

WELCOME TO: STAT 1430 SPRING 23 STATISTICS FOR THE BUSINESS SCIENCES

Course Leaders

DR. RUMSEY – Course Coordinator and Online Lecture Podcasts

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- Office Hours: T Th 1:45-2:45 in Cockins 227 or by prior appointment
- Zoom information is posted in Carmen.

DALTON HOPPER- Lecturer

- Office Hours: M 3:55-4:55 in CH 328 and on T 1:00-2:00 on Zoom, or by prior appt.
- Zoom Room information is posted in Carmen.
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KEITH RODGERS –Lecturer

- Office Hours: T Th 9-10 in Cockins 212b or by prior appointment.
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SEAN O'NEILL –Lecturer

- Office Hours: MW 8:10-9:00 in 212c Cockins or by prior appointment.
- Email: oneill.90@osu.edu
- Zoom information is posted in Carmen.

TUTOR ROOM:

- ✓ For a place to ask specific statistical questions or get extra help on recitation work, visit the in Person Tutor Room in Cockins Hall or the Virtual Tutor Room on Zoom. The Stat Help Room is open selected hours during the week, is free, and is staffed by TAs. For info see www.mslc.osu.edu. Find information under tutoring / statistics shared office hours.

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.

Stat 1430 Carmen Website:

Please check the course website frequently as new announcements and information are added all the time. Here are some of the materials that are posted on Carmen:

- Course announcements, schedule, and other course information
- Announcements/changes/updates in the course
- Lecture outlines and podcasts for every lecture. Please take notes on the outline as you listened to the podcast.
- All recitation materials; solutions posted as we go along.
- Exam review materials

Textbook

- **My Stat Lab** is REQUIRED for Stat 1430. It includes the e-book and our statistical software. 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.)
- The textbook is Business Statistics 4th Edition, by N. Sharpe. E-book comes with My Stat Lab.

Technology

- Calculators are required on the exams if you don't want to do hand-calculations.
- **INSPIRE 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 comes as a part of My Stat Lab. You will need it for recitations and possibly homework.

Course Topics List and Suggested Book Reading

Course Modules	Suggested Textbook Reading
Module 1: Data Collection: Surveys and Experiments	Chapter 1: Data and Decisions Chapter 8: Data Sources: Observational Studies and Surveys Chapter 9: Data Sources: Experiments
Module 2: Organizing Data with Graphs and Descriptive Statistics	Chapter 2: Visualizing and Describing Categorical Data Chapter 3: Describing, Displaying, and Visualizing Quantitative Data
Module 3: Using StatCrunch Correlation and Regression	Not applicable
Module 4: Correlation and Regression	Chapter 4: Correlation and Linear Regression
Module 5: Two-way Tables and Independence	Chapter 5: Section 5.5 - 5.7: Randomness and Probability
Module 6: Probability Rules	Chapter 5: Randomness and Probability
Module 7: Conditional Probability	Chapter 5: Section 5.8 - 5.9: Randomness and Probability
Module 8: Discrete Random Variables	Chapter 6: Random Variables and Probability Models
Module 9: Continuous Random Variables	Chapter 7: The Normal and Other Continuous Distributions: Section 7.6
Module 10: Normal and Binomial Distributions	Chapter 6: Random Variables and Probability Models: Section 6.4. Chapter 7: The Normal and Other Continuous Distribution
Module 11: Sampling Distributions and Confidence Intervals (CI)	Chapter 11: Confidence Intervals for Means
Module 12: Hypothesis Tests (HT) for Population Mean (σ known)	Chapter 12: Hypothesis Testing Chapter 13: More About Tests and Intervals
Module 13: T-distribution	Chapter 11: Confidence Intervals for Means: Section 11.4
Module 14: CI and HT for the Population Proportion	Chapter 10: Sampling Distributions and Confidence Intervals for Proportions

Recitation Assignments and Recitation Sessions

- ✓ Attendance and Participation are REQUIRED in recitation and is worth 5 percent of your final grade. If you have an online recitation your video must be on the entire time. Leaving early or coming late causes you to miss the point for the day. Not participating can cause the same thing. We do drop 3 recitation attendance grades but we DO NOT make up missed recitations, nor do we excuse them. Save your drops for when you absolutely need them.
- ✓ Two recitation assignments are due each week and are due on the following Monday at 11:59pm, submitted online. DUE TO MLK HOLIDAY THE FIRST RECITATIONS Rec 1a and Rec 1b

are due on TUESDAY Jan 17 instead of Monday. See the MODULES section of Carmen on each topic for recitations pertaining to that topic.

- ✓ You are assigned to 2 recitation sessions per week. We work on the weekly recitation assignments in groups in recitation, as well as highlight the big ideas from lecture and work examples.
- ✓ Late work is not accepted unless there are extenuating long-term circumstances that are documented. The lowest 3 assignments are dropped to cover all work that is not turned in for any other reason.
- ✓ Questions on the assignment will cover material recently covered in lecture.
- ✓ Each recitation assignment will be worth 10 possible points. Most of the time we will grade 5 random problems for 2 points each.
- ✓ Recitation questions will include short answer work as well as MC/TF.
- ✓ Make sure you bring completely filled-in lecture notes before recitation. We do not have time to explain material from scratch and will not be able to do so in recitation.
- ✓ You can also get help in the tutor room or office hours.

Lectures:

- ✓ All lectures are online in video format for all sections (in addition to being in person for the in-person lectures). They are in 15 minute sections.

Homework – Online Quizzes in Carmen:

- ✓ Each week you will complete an online Homework of 20 questions worth 20 points, due the following Monday at 11:59 pm. NOTE DUE TO MLK HOLIDAY THE FIRST ONE IS DUE TUES THE 17th. We drop the lowest HW grade. They 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 get the most learning possible. Solutions will be provided after the due date/time has passed.

Exam Information and Policies:

- **Number of exams.** There will one midterm exam and one final exam. The final exam will contain material after the midterm as well as regression and correlation.
- **Everyone except online lecture AND online recitation:** Exams are in person on paper. No extra materials are to be used on the exam.
- **Online lecture AND online recitation:** Your exams will be online. To monitor you during the exams you will have your phone camera on and it will be logged into zoom, recording you while you take the exam. You will have a different exam from the in-person section.
- **Exam Content and Advice. Exam questions are all multiple choice / true/false and may contain short answer questions.** 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 my exams in the exam review materials module.
- You **MUST HAVE** your Buck-ID available to show the proctor (in person exam) or the camera (online exam) during the exam.

- **No-Question policy during exams.** We are not able to answer questions during the exams. To that end, exam questions are written very clearly, to avoid misunderstanding.
- **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, 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:** If you have a documented class conflict there will be a make up exam scheduled for the same day. More information on this as the exams get closer. If you have an emergency or extended illness (such as Covid) and are going to miss an exam please notify Dr. Rumsey as soon as possible so arrangements can be made. **Please also have documentation (doctor's note, etc.) that says you were too sick to take the exam (not just that you visited the doctor)** Your documentation must be approved prior to your being allowed to take a make-up.
- **No early final exams – no exceptions.** **Plan your schedule in advance, including the purchase of plane tickets, so you leave AFTER our final is over.**

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.
- ✓ **Communicating with any other person or any resource outside of Carmen or your notes on exams is Academic Misconduct.**
- ✓ **Using unauthorized resources, such as Course Hero, or Chegg or any previous semester materials to turn in work is considered Academic Misconduct.**

Make-Up Assignment Policy – Restricted:

- ✓ We do not have make-up recitations 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 recitations, 3 absences from attendance, and 1 HW.
- ✓ **If you are on university business such as a conference, university trip, or if you are an athlete or a member of the military, or if you are celebrating a religious holiday please let your grading TA know prior to your leaving so your make up work can be arranged. Make up work is due on the first recitation you are due back.**
- ✓ If you have an extended illness or extended emergency and this illness causes you to miss more than the allowed number of dropped recitations and/or quizzes, obtain documentation and contact Dr. Rumsey immediately.
- ✓ We cannot add additional dropped assignments. Save the drops for when they are needed!

GRADE COMPONENTS:

Weekly Recitation Assignments all graded on a 10-point scale. We drop the 3 lowest scores. We only do make up work in the event of extended absences (2 weeks or >). No extensions.	15%
Out-of-Class HW: 20 points each, 20 questions, 90 min each. These are done as Quizzes on Carmen. We drop the lowest score; this includes HW missed due to any reason except for extended illness that includes documentation. No extensions.	15%
Attendance AND participation in recitation: We drop 3 lowest scores. Save them for when you are sick or have emergencies! If you are not participating in the in-person groups or online breakout rooms you won't get the point for that day. Your video must be ON in the online breakout rooms.	5%
Midterm: Monday Feb 27 EVENING. TIME likely to be 6:00-7:15pm and will be confirmed soon on this syllabus.	30%
Final Exam: Thursday April 27 EVENING. TIME TO BE DETERMINED (Final contains all the material after the midterm plus regression/correlation) NO EARLY FINALS! NO EXCEPTIONS!	35%

Grades Statement – Important!

We believe strongly that grades are earned, not given. If you need to achieve a certain grade in this course, be careful to complete all assignments, plan appropriate time for studying, come to office hours/tutor room and ask questions, review feedback you receive on graded activities so you can talk to us about any problems you missed, and get help as needed in order to achieve your goal. We hope your grade in the course will be just as important to you on Day 1 as it is at the end of the semester, especially since you will have known the expectations of this course all semester and are in control of deciding what grade to earn. We do not bump grades at the end of the semester, we do not have extra credit and we cannot change grades based on a person's circumstances We may or may not curve the exams depending on how students do. But we do not curve the final total points at the end.

IMPORTANT! Keep track of your grades!!

- ✓ Please check the Carmen website for your recitation and exam scores frequently.
- ✓ If something is wrong or missing notify your TA within one week of when that item was graded by the TA. TAs will grade all recitations within 1 week.
- ✓ We can't address problems regarding prior missing grades at the end of the semester.

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% – 100.00%	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 your specific needs.
- ✓ Students with documented disabilities should also contact the Student Life Disability Services (SLDS) in 098 Baker Hall (phone: 292-3307) to coordinate reasonable accommodations for the course.

- ✓ You MUST BE REGISTERED through SLDS in order to receive accommodations.
- ✓ SLDS forms must be given to the course coordinator (Dr. Rumsey) as early in the semester 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 are 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 TA will not under any circumstances sign paperwork regarding section changes.* E-mail Jean Scott in the Statistics Office (jscott@stat.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 (jscott@stat.osu.edu)