

LER 593: Quantitative Methods in LER

Fall 2019

Lecture:
Room 53

Lab Sessions:
Room 51

Section AE1: 11:00am-1:50pm, Thursdays

8:00-9:00am, Fridays **Group AQ1**
9:00-10:00am, Fridays **Group AQ2**

Section BE1: 2:00pm-4:50pm, Thursdays

10:00-11:00am, Fridays **Group BQ1**
11:00am-12:00pm, Fridays **Group BQ2**

Instructor: **Yihao Liu, Ph.D.**

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Office hour: By appointment

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Teaching Assistants:

Section AE1: Weihao Li

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Lab Sections: **Fridays, 8:00am-10:00am**

Section BE1: Yin Lee

Email: yinlee2@illinois.edu

Lab Sections: **Fridays, 10:00am-12:00pm**

◆TEXTBOOK

Anderson, D. R., Sweeny, D. J., Williams, T. A., Camm, J. D., & Cochran, J. J. *Essentials of Statistics for Business and Economics*, 8th edition. Stamford, CT: Cengage Learning.

[ISBN-10: 1-337-11417-0]

◆COURSE OBJECTIVES & ORIENTATION

This required course will introduce you to important statistical concepts and analyses that are critical to Human Resource Managers. There are several methods that enable the exploration and evaluation of important HRM questions and issues and this course will introduce you to the statistics that may be used to interpret and evaluate organizational situations and phenomena. The goal of this course is to provide you with a foundational understanding of statistics that will enable you to (a) develop and test research questions relevant for the organizational context; (b) critically evaluate quantitative information and illustrations you encounter; (c) communicate your understanding of statistics to others; and (d) perform common statistical analyses in Microsoft Excel. Specifically, at the end of this course, you should have learned:

1. How to organize and summarize data
2. How to identify the appropriate data and statistical procedures for many basic HR problems and decisions
3. How to interpret and communicate the findings of your analyses to others
4. How to critically evaluate and interpret quantitative information
5. How to use Microsoft Excel to analyze data

◆GRADES

There are 1000 possible points you can get in the course.

965 to 1,000 = A+
 925 to 964 = A
 895 to 924 = A-
 865 to 894 = B+
 825 to 864 = B
 795 to 824 = B-
 765 to 795 = C+
 725 to 764 = C
 695 to 724 = C-
 < 695 = F

Points are based on 3 Exams, 10 Weekly Assignments, and Class Participation & Attendance:

WEEKLY ASSIGNMENTS = Best 10 of 11 @ 50 pts = 500 pts

EXAMS 1-3 = 150 pts per exam, 450 pts in total

CLASS PARTICIPATION & ATTENDANCE = 50 pts

TOTAL = 1000 pts

WEEKLY ASSIGNMENTS. Each week, a set of problems will be assigned to be completed in lab and at home. These assignments will take you through the nuts-and-bolts of the statistical techniques, showing you how to actually do the things you have been reading about (both by hand and on computer). As you might imagine, these assignments are a critical feature of the class, and most closely foreshadow the way you will use this material in the future. **Assignments will be posted online around noon of each Thursday. Unless otherwise noted, these assignments will be due on or before 11:59am on the next Tuesdays. You can either type in your answers on a computer or hand-write your answers. Then you should deliver your completed assignment to your TA's office.** Occasionally, if you cannot make it to campus to deliver your assignment, you may scan your answers and email them to your TA, but this should not happen too often. Typically, you will get feedback (along with your grades) from your TA on each assignment in the same week. Late assignments will be penalized 10% per day.

Grading caveat: Although only the 10 highest assignment grades will be counted toward your final average, **there is a condition that you must complete ALL 11 assignments.** For each assignment that is not turned in, 50 points will be deducted from your Weekly Assignments total.

EXAMS. This course has 3 non-cumulative exams. The exams will consist of multiple-choice questions/problems and questions/problems that require you to show your calculations and provide the answer. Material for the exams will be drawn from the lectures, discussions/activities, and the textbook. The format of each exam will be a **2hr in-class exam**. A study guide will be provided before each exam.

You must be present for all three exams. In general, make-up exams will not be offered for missed exams. Make up exams will only be considered (but not necessarily given) in rare and extraordinary circumstances. Only persons with University of Illinois approved excuses in writing will be allowed to take a make-up exam. (See: http://admin.illinois.edu/policy/code/article1_part5_1-501.html). To be excused and have the right to a make-up exam, you need to notify me in advance or, if advanced notification is impossible, by the end of the second working day after the absence (in the latter case you must provide documentation why such notification before the class was impossible). If granted, make-up exams must be taken within one week of the missed exam.

CLASS PARTICIPATION & ATTENDANCE. Students are expected to attend each and every class. For each lecture session, you are expected to have read the assigned reading for that particular session, as well as to be prepared to discuss topics in class. Exam questions are drawn from lectures, exercises, and class discussion—so, missing classes will hurt you on exams.

All students will begin the semester with 40 out of 50 participation & attendance points. If you regularly attend class and voluntarily participate in discussions, your score will increase. If you regularly attend class and only participate when prompted, your score will remain at 40. If you miss multiple classes and/or never participate, your score will decrease. The attendance policy is outlined below.

As a member of this class, you are expected to attend all class sessions. Attendance will be taken regularly during lecture sessions. Not participating in-class exercises (i.e., your written responses/answers are not handed in by the end of class) will lead to a reduction of 5 points for each class. Please note that any university-sanctioned absence is excused and does not count towards your missed days.

For **lab sessions**, mandatory attendance is not required. However, it is your own responsibilities to monitor your own learning progress and decide how often to attend the lab sessions. If you think you are falling behind, **ATTEND THE LAB SESSIONS REGULARLY**. Your TA will be there to help you out. Lab sessions are the best times for you to get help from your TA. If you rarely or never attend lab sessions but request private office hours from me or the TA later in the semester, we reserve the right to decline your requests. Again, **SELF-MONITOR YOUR LEARNING PROGRESS AND ATTEND LAB SESSIONS IF YOU THINK YOU NEED HELP**. During the lab sessions, your TA will give you feedback on your assignments, answer any questions you may have about the

assignments, lectures, and upcoming exams, and walk you through contents of lectures with extra exercises.

◆CLASSROOM POLICIES

Technology Requirement: A website for this course is hosted on Illinois Compass 2g. Students registered for the course may log in at <https://compas2g.illinois.edu>. Course resources (e.g., PowerPoint slides, review guides, etc.), additional readings, weekly assignments, etc. as well as grades will be available via the website.

Students should bring a laptop computer to both lectures and lab sections of the course in order to actively apply the concepts being learned in Microsoft Excel in real time. Correspondingly, students should also have a working version of Microsoft Excel on their device. For more policies on computer use in the classroom, please read the section below.

Classroom Manner: Please complete the reading assignments before each class, turn in your assignment on time (again, by **11:59am on Tuesdays**), and come to class on time. You are allowed to bring your laptop to class and use it for activities related to the class **only**. The use of cell phones is prohibited in this class as it interferes with not only your learning experience, but also with the learning experience of your peers. However, I do understand that certain situations may require you to keep your device on or to take a call. Please be respectful of all members of the class and keep your phone on silent or vibrate and leave the classroom prior to taking a call. Students not adhering to these expectations and policies will be asked to leave the class and lose corresponding attendance and participation points, which impact the student's overall grade for the course.

Requests for Reconsidering a Grade: If you feel that the work you submitted was improperly evaluated, you may ask in writing to have it reviewed and the grade reconsidered. To do this, prepare a written statement (one or two paragraphs) explaining what you believe to be erroneous about the grade, and send it to me by email **within 72 hours of receiving your grades**. While I am decidedly unreceptive to being asked to review work simply because a poor grade was received, I truly appreciate the opportunity to correct a mistake. Please recognize that a new grade could be lower or higher than the original grade.

Policies on Sharing Assignments: Although you are allowed to talk to/consult your peers from this class when completing the assignments, **you may not share any written work nor electronic files related to any assignment**. Sharing written assignments or electronic files will result in failing this course, at a minimum.

◆UNIVERSITY POLICIES

Changes to Course Syllabus: During the course of the term, I reserve the right to make changes to the syllabus, schedule, or other course details as needed.

Class Behaviors: The classroom is a “safe” environment for students. The focus will be on learning. Causing disruptions, harassment of other students, foul language, disrespect for

others, or entertaining at someone else's expense will not be tolerated. For a detailed explanation consult UIUC's Student Conduct Code at www.studentcode.illinois.edu.

Students with Disabilities: The University of Illinois is committed to providing equal educational opportunities for all persons without regard to race, color, religion, sex, age, national origin or disability. Inquiries regarding this policy and availability of accommodative services for students with disabilities may be addressed to the instructor and the Office of Disability Resources & Educational Services (217.333.4603) as soon as possible so we can work out appropriate accommodations.

Class Cancellation Procedure: In situations where inclement weather may affect the normal operation of UIUC, or when circumstances beyond the university's control may affect working conditions and create a need to cancel classes or close the campus for any reason, students should refer to their local radio and television stations for information. The university will notify the stations. Additionally, the instructor will send an e-mail notifying students of the cancellation. If the class is cancelled, the next class will start where we left off, and the syllabus will be adjusted to make up for the lost session.

Academy Integrity: Evidence of academic dishonesty, including cheating and plagiarism, may result in receiving an "F" for the course. While you are encouraged to work with other class members on projects, assignments and class preparation, all written work submitted *must* be your own work and reflect your own thoughts. Appropriate recognition of sources of information is required through such means as quotation marks for direct quotations and citations *with page numbers*; or other indications of sources when paraphrasing is used. Copying and pasting from other sources is still plagiarism. Use of materials from the Internet should include complete URLs. If you have any questions or concerns regarding academic integrity, please contact the instructor, or refer to the policies contained in the University of Illinois Code of Policies and Regulations Applying to All Students. At a minimum, those found guilty of academic dishonesty will receive a score of "0" for that particular assignment and will be subject to penalties discussed in the Code, which include, among others, a failing grade for the course and dismissal from the University.

Sexual Misconduct Policy and Reporting: The University of Illinois is committed to combating sexual misconduct. As such, you should know that faculty and staff members are required to report any instances of sexual misconduct—which also includes dating violence, domestic violence, and stalking—to the University's Title IX and Disability Office. What this means is that as your instructor, I am required to report any incidents of sexual misconduct that are directly reported to me, or of which I am somehow made aware. When a report is received, an individual with the Title IX and Disability Office reaches out to provide information about rights and options, including accommodations, support services, the campus disciplinary process, and law enforcement options.

There is an exception to this reporting requirement about which you should be aware. A list of the designated University employees who, as counselors, confidential advisors, and medical professionals, do not have this reporting responsibility and can maintain confidentiality, can be found here: wecare.illinois.edu/resources/students/#confidential. Other information about resources and reporting is available here: wecare.illinois.edu.

TENTATIVE SCHEDULE

Date	Topic of Lecture	Reading	Lab Sessions	Assignments
Week 1 Aug. 29	Syllabus Basics of Data	Ch 1	NO LAB	
Week 2 Sept. 5	Descriptive Statistics	Ch 2 Ch 3 (3.1 & 3.2)	#1: Sept. 6	#1: Due Sept. 10
Week 3 Sept. 12	Z-scores Probability Distributions	Ch 3 (3.3) Ch 6	NO LAB (Scholarship Reception)	#2: Due Sept. 17
Week 4 Sept. 19	Review for Exam 1		#2: Sept. 20	#3: Due Sept. 20
Week 5 Sept. 26	Exam 1		NO LAB	
Week 6 Oct. 3	Sampling Distributions Interval Estimation	Ch 7 Ch 8	#3: Oct. 4	#4: Due Oct. 8
Week 7 Oct. 10	Hypothesis Testing	Ch 9	#4: Oct. 11	#5: Due Oct. 15
Week 8 Oct. 17	Comparing Means of Two Populations (Z-test & T-test)	Ch 10 (10.1-10.3)	#5: Oct. 18	#6: Due Oct. 22
Week 9 Oct. 24	Review for Exam 2		#6: Oct. 25	#7: Due Oct. 25
Week 10 Oct. 31	Exam 2		NO LAB	
Week 11 Nov. 7	Comparing Means of More Than Two Populations (ANOVA) Correlation	Ch 10 (10.4 & 10.5) Ch 3 (3.5)	#7: Nov. 8	#8: Due Nov. 12
Week 12 Nov. 14	Bivariate Regression	Ch 12	#8: Nov. 15	#9: Due Nov. 19
Week 13 Nov. 21	Multiple Regression Additional Useful Statistics	Ch 13	#9: Nov. 22	#10: Due Dec. 3
Week 14 Nov. 28	No Class (Thanksgiving Break)		NO LAB	
Week 15 Dec. 5	Review for Exam 3		#10: Dec. 6	#11 Due Dec. 6
TBD (Between Dec. 13-20)	Exam 3			