



Syllabus

Stat 1430H

Introduction to Business Statistics - Honors

Spring 2024

4 Credit Hours

Hybrid

Course overview

Instructor

- **Dr Rumsey**
- **Rumsey-johnson.1@osu.edu**
- **614-292-0779**
- **Office Hours on Zoom: T Th 1:40-3**

Note: My preferred method of contact is email.

Course description

Statistics 1430 is a 4 credit, 2 lecture/2 recitation per week 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.

Course expected learning outcomes



By the end of this course, students should successfully be able to:

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.

General education goals and expected learning outcomes

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 this online course works

Mode of delivery

This course is 50% online and 50% in person. The online component consists of two synchronous lectures each week that you are required to participate in by logging in to Carmen Zoom at the scheduled times. The in-person component consists of required recitations that will be held in person two days a week.

Pace of online activities



You should plan to attend and participate in the live, online lectures each week, and then attend the in-person recitations to practice what you learned during the lectures.

Credit hours and work expectations

This is a **4-credit-hour course**. According to Ohio State policy (go.osu.edu/credithours), students should expect around 4 hours per week of time spent on direct instruction (instructor content and Carmen activities, for example) in addition to 8 hours of homework (reading and assignment preparation, for example) to receive a grade of (C) average.

Participation requirements

Because this course has online component, your attendance is based in part on your online activity and participation. The following is a summary of students' expected online participation:

Participating in online activities

Students will attend and participate in the live, online lectures each week to learn the material. Do not expect to learn the material for the first time in the in-person recitation.

Office hours (optional)

My office hours are optional for you to attend.

Course communication guidelines

Working together

It is encouraged that you work together on recitation materials. However the final work you turn in should be your own.



You may work together on HW quizzes, but we strongly encourage you to do them on your own so that you can learn what you know as an individual.

You are NOT allowed to work together on exams.

Protecting and saving your work

We encourage students to compose their work in documents or word processing tools outside of Carmen where they can ensure their work will be saved. This gives them a backup in case they encounter any issues with browser time-outs, failed submission attempts, or lack of internet connectivity.

Course materials and technologies

Textbooks

Required

- **My Stat Lab** is REQUIRED for Stat 1430h. 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.

Course technology

Technology support

For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the Ohio State IT Service Desk. Standard support hours are available [at it.osu.edu/help](https://it.osu.edu/help), and support for urgent issues is available 24/7.



- **Self-Service and Chat support:** it.osu.edu/help
- **Phone:** 614-688-4357(HELP)
- **Email:** 8help@osu.edu
- **TDD:** 614-688-8743

Technology skills needed for this course

- **Basic computer and web-browsing skills**
- **Navigating Carmen** (go.osu.edu/canvasstudent)
- **CarmenZoom virtual meetings for lecturer office hours** (go.osu.edu/zoom-meetings)

Required Equipment

- **Calculators are required on the exams if you don't want to do hand-calculations. INSPIRE BRAND CALCULAORS (or equivalent) ARE NOT ALLOWED.**
- **Computer:** current Mac (MacOs) or PC (Windows 10) with high-speed internet connection
- **Webcam:** built-in or external webcam, fully installed and tested
- **Microphone:** built-in laptop or tablet mic or external microphone
- **Other:** a mobile device (smartphone or tablet) to use for BuckeyePass authentication

Required software

- **Microsoft Office 365:** All Ohio State students are now eligible for free Microsoft Office 365. Full instructions for downloading and installation can be found at go.osu.edu/office365help.
- **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.

Carmen Access

You will need to use BuckeyePass (buckeyepass.osu.edu) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps:

- Register multiple devices in case something happens to your primary device. Visit the BuckeyePass
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click **Enter a Passcode** and then click the **Text me new codes** button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Download the Duo Mobile application to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357(HELP) and IT support staff will work out a solution with you.

Grading and instructor response

How your grade is calculated

Assignment Category	Points and/or Percentage
Weekly Recitation Assignments	15%



Assignment Category	Points and/or Percentage
Out-of-Class HW	15%
Final Project	5%
Midterm	30%
Final Exam	35%
Total	100%

Description of major course assignments

Assignment #1 RECITATION ASSIGNMENTS

- **Description**
- Recitation assignments are a series of MCTF and Short Answer problems to work on in groups during recitation, finish out of class on your own or with a partner, and turn in online.
- All graded on a 10-point scale. We drop the 2 lowest scores. We only do make up work in the event of extended absences (2 weeks or >). No extensions.
- **Academic integrity and collaboration guidelines**

You may work together on these assignments but the final work you turn in must be your own.



No one may use previous course materials, or resources like Chegg, Course Hero, or CHAT GPT to do their work. This is considered academic misconduct.

Assignment #2 HOMEWORK

- **Description**
- **HW is done as a quiz on Carmen. 20 points each, 20 questions. We drop the lowest 2 scores; this includes HW missed due to any reason except for extended illness that includes documentation. No extensions.**
- **Academic integrity and collaboration guidelines**

You may work with others on the HW but we strongly encourage you to do it on your own so you can be more prepared for the exam.

No one may use previous course materials, or resources like Chegg, Course Hero, or CHAT GPT to do their work. This is considered academic misconduct.

Assignment #3 Final Project

Final project is done in assigned groups. The goal is to convince a group of “meeting planners” why your airline is the best airline for the next Joint Statistical Meetings, held by the American Statistical Association. Final project includes a 2-3 minute video or in-person talk, a set of powerpoint slides, a brochure made for your airline, and a page showing your sources.

Assignment #4 MIDTERM EXAM

- **Description**



The midterm is a multiple choice/true false assessment that covers all topics from the first day through conditional probability.

- **Academic integrity and collaboration guidelines**

No one is allowed to work together on exams or use any other materials than the formula sheet which is provided on the exam by us.

Assignment #5 FINAL EXAM

- **Description**

The final is a multiple choice/true false assessment that covers all topics from discrete random variables through the end of the course, PLUS regression and correlation from the midterm.

- **Academic integrity and collaboration guidelines**

No one is allowed to work together on exams or use any other materials than the formula sheet which is provided on the exam by us.

Late assignments

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 2 recitations and 2 HWs.



- ✓ 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!

Grading Scale

- **93-100: A**
- **90-92: A-**
- **87-89: B+**
- **83-86: B**
- **80-82: B-**
- **77-79: C+**
- **73-76: C**
- **70-72: C-**
- **67-69: D+**
- **60-66: D**
- **Under 60: E**

Instructor feedback and response time

Grading and feedback

All work turned in for recitation or exams will be graded within a week. You have a week to contest a grade on any recitation assignment or exam. The homeworks are auto graded by Carmen instantly. Grades will be released within a week.



Preferred contact method

I answer email very quickly; within 24 hours at the most.

Academic policies

Academic integrity policy

See **Descriptions of major course assignments**, above, for my specific guidelines about collaboration and academic integrity in the context of this online class.

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct: <http://studentlife.osu.edu/csc/>.

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the university’s Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:



- **Committee on Academic Misconduct web page**
(go.osu.edu/coam)
- **Ten Suggestions for Preserving Academic Integrity**
(go.osu.edu/ten-suggestions)

Copyright for instructional materials

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Statement on title IX

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at <http://titleix.osu.edu> or by contacting the Ohio State Title IX Coordinator at titleix@osu.edu

Commitment to a diverse and inclusive learning environment

The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential. Discrimination against any individual based upon protected status, which is



defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.

Land acknowledgement

We would like to acknowledge the land that The Ohio State University occupies is the ancestral and contemporary territory of the Shawnee, Potawatomi, Delaware, Miami, Peoria, Seneca, Wyandotte, Ojibwe and Cherokee peoples. Specifically, the university resides on land ceded in the 1795 Treaty of Greeneville and the forced removal of tribes through the Indian Removal Act of 1830. I/We want to honor the resiliency of these tribal nations and recognize the historical contexts that has and continues to affect the Indigenous peoples of this land.

More information on OSU's land acknowledgement can be found here:
<https://mcc.osu.edu/about-us/land-acknowledgement>

Your mental health

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 are 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 and 24 hour emergency help is also available 24/7 by dialing 988 to reach the Suicide and Crisis Lifeline.



Accessibility accommodations for students with disabilities

Requesting accommodations

The university strives to maintain a healthy and accessible environment to support student learning in and out of the classroom. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion.

If you are isolating while waiting for a COVID-19 test result, please let me know immediately. Those testing positive for COVID-19 should refer to the [Safe and Healthy Buckeyes site](#) for resources. Beyond five days of the required COVID-19 isolation period, I may rely on Student Life Disability Services to establish further reasonable



accommodations. You can connect with them at slds@osu.edu; 614-292-3307; or slds.osu.edu.

Religious accommodations

It is Ohio State's policy to reasonably accommodate the sincerely held religious beliefs and practices of all students. The policy permits a student to be absent for up to three days each academic semester for reasons of faith or religious or spiritual belief.

Students planning to use religious beliefs or practices accommodations for course requirements must inform the instructor in writing no later than 14 days after the course begins. The instructor is then responsible for scheduling an alternative time and date for the course requirement, which may be before or after the original time and date of the course requirement. These alternative accommodations will remain confidential. It is the student's responsibility to ensure that all course assignments are completed.

Course Schedule

Refer to our Carmen course page for up-to-date assignment due dates.

Week	Date	Topics/Readings/Assignments	Assessments Due
1		*Readings are OPTIONAL throughout	
	1/8/24-1/12/24	Module 1: Data Collection: Surveys and Experiments Read:	-----



Week	Date	Topics/Readings/Assignments	Assessments Due
		Chapter 1: Data and Decisions Chapter 8: Data Sources: Observational Studies and Surveys Chapter 9: Data Sources: Experiments	
2	1/15/24- 1/19/24	Module 2: Organizing data with graphs and descriptive statistics Read: Chapter 2: Visualizing and Describing Categorical Data Chapter 3: Describing, Displaying, and Visualizing Quantitative Data	Rec 1 and HW 1 due Tues 11:59pm
3	1/22/24- 1/26/24	Module 3: Correlation and Regression Read Chapter 4: Correlation and Regression	Rec 2 and HW 2 due Tues 11:59pm
4	1/29/24- 2/2/24	Module 4: Correlation and Linear Regression with Stat Crunch	Rec 3 and HW 3 due Tues 11:59pm



Week	Date	Topics/Readings/Assignments	Assessments Due
5	2/5/24- 2/9/24	Module 5: Probability and Two Way tables Read Ch 5: Section 5.5 - 5.7: Randomness and Probability	Rec 4 and HW 4 due Tues 11:59pm
6	2/12/24- 2/16/24	Module 6: Probability Rules Read Chapter 5: Randomness and Probability	Rec 5 and HW 5 due Tues 11:59pm
7	2/19/24- 2/23/24	Module 7: Conditional Probability Read: Chapter 5: Section 5.8 - 5.9: Randomness and Probability	Rec 6 and HW 6 due Tues 11:59pm
8	2/26/24- 3/1/24	Midterm in Recitation (through week 7) Module 8: Discrete Random Variables	*****Rec 7 and HW 7 due SUNDAY APRIL 25 11:59pm*****



Week	Date	Topics/Readings/Assignments	Assessments Due
		Read Chapter 6: Random Variables and Probability Models	
9	3/4/24- 3/8/24	Module 9: Continuous Random Variables Chapter 7: The Normal and Other Continuous Distributions: Section 7.6	Rec 8 and HW 8 due Tues 11:59pm
	3/11/24- 3/15/24	SPRING BREAK	-----
10	3/18/24- 3/22/24	Module 10: Normal and Binomial Distributions Read: Chapter 7: The Normal and Other Continuous Distribution	Rec 9 and HW 9 due Tues 11:59pm



Week	Date	Topics/Readings/Assignments	Assessments Due
11	3/25/24- 3/29/24	Module 11: Sampling Distributions and Confidence Intervals Read: Chapter 11: Confidence Intervals for Means	Rec 10 and HW 10 due Tues 11:59pm
12	4/1/24- 4/5/24	Module 12: Hypothesis Tests for Population Mean Read: Chapter 13: More About Tests and Intervals	Rec 11 and HW 11 due Tues 11:59pm
13	4/8/24- 4/12/24	Module 13: T-Distribution Read: Chapter 11: Confidence Intervals for Means: Section 11.4	Rec 12 and HW 12 due Tues 11:59pm



Week	Date	Topics/Readings/Assignments	Assessments Due
14	4/15/24- 4/19/24	Module 14: Confidence Intervals and H Tests for Proportions Read: Chapter 10: Sampling Distributions and Confidence Intervals for Proportions	Rec 13 and HW 13 due Tues 11:59pm
15	4/22/24 Last day of classes	Final Exam Review	Rec 14 and HW 14 due Tues 11:59pm
Finals	Fri April 26, 12:00pm – 1:45 pm	Covers discrete random variables through to the end of the semester, PLUS regression and correlation from the midterm.	Final Exam