. Computerized watches can be used for showing current time only, and may have to be stowed away during tests. **Using the tech listed above in violation of this syllabus 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.

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.