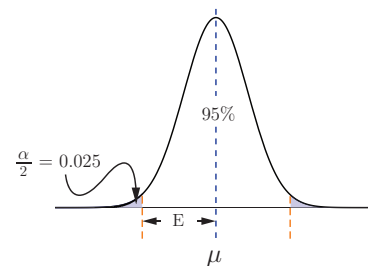


Spring 2019      TuTh 9:10 – 11:00 (Section AI/PE)

Instructor:      Jon Freedman  
 Office: 7216  
 Phone: 738 – 7032  
 e-mail: freedmanj@smccd.edu  
 Website: www.smccd.edu/accounts/freedmanj/



Office Hours: M–Th 12 – 1; TuTh 4:30 – 5:30 and most times by arrangement – *ask*.

Prerequisite:      Math 120 (or equivalent HS course) or Math 190, with C or better, or Multiple Measures equiv.

Text:              *Statistical Reasoning*. Carnegie–Mellon University. <http://oli.cmu.edu/>  
 This is an online text. To access it register with OLI (the *Open Learning Initiative*), then sign up for the class Math 200 Spring 2019 using the course key: **math200s19**.

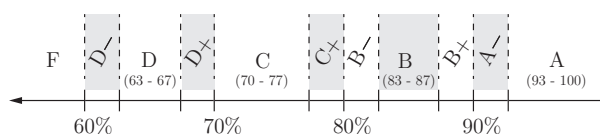
Materials:        You will need a user license for StatCrunch at: <https://www.statcrunch.com/>  
 A tablet or similar computer with the capability of reaching the internet is necessary for this course. We will have a Chromebook cart available in class and there are computers available on campus. If you do not have access to a computer at home, you will need to plan accordingly to complete assignments.  
 You may also want to have a scientific calculator for use on tests (internet capable devices are not permitted).

Important Dates:	Last day to Add this course:	Monday, January 28
	Last day to Drop this course without a W:	Sunday, February 3
	Last day to Withdraw from class:	Thursday, April 25
	Holidays:	1/21; 2/15 – 2/18; 3/31 – 4/6
	Flex Days:	3/6; 3/29
	Last regular class:	Thursday, May 16
	Final Exam (comprehensive):	Tuesday, May 21, 8:10 – 10:40 am

Assignments:      Assignments will be given in the form of class handouts, book work, online assignments through OLI and StatCrunch, and projects.

Grading:            Assignments (homework, classwork, quizzes) (35%)  
 Time By Arrangement (5% – OLI interactive assignments with online discussion)  
 3 – 5 Tests (40%)  
 Final (20%)  
 I will drop your worst test score (Not the final). There will be no makeup tests. If you are late for a test you will have only the remaining time to complete the test (so don't be late). If you know you are going to miss a test date, contact me at least three days in advance and we can arrange an alternate test to be taken in advance of the class test date.  
 I will drop your worst quiz. There will be no makeup quizzes.  
 I will excuse your worst homework score. I will excuse up to four late assignments provided you (1) meet with me to go over them and (2) submit them before any test covering their content.

Grading Scale:



Attendance: You will not be graded directly on your attendance. However, your involvement in class and your participation in the process of discovering concepts will be fundamental in your understanding of statistics. Tests and written work will be based largely on material discussed and practiced during class. Please note that no students with more than 4 absences have passed this class.

Withdrawal Policy: If you decide to drop this class you must do so formally either by using WebSMART or by filing the correct form with the registrar's office. If you miss more than 10 classes and still desire to remain in the class you must meet with me and convince me that you can learn the material necessary to pass the class.

Course Contents: We will study the collection, organization and analysis of data. We will develop mathematical models of the data and use them to make inferences. We will begin the process of understanding probability theory.

### Big Ideas (SLOs):

#### 1. THINK STATISTICALLY

Students will be able to collect, organize, analyze, and interpret data using various methods including statistical software and graphing calculators.

- Forming a question.
- Collecting relevant data.
- Organizing the data.
- Analyzing the data.
- Interpreting and communicating the results (is there cause and effect; does the result generalize?)

2. Organize, analyze, and utilize appropriate methods to draw conclusions based on sample data by constructing and/or evaluating tables, graphs, and numerical measures of characteristics of data.

3. Identify, evaluate, interpret and describe data distributions through the study of sampling distributions and probability theory.

4. Collect data, interpret, compose and defend conjectures, and communicate the results of random data using statistical analyses such as interval and point estimates, hypothesis tests, and regression analysis.

SI: Supplemental Instruction is an integral part of this course. Your SI leader offers insight and resources specific to our class and is prepared to help guide you through the more challenging aspects of Statistics. Plan to attend at least one SI meeting each week.

Tutoring: The Learning Center (TLC) is an outstanding resource for semi-free tutoring in all of your classes. You should visit TLC at the slightest sign of confusion or just as a place to sit and work in a supportive environment. The Learning Center staff is well trained and dedicated solely to your success, so don't waste this resource!

OLI is an excellent resource. They offer links and supplemental materials for all of their courses. In addition, there are many free internet sites that offer support for statistics. Beware, however, some sites emphasize traditional computation rather than intuitive understanding and that may lead you astray of our course objectives. Please ask me if you have questions or concerns about what and where to study.

Assistance: In coordination with the DRC office, reasonable accommodations will be provided for qualified students with disabilities. If you have an accommodation letter, please meet with me during my office hours to discuss your needs. For more information, please contact DRC (in building 5) at 738-4280.

Academic  
Dishonesty:

I strongly encourage you to form study groups and to work together to understand the material covered in this class. Explaining a concept is a valuable way for you and the listener to develop your insight and your skills. Simply copying work, whether it is from an assignment or a test, is of no value to you academically. Consequently, if I find that you are submitting any part of another's work as your own, you will not receive credit for this course. The same holds true for any other kind of academic dishonesty. There is no situation that could arise in this class that would justify risking expulsion. If you are having any difficulty, PLEASE see me about it so that we can work together in resolving the issue.

The foundation of this course is rooted in the objectives delineated by GAISE (Guidelines for Assessment and Instruction in Statistics Education). Those objectives come in the form of both recommendations for the instructor and goals for the student.

### Recommendations

1. Teach statistical thinking.
  - Teach statistics as an investigative process of problem-solving and decision-making.
  - Give students experience with multivariable thinking.
2. Focus on conceptual understanding.
3. Integrate real data with a context and purpose.
4. Foster active learning.
5. Use technology to explore concepts and analyze data.
6. Use assessments to improve and evaluate student learning.

### Goals

1. Students should become *critical consumers* of statistically-based results reported in popular media, recognizing whether reported results reasonably follow from the study and analysis conducted.
2. Students should be able to recognize questions for which the *investigative process* in statistics would be useful and should be able to answer questions using the investigative process.
3. Students should be able to produce *graphical displays and numerical summaries* and interpret what graphs do and do not reveal.
4. Students should recognize and be able to explain the central role of *variability* in the field of statistics.
5. Students should recognize and be able to explain the central role of *randomness* in designing studies and drawing conclusions.
6. Students should gain experience with how *statistical models*, including multivariable models, are used.
7. Students should demonstrate an understanding of, and ability to use, basic ideas of *statistical inference*, both hypothesis tests and interval estimation, in a variety of settings.
8. Students should be able to interpret and draw conclusions from standard output from *statistical software packages*.
9. Students should demonstrate an awareness of *ethical issues* associated with sound statistical practice.