Term Information

Effective Term	Autumn 2020
Previous Value	*Autumn 2018*

Course Change Information

What change is being proposed? (If more than one, what changes are being proposed?)

Change of math prerequisite. Change of Grade Roster Component. Move to allowing full online offering -- the course is already approved as a hybrid course.

What is the rationale for the proposed change(s)?

Change of math prerequisite. Change of Grade Roster Component. Move to allowing full online offering -- the course is already approved as a hybrid course.

What are the programmatic implications of the proposed change(s)?

(e.g. program requirements to be added or removed, changes to be made in available resources, effect on other programs that use the course)?

None

Is approval of the requrest contingent upon the approval of other course or curricular program request? No

Is this a request to withdraw the course? No

General Information

Course Bulletin Listing/Subject Area	Statistics
Fiscal Unit/Academic Org	Statistics - D0694
College/Academic Group	Arts and Sciences
Level/Career	Undergraduate
Course Number/Catalog	1430.02
Course Title	Statistics for the Business Sciences
Transcript Abbreviation	Stat Business Sci
Course Description	Fundamentals of probability and statistics: Data collection and summaries, random variables, simple linear regression, two-way tables, conditional probability, sampling distributions, confidence intervals, hypothesis tests, analysis of variance. Partly or fully offered online.
Previous Value	*Fundamentals of probability and statistics: Data collection and summaries, random variables, simple linear regression, two-way tables, conditional probability, sampling distributions, confidence intervals, hypothesis tests, analysis of variance. On-line recitation.*
Semester Credit Hours/Units	Fixed: 4

Offering Information

Length Of Course	14 Week, 12 Week, 8 Week, 7 Week, 6 Week
Flexibly Scheduled Course	Never
Does any section of this course have a distance education component?	Yes
Is any section of the course offered	100% at a distance Less than 50% at a distance
Previous Value	*Yes, Less than 50% at a distance*
Grading Basis	Letter Grade
Repeatable	No
Course Components	Recitation, Lecture
Grade Roster Component	Recitation
Previous Value	*Lecture*

Credit Available by Exam	No
Admission Condition Course	No
Off Campus	Never
Campus of Offering	Columbus

Prerequisites and Exclusions

Prerequisites/Corequisites	Prereq: Math 1131, 1141, 1151, 1156, 1161.xx, or 1181H, or permission of instructor.
Previous Value	*Prereq: Math 1131, 1151, 1156, 1161.xx, or 1181H, or permission of instructor.*
Exclusions	Not open to students with credit for 1430, 1430.01, or BusMgt 2320.
Electronically Enforced	Yes

Cross-Listings

Cross-Listings

Subject/CIP Code

Subject/CIP Code	52.1302
Subsidy Level	Baccalaureate Course
Intended Rank	Freshman, Sophomore, Junior, Senior

Requirement/Elective Designation

General Education course:
 Data Analysis
The course is an elective (for this or other units) or is a service course for other units

Course Details

Course goals or learning objectives/outcomes	• Understand basic concepts of statistics and probability.
	• Comprehend methods needed to analyze data and critically evaluate statistical arguments.
	• Recognize the importance of statistical ideas.
Content Topic List	• Data collection and summaries
	• Discrete and continuous random variables
	• Simple linear regression
	• Relations in categorical data
	• Sampling distributions
	• Confidence intervals
	• Hypothesis tests
	• Analysis of variance
Sought Concurrence	No

Attachments

- ASC-Columbus-STATISTICS-1430.02-Syllabus.docx

  (Syllabus. Owner: Craigmile,Peter F)

- Statistics 1430.02 GE justification.doc

  (GEC Course Assessment Plan. Owner: Craigmile,Peter F)

- DL Stats 1430.02.docx: DL checklist

  (Other Supporting Documentation. Owner: Craigmile,Peter F)

Comments

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Craigmile,Peter F	06/08/2020 03:47 PM	Submitted for Approval
Approved	Craigmile,Peter F	06/08/2020 03:48 PM	Unit Approval
Approved	Haddad,Deborah Moore	06/08/2020 06:21 PM	College Approval
Pending Approval	Jenkins,Mary Ellen Bigler Hanlin,Deborah Kay Oldroyd,Shelby Quinn Vankeerbergen,Bernadette Chantal	06/08/2020 06:21 PM	ASCCAO Approval

THE OHIO STATE UNIVERSITY

SYLLABUS:
STAT 1430.02: STATISTICS FOR THE BUSINESS SCIENCES

Course overview

Instructors

Dr. Deborah Rumsey, Department of Statistics

Office hours: Days and times TBD, or by appointment. Office hours will be held on CarmenZoom (https://osu.zoom.us)

Teaching Assistants

To be determined

Course description

Statistics 1430.02 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.Course learning outcomes

General Education (GE) Requirement: This course satisfies the GE requirement in Data Analysis.

Expected Learning Outcomes: Upon successful completion of this course, students understand basic concepts of statistics and probability, comprehend methods needed to analyze and critically evaluate statistical arguments, and recognize the importance of statistical ideas.

Course materials

- Textbook: Business Statistics - A Decision Making Approach, by Groebner, Shannon, and Fry, 10th edition. (Available as an e-book with the MyStatLab package, see below.)

- MyStatLab is a required software for Stat 1430.02 (see below, under Technology). It contains a good electronic textbook to use to follow along if you like to have a textbook to accompany your notes. Note: MyStatLab AND ITS ELECTRONIC TEXTBOOK ARE REQUIRED FOR BM2320, WHICH FOLLOWS THIS CLASS. You can buy now, and use them for both courses. This is the least expensive option for getting the book.
- Privacy rights for MyStatLab are given at the following link: https://pi.pearsoned.com/v1/piapi/policies/static/html/NA/PearsonPrivacyPolicy_en_US.html?cc=US&lang=en_US
- Accessibility Information for MyStatLab is provided at the following link: https://www.pearsonmylabandmastering.com/northamerica/mystatlab/accessibility/index.html

100% Online Course Delivery

Lecture: Two times a week, one or more lecture videos will be posted on the course website. You are responsible for watching the videos and studying the material that is assigned each week. In addition to the lecture videos, weekly recitation assignments and homework will be posted on the class website. You will be given ample time to complete the assignments, and you will be allowed to use your lecture notes, your textbook, and the material on Carmen.

The instructor may elect to deliver live Zoom lectures in place of videos for certain topics. In this case, the lecture will be recorded and posted on the class website soon after.

Office Hours: the instructor will hold weekly office hours via Zoom. The dates and times will be announced later and posted on the Carmen website. The TAs for this class will also initiate and manage active discussion boards, also via Carmen.

Tutor Room: Virtual office hours in the virtual tutor room will be offered through the MSLC (Mathematics and Statistics Learning Center) during most of the week by a group of TAs.

Recitation: You are assigned to a recitation section. Each week, two recitation activities will be posted on Carmen, one pertaining to each lecture. They will be accompanied by live Zoom interactions, tutorial videos, worked out examples or other educational materials.

The vast majority of the course can be completed **asynchronously,** meaning that you will be able to study materials and work on assessments according to your own schedule. Regularly, live Zoom meetings will take place. The dates and times of these, will be announced later, see the **Staff Response** section below. These live Zoom meetings will be recorded for later reference.

Assessment

Homework: In addition to the weekly recitations, there will be one weekly online homework assignment posted each week on Carmen. Due dates and times will be provided as needed.

Exams: There will be one midterm exam and one final exam. **All exams will be delivered remotely, via Carmen**. The final exam will take place at the time and date established by the University. Information regarding the exams will be posted well in advance through the course website. ***Proctorio* will be used during the exams, which requires you to use a computer with a webcam and microphone**. The exams will be mainly multiple choice/true false with possibly some short answer questions that will be submitted online.

Weekly Recitation assignments: Each week, recitation assignments will be posted on Carmen. Typically, these will be due at the end of the week and will count towards your final grade. Recitation assignments will count for 25% of your grade, homework will count for 25% of the final grade, the midterm exam will count for 25% of the grade and the final exam will count for 25% of the final grade.

Course schedule

The following is a tentative weekly list of topics which will be covered during this course:

Week	Dates	Topic
1-2	Aug 25-28 Aug 31-Sept 4	Data collection, organizing data, graphs, descriptive statistics
3	Sept 7-11	Correlation and Regression.
4-5	Sept 14-18 Sept 21-25	Probability rules, conditional probability, independence
6-7	Sept 28-Oct 2 Oct 5-9	Discrete random variables: Binomial distribution.
8-9	Oct 12-16 Oct 19-23	Continuous random variables: normal distribution.
10-11	Oct 26-30 Nov 2-6	**MIDTERM EXAM WED OCT 28 10:00-12:00 EST (EASTERN STANDARD TIME)** **Midterm Covers everything through normal distribution.** New Material for Final: Sampling distribution of the sample mean. Confidence intervals for the population mean.
12	Nov 9-13	Hypothesis testing for the population mean. Type I and II errors.
13-14	Nov 16-20 Nov 23-25	The t-distribution, Confidence intervals and hypothesis testing with unknown variance.
15	Nov 30-Dec 4	Confidence intervals and hypothesis test for the population proportion.
Final	**Tues Dec 8 10am-12pm EST (Eastern Standard Time)**	**Everything from Normal distribution to the end, plus correlation and regression from midterm material.**

Course technology

For help with your password, university e-mail, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at https://ocio.osu.edu/help, and support for urgent issues is available 24x7.

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

Baseline technical skills necessary for online courses

- Basic computer and web-browsing skills
- Navigating Carmen; the following website may help you if you encounter difficulties with Carmen: https://resourcecenter.odee.osu.edu/canvas/ .

Necessary equipment

- Computer: current Mac (macOS) or PC (Windows 8+) with a high-speed internet connection, a **web cam with a microphone for exams**, and an up-to-date browser. A number of publicly available computers are available on campus, here is a link for their locations https://odee.osu.edu/public-computing .
- CarmenZoom text, audio, and video chat. If you need technical assistance, either call 614-688-HELP, or refer to the online instructions: https://resourcecenter.odee.osu.edu/carmenzoom
- Calculators are required during the recitations and exams. You are not allowed to use your phone as a calculator during recitation or exams.
- INSPIRE BRAND CALCULATORS (or equivalent) ARE NOT ALLOWED.
- Necessary data sets can be accessed via the STAT 1430.02 Carmen Website.
- Computer Software: StatCrunch. This software is required and comes as a part of My Stat Lab. You will need it for recitations and possibly homework.

Staff response

Staff feedback and response time

We are providing the following list to give you an idea of our intended availability throughout the course. (Remember that you can call **614-688-HELP** at any time if you have a technical problem.)

Canvas Conversations

A course instructor or teaching assistant will reply to messages sent via Canvas Conversations within **24 hours on school days (Monday – Friday, excluding university holidays; list of holidays at** http://registrar.osu.edu/staff/bigcal.asp**).**

Discussion board

We will check and reply to messages in the discussion boards as appropriate every **24 hours on school days**.

Live Zoom office hours.

Each week, there will be live Zoom office hours. The dates and times of these will be communicated clearly and well in advance. An announcement will also be posted on the class website.

Live Virtual Tutor Room.

For a certain number of hours per day M-F, TAs will be available in a virtual tutor room through the Mathematics and Statistics Center. (www.mslc.osu.edu)

If you have questions about the Mastery Assessments (Quizzes, Exams, etc.) or notice any typos in the material, please message us directly via Canvas Conversations – please do not use the Discussion board.

Attendance, participation, and discussions

Communication guidelines

The following are our expectations for how we should communicate. Above all, please remember to be respectful and thoughtful.

- **Writing style**: While there is no need to communicate as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. Informality (including an occasional emoticon) is fine for non-academic topics.

- **Tone and civility**: Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online.
- **Backing up your work**: Consider composing your academic posts in a word processor, where you can save your work, and then copying into the Carmen discussion.

Other course policies

Academic integrity policy

Policies for this online course

- **Assessments**: You must complete the exams and online homework yourself, without any external help or communication. You may use your lecture notes and Carmen materials only.
- **Recitation activities** can be completed in a "group setting" by collaborating with other students in the class. Help from sources outside of this class is not allowed (such as Course Hero).
- **Exams** will use *Proctorio* as a proctoring tool. This will require a computer with a webcam and microphone.

Ohio State's academic integrity policy

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's *Code of Student Conduct*, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the University, or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University's *Code of Student Conduct* is never considered an "excuse" for academic misconduct, so we recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If we suspect that a student has committed academic misconduct in this course, we are 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:

- The Committee on Academic Misconduct web pages (http://oaa.osu.edu/coam.html)
- *Ten Suggestions for Preserving Academic Integrity (*https://oaa.osu.edu/coamtensuggestions.html*)*
- *Eight Cardinal Rules of Academic Integrity (*http://www.northwestern.edu/uacc/8cards.htm*)*

Student Services Offered on OSU Main Campus

- Student academic services offered on the OSU main campus. http://advising.osu.edu/welcome.shtml
- Student services offered on the OSU main campus. http://ssc.osu.edu.

Copyright disclaimer

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, Kellie Brennan, at titleix@osu.edu

Accessibility accommodations for students with disabilities

Requesting accommodations

If you would like to request academic accommodations based on the impact of a disability qualified under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, contact your instructor privately as soon as possible to discuss your specific needs. Discussions are confidential.

In addition to contacting the instructor, please contact the Student Life Disability Services at 614-292-3307 or ods@osu.edu to register for services and/or to coordinate any accommodations you might need in your courses at The Ohio State University.

Go to http://ods.osu.edu for more information.

Accessibility of course technology

This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- Carmen (Canvas) accessibility (https://community.canvaslms.com/docs/DOC-2061)
- Streaming audio and video

Accommodations

Students with disabilities (including mental health, chronic or temporary medical conditions) that have been certified by the Office of Student Life Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office of Student Life Disability Services is located in 098 Baker Hall, 113 W. 12th Avenue; telephone 614- 292-3307, slds@osu.edu.

STAT 1430 SP 20: STATISTICS FOR THE BUSINESS SCIENCES

Lecturers – Any of them can help you with statistics questions no matter which lecture you're in

Dr. Rumsey: Course Coordinator, 8:00 MW lecturer and 12:45 T Th lecturer
   Office hours: **Monday and Wednesday 10:15-11:15 Cockins Hall 227**, or by appointment
   Contact: <u>rumsey-johnson.1@osu.edu</u>

If not Dr. Rumsey, your lecturer is:_____ Office Hours: _____ Contact Info: _____

My Lead TA's name is _____. Their email address is: _____

NOTE: Lines of communication: We have more than 800 students in the class and we need to follow a certain line of communication in order to function efficiently and get you the help you need. All correspondence must be using your OSU name.# address, otherwise we cannot respond. Thanks for your cooperation!

1. For any questions regarding recitation or anything relating to your graded work contact your TA first. Your TA will give you their contact information during recitation. (Their name is also on your course schedule on BuckeyeLink; use "OSU Find People" or the Statistics Department website to find their contact information if you need it.)

2. **ONLINE RECITATION STUDENTS**: Under "Discussions" in Carmen is a way for you to ask TAs questions about the upcoming assignments. For in-class recitations, use recitation to ask TAs questions.

3. **For a place to ask specific statistical questions, get extra help on certain topics, or for a quiet place to study, visit the <u>Statistics Help Room</u> in Cockins Hall, room 132. The Stat Help Room is open throughout the week, is free, and is always staffed by TAs. The Stat Help Room is open from 9:10 AM to 6:20 PM on Mondays through Thursdays and 9:10 AM to 1:40 PM on Fridays.**

4. For **technical help** with Carmen regarding the Carmen Homework, contact **Joel Bracken** at <u>bracken.52@osu.edu</u>

5. For statistical help, you may visit ANY of the lecturers during their posted office hours above.

6. If you have a personal issue that is confidential, requires special attention by the university, an unresolved issue, or would like a private discussion regarding your grade in the class, etc., contact Dr. Rumsey, the course coordinator at <u>rumsey-johnson.1@osu.edu</u>.

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.

<u>This is a GEC course for Data Analysis. The expected overall learning outcomes are:</u>
Students understand basic concepts of statistics and probability, comprehend methods needed to analyze and critically evaluate statistical arguments, and recognize the importance of statistical ideas.

Textbook
- **My Stat Lab** is REQUIRED for Stat 1430. It contains a good electronic textbook to use to follow along if you like to have a textbook to accompany your notes. Note MY STAT LAB AND ITS ELECTRONIC

TEXTBOOK ARE REQUIRED FOR BM2320, WHICH FOLLOWS THIS CLASS. So you can buy now, and use them for both courses. This is the least expensive option for getting the book. **The instructions for purchase are under the COURSE INFORMATION MODULE of Carmen.**

Technology
- Calculators are required on the exams if you don't want to do hand-calculations. You are not allowed to use your phone as a calculator during recitation or exams.
- **INSPIRE BRAND CALCULAORS (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.**

Stat 1430 Carmen Website: Please check the course website frequently as new announcements and information are added all the time. You are responsible for all the information on Carmen.

Here is some of the material that will be posted on Carmen:
- Course announcements, schedule, and other course information
- Announcements/changes/updates in the course – CHECK ANNOUNCEMENTS PAGE!!
- Lecture outlines for every lecture. Please print and bring them to lecture.
- Step by step instructions for analyzing data in Excel 2016
- All recitation materials; solutions posted as we go along.
- Solutions for certain course materials.
- Exam review materials

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.

- **Exam Content.** Exam questions are multiple choice / true/false, and short answer/work it out problems with interpretation. The amount of weight placed on the MC/TF vs the Short answer varies! Computer output could appear on exams and you will be expected to use the output to answer various questions. The main priority is to have a full set of lecture notes and study them very closely. Also, be sure to work as many problems as you can from the resources available on Carmen (including all recitation activities and past exams.) Read the information on how to study for my exams in the exam review materials module.

- **Exam materials.** No review/cheat sheets or any other outside materials are allowed on exams. We provide a copy of the Stat 1430 formula sheet attached to each exam. The formula sheet is posted on the Carmen website under the COURSE INFORMATION Module. The same formula sheet will be used on both exams in this class. Statistical tables from the text will also be provided on exams as needed; they are also on Carmen.

- You **MUST BRING** your Buck-ID, pencils (no pens please), and a scientific calculator (any type except one that can connect to the Internet) to each exam. **You will lose 5 points if you do not have a calculator or ID.**

- **Question policy during exams.** We are not able to answer questions during the exams. Questions during exams cause distraction for others. It can also create a situation where one student can get an unfair edge over the other students by asking certain questions in certain ways. **To that end, exam questions are written very clearly, to avoid misunderstanding.** Every attempt is made to avoid errors. However, **if you believe there is an error** on the exam, write a note to us on 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, you will receive a penalty of 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 an emergency 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.) as to why you missed the exam. Your documentation must be approved prior to your being allowed to take a make-up.

- <u>**No early final exams – no exceptions.**</u> **Plan your schedule in advance, including the purchase of plane tickets, so you leave AFTER our final is over.**

Midterm regrade requests: If you would like us to reconsider how we graded a problem on your exam, you may submit a regrade request within one week of when the exams were returned to students in recitation. We have a formal process that must be followed in order for us to consider a regrade request:

1. Check the solutions to the exam and compare to your exam and how it was graded. We will not regrade problems that were graded in accordance with the solutions.
2. If you still have a question, use a separate sheet of paper and write down which problem(s) you want to be regraded and why. Also include your recitation day/time and your TA's name on this sheet of paper. <u>**Do not write anything on your exam.**</u>
3. <u>**Your reason has to be very brief-no more than a few words. In fairness to all students, problems will be regraded based on what was originally written on the exam, not what is written on your regrade request. Long, drawn out arguments will NOT be considered.**</u>
4. Show your request to your TA. They will advise you regarding your request. They know how the problems were graded and what we were expecting.
5. If you still want to send in a regrade request, attach your request to your exam and turn it in to your TA within one week after exams were returned to students in recitation.
6. Once the deadline passes decisions will be made all at once. Decisions are final. No requests will be considered once the deadline passes.
7. If you submit several questions for regrades, we reserve the right to regrade your entire exam. Do not request regrades for every point missed.
8. Regrade requests submitted after the deadline will not be considered. The deadline for regrades is always one week after the exams were returned in recitation.

Recitation Assignments for those with IN-CLASS RECITATIONS (NOT ONLINE)

- ✓ One recitation assignment is due at the end of each recitation, submitted on paper in class. Late work is not accepted. Online work is not accepted. <u>**Attendance at recitation is required in order for your work to be accepted.**</u> The lowest 3 assignments are dropped.
- ✓ For in-class recitation, each day you will work through a series of problems with a partner. Partners change every few weeks. The assignments are due at the end of the period on paper.
- ✓ In-class recitations: write the names of you and your partner on top of the assignment.
- ✓ 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.

In-class Recitation Students

1. We are not always in a computer lab for recitation but we are using computers, so we encourage you to bring your iPads/Laptops to recitation if you feel comfortable doing so if your recitation is not in the EA building. We have a **virtual desktop** that you can log into to have access to Excel, Carmen/Canvas, and the Internet if your device does not have those. See Carmen/Course Information for instructions.
2. **Make sure you bring completely filled-in lecture notes and go over them beforehand.** We do not have time to explain material from scratch and will not be able to do so in recitation.
   a. Laptop is ok for your notes; your cell phone is not.

      b.   You cannot bring or take photos or copies of other people's lecture notes or any solutions to problems on any assignment – <u>that is considered academic misconduct.</u>
      c.   Do not bring in partially filled-in lecture notes.

3. **Participate, work hard, and stay on task.** We expect you to contribute equally to your group and not be creating a distraction by surfing the internet, checking your phone, emailing, etc.
4. **No cell phone use allowed. We will take off 5 points if we see your cell phone out or in use.**
5. <u>**We reserve the right to take off 5 of your recitation points if you do not have your lecture notes, if you are being distracted/distracting, if you come late, if you leave early, or if you are not participating with your partner.**</u>

Recitation Assignments for those with ONLINE-RECITATIONS (NOT IN-CLASS)

1. Two recitation assignments are due each week, submitted online within each module. Late work is not accepted. The lowest 3 assignments are dropped.
2. **Both the assignments will be due each Friday at 11:59 pm unless otherwise stated.**
3. Each recitation assignment will be worth 10 possible points. Most of the time we will grade 5 random problems for 2 points each.
4. You will have a discussion group on Carmen where you can post your questions since you do not come in for an in-class recitation. We have 2 TAs monitoring the discussion groups. Ask any questions that you have. If you have any problems with the discussion groups contact **Nate Onnen at onnen.2@osu.edu**
5. You can also get help in the tutor room, which is open all week (Cockins 132), and/or visit your lecture during office hours or make an appointment.
6. <u>**You are welcome to work with others but your submitted assignment must be your own in your own words, otherwise it will be treated as academic misconduct.**</u>
7. **Check the weekly online recitation announcements for important information about things like the recitation assignments or the upcoming exam.**

Additional Homework – Online Quizzes in Carmen:

✓ Throughout the semester you will be given additional out-of-class Homework worth 10 points each. We drop the lowest HW grade. <u>They will appear as quizzes on Carmen.</u> You will have one hour from when you open the quiz to complete it. 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.

Academic Misconduct:

✓ Academic misconduct **will not be tolerated** and will be dealt with procedurally in accordance with University Rule 3335-31-02. (This policy can be found at http://oaa.osu.edu/procedures/1.0.html.)
✓ Academic Misconduct can result in receiving an E in the class, one full grade lower in the class, and/or academic probation.
✓ **Using unauthorized course resources, such as Course Hero, 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. We cannot have make-up recitations for every person who is ill or had to miss recitation. However, to cover these situations, we do drop 3 recitations and 1 homework assignment (See grade components section of the syllabus.)
✓ **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, or suffer a death in your <u>immediate family</u>, we will accommodate you in providing make up work. Please let your 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. Notification and documentation <u>at the time of illness or within a week of returning</u> will be required. If you will be absent on university approved business (e.g. athletes) or are observing a religious holiday, please make arrangements with your TA in advance to turn in the work you will be missing.
- ✓ <u>We cannot add additional dropped assignments.</u> Save the dropped recitations for when they are needed!

IMPORTANT! Keep track of your grades!!
- ✓ It is your responsibility to check the Carmen website for your recitation and exam scores.
- ✓ If something is wrong or your score is missing you must notify your TA <u>within one week</u> of when that item was returned to the class.
- ✓ <u>We can't address problems regarding missing grades at the end of the semester. NO EXCEPTIONS.</u>

<u>GRADE COMPONENTS:</u>

Weekly Recitation Assignments all graded on a 10-point scale. We drop the 3 lowest scores. Those on university business must make plans with your TA in advance to turn in missed work, and supply documentation – it's your responsibility to notify us AHEAD OF TIME.	25%
Out-of-Class HW: 10 points each. These are done as Quizzes on Carmen. We will drop the lowest score. This includes HW missed due to any reason except for extended illness and must include documentation.	15%
Midterm **DATE: Monday March 2, 6-7:15 pm, rooms to be announced.**	30%
Final Exam (All the material after the midterm plus regression/correlation) **DATE: Thurs April 23, 8-9:45pm, rooms to be announced** **NO EARLY FINALS! NO EXCEPTIONS!**	30%

Grading Scale:
- ✓ We fully expect final course grades to be assigned based on the grading scale below.
- ✓ We do not curve the class unless there is a major problem (which is rare.) Don't expect a curve!
- ✓ We don't move cutoff s. Many people end up close to cutoffs, but moving cutoffs only creates more people being close to the new cutoffs, etc. **We do not give extra credit.**

		B+	87% – 89%	C+	77% – 79%	D+	67% – 69%
A	93% – 100%	B	83% – 86%	C	73%– 76%	D	60% – 66%
A-	90% – 92%	B-	80% – 82%	C-	70%– 72%	F	below 60.0%

Email Correspondence:
- ✓ All course e-mail correspondence **must** be done through a valid OSU name.number account.
- ✓ **All course emails MUST include the time of your recitation and the name of your TA.**

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.
- ✓ <u>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.</u>

Section Changes, Unpaid Fees: *The instructor and TA will not under any circumstances sign paperwork regarding section changes.* See Jean Scott in the Statistics Office (408A Cockins Hall) for the policy on section changes. If your fees are unpaid, you should not be attending class. Anyone with unpaid fees at the time of the midterm will not be allowed to take the midterm exam. In fact, you will be dropped from the course. However, if there is a valid reason for your fees being unpaid (e.g., financial aid hasn't gone through), submit this in writing (with documentation of the reason) to the course coordinator as soon as possible so that we allow you to take the midterm exam and do not drop you from the course.

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

Course Topics List

Data Collection: Surveys and Experiments
Organizing Data with Graphs
Organizing Data with Descriptive Statistics
Correlation and Regression
Two-way Tables and Independence
Probability Rules
Conditional Probability
Random Variables: Discrete
Random Variables: Continuous
Binomial Distribution
Normal Distribution
Sampling Distribution for the Sample Mean
Confidence Intervals for the Population Mean (sigma known)
T-distribution; CI and HT with sigma unknown
Hypothesis Tests for the Population Mean (sigma known); TYPE I, II errors
Confidence Intervals and Hypothesis Tests for the Population Proportion

Statistics 1430.02 General Education Course Justification

Expected Learning Outcomes Data Analysis: Students understand basic concepts of statistics and probability, comprehend methods needed to analyze and critically evaluate statistical arguments, and recognize the importance of statistical ideas.

Required Coursework Data Analysis: The intent of this category is to enable students to deal with problems of data-gathering, presentation, and interpretation. Students should develop an understanding of problems of measurement, be able to deal critically with numerical and graphical arguments, gain an understanding of the impact of statistical ideas in daily life and specific areas of study, and recognize the uses and misuses of statistics and related quantitative arguments. Courses should include exposure to fundamental ideas of probability, involve the use of computer programs in problems of data analysis, and include opportunities to present data using summary measures and graphical techniques.

1. How do the course objectives address the GE category expected learning outcomes?

The learning objectives for Statistics 1430.02 (outlined below) require a strong understanding of and appreciation for the basic concepts of probability and statistics, methods of data analysis, and the ability to critically evaluate statistical arguments and conclusions:

✓ Creating and interpreting the results of graphical data displays (created using statistical software) including histograms and boxplots, and numerical summaries (created using statistical software), including measures of center, spread, and relative standing; evaluating the quality of graphical displays and numerical summaries appearing in the media.

✓ Understanding the basic design of samples, experiments and surveys, assessing their quality, and critically evaluating the conclusions that are made.

✓ Checking conditions and analyzing data (using statistical software) in a variety of settings; interpreting results; drawing appropriate conclusions and understanding limitations. Methods of data analysis include correlation and scatterplots, simple linear regression, and model fitting assessments such as analysis of residuals.

✓ Understanding the basic rules of probability and methods for calculating marginal and conditional probabilities and distributions for one and two categorical variables, including the use of Bayes' Theorem and the law of total probability; checking for independence of two variables using the appropriate probabilities.

✓ Understanding the notion of sampling distributions and the Central Limit Theorem and calculating simple probabilities for sample means and proportions based on the sampling distributions; understanding and using the techniques of confidence intervals and hypothesis tests to draw statistical inferences.

Expected Learning Outcomes Data Analysis: Students understand basic concepts of statistics and probability, comprehend methods needed to analyze and critically evaluate statistical arguments, and recognize the importance of statistical ideas.

Required Coursework Data Analysis: The intent of this category is to enable students to deal with problems of data-gathering, presentation, and interpretation. Students should develop an understanding of problems of measurement, be able to deal critically with numerical and graphical arguments, gain an understanding of the impact of statistical ideas in daily life and specific areas of study, and recognize the uses and misuses of statistics and related quantitative arguments. Courses should include exposure to fundamental ideas of probability, involve the use of computer programs in problems of data analysis, and include opportunities to present data using summary measures and graphical techniques.

1. How do the course objectives address the GE category expected learning outcomes?

The learning objectives for Statistics 1430 (outlined below) require a strong understanding of and appreciation for the basic concepts of probability and statistics, methods of data analysis, and the ability to critically evaluate statistical arguments and conclusions:

✓ Creating and interpreting the results of graphical data displays (created using statistical software) including histograms and boxplots, and numerical summaries (created using statistical software), including measures of center, spread, and relative standing; evaluating the quality of graphical displays and numerical summaries appearing in the media.

✓ Understanding the basic design of samples, experiments and surveys, assessing their quality, and critically evaluating the conclusions that are made.

✓ Checking conditions and analyzing data (using statistical software) in a variety of settings; interpreting results; drawing appropriate conclusions and understanding limitations. Methods of data analysis include correlation and scatterplots, simple linear regression, and model fitting assessments such as analysis of residuals.

✓ Understanding the basic rules of probability and methods for calculating marginal and conditional probabilities and distributions for one and two categorical variables, including the use of Bayes' Theorem and the law of total probability; checking for independence of two variables using the appropriate probabilities.

✓ Understanding the notion of sampling distributions and the Central Limit Theorem and calculating simple probabilities for sample means and proportions based on the sampling distributions; understanding and using the techniques of confidence intervals and hypothesis tests to draw statistical inferences.

2. How do the readings assigned address the GE\ category expected learning outcomes?

Readings are from the textbook for Stat 1430 cover all the topics listed in the course. See the discussion in the next item regarding how these topics will address the GE category expected learning outcomes.

3. How do the topics address the GE category expected learning outcomes?

Course topics in Stat 1430 include probability (thus introducing students to basic concepts in probability); sampling distributions and statistical inference (thus introducing students to basic concepts in statistics); graphical and numerical summaries of data, design of experiments and sampling designs, and statistical inference (thus helping students critically evaluate statistical arguments); and one- and two-sample procedures for confidence intervals and hypothesis tests (thus providing students with tools to analyze data).

4. How do the written assignments address the GE category expected learning outcomes?

1. The written assignments for Stat 1430 are in the form of individual homework and group activities in recitation and include problems on material from all the course topics.

2. Homework and recitation activities engage students in 1) conducting summaries and analyses of data, making interpretations of the statistical results, and discussing the conclusions from the results within the context of the problem (that is, in "plain" English); 2) evaluation and critique of graphical and numerical summaries and data analyses whose results appear in the media; and 3) applying concepts and rules of probability to solve problems.

Course assessment plan:

1. The undergraduate committee will review the syllabus regularly to make sure that it continues to learning outcomes for the data analysis component of the GE.

2. The undergraduate committee will periodically discuss the core set of concepts that must be tested in Stat 1430.02. In particular, the GE goals will be emphasized in establishing these concepts.

3. The midterms and final exams contain both multiple choice/ true false questions to assess the abstract ideas of statistics (such as when to use a certain analysis, what properties and rules can and can't be applied, and why certain results can and can't be concluded); and short answer questions to assess the skills for calculating and interpreting results, and drawing conclusions.

   a. A sample of exams will be reviewed by the undergraduate committee to assess the student performance on the agreed upon concepts and hence GE goals.

Measures of student performance on the core concepts will be collected from this sample.

b. The sample of exams will be preserved to examine possible changes in performance with respect to the core concepts, over time.

c. The average and standard deviation of test scores on midterms and the final will be kept and compared across semesters and years. These statistics are also calculated and compared for each section of the course to assess the consistency of student performance across sections.

4. Final exams will contain embedded questions that address the learning outcomes. Using the same, or very similar, questions each time the course is taught will provide a consistent evaluation over time. Embedded questions will not appear in copies of past final exams and their solutions that are posted for student use.

The embedded questions will either come from or be modeled on the nationally recognized Assessment Resource Tools for Improving Statistical Thinking (ARTIST) available online at www.causeweb.org/research/. These are validated test questions and measurement tools to use in assessing statistical literacy, reasoning, and thinking.

Scores on the embedded questions will be kept and compared across sections, semesters, and years to measure consistency and level of student performance.

Arts and Sciences Distance Learning Course Component Technical Review Checklist

Course: Stats 1430.02
Instructor: Dr. Deborah Rumsey
Summary: Statistics for the Business Sciences

Standard - Course Technology	Yes	Yes with Revisions	No	Feedback/ Recomm.
6.1 The tools used in the course support the learning objectives and competencies.	X			• Office 365 • Carmen • MyStatLab • Proctorio
6.2 Course tools promote learner engagement and active learning.	X			• Carmen Message Boards • Canvas Conversations • Live Tutoring
6.3 Technologies required in the course are readily obtainable.	X			All are available for free via OSU site license
6.4 The course technologies are current.	X			All apps are updated regularly.
6.5 Links are provided to privacy policies for all external tools required in the course.	X			Privacy policy for MyStatLab is included
Standard - Learner Support				
7.1 The course instructions articulate or link to a clear description of the technical support offered and how to access it.	X			Links to 8HELP are provided
7.2 Course instructions articulate or link to the institution's accessibility policies and services.	X			A
7.3 Course instructions articulate or link to an explanation of how the institution's academic support services and resources can help learners succeed in the course and how learners can obtain them.	X			B
7.4 Course instructions articulate or link to an explanation of how the institution's student services and resources can help learners succeed and how learners can obtain them.	X			C
Standard – Accessibility and Usability				
8.1 Course navigation facilitates ease of use.	X			Recommend using the Carmen Distance Learning "Master Course" template developed by ODEE and available in the Canvas Commons to provide student-users with a consistent user experience in terms of navigation and access to course content.
8.2 Information is provided about the accessibility of all technologies required in the course.	X			Accessibility policy for MyStatLab is provided.
8.3 The course provides alternative means of access to course materials in formats that meet the needs of diverse learners.	X			
8.4 The course design facilitates readability	X			
8.5 Course multimedia facilitate ease of use.				All assignments and activities that use the Carmen LMS with embedded multimedia facilitates ease of use. All other multimedia resources facilitate ease of use by being available through a standard web browser

Reviewer Information
- Date reviewed: 6/9/20
- Reviewed by: Ian Anderson

Notes: Good to go!

[a]The following statement about disability services (recommended 16 point font):
Students with disabilities (including mental health, chronic or temporary medical conditions) that have been certified by the Office of Student Life Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office of Student Life Disability Services is located in 098 Baker Hall, 113 W. 12th Avenue; telephone 614- 292-3307, slds@osu.edu; slds.osu.edu.

[b]Add to the syllabus this link with an overview and contact information for the student academic services offered on the OSU main campus.
http://advising.osu.edu/welcome.shtml

[c]Add to the syllabus this link with an overview and contact information for student services offered on the OSU main campus. http://ssc.osu.edu. Also, consider including this link in the "Other Course Policies" section of the syllabus.