WELCOME TO STAT 1430: STATISTICS FOR THE BUSINESS SCIENCES (SUMMER 2024)

Course Leaders & Recitation Information

> **Fangyi Wang– Instructor**
> - **Office Hours: Tuesday, 11:00am-12:00 p.m. via Zoom (other times available by appointment)**
> - **Email: wang.15022@osu.edu**
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> **Arkajyoti Bhattacharjee – TA**
> - **Office Hours: Thursdays, 3:30-4:30 p.m. via Zoom**
> - **Email: Bhattacharjee.57@osu.edu**
>
> **Chenze Li – TA**
> - **Office Hours: Wednesday, 10:30-11:30 a.m. via Zoom**
> - **Email: Li.13074@osu.edu**
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> **RECITATION TIMES:** **M, Tu, W, Th: 8:45-9:35 a.m.**

EMAIL NOTE:
- ✓ All email correspondence must be using your OSU name.# address or we cannot respond. Thanks!

Course Description:
Statistics 1430 is an introduction to the fundamental concepts of probability, statistics, and data analysis. Topics include surveys and experiments, numerical and graphical summaries, discrete and continuous random variables, simple linear regression, relations in categorical data, sampling distributions for means, and introduction to confidence intervals. The prerequisite is Math 1131. We assume you can do basic integration.

This course satisfies the General Education foundation requirement in *Mathematical and Quantitative Reasoning or Data Analysis* which has the following goals and expected learning outcomes:
Goals: Successful students will be able to apply quantitative or logical reasoning and/or mathematical/ statistical methods to understand and solve problems and will be able to communicate their results.
Expected Learning Outcomes (ELOs): Successful students are able to:
1.1 Use logical, mathematical and/or statistical concepts and methods to represent real-world situations.

1.2 Use diverse logical, mathematical and/or statistical approaches, technologies and tools to communicate about data symbolically, visually, numerically and verbally.
1.3 Draw appropriate inferences from data based on quantitative analysis and/or logical reasoning.
1.4 Make and evaluate important assumptions in estimation, modeling, logical argumentation and/or data analysis.
1.5 Evaluate social and ethical implications in mathematical and quantitative reasoning.

This course also satisfies the Legacy General Education requirement in *Data Analysis*. which has the following goals and expected learning outcomes:
Goals: Students develop skills in drawing conclusions and critically evaluating results based on data.
Expected Learning Outcomes:
1. Students understand basic concepts of statistics and probability.
2. Students comprehend methods needed to analyze and critically evaluate statistical arguments.
3. Students recognize the importance of statistical ideas.

How ELOs will be met: STAT 1430 will promote an understanding of statistical principles in a theoretical and applied framework. Data organization and visualization techniques will be discussed, as well as techniques that allow one to make inference using sample data. The interpretation of results will be heavily emphasized. The ELOs will be assessed through group discussion, lecture quizzes, recitation activities, and exams.

STAT 1430 Carmen Website:
Please check the course website often, as new announcements and information are added frequently. Here are some of the materials that are posted on Carmen:
- Course announcements, schedule, and other course information
- Changes/updates in the course
- Lecture outlines and videos for every lecture. Please take notes on the outline as you watch the corresponding video.
- All recitation materials (solutions are posted as we go along).
- Exam review materials

Textbook
- **MyStatLab** is REQUIRED for STAT 1430. It includes the e-book and our statistical software, StatCrunch. It's a part of Carmen Books—already incorporated in your course fee at a much lower price! You don't need scholarship or financial aid money to register for it.
- **The instructions to register for access to MyStatLab are under the COURSE INFORMATION MODULE of Carmen.** (If you want to opt out, go to the OSU Carmen Books website.)

Technology
- Calculators are required on the exams if you don't want to do hand-calculations.
- TI-NSPIRE **BRAND CALCULATORS (or equivalent) ARE NOT ALLOWED.**
- **Data Files** will be used in the class during recitation. You can access all data sets through the STAT 1430 Carmen website.

- **Computer Software**: **StatCrunch.** This software is required and comes with MyStatLab. You will need it for recitation activities (and possibly homework).

Course Topics (organized by Module):

Week 1 Module: Samples, Surveys, and Experiments
Week 2 Module: Organizing Data, Descriptive Statistics, Scatterplots, & Correlation
Week 3 Module: Regression, Two-Way Tables, & Probability Rules
Week 4 Module: More Probability Rules, Conditional Probability, & Probability Review
Week 5 Module: Discrete vs. Continuous Random Variables
Week 6 Module: Normal & Binomial Distributions, Sampling Distributions, & Confidence Intervals
Week 7 Module: Hypothesis Testing for Means & t-distribution
Week 8 Module: Confidence Intervals & Hypothesis Testing for Proportions

Recitation Assignments and Recitation Sessions
- ✓ Four recitation activities are due each week (three will be due in Week 1 and the weeks with holidays). These recitation activities are due on the following Sunday at 11:59 p.m. and must be submitted online through Carmen.
  - On the weeks where you submit 4 recitation activities, 2 will be graded for correctness, and 2 will be graded for completeness.
  - On the weeks where you submit 3 recitation activities, 1 will be graded for correctness, and 2 will be graded for completeness.
- ✓ You are assigned to 4 recitation sessions per week.
  - In these recitation sessions, the TAs will begin with a review of big ideas from lecture and/or work through some examples. Then, you will be split into breakout rooms where you can work as a group (or individually) on that day's recitation activity. The TAs and I will be available to answer any questions as they arise!
  - Bring completely filled-in lecture notes to recitation. Due to time constraints, we cannot explain all the material from scratch in recitations.
  - On non-exam days, attendance at these recitation sessions is optional.
- ✓ Late work is not accepted unless there are extenuating long-term circumstances that are documented. The lowest **3** recitation activity scores are dropped to cover all work that is not turned in for any other reason.
- ✓ Questions on all recitation activities will cover material recently covered in lecture.
- ✓ Each recitation activity will be worth 10 points. Most of the time, on the recitation activities graded for correctness, we will grade 5 random problems worth 2 points each.
- ✓ Recitation questions will include short answer work as well as MC/TF.

Lecture – Notes, Videos, & Online Quizzes in Carmen:
- ✓ All lectures are online in video format (they are in 15-minute chunks). In each week's module, the videos are posted in the order that they should be watched. The corresponding lecture

notes are posted in the Modules as well. Also, there are weekly lecture quizzes that ask questions from the corresponding lectures.

- ✓ Lecture Quizzes are due on the following Sundays at 11:59 p.m. they are assigned, starting the Sunday of Week 2 (they will be posted on the Sunday prior).
  - **You will have 1 attempt for each lecture quiz.**
  - **We drop the lowest lecture quiz score.**

Homework – Online Quizzes in Carmen:
- ✓ Each week you will complete an online homework worth 20 points, due the following Sunday at 11:59 p.m. (HW for a particular week will be posted the Sunday prior, so you will have one full week for these assignments). These homework assignments will appear as quizzes on Carmen. You may use any materials you want to complete the homework. We encourage you to work on your own to simulate practice for exams.
  - **You will have 2 attempts for each homework assignment; your highest score will be kept.**
  - **We drop the lowest HW grade.**

Exam Information and Policies:
- **Number of exams.** There will be one midterm exam and one final exam. The final exam will contain material covered after the midterm (as well as regression and correlation).
- **Exam Monitoring:** To monitor you during the exams, you must have your webcam on and be logged into Zoom. The exam sessions will be recorded. If we need to see your screen at any time, we will send you a chat message; at that point you must show your screen or your exam will not be accepted.
- **Exam Content and Advice. Exam questions are all MC/TF**. An online practice exam will be posted for each exam, as well as review materials including old (on paper) exams. Read the document on how to study for exams in the Midterm Practice Module.
- **Exam materials.** You may use your own course materials (notes, book, etc.) during exams. However, you are not allowed to communicate with anyone or go outside the exam website. This will be monitored and locked down. A formula sheet is posted on the Carmen website under the COURSE INFORMATION Module; you may use this on exams. Statistical tables from the text are also on Carmen (also in the COURSE INFORMATION Module).
- You **MUST HAVE** your Buck-ID available to show the camera during the exam.
- If you're late to an exam, had the wrong day on your schedule, or missed the exam for any unexcused reason, you might not be allowed to make it up and may receive a zero. If you are allowed to take a make-up exam, you may receive a penalty of up to 25% of the total points possible on the exam. Any missed exams with no communication to us within 24 hours (except for extreme emergencies) may receive a 0.
- **Make-up Exams:** Make-up exams will generally not be given. If you have an emergency or extended illness and are going to miss an exam, please notify Fangyi Wang as soon as possible so arrangements can be made. **Please also have documentation (doctor's note, etc.) that says you were unable (e.g., too sick) to take the exam. Your documentation must be approved prior to taking a make-up exam.**

<u>No early final exams – no exception</u>

Academic Misconduct:
- ✓ Academic misconduct **will not be tolerated** and will be dealt with procedurally in accordance with University Rule 3335-31-02.
- ✓ Academic misconduct can result in receiving an E in the class, one full grade lower in the class, and/or academic probation.
- ✓ **Some examples of academic misconduct include communicating with any other person or using any resource besides Carmen or your notes on exams; using unauthorized resources (e.g., Course Hero, Chegg, STAT 1430 materials from previous semesters) to turn in work; etc.**

Make-Up Assignment Policy – Restricted:
- ✓ We do not have make-up assignments except for extended emergency situations or extended illness; if you are in one of those situations, you must let us know right away so we can work with you. **To cover these situations, we do drop 3 recitation activities, 1 HW, and 1 lecture quiz.**
- ✓ If you are on university business (e.g., conference, university trip), are an athlete, are a member of the military, or if you are celebrating a religious holiday, please let the TAs know prior to your absence so your make-up work can be arranged.
- ✓ If you have an extended illness or extended emergency and this illness causes you to miss more than the allowed number of dropped recitation activities, lecture quizzes, and/or homework assignments, obtain documentation, and contact Fangyi Wang immediately.
- ✓ **We cannot add additional dropped assignments**. Save the drops for when they are needed!

<u>GRADE COMPONENTS:</u>

Recitation Activities: all graded on a 10-point scale. We drop the 3 lowest scores.	30%
Homework: 20 points each. These are set up as untimed Quizzes on Carmen. We drop the lowest score.	15%
Lecture Quizzes: These are set up as untimed Quizzes on Carmen. We drop the lowest score.	10%
Midterm: Tuesday, June 4 from 8:45 – 9:35 a.m. (Eastern Standard Time) (Midterm covers the material up to, and including, conditional probability)	20%
Final: Thursday, June 27 from 8:45 – 9:35 a.m. (Eastern Standard Time) (Final covers the material after the midterm, plus regression and correlation)	25%

<u>Grades Statement – Important!</u>

We strongly believe that grades are earned, not given. If you need to achieve a certain grade in this course, complete all assignments, plan appropriate time for studying, and come to office hours/ask questions. We are here to help you and want you to have a positive learning experience!

IMPORTANT! Keep track of your grades!!
- ✓ Please frequently check Carmen for your recitation, lecture quiz, homework, and exam scores.
- ✓ If something is wrong or missing, notify the TAs <u>within one week</u> of when that item was graded. The TAs will grade all recitations within 1 week.

✓ We can't address problems regarding prior missing grades at the end of the term.

Grading Scale:
  ✓ We will assign final course grades based on the grading scale below:

		B+	87.00% – 89.99%	C+	77.00% –79.99%	D+	67.00% – 69.99%
A	93.00% and above	B	83.00% – 86.99%	C	73.00%– 76.99%	D	60.00% – 66.99%
A-	90.00% – 92.99%	B-	80.00% – 82.99%	C-	70.00%– 72.99%	F	below 60.00%

Addressing Issues of Differing Abilities:
  ✓ Any student who feels they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs.
  ✓ Students with documented disabilities should also contact the Student Life Disability Services (SLDS) in 098 Baker Hall (Phone: (614) 292-3307) to coordinate reasonable accommodations for the course.
  ✓ You MUST BE REGISTERED through SLDS to receive accommodations.
  ✓ SLDS forms must be given to the instructor as early in the term as possible to be filled out and returned to you in time.
  ✓ SLDS requires at least 3 business days to coordinate an exam for someone who is already registered through SLDS. For someone not registered with SLDS by that time, we cannot guarantee accommodation.

PLEASE TAKE CARE OF YOURSELF (OSU Mental Health Statement):
As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing.

If you or someone you know is suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting **ccs.osu.edu** or calling 614-292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at 614-292-5766.

If you are thinking of harming yourself or need a safe, non-judgmental place to talk, or if you are worried about someone else and need advice about what to do, 24 hour emergency help is also available through the Suicide Prevention Hotline (Columbus: 614-221-5445 / National: 800-273-8255); or text (4hope to 741741); or at suicidepreventionlifeline.org.

Section Changes, Unpaid Fees: *The instructor and TAs will not under any circumstances sign paperwork regarding section changes.* E-mail Jean Scott in the Statistics Office (scott.961@osu.edu) for the policy on section changes. If your fees are unpaid, you should not be attending class. However, if there is a valid reason (e.g., financial aid hasn't gone through), submit this in writing (with documentation) to Jean Scott ASAP (scott.961@osu.edu).