

Syllabus

STAT 216: Introduction to Statistics, Summer 2019

Section 60: MTWR 8:05-9:20am in Math 103

Section 61: MTWR 9:30-10:45am in Math 103

Course Information:

- **Instructors:** Omid Khormali, Corbin 365, omid.khormali@umontana.edu,
Dakota Gray, Corbin 354, dakota.gray@umontana.edu
- **Textbook:** *Workshop Statistics: Discovery with Data*, 4th ed., by Rossman & Chance, Key College Publishing, 2012. A clean copy of this text is required of every student as this will be the record of your in-class work for the course.
- **Prerequisites:** M 115 (Probability & Linear Math)
- **Office Hours:** To be announced.
- **Course Webpage:** Available through your Moodle account.
- **Supplements:** Notes for STAT 216 and an R Software Manual are available on the course webpage.
- **Statistical Software:** We will be using the statistical software package R with a GUI interface called Commander in class and on homework assignments. R/R Commander are available to download for free from <http://www.r-project.org/> as explained in the upcoming days. We will also use a number of applets associated with the text.
- **Attendance:** The text for this course takes a “workshop” approach which means that you will spend much of the class time working in small groups on activities from the text. This is an integral part of the course; therefore, **ATTENDANCE IS REQUIRED AND WILL BE TAKEN! MISSING MORE THAN FOUR (4) CLASSES FOR ANY REASON WILL RESULT IN YOUR COURSE SCORE BEING LOWERED BY 2 POINTS (OUT OF 100) FOR EACH ABSENCE BEYOND FOUR.** You are considered absent if you miss more than 15 minutes of any class. Because you will work with the same group for 2-3 weeks at a time, you cannot attend the other sections of this class if you are absent from your own section.

Grading

- **Tests, 68%.**
We will have 4 in-class tests. For section 60, the tests will start at 7:45am (20 minutes early) and run to 9:15am. For section 61, the tests will start at 9:30am (normal time) and run to 11:00am. You will therefore have 90 minutes. The tentative test dates are:

Wednesday, May 29

Thursday, June 13

Thursday, July 10

Thursday, July 25

All tests count equally. The tests will be closed book except that you will be allowed to bring 8.5 x 11 sheet of paper on which you can write anything you want (both sides). You should also have a calculator. Notify the instructor as soon as possible in advance if you must miss a test for a legitimate reason. If illness or emergency prevents you from taking a test, you must notify the instructor on the day of the test. A make-up test will not be given unless the instructor is notified.

- **Homework, 22%**

Homework problems will be assigned regularly and will be due at the *beginning* of class on the day after we finish the topics covered on that homework. Generally, only a subset of the problems will be graded on each assignment. Solutions will be handed out the day after the assignment is due. Your lowest homework score will be dropped. In addition, you may hand in two assignments one day late without penalty, as long as they are handed in by the start of class the next day. Every one-day-late assignment beyond the 2nd one will be graded for half credit. An exception is that you may not hand in late an assignment due the day before a test as solutions will be handed out that day. You are welcome (and encouraged) to work with others on the homework; however, you are expected to write up your solutions individually and to use your own words when asked for explanations. If you cannot write legibly, then you should type your assignments.

If you use R to do computations or graphs for a problem, do not simply attach the R output. Cut and paste individual pieces of R output into your write-up at the appropriate place. **Do not include unnecessary R output.**

- **In-class work, 10%.**

Your in-class grade will be based on the completeness and correctness of the work in your workbook as well as your participation in your group. More on the function of the group is described below.

Groups

Much of your in-class time will be spent working in groups of 3 or 4. You will be assigned a group on the first day; groups will change after each test. You will be assigned in-class problems each day. Every individual is expected to record answers in his or her workbook; it is not acceptable to record your work on separate sheets of paper. Many questions call for you to write a sentence or two or to write a paragraph describing what you have found. **You are expected to write in complete sentences and to relate your answer to the context of the problem** (see Activity 2-1, part (e) on page 16 of the text). Answers to the in-class problems will be provided on the course webpage. The instructors will usually wander around the classroom listening in on

groups and offering help when it is solicited (and occasionally when it is not solicited). Raise your hand when your group has a question and an instructor will come to you; do not come to an instructor. Do not raise your hand unless you have already discussed the question with the group. If your group finishes the in-class work before the end of class, please raise your hand so that an instructor can check your work; you can then start on the homework. If your group does not finish the in-class assignment you are expected to finish it on your own. If you are absent for a class, you are expected to complete the in-class activities on your own. **Your in-class grade will be based on your participation in your groups and the written work in your workbook.** The instructors will check your workbook several times during the term. It is very important that you regard the workbook as a complete record of your in-class work and keep it up to date. Repeated tardiness (or leaving early) will lower your in-class grade.

Writing

This text emphasizes writing sentences and short paragraphs about what you find using proper grammar, complete sentences, etc. We agree with this emphasis and will expect you to be able to do such writing on the in-class exercises, the homework and exams. Your grade on such questions will be based not only on what you say, but how you say it.

Important dates:

- **Friday, May 17:** last day to add courses by Cyberbear.
- **Friday, May 24:** Last day to drop courses and change grading option in Cyberbear.
- **Wednesday, July 24:** Last day to drop courses. Paper form must be signed by instructor. A W will appear on your transcript. After this date, drops can only be done by petition requiring extraordinary circumstances.
- **Thursday, July 25:** Last day of class. Last day to change grading option (letter grade to CR/NCR or vice-versa). Requires paper form signed by instructor and dean.

Learning Outcomes

1. To learn how to describe and explore sets of data both numerically and graphically.
2. To learn the normal model for the distribution of a single variable and the linear regression model for the relationship between two variables.
3. To learn the basic ideas of good experimental design and good sampling design.
4. To learn the fundamental ideas of statistical inference for means and proportions including both hypothesis testing and confidence intervals.
5. To learn how to interpret confidence intervals and P-values in the context of real problems.
6. To learn how to be critical consumers of statistical studies reported in the media.

Disability Services

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students (DSS). If you think you may have a disability adversely affecting your academic performance, and you have not already registered with DSS, please contact DSS in Lommasson 154. We will work with you and DSS to provide an appropriate accommodation.

Academic Honesty

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary action by the University. All students need to be familiar with the Student Conduct Code. You can find it in the A-Z index on the UM home page.