STAT 201: Elementary Statistics

Spring 2015, Sections 10, 11 and 12

Pearson Course ID = cipolli68183

Class Meetings:

Lectures: Monday, Friday from 08:30am - 09:20 pm in LeConte Room 210

Labs: Section 1, Wednesday 08:30am - 10:25 am in LeConte Room 200A (Will Cipolli)

Section 2, Wednesday 08:30am - 10:25 am in LeConte Room 205 (Chunling Wang)

Section 3, Wednesday 08:30am - 10:25 am in LeConte Room 124 (Chong Ma)

Lecturer's Information:

Name: Will Cipolli

Email: william.cipolli@gmail.com

Website: http://people.stat.sc.edu/cipolli/

Office: LeConte 127

Office Hours: M 9:30A-11:30A, by appointment, and flexible virtual office hours via Google Hangouts.

Expectations of Students:

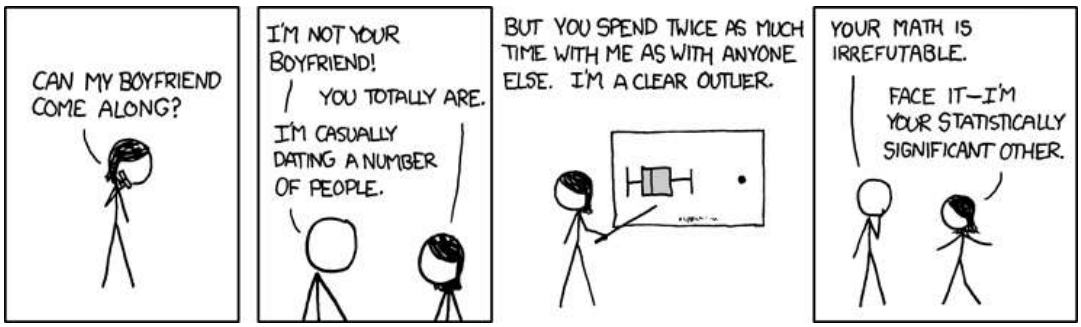
- **Punctuality:** It is important that you show up to class on time. Quizzes, provided by your lecturer, will be administered at the beginning of the labs. Five minutes early is on time.

- **Cell phone use:** Technology is becoming more prevalent every day. I am fine with you checking your phone, and even sending a quick message back. The phone must be on vibrate, or preferably silent, and anyone excessively using their phone will be asked to stop. Any excessive use, after the warning, will result in the taking of the phone for the rest of the course time or dismissal from the lecture or lab. Also, if it rings I get to answer it.

- **Talking in Class:** Labs are meant for collaboration among students, therefore talking is encouraged. I ask that students, please, try to keep their discussions on topic and appropriate. In lecture I ask that you pay attention and interact when appropriate – ask questions and tell me when you don't get something.

- **Carolinian Creed:** As a Carolinian...
  - I will practice personal and academic integrity
  - I will respect the dignity of all persons
  - I will respect the rights and property of others
  - I will discourage bigotry, while striving to learn from differences in people, ideas and opinions
  - I will demonstrate concern for other, their feelings and their need for conditions which support their work and development

- **Resources that will be helpful:**
  - **http://www.purplemath.com**
  - **http://www.stattrek.com**
  - **http://www.wolframalpha.com**



Credit: http://xkcd.com

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. atThey 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 (3rd 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 = cipolli68183**)**

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 only the access code to My Lab and Mastering from **pearsonmylabandmastering.com**. An **e-book** is included in 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.)

Additional Book:
Naked Statistics, by Charles Wheelans, W. W. Norton Publishing. (Available on Amazon.)

Calculator: Each student will need a scientific calculator. Cell phone calculators are not permitted for use on exams.

Course Management System, pearsonmylabandmastering.com (Pearson Course ID = cipolli68183) 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. See the last page of this syllabus for instructions on registering for My Lab and Mastering. Students who are not registered on Pearsonmylabandmastering 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. If you miss a class, you are responsible for all material and announcements covered in class on that day. Grade deductions will be made in accordance with the University's guideline.

Computer Facilities: Homework requires the use of a computer with internet access. Computers are available for student use through Science and Math (MS) at the following campus locations: LeConte 303A. Check these locations for hours. An account will be set up for you. Account information will be available at the first lab meeting. Please know your USC computer ID and your banner ID.

Statistics Tutoring Center: The Statistics Tutoring Center offers free tutoring to all STAT 201 students. It is located in LeConte Room 215A and is staffed by STAT 201 lecture teachers and lab assistants. The open hours for the Statistics Tutoring Center will be announced early in the semester.

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 Office of Student Disability Services prior to the first exam so that your needs may be addressed. The Office of Student Disability Services determines accommodations based on documented disabilities. You may contact them at 803-777-6142, LeConte 112A, or http://www.sa.sc.edu/sds.

Grading:

Standards (About 40% or 240 points) There are roughly 38 topics we will cover and you will be evaluated on them all; we will not have exams but you can expect quizzes two to three times per week and two exam periods where you will be evaluated on many topics. You will have at least one opportunity to show that you have met a standard and we will keep the best score.

Final Exam (20% or 120 points) A comprehensive 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.

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 10 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 3 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.

Pre-Lab Quizzes (5% or 30 points) You will be given a pre-lab assignment on My Lab and Mastering due before each lab (except for Lab 5). The pre-lab will post 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.

Lab 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. Students may work together in answering SAWA questions, but each student must turn in an assignment to receive credit. Lowest Lab is dropped.

Extended Writing Assignment – EWA (5% or 30 points) For Lab Session 2, an extended writing assignment (EWA) will be assigned. 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. It is very important for you to attend this lab which is scheduled on February 1and due on February 11. If you miss this lab for a valid reason but do not notify me of your situation in a timely manner (prior to or the day of the lab), then you will receive a zero on the EWA. A 25% penalty will be imposed on all late papers and these will only be accepted up to a week after the due date. 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%
Pre-Lab Quizzes	30	5%
Labs	90	15%
EWA	30	5%
Standards	240	40%
Final	120	20%
Total	**600**	**100%**

Final Grading Scale	
A	540-600 points (90-100%)
B+	522-539.4 points (87%-89.9%)
B	480-521.4 points (80%-86.9%)
C+	462- 479.4 points (77%-79.9%)
C	420- 461.4 points (70%-76.9%)
D+	402- 419.4 points (67%-69.9%)
D	360- 401.4 points (60%-66.9%)
F	<360 points (<60%)

*Extra credit assignments will not be offered.

Schedule:

Date	What We're Doing
M 1/11	Lecture 1
W 1/13	Lecture 2
F 1/15	Lecture 3
M 1/18	Holiday
W 1/20	Lab 2
F 1/22	Lecture 4
M 1/25	Lecture 5
W 1/27	Lab 3
F 1/29	Lecture 6
M 2/1	Lecture 7
W 2/3	Lab 4
F 2/5	Lecture 8
M 2/8	Lecture 9
W 2/10	Lab 5
F 2/12	Lecture 10
M 2/15	Lecture 11
W 2/17	Lecture 12
F 2/19	Lecture 13
M 2/22	Lecture 14
W 2/24	Lab 6
F 2/26	**Exam Period One**
M 2/29	Lecture 15
W 3/2	Lab 1
F 3/4	Lecture 16
M 3/7	Holiday – No Class
W 3/9	Holiday – No Class
F 3/11	Holiday – No Class
M 3/14	Lecture 17
W 3/16	Lab 7
F 3/18	Lecture 18
M 3/21	Lecture 19
W 3/23	Lecture 20
F 3/25	Lecture 21
M 3/28	Lecture 22
W 3/30	Lab 8
F 4/1	Lecture 23
M 4/4	Lecture 24
W 4/6	Lab 9
F 4/8	Lecture 25
M 4/11	Lecture 26
W 4/13	Lab 10
F 4/15	Lecture 27
M 4/18	Lecture 28
W 4/20	Lab 11
F 4/22	**Exam Period 2**
M 4/25	Lecture 29
W 4/27	**Final Exam (Same Room @ 9am)**

Timeline for lectures, labs and exams	Chapters	Time
Introduction, statistical terms and graphical displays **LAB 2**: Introduction to StatCrunch	AF 1	1 week
Descriptive statistics **LAB 3**: Descriptive statistics and graphical displays	AF 2	1 week
Simple linear regression and correlation **LAB 4**: Simple linear regression and correlation	AF 3	1 week
EXAM I: Recall basic statistical terms with the ability to express them in the correct context, select appropriate descriptive statistical methods for univariate and bivariate data, effectively explain findings from graphical displays and descriptive statistics. Apply basic concepts of probability		
Investigating methods of sampling **Lab 1**: Sampling	AF 5	1 week
Basic probability: sample space, laws of probability, conditional probability, tree diagrams, and independence **Lab 5**: Probability	AF 6	1 week
Continuous random variables, normal distribution	AF 6	1 week
Comparing two sample proportions with a randomization test **Lab 12**: Randomization test to compare two proportions	AF 7	1 week
Sampling distribution of sample mean, central limit theorem **Lab 7**: Sampling distribution of a sample mean	AF 7	.67 week
Point and confidence interval estimation of population proportion	AF 8	.67 week
One sample hypothesis test for population proportion **Lab 8**: Inference for a population proportion	AF 9	1 week
EXAM II: Apply basic concepts of probability including properties of the normal and binomial distributions . Apply properties of sampling distributions to solve probability problems, select and apply appropriate inferential statistical methods for univariate data, effectively explain findings from inferential statistical analysis for univariate data		
Point and confidence interval estimation of mean, t distribution	AF 8	.67 week
One sample hypothesis tests for mean, errors in hypothesis testing **Lab 9**: Inference for a population mean	AF 9	1 week
Comparing two population means, dependent sample design **Lab 10** Comparing two population means, dependent sample design	AF 10	1 week
Comparing two population means, independent sample design **Lab 11**: Comparing two population means, independent sample design	AF 10	1 week
Cumulative Final Exam: Material from exams I, and II select appropriate descriptive and inferential statistical methods for comparing two populations means, effectively explain findings from inferential statistical analyses for comparing two populations		

Note: StatCrunch, an online data analysis package, will be used for all data analysis in labs.

* For one lab, students will compose a technical report explaining data collection methods, statistical methods, and interpretation of results

To register at pearsonmylabandmastering.com

1. On the MyLab and Mastering website (**pearsonmylabandmastering.com)**, click **Student** under **Register**.
2. Enter the (**Course ID** = cipolli68183), and click **Continue**.
3. Sign in or create an account:
    - If you already have a Pearson account, enter your username and password. Click **Sign In**.
    - If you don't have an account, click **Create an account**. Add your account information (USC ZIP Code = 29208), and read and accept the license agreement. Click **Create Account**.
    - To retrieve your account information, click **Forgot your username and password**

    Note: On the Sign In page, check that the course details are correct, If not, click **Enter a different course ID**.

4. To select an option to register for access to your course, do one of the following:
    - If you already bought your access code, either bundled with your textbook or as an access code kit sold individually, click **Access Code.** Next, enter your access code and click **Finish**.
    - To buy your course online, click **Use a Credit Card or PayPal**, and then **the** item you want. You can choose different items that correspond to the same textbook. For example, for some textbooks, you can choose to buy its eText. Next, enter your credit card or PayPal information, and review and submit your order.
    - If you're waiting for financial aid, click **Get temporary access without payment for 17 days**. Click Yes when a message appears asking if you are sure you want temporary access.

    A Confirmation page appears where you can go to your course.

Sign in

Once you have entered your course ID and registered, you can sign in anytime:

1. On the MyLab and Mastering website, click **Sign in**.
2. Enter your username and password, and click **Sign in**.
3. Under **MyLab / Mastering New Design**, click your course title.

    When your course appears, use the course menu to navigate.

For Customer Technical Support, call Toll Free **1-800-677-6337**, Monday through Friday
9 AM – 6 PM EST.