Statistics 200, Section L1, CRN 67087, Spring 2026

TR 11am-12:20pm in 0035 CIF — Statistical Analysis (3 credits)

About your instructor:
Kit Clement (he/him) kitc@illinois.edu Office: 703 Wright St. #25 My Drop-in Hours: TBD or by appointment

To contact the entire Stat 200 teaching team, email stat200team@lists.illinois.edu.

Course description and prerequisites:
In Stat 200, we will study introductory statistics concepts using the TinkerPlots and RStudio statistical software packages. Some topics to be covered include data summary and visualization, study design, elementary probability, categorical data, comparative experiments, multiple linear regression, analysis of variance, and statistical inferences. There are no prerequisites for this course, but you should be prepared to handle problems that involve arithmetic and the use of statistical computing software. If you are uncertain about your preparation for this course, you should reach out to me, and I will be happy to assist you in reviewing these concepts. This course will include challenging material; however, the activities, assignments, and exams are designed so that any student who is willing to put in the time to attend class consistently, work regularly outside of class, develop good study strategies, and contact the teaching team when they are struggling can develop a thorough understanding of the material and ultimately succeed in the course. Classes will be very hands-on and involve working on discovery-based learning activities in groups. In addition to our class sessions, work outside of class will take an average of 6 hours per week. The course is designed to be engaging and to prepare you to think critically about basic statistical ideas and apply them in your own disciplines.

General education categories:
Quantitative Reasoning I

Course objectives:
- Gain proficiency in creating and interpreting qualitative and quantitative data using TinkerPlots and RStudio.
- Understand the key concepts of statistical inference.
- Conduct inferential techniques in a wide variety of statistical scenarios.

Student learning outcomes:
Upon completion of this course, the student should be able to:
- Apply inferential statistics to real world problems.
- Use simulations to carry out statistical inference and connect these to traditional methods.
- Communicate information effectively and efficiently.
- Use R as a statistical and graphical tool.
- Select theoretical concepts from various disciplines and apply them to real world problems.

Text/materials:
- *Statistical Analysis Incomplete Notes, S26* – Available at the bookstore for around $20. If you would prefer to use a tablet/touchscreen computer to annotate them, I will be publishing all PDFs of the book to Canvas. **Annotating this book is necessary to interact with the material, so I do NOT recommend using the PDFs if you do not have a tablet/pen combination to annotate these notes.** The price of the book at the bookstore beats printing it out yourself with campus printers, and comes spiral bound.
- *R/RStudio Software* – We will be using the R software environment for statistical analysis in this class. R is freely available online at www.r-project.org. You should also download RStudio in addition to the base R installation – RStudio has a much more friendly user interface for using R and is also free to download at posit.co.
- *TinkerPlots Software* – We will also be using the TinkerPlots software environment to explore concepts of statistics through simulation. See http://www.tinkerplots.com for details on how to download. Access to TinkerPlots during class sessions is a requirement for the course to be able to participate in class activities and complete homework assignments. **Note that the software is supported only for Mac OSX and Windows operating systems**. If you need to access TinkerPlots outside of class, the software is available in the English Building basement computer lab, room 8.

Learning Management Systems:
This course will use the following platforms:

- Canvas – this is the primary hub for all course materials and general organization. Ungraded assignments (pre-work, activities) and auto-graded assignments will be turned in here.
- Gradescope – any graded assignment (TP HW and exit cards) will be turned in here. This system allows us to grade assignments faster with tailored feedback on each question that is graded!

Course values:
I am committed to creating a positive learning environment where diverse perspectives are recognized and valued as a source of strength. I request that all students work with me to create a classroom culture based on open communication, mutual respect, and inclusion. As a class we will approach all discussions with respect and civility. Disagreements and debates in academic discourse are expected and welcome, but personal attacks are never okay and will not be tolerated. I strive to ensure an open and welcoming classroom for all students. If I ever miss the mark, please don't hesitate to come and talk to me. We are all learning together!

Grading:
Your final grade is determined by unweighted points. The percentage of earned points to total possible points will be calculated and the grading scale noted below applied. There are 1500 points total in the course. The following describes the various categories of grades:

Ungraded (for completion only) assignments

- Thursday TP activities (110 points, 8.8% of final grade)
    - There will be 13 activities worth 10 points each. We will drop two activity scores from your final grade.
    - You will not be graded on whether your activities are done correctly, but on completion and participation. Note that the concepts gained in these activities will be material for homework and exams, so it is in your best interest to put your best effort forward on the activities.
    - Activities will be done in assigned groups of two, but you should collaborate with others at your table. If you experience trouble in your group that cannot be resolved, please discuss this with your instructor or CA. **Work collaboratively, ask each other questions, and make your group mates explain their reasoning! This kind of group participation will benefit everyone!**
    - TP Activities are turned in individually by each group member to Canvas.
- TinkerPlots pre-work assignments (30 points, 2.4% of final grade)
    - Pre-work assignments are typically short assignments designed to prepare you for a specific activity on that day. They are due before the start of that specific class.
    - There are 4 pre-work assignments worth 10 points each. One pre-work assignment will be dropped.
    - Pre-work assignments are turned into Canvas.

Auto-graded assignments

- Video lectures and quizzes (185 points, 14.8% of final grade)
    - After completing your introductory activity on Thursday, your homework over the weekend is to watch a set of lecture videos.
    - Throughout the term, you will watch a total of 48 video lectures, plus the syllabus video. This comes out to about 4 videos per weekend that videos are assigned. For more details on the length and number of videos assigned each weekend, check the "Video assignment information" section of the syllabus.
    - To check that you have watched the videos, a short quiz on Canvas is assigned for each video. Your worst 12 quizzes will be dropped, with the remaining 37 counting for your final grade. You have **one try** on each of these quizzes.
- Tuesday R assignment (225 points, 18% of final grade)
    - There are 12 total R assignments worth 25 points each. Your worst three grades will be dropped.
    - Each Tuesday class (except the first) will feature a homework assignment centered around using R/RStudio. These assignments are done in Canvas.
    - Questions will be a mix of multiple choice and numeric answer. These assignments are automatically graded after submitting them.
    - You will get two attempts at every R assignment, and your highest grade will count as your final grade.
    - You should work with your groupmates in-class to help complete these assignments, but you are submitting work by yourself. You are welcome to share your thinking on these questions with your

groupmates, but **directly sharing/copying answers is an academic integrity violation and may result in a FAIR violation.**

- Ideally, these are completed each Tuesday so that you don't have to take this work home with you, but if you don't complete them, they will be due before the next Tuesday's class.
  - The exception is before midterms, where they will be due before the next class on Thursday.

Manually graded assignments

- TinkerPlots homework assignments (150 points, 12% of final grade)
  - There are 4 graded TinkerPlots homework assignments, each worth 50 points. One HW assignment will be dropped from your final grade.
  - These assignments will have you do a thorough statistical analysis using simulation in TinkerPlots, answering free response questions that allow you to practice writing interpretations.
  - Specific questions will be chosen for grading on each assignment, and feedback from CAs will be given. The remaining questions will be graded for completion.
    - All questions will appear as one point to not make it obvious which are graded/ungraded. Actual point values per question will be assigned after the due date.
  - Homework is submitted through **Gradescope**. Homework is due at the date and time indicated for each assignment on Gradescope.
    - A three hour grace period (the "late" due date) will be placed on all of these assignments. No penalty is given if turned in by this time, but this is intended to be used for technical difficulties. Don't treat this like the real due date.
    - You may request a 48-hour extension via Google Form if requested before the initial due date (not including grace period). Otherwise, **late homework will NOT be accepted except in extenuating circumstances.**
- Midterm Exams (500 points, 40% of final grade)
  - Midterm 1 will occur on Tuesday, March 10th, in class.
  - Midterm 2 will occur on Tuesday, May 5th, in class.
  - You may also bring a two-sided 8.5x11" sheet of notes to aid you for each exam. **It must be hand-written, no photocopies or typed notes.**
  - Failure to abide by exam rules as detailed on the cover sheet of the exam may result in penalties, potentially resulting in a 0 on your exam.

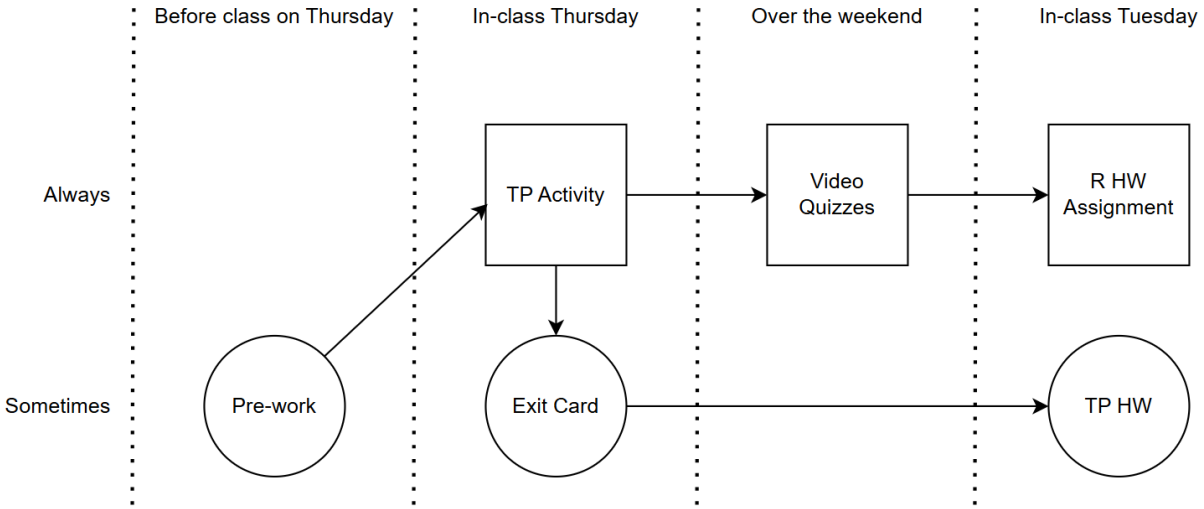
Other stuff

- Participation (50 points, 4% of final grade)
  - Throughout the class, you will be assigned to work in groups. We will change up the groups twice throughout the term, giving you three different groups of students to work with.
  - After the groups change, you will be asked to reflect on your experiences working with your classmates. This is meant to keep students accountable for working together in each group effectively. Each survey is worth 5 points each for completion.
  - Your total participation effort in the class will be worth 35 points. This is graded at discretion of the instruction team and based on survey feedback from your classmates.
- Attendance
  - Participation in this course is crucial to your success. If you are registered for this course, it is expected that you will attend each day class is scheduled. Your groupmates will also be relying on your attendance and timeliness – it is disrespectful to your group to regularly miss class or show up to class late.
  - Each student is allowed up to 4 absences with no penalty, regardless of reason. **For each absence after the first four, your final calculated grade will be reduced by 2% (25 points each time!)**
    - Generally, absences are never excused in this course, as four should cover most situations that arise within one semester. Thus, use these four absences wisely! These should be reserved for any serious issue that comes up, from common sickness, busy days, or family emergencies.
    - In very exceptional circumstances (serious illness, long-term family emergency, etc.) where you need to miss class for an extended period of time (at least a week), we will allow for more than four absences. This will be arranged with your instructor and CA. **You must communicate with your instructor/CA as soon as possible if such a circumstance arises!**
    - If you add the course late, any sessions missed before your enrollment date will be considered a half absence. (If you have 4.5 absences by the end of the term, this will be a 1% penalty.)

- The Canvas gradebook will track what days you are present or absent, but this is not factored into your calculated percentage at any point. **It is your responsibility to track your attendance and how this factors into your grade.**
- If you arrive **5 or more minutes late or leave before class ends, this will be considered an absence.**
- If you miss a Thursday class, TP activities can still be made up on your own and turned in before the next class begins, but this is still considered an absence.

Extra Credit Opportunities

- Exit Cards
  - For select TinkerPlots activities that focus on important statistical interpretations, we will have you write up your interpretation to be graded for accuracy.
  - There will be 6 exit cards. You will earn extra credit based on the number of exit cards you complete with a perfect score:
    - 6/6: 10 points
    - 5/6: 6 points
    - 4/5: 3 points
    - 3/6 or fewer: 0 points
  - Regardless of extra credit, I encourage you to submit something for every exit card to receive feedback on your interpretation. This will help you in your later TP HW assignments!
  - Submissions of exit cards will be done via **Gradescope**.
- Other EC opportunities
  - There will be an R HW on an extra topic that you can complete for an additional 20 points. There is also one EC video quiz worth an additional 5 points.
  - There may be EC opportunities that will have you participate in educational research studies – more on that when those opportunities arise.
  - Other EC opportunities may be added at the instructor's discretion.



Based on these categories, a final grade percentage is calculated, and the letter grade will be assigned based on the point ranges below. This grading scale may be adjusted but will only be done in your favor – that is, it will never be more difficult to achieve a given letter grade that is described by the scale above.

A+: 99+	B+: [87, 90)	C+: [77, 79)	D+: [67, 69)	
A: [93, 99)	B: [83, 87)	C: [73, 77)	D: [63, 67)	
A-: [90, 93)	B-: [80, 83)	C-: [70, 73)	D-: [60, 63)	F: Below 60

Re-grading requests:

If you would like to request that an assignment's grade be reviewed (including attendance), all requests for these reviews must be made within one week of that grade being released. This includes disagreements on how you were evaluated on an open-ended question from a homework or exam, grade mis-entries into the Canvas gradebook, or any technical issues with auto-graded assignments in Canvas. After this one week has passed, I reserve the right to not review or change that grade. Re-grade requests for assignments turned in via Gradescope should be submitted through Gradescope, otherwise,

reach out to the appropriate person (see next section). Warning: I may review other parts of the assignment if you submit a grade review, and it may result in your grade being reduced if the result of the re-grade warrants that.

Communication:
I would love to be able to have one-on-one dialogue with all of you, but given the size of the course, this does not scale well. If you need help in the course, please reach out to the appropriate contact based on the following examples:

- Contact the team at stat200team@lists.illinois.edu for questions about:
  - RStudio/TinkerPlots troubleshooting issues
  - Course content or HW questions
  - Locating course resources
- Contact your CA directly about:
  - Attendance or missing class
  - Grades for TP activity or pre-work assignments
  - Issues with group assignments in the class
- Contact your instructor directly about:
  - Exam re-grade requests
  - Confidential or sensitive topics
  - General concerns (falling behind, stressed, etc.)

Course schedule:

Week	Dates	Topic	R Assignment	TP Pre-work	TP Homework
0	1/20	Randomness and Random Processes			
1	1/22 – 1/27	Introduction to R		**1** due 1/22	
2	1/29 – 2/3	Statistical Investigations	**1** due 2/3	**2** due 1/29	
3	2/5 – 2/10	Probability and Random Variables	**2** due 2/10		
4	2/12 – 2/17	Introduction to Statistical Inference	**3** due 2/17		
5	2/19 – 2/24	Exploring Hypothesis Testing	**4** due 2/24		
6	2/26 – 3/3	Estimating a Proportion	**5** due 3/3		**1** due 3/2
MT1	3/5 – 3/10	**Midterm 1 (Mar 10th)**	**6** due **3/5**		
7	3/12 – 3/24	Statistical Inference for One Mean			
8	3/26 – 3/31	Statistical Inference for Two Proportions	**7** due 3/31	**3** due 3/26	**2** due 3/30
9	4/2 – 4/7	Statistical Inference for Two Means	**8** due 4/7		
10	4/9 – 4/14	Simple Linear Regression	**9** due 4/14	**4** due 4/9	**3** due 4/13
11	4/16 – 4/21	Multiple Linear Regression	**10** due 4/21		
12	4/23 – 4/28	Analysis of Variance (ANOVA)	**11** due 4/28		**4** due 4/27
MT2	4/30 – 5/5	**Midterm 2 (May 5th)**	**12** due **4/30**		

Video assignment information:

Week	Dates	Number of Videos	Average Length	Total Time
1	1/22 – 1/27	3	21:54	1:05:43
2	1/29 – 2/3	5	24:05	2:00:24
3	2/5 – 2/10	4	23:49	1:35:16
4	2/12 – 2/17	4	17:47	1:11:09
5	2/19 – 2/24	3	16:04	48:12
6	2/26 – 3/3	3	17:47	53:20
7	3/12 – 3/24	5	17:32	1:27:42
8	3/26 – 3/31	5	21:40	1:48:22
9	4/2 – 4/7	4	16:38	1:06:33
10	4/9 – 4/14	4	20:30	1:22:00
11	4/16 – 4/21	3	16:36	49:49
12	4/23 – 4/28	5	17:08	1:25:41

Disabilities services:
The University of Illinois Urbana-Champaign values diversity and inclusion; we are committed to fostering mutual respect and full participation for all students. My goal is to create a learning environment that is equitable, useable, inclusive, and welcoming. If any aspects of instruction or course design result in barriers to your inclusion or learning, the Disability Resources and Educational Services (DRES) can provide reasonable accommodations for students who encounter such barriers. If you have or think you may have a disability that may affect your work in this class and feel you need accommodations, contact DRES to schedule an appointment. If you already have accommodations, please contact me to make sure that I have received your letter of accommodations (LOA) so we can discuss implementing these accommodations.

Ethics and integrity:
It is anticipated that you are enrolled in this course to expand your knowledge of statistics. This course seeks to encourage independent critical thinking and further the development of problem solving skills. Thus, students will benefit from discussions of course material with peers outside of class and at drop-in hours. However, all students are more likely to achieve the learning objectives of this course if their **own** work is submitted. By turning in a test or assignment, you certify that the work was produced without plagiarism (passing someone else's work as your own, or not citing someone else's work appropriately) or other forms of academic dishonesty. You should carefully review the student code regarding these issues. Note that sharing an assignment is equally in violation of this policy as copying an assignment from another student. Violations of academic honesty standards may result in a grade of 0 (F) for the given assignment. More formal proceedings may also be initiated at the discretion of the instructor.

Student resources:
Many students face obstacles to their education as a result of work or family obligations or unforeseen personal difficulties. If you are experiencing challenges throughout the term that are impacting your ability to succeed in this course, or in your undergraduate career more broadly, please reach out to me so that we can work together to form a plan for your academic success. If you are unable to attend my drop-in hours, please email to set up a time that works for you or arrange a meeting by Zoom.

All of us need a support system, and many students benefit from the use of counseling services. The Counseling Center works with students to identify and address issues related to personal growth, self-confidence, anxiety, depression, eating disorders, academic difficulties, and career indecision. They provide many counseling services to students that are covered by your student health fee. For more information, see the Counseling Center's website here.

If you or someone you know experiences any of the previously mentioned mental health concerns, it is strongly encouraged that you contact or visit any of the resources listed below:

- Counseling Center (217) 333-3704
- McKinley Health Center (217) 333-2700
- National Suicide Prevention Lifeline (800) 273-8255
- Rosecrance Crisis Line (217) 359-4141 (available 24/7, 365 days a year)

If you or someone you know is in immediate danger, call 911.

Religious Observances:
Illinois law requires the University to reasonably accommodate its students' religious beliefs, observances, and practices in regard to admissions, class attendance, and the scheduling of examinations and work requirements. Students should complete the Request for Accommodation for Religious Observances form should any instructors require an absence letter in order to manage the absence. In order to best facilitate planning and communication between students and faculty, students should make requests for absence letters as early as possible in the semester in which the request applies.

Title IX reporting obligations:
As an instructor, one of my responsibilities is to help create a safe learning environment for my students and for the campus as a whole. Please be aware that as a faculty member, I have the responsibility to report any instances of sexual harassment, sexual violence and/or other forms of prohibited discrimination. If you would rather share information about sexual harassment, sexual violence or discrimination to a confidential employee who does not have this reporting responsibility, you can find a list of those individuals on the Title IX office's student resources page.

Family Educational Rights and Privacy Act (FERPA):
Any student who has suppressed their directory information pursuant to Family Educational Rights and Privacy Act (FERPA) should self-identify to the instructor to ensure protection of the privacy of their attendance in this course. See http://registrar.illinois.edu/ferpa for more information on FERPA.

Community of Care:
As members of the Illinois community, we each have a responsibility to express care and concern for one another. If you come across a classmate whose behavior concerns you, whether in regards to their well-being or yours, we encourage you to refer this behavior to the Student Assistance Center (217-333-0050 or http://odos.illinois.edu/community-of-care/referral/). Based on your report, the staff in the Student Assistance Center reaches out to students to make sure they have the support they need to be healthy and safe.

Further, as a Community of Care, we want to support you in your overall wellness. We know that students sometimes face challenges that can impact academic performance (examples include mental health concerns, food insecurity, homelessness, personal emergencies). Should you find that you are managing such a challenge and that it is interfering with your coursework, you are encouraged to contact the Student Assistance Center (SAC) in the Office of the Dean of Students for support and referrals to campus and/or community resources.

Disruptive Behavior:
Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and an instructor's ability to teach. A student responsible for disruptive behavior may be required to leave class pending discussion and resolution of the problem and may be reported to the Office for Student Conflict Resolution (https://conflictresolution.illinois.edu; conflictresolution@illinois.edu; 333-3680) for disciplinary action.

Emergency Response Recommendations:
Emergency response recommendations and campus building floor plans can be found at the following website: https://police.illinois.edu/em/run-hide-fight/. I encourage you to review this website within the first 10 days of class.