

STAT 201: Elementary Statistics

Spring 2019, Sections Y01, Y02, and Y03

Pearson Course ID = **cao26175**

Class Meetings

Lectures: Mondays and Wednesdays from 5:50 to 7:40 PM in LeConte Room 210

Labs: Section Y01, Mondays from 5:50 – 7:40 PM in LeConte Room 200A

Section Y02, Mondays from 5:50 – 7:40 PM in LeConte Room 205

Section Y03, Mondays from 5:50 – 7:40 PM in LeConte Room 124

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Office Hours: Mondays and Wednesdays 3:50 – 5:50 PM

Lab Instructors

Section Y01 - Xiangyang Cao - xc1@email.sc.edu

Section Y02 - Ibraheem Kolawole Adams - ikadams@email.sc.edu

Section Y03 - Caroline Marie Kerfonta - kerfontc@email.sc.edu

Purpose To give students from throughout the university a non-calculus based introduction to the application of modern statistical methods including descriptive and inferential statistics. To show students that statistics is an important research tool.

Description Elementary Statistics (3 credit hours) (Prereq: MATH 111 OR 115 or STAT 110, or consent of department)

An introductory course in the fundamentals of modern statistical methods. Topics include descriptive statistics, probability, random sampling, simple linear regression, correlation, tests of hypotheses, and estimation.

Laboratory **The class will meet in conventional classroom lecture sessions and also (in most weeks) in a 2-hour laboratory session.** The development of these laboratory exercises was originally sponsored by the National Science Foundation. In each lab session, students will work in teams under the guidance of a lab instructor to collect data, using appropriate measurement technology, to shed light on a posed research question. They then immediately analyze their data using a computer and modern statistical software. For all lab sessions, students will complete a series of short answer questions about the lab activity and results; for one lab session, each student will write an extended formal report of the lab session.

Learning Outcomes Upon successful completion of this course, students should be able to:

- Recall basic statistical terms with the ability to express them in the correct context
- Employ appropriate methods for collecting data in a laboratory experiment
- Apply basic concepts of probability including properties of sampling distributions, the normal distribution and the binomial distribution
- Select and apply appropriate descriptive and inferential statistical methods for univariate and bivariate data
- Use statistical software to apply descriptive and inferential statistical analyses including numerical summaries, graphical displays, linear regression, hypothesis testing and confidence intervals
- Effectively explain findings from graphical displays, descriptive statistics and inferential statistical analyses
- Compose a technical report for a laboratory experiment explaining data collection methods, statistical methods, and interpretation of results

Textbook

Statistics: The Art and Science of Learning from Data (4th ed.), by Agresti and Franklin, Pearson Education, Inc. The course management system that we will use in the course, My Lab and Mastering, contains this textbook as an e-book. An access code to My Lab and Mastering is **required**. (Pearson Course ID = cao26175)

Choose one of the two options below to obtain an access code:

1. **Buy the hard copy custom edition of the textbook** bundled with an access code to My Lab and Mastering (My Stat Lab) from a USC bookstore. Choose this option if you want a hard copy of the textbook.
2. **Buy the access code** only for pearsonmylabandmastering.com. An **e-book** is included in the online course management system.
3. **** The **purchase of the access code** is required for those enrolled in STAT 201 (note the hardcopy of the book is not required but the access code is). Student's grade will be affected without the purchase of the access code or a lapse in access to the online course management system. ****

Lab Book

Statistics Play-By-Play: Laboratory Experiments for Elementary Statistics (1st ed.), by Petkewich and Edwards, Kendall Hunt Publishing. (Available in the bookstore.) **This is a required text**. Students must purchase this book to use in labs. Students lab grade will be affected by 25% penalty assigned without the purchase of the lab book.

Calculator: Each student will need a scientific or graphing calculator. Cell phone or computer/tablet calculators are not permitted for use on exams. ** Students are expected to bring a calculator for use during exams, instructors are not required to provide students with calculators.

Course Management System, pearsonmylabandmastering.com (Pearson Course ID = cao26175)

My Lab and Mastering is an online course management system which includes the e-book, homework, notes and announcements. My Lab and Mastering also includes access to StatCrunch.com, an online data analysis package that will be used with each lab and also with homework. Java 'statlets' (interactive applets) demonstrating statistical concepts are included as well. My Lab and Mastering will be demonstrated in class throughout the semester. Students who are not registered on [Pearsonmylabandmastering.com](http://pearsonmylabandmastering.com) when an assignment is due will receive a zero on those assignments including homework, labs, pre-labs and the EWA. These assignments cannot be made up.

Attendance You are expected to attend all classes and to arrive on time. Attendance will be recorded for each class meeting (lectures and labs). If you miss a class, you are responsible for all material and announcements covered in class on that day.

Computer Facilities Homework requires the use of a computer with internet access. Computers are available for student use at the following campus location: Gambrell (http://www.artsandsciences.sc.edu/technology/lab_hours_). Account information will be available at the first lab meeting for use on computers in the STAT 201 lab rooms.

Student Success Center (SSC) You are encouraged to visit the SSC for peer tutoring, if needed, for STAT 201. Website: <http://www.sc.edu/success/peertutoring.html>

Honor Code and Student Conduct See the *Carolinian Creed* in the *Carolina Community: Student Handbook & Policy Guide*.

Student Disability Services If you qualify for accommodations because of a disability, please submit a letter from the Student Disability Resource Center prior to the first exam so that your needs may be addressed. The Student Disability Resource Center determines accommodations based on documented disabilities. You may contact them at 803-777-6142, LeConte 112A, or <http://www.sa.sc.edu/sds>.

Grading

Exams (About 11.67% or 70 points each) There will be **3 in-class exams**. Make-up exams will be considered only in extreme circumstances and **documentation will be required**. Also, you must notify me **prior** to the exam or **the day of the exam** if you think your situation merits a make-up. Exam dates are on the schedule at the end of the syllabus. If you miss an exam for a valid reason but do not notify me of your situation in a timely manner (prior to or the day of the exam), then you will receive a zero on the exam. Individual work is required on exams. In the event that an exam is missed and a make-up exam is not permitted then the final exam grade will be used in the place of the missed exam (this can only occur for one missed exam).

Final Exam (20% or 120 points) **A comprehensive, mandatory, final exam will be given** according to the University's exam schedule. Individual work is required on the final exam. Make-up final exams will be considered only in extreme circumstances and **documentation will be required**. Also, you must notify me **prior** to the final exam or **the day of the final exam** if you think your situation merits a make-up. If you miss the final exam for a valid reason but do not notify me of your situation in a timely manner (**prior to** or **the day of the exam**), then you will receive a zero on the final exam. Individual work is required on exams. If the score on the final exam is higher than the score of the lowest regular exam, then it will be used to replace the regular exam score. Students may not exempt the final exam.

Class Activities (5% or 30 points) There will be **several unannounced brief activities** in class that count towards a class participation grade. You must be present in class to receive credit for these activities. If you miss an activity because you are late to class, then you will not receive credit for that activity. You may miss two class activities without penalty.

Homework (15% or 90 points) **Homework testing the concepts taught in lecture will be posted in My Lab and Mastering throughout the semester**. Students will submit their answers online and receive feedback on responses. A date and time for closing each assignment will be announced in class and appear on each assignment. Some written homework problems from the textbook (e-book) may also be assigned and collected. Expect 10 assignments worth 9 points each. Students may discuss the homework problems with each other but each student should submit their answers individually. A 30% penalty will be imposed on all late assignments and these will only be accepted up to 7 days after the due date. If you have technical difficulties with My Lab and Mastering, you must notify me 24 hours before the assignment is due to receive consideration for an extension. Students who are not registered on Pearson MyLabandMastering will receive a zero on homework assignments.

Pre-labs (5% or 30 points) **You will be given a pre-lab assignment on My Lab and Mastering due before each lab**. The pre-lab will post at least 24 hours before your lab time. Each pre-lab is worth 3 points. Students who are not registered on Pearson MyLabandMastering will receive a zero on pre-labs. At the end of the semester the highest 10 pre-lab grades are used.

Short Answer Writing Assignments – SAWA (15% or 90 points) **For all lab sessions, you will be required to complete a series of short answer questions to be collected**. Each SAWA will be completed and turned in at the lab meeting. In the event that the lab runs long, the lab instructor may extend the assignment. The lowest SAWA grade will be dropped. If you miss a lab, then that is the lab that will be dropped. Students may work together in answering SAWA questions, but each student must turn in an assignment to receive credit. Lab groups will randomized each week. Students who are not registered on Pearson MyLabandMastering will

receive a zero on SAWA assignments. Be on time for lab. If you are late to lab and the data collection process has already begun then you will receive 20% off your SAWA grade for that lab. The SAWA questions are found in the Lab book (Statistics Play-By-Play: Laboratory Experiments for Elementary Statistics), 25% will be taken from each SAWA grade when the student does not have a copy of the lab book.

Extended Writing Assignment – EWA (5% or 30 points) Students will have the choice of two different labs to do their extended writing assignment (EWA). This is a detailed technical writing report that discusses the lab experiment, statistical methods, and results. Greater detail on this paper will be provided later.

* **Option 1 for EWA: Lab 4.** Lab 4 is on 2/6 and the EWA is due 2/20 at the beginning of lab or late with a 25% penalty that is due 2/27 at the beginning of lab.

* **Option 2 for EWA: Lab 8.** Lab 8 is on 3/27 and the EWA is due 4/10 at the beginning of lab or late with a 25% penalty that is due 4/17 at the beginning of lab.

It is very important for you to attend one of these labs. If you miss this lab for a valid reason then you will need to do the EWA on the other lab (it is highly recommended that you do the EWA on Lab 4 and use Lab 8 as a backup). Individual work is required on the EWA. Students may proof-read each other's papers, but original writing is required from each student. Students who are not registered on Pearson MyLabandMastering will receive a zero on the EWA.

Assignment Summary and Grading Scale

Assignment Summary	Points	Percent
Homework	90	15%
Class Activities	30	5%
SAWAs (Labs)	90	15%
PreLabs	30	5%
EWA	30	5%
Exam1	70	11.67%
Exam2	70	11.67%
Exam3	70	11.67%
Final Exam	120	20%
Total	600	100%

Grading Scale	
A	540-600 points (90-100%)
B+	522-539 points (87%-89.9%)
B	480-521 points (80%-86.9%)
C+	462-479 points (77%-79.9%)
C	420-461 points (70%-76.9%)
D+	402-419 points (67%-69.9%)
D	360-401 points (60%-66.9%)
F	<360 points (<60%)

*Extra credit assignments will not be offered.

Daily Schedule

Mondays		Wednesdays	
Date	Material	Date	Material
1/14	Introduction Chapter 1 Terms Start Chapter 2: Types of Data / Graphs / Finish Measures of Center	1/16	Lab 2
1/21	MLK Day No Classes	1/23	Lab 3
1/28	Measures of Center / Measures of Variability / Measures of Position / Chapter 3: Association between two variables/ Regression	1/30	Lab 1
2/4	Review Exam 1: Chapters 1 - 3	2/6	Lab 4
2/11	Exam 1	2/13	Chapter 5: Probability
2/18	Chapter 6: Normal Distribution and Binomial Distribution	2/20	Lab 5
2/25	Review Exam 2: Chapters 5-6	2/27	Lab 6
3/4	Exam 2	3/6	Chapter 7: Sampling Distribution
3/11	Spring Break	3/13	Spring Break
3/18	Sections 8.1 and 8.2: Confidence Intervals and Confidence Interval for One Sample Proportions	3/20	Lab 7
3/25	Sections 9.1 and 9.2: Hypothesis Tests and Hypothesis Test for One Sample Proportions	3/27	Lab 8
4/1	Review Exam 3 - Chapter 7 and Sections 8.1-8.2 and 9.1-9.2	4/3	Exam 3
4/8	Section 8.3: Confidence Interval for One Sample Mean / Introduction of t distribution Section 9.3: Hypothesis Test for One Sample Mean	4/10	Lab 9
4/15	Section 10.4: Finish Up One Sample Inference and Introduce Two Sample Inference- Dependent Samples	4/17	Lab 10
4/22	Section 10.2: Two Sample Inference - Independent Samples	4/24	Lab 11
4/29	Review Final Exam	4PM, 5/3	Final Exam

Note that on a few Wednesdays there will be lecture instead of lab (2/13, 3/6). The meetings on these Wednesdays will take place in Leconte 210 at the regular lecture time (5:50 PM).

Please note our final exam will be on May 3rd at 4 pm in our regular lecture room(LC210).

Schedule is subject to change. Additional sections may be covered if time permits.