

Introduction to Statistical Inference

Math 1070-002, Fall 2018

Class meets: 08/21/2018 to 12/06/2018

Time: TH 06:00 pm - 07:30 pm

Holidays: October 7 -14 (Fall Break) & November 22 (Thanksgiving Day)

Place: JTB 140

Instructor: Sung Chan Choi, JWB 121

Website:

Email: choi@math.utah.edu

Office Hours: T 07:45 pm- 08:45 pm in JWB 121 & H 04:45 pm- 05:45 pm in JWB 121

Tutoring, Computer Lab, and Printing:

Free tutoring and free printing are available in the T. Benny Bushing Mathematics Center, located between LCB and JWB. The regular hours is M-Th 8:00am - 8:00pm, Fri 8:00am - 6:00pm. See <http://www.math.utah.edu/ugrad/mathcenter.html> .

Lecture note:I will post lecture note on Canvas. You need to print out before you come to class.

Text: The Basic Practice of Statistics, by Moore, et. al., **6th edition (ISBN: 9781464104336)**
(Homework will be given based on the 6th edition)

Course Objectives:

Upon successful completion of this course, a student should be able to:

1. Be able to summarize the data using charts, graphs, histograms, and to calculate basic descriptive statistics like the mean, standard deviation, median and quartiles.
2. Work with the normal distribution and use table to find probabilities.
3. Understand the difference between correlation and causation.
4. Perform regression analysis and compute correlation.
5. Understand the Central Limit Theorem and the normality assumption.
6. Understand the basics of tests of significance and confidence intervals including z-tests, t-tests, proportion tests, Chi-square tests, ANOVA.
7. Be able to perform simple statistical analysis of large data sets using spreadsheets (throughout the whole course).

Prerequisites: "C" or better in (MATH 1010 OR MATH 1040 OR MATH 1050 OR MATH 1080 OR MATH 1090) OR Accuplacer CLM score of 50 or better OR ACT Math score of 23 or better OR SAT Math score of 540 or better.

Requirement Designation: Quantitative Reasoning (Statistics/Logic)

Grade Distribution:

Homework	20%
Quizzes	15%
Midterm Exam 1	15%
Midterm Exam 2	15%
Project	5%
Final Exam	30%

Grading Scale:

≥ 93	A	73 - 76	C
90 - 92	A-	70 - 72	C-
87 - 89	B+	67 - 69	D+
83 - 86	B	63 - 66	D
80 - 82	B-	60 - 62	D-
77 - 79	C+	≤ 59	E

Course Policies:

• General

- Exams are closed book, closed notes.
- You will need a calculator for this class. I do not have any preference regarding which calculator would be most useful, so you're welcome to choose for yourself. I will allow calculators on exams. No cell phone calculators will be allowed.
- **No makeup exams will be given** except in the case of a documented emergency.

• Weekly Homework

- I will collect homework during the first class of each week. All of the homework assigned the previous week is due at that time.
- All homework must be written in a neat and organized form and **stapled** together. If you do **not staple** together or do **not write homework number and your name**, **5 points will be taken off**. A non-stapled or non-organized homework will hinder our from grading because the class size is big.
- **Late homework will NOT be accepted**. But **2 lowest scores** will be dropped at the end of this semester.

• Daily Quizzes

- Quiz will be given daily with one or two problems on the topic of the previous class in class.
- 5-7 minutes will be given.
- You will need a calculator for this class. I do not have any preference regarding which calculator would be most useful, so you're welcome to choose for yourself. I will allow calculators on exams. No cell phone calculators will be allowed.
- **No makeup** quiz will be given. But **3 lowest scores** will be dropped at the end of this semester.

- **Midterms**

- There will be two in-class midterm exams.
- **10/4(H) and 11/15(H)** in the regular classroom
- You will need a calculator for this class. I do not have any preference regarding which calculator would be most useful, so you're welcome to choose for yourself. I will allow calculators on exams. No cell phone calculators will be allowed.
- **No makeup exams will be given** except in the case of a documented emergency. Please contact the instructor ASAP, or at least two classes ahead of time so that the instructor and student can make arrangements to make up the test. I reserve the right to make makeup exams more difficult than the scheduled exam.

- **Project**

- There will be one project assigned.
- I will post the direction on Canvas by 9/28(F).
- It will be due in class **12/6 (The last class day)**.
- **Late projects will NOT be accepted.**

- **Final**

- The comprehensive final exam will be on **December 11(T), from 6 pm to 8 pm.**
- JTB 140

- **Other Policies**

- There will be no retakes of exams . . . ever. Your score is what you get.
- You may take an alternate exam if you submit a documented verification about it to me first and explain the extenuating circumstances that make it necessary. Needing to work, babysitting your siblings, oversleeping, or needing more time to study do not pass as acceptable reasons.
- I will demand respectful behavior in my classroom. Examples of disrespect include reading a newspaper or magazine in class, social chatting with your friend in class, text-messaging your buddies during class or cuddling with your girl/boyfriend in class.
- There will be no cursing nor negative ranting (for example, "math sucks") on any written work turned in. The penalty for such things on your written work will be a zero score on that assignment or test!
- You need to have a valid email address registered with Campus Information System.
- You need to check CANVAS everyday.
- Student Responsibilities: All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. You have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, collusion, fraud, theft, etc. Students should read the Code carefully and know you are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the

right to appeal such action to the Student Behavior Committee.
See <http://regulations.utah.edu/academics/6-400.php>

- I reserve the right to change my policies stated in this syllabus at some point in the semester. If I do make a change to a policy, I will announce it in class and send the change in email.

Other Important Dates:

- 8/31(F): Last Day to Add,Drop(Delete),Elect CR/NC,or Audit Classes
- 10/19(F): Last Day to Withdraw from classes
- See <https://registrar.utah.edu/academic-calendars/fall2018.php>

ADA:

The American with Disabilities Act requires that reasonable accommodations be provided for students with physical, cognitive, systemic learning, and psychiatric disabilities. The student needs to have such a disability approved by the Disability Service Office (162 UNION, 581-5020) in order to have the accommodations provided. The instructor needs to be informed about such a disability and approved accommodations at the beginning of the semester.

Tentative Course Outline:

Week	Content
Week 1	<ul style="list-style-type: none"> • 8/21 Intro, ch1 • 8/23 ch2 <p style="text-align: right;">Quiz 0 Quiz 1</p>
Week 2	<ul style="list-style-type: none"> • 8/28 ch3 • 8/30 ch3, ch4 <p style="text-align: right;">Quiz 2 Quiz 3</p>
Week 3	<ul style="list-style-type: none"> • 9/04 ch4 • 9/06 ch5 <p style="text-align: right;">Quiz 4 Quiz 5</p>
Week 4	<ul style="list-style-type: none"> • 9/11 ch5 • 9/13 ch8 <p style="text-align: right;">Quiz 6 Quiz 7</p>
Week 5	<ul style="list-style-type: none"> • 9/18 ch9 • 9/20 ch10 <p style="text-align: right;">Quiz 8 Quiz 9</p>
Week 6	<ul style="list-style-type: none"> • 9/25 ch10, ch11 • 9/27 ch11 <p style="text-align: right;">Quiz 10 Quiz 11</p>
Week 7	<ul style="list-style-type: none"> • 10/02 Review for Midterm Exam 1 • 10/04 Midterm Exam 1(ch1-5, ch8-11)
Week 8	<ul style="list-style-type: none"> • 10/09 Fall Break • 10/11 Fall Break
Week 9	<ul style="list-style-type: none"> • 10/16 ch14 • 10/18 ch14, ch15 <p style="text-align: right;">Quiz 12</p>
Week 10	<ul style="list-style-type: none"> • 10/23 ch15 • 10/25 ch15, ch18 <p style="text-align: right;">Quiz 13 Quiz 14</p>
Week 11	<ul style="list-style-type: none"> • 10/30 ch18 • 11/01 ch18, 19 <p style="text-align: right;">Quiz 15 Quiz 16</p>
Week 12	<ul style="list-style-type: none"> • 11/06 ch19, ch20 • 11/08 ch20 <p style="text-align: right;">Quiz 17 Quiz 18</p>
Week 13	<ul style="list-style-type: none"> • 11/13 Review for Midterm Exam 2 • 11/15 Midterm 2 (ch14-15, ch18-20)
Week 14	<ul style="list-style-type: none"> • 11/20 ch23 • 11/22 Thanksgiving day holiday
Week 15	<ul style="list-style-type: none"> • 11/27 ch23 • 11/29 ch25 <p style="text-align: right;">Quiz 19 Quiz 20</p>
Week 16	<ul style="list-style-type: none"> • 12/4 ch25 • 12/6 Review for final <p style="text-align: right;">Quiz 21 Project Due</p>
Week 17	<ul style="list-style-type: none"> • 12/11 6 pm - 8 pm Final(ch1-5,ch8-11,ch14-15, ch18-20, ch23-25)

Homework Assignments

The homework assignments are based on the **6th** edition.

HW(or Quiz)#	Due	Chapters assigned
HW 1	August 28(T)	Ch. 1: 22,27,30,31 Ch. 2: 19,22,25,28,30,44,52
HW 2	September 4(T)	Ch. 3: 16,28,29,30,32,35,36
HW 3	September 11(T)	Ch. 3: 45,47 Ch. 4: 16,17,18,19,20,21,26,34
HW 4	September 18(T)	Ch. 5: 19,20,21,32,33,37
HW 5	September 25(T)	Ch. 8: 17, 18, 20, 21, 24, 38; Ch. 9: 20, 21, 22, 25, 29, 36
HW 6	October 2(T)	Ch. 10: 21, 24, 26, 38, 41, 43; Ch. 11: 14-20 (even), 26, 28, 36
EXAM 1	October 4(H)	Ch. 1-5, 8-11
HW 7	October 23(T)	: Ch. 14: 11, 12, 15, 16, 17, 18, 24, 26
HW 8	October 30(T)	Ch. 15: 20, 21, 22, 23, 24, 30, 32, 41
HW 9	November 6(T)	Ch. 18: 16, 19, 29, 30, 33
HW 10	November 13(T)	Ch. 19: 16, 17, 25, 26, 32, 33; Ch. 20: 32, 34, 38
EXAM 2	November 16(H)	Ch 14-15, 18-20
HW 11	November 29(H)	Ch. 23: 30, 32(b), 38, 42
HW 12	December 6(H)	Ch. 25: 15, 16, 28, 30, 37, 39
Project due	December 6(H)	
FINAL EXAM	December 11(T) 6:00 - 8:00 pm	Comprehensive