

The University Of Houston Clear Lake
 School Of Human Sciences And Humanities
STATISTICS—SOCI 4384
 Spring 2018

Instructor	Dr. Amy Lucas: Lucas@uhcl.edu	 <u>This Class Emphasizes</u> Communication Connections Curiosity Creativity
Course Information		
Office Hours and Location		
TA Contact Information		

APPLIED CRITICAL THINKING STATEMENT:

This course has been authorized by UHCL as an Applied Critical Thinking (ACT) Course which means that in addition to learning about the specified course content, students will be engaged with some or all of the Elements of Thought and Universal Intellectual Standards of critical thinking. The objective of an ACT course is to develop the student’s ability to become skilled at analysis and evaluation by applying a set of intellectual tools that may be effectively used across all disciplines (as well as to the student’s personal life). Based on the Foundation for Critical Thinking model (<http://www.criticalthinking.org/>), critical thinking involves thinking for a purpose, asking questions, using information, applying concepts, drawing inferences and conclusions, identifying assumptions, anticipating implications and consequences, and recognizing points of view. The Universal Intellectual Standards that are applied to these Elements of Thought of critical thinking in order to develop Intellectual Traits include clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness.

COURSE DESCRIPTION:

Statistical literacy, which is the ability to read, interpret, organize, analyze, and present data, is an important skill needed in today’s society. Today’s world is very number-based, and it is hard to go through a day without encountering some type of statistic in a news article, advertisement, sports broadcast, or social media. These statistics serve many purposes. Some are used to shape debates and influence public opinion; others hope to “sell you” on the choice of a particular product. The mass media often uses statistical information to cover events while businesses use statistics to market their products. Public officials use statistics to defend or critique a policy or position. In this era, statistical literacy is no longer a specialty. It is a requirement!

This course teaches basic statistical concepts and techniques in the context of social science research. In this course, you will learn to think critically about statistics. In particular, you will learn how to interpret statistics and make inferences. You will learn how to evaluate statistical information, by drawing upon course concepts and material. The class will use examples from daily life to help you build your statistical skills in an applied context and develop a statistical perspective. You will also have the opportunity to create your own survey, collect data, and

analyzes it. In addition, you will learn how to use SPSS statistical software. The skills you gain in this course will help you become a more intelligent consumer of information, as statistical literacy is central to being able to process information in today's society.

Student Learning Objectives:

1. Explain statistical **concepts** with *clarity* and *accuracy*
2. Organize and summarize data (**information**) *logically*
3. *Clearly* and *accurately* **interpret** descriptive statistics and graphs
4. *Accurately* identify the *relevant* **assumptions** of statistical tests
5. *Logically* and *clearly* **infer** characteristics of a population from sample data

4 C's of Critical Thinking:

The UHCL Quality Enhancement Plan (QEP) endorsed by the university accrediting body is a plan to promote applied critical thinking (ACT) for lifelong learning and adaptability. In particular, the key learning outcomes of the UHCL applied critical thinking plan involve 4 C's: Curiosity, Connections, Creativity, and Communication. In this course, we will focus on one of these four C's: Communication. In particular, we will be learning how to *clearly* and *accurately* communicate statistical **concepts** and **information**.

Course Policies:

Rules of the Road: On the first day of class, we will collectively create some “rules of the road” for all of us to follow. I will then post the rules on Blackboard.

Format: This course is an active course – we will be using statistical software and the classroom’s computers in almost every class period. It is vital that you attend so that you can keep up with all of the work and material. I hope that we can all learn from each other throughout the course. I want to encourage you to consider the learning process as stemming from three important sources: class reading material, the thoughts I share with you as the instructor, and the ideas expressed by your classmates.

Break: When possible, a break of 10 to 15 min will be scheduled somewhere during the middle of the class session.

Late Work and Make-up Exams: All work is considered late by the end of the class period for which it is due. No late work will be accepted without a valid, well documented excuse. In the case of exams, if you arrive late you must still take the exam. Make-up exams will be given for those who miss an exam for a university approved excuse or event. In the case of events, students must give notice 48 hours before the scheduled exam. If you miss the exam, it is your responsibility to schedule a make-up exam with me.

Accommodations: The University of Houston System complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for students with a disability. In accordance with Section 504 and ADA guidelines, each University within the System strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. If you believe that you have a disability requiring an academic adjustment/auxiliary aid, please contact UHCL’s student disability services center in the Student Services Building, 281-283-2648.

Academic Honesty Policy: All UHCL students are responsible for knowing the standards of academic honesty. Please refer to the UHCL catalog and the Student Life Handbook for the University Academic Honesty Policy. Plagiarism, that is, using research without its citations, or using a created product without crediting the source, will result in a grade penalty or failure of the course.

Incompletes: A grade of Incomplete (“I”) may be given at the discretion of the instructor to students who are making satisfactory progress in a course. Incompletes are typically given for emergency situations which occur after the withdrawal date but prior to the end of the semester, and which prevent the student from completing course requirements. When assigning the grade of “I,” instructors provide students with an incomplete Grade Contract that outlines the work to be accomplished before the “I” can be converted to a final grade and specifies a deadline date.

6 Drop Rule Limitation: Students who entered college for the first time in Fall 2007 or later should be aware of the course drop limitation imposed by the Texas Legislature. Dropping this or any other course between the first day of class and the census date for the semester does not affect your 6 drop rule count. Dropping a course between the census date and the last day to drop a class for the semester will count as one of your 6 permitted drops. You should take this into consideration before dropping this or any other course. Visit www.uhcl.edu/records for more information on the 6 drop rule and the census date information for the semester.

Office Hours: Office hours can be used if you are having a specific problem, or if you'd like to discuss a certain issue. For example, you might have a question about a reading you don't understand, a concept we've covered in class, or something you've seen on TV or the Web. Be as specific as you can about how I can help you. I strongly encourage you to come by during my office hours if you are having any difficulty with the course. However, you don't have to have a problem to come to office hours -- you may just want to chat or stop by to say hi -- and please do so!

I also encourage you to e-mail me if you have any questions. In-depth questions will require us to meet face-to-face, but often times there are questions that I can answer over e-mail. I check and respond to email within 24 hours (unless I have told you otherwise in advance).

For help with your writing, I encourage you to visit The Writing Center. The Writing Center offers tutoring services to all university students, staff, and faculty on any type of writing project. You may come for a tutoring session during any stage of the writing process, whether you need help brainstorming, narrowing a topic, clarifying a thesis, organizing your thoughts, documenting your sources, or improving the flow of your language. Students may make an appointment with the Writing Center by coming in person to SSCB 2105, by calling 281-283-2910, or by visiting the website: www.uhcl.edu/writingcenter and clicking "Make an Appointment."

Required Texts:

- Leon-Guerrero, Anna and Chava Frankfort-Nachimas. 2015. *Essentials of Social Statistics for a Diverse Society*. 2nd edition. Washington DC: Sage.

Evaluation:

You will be evaluated on the following criteria:

1. **Class Participation:** Since this course is a cooperative one, it is vital that everyone attend and participate. You are expected to come to every class and be prepared to participate in class discussion and activities. You should prepare for discussion by completing each week's readings. Your class participation grade will be determined based on your attendance and my evaluations of your participation in class. With regard to attendance, you may miss one class without penalty. Any additional class missed will result in a 5 point deduction from your class participation grade (i.e. if you miss 3 total classes, you will have 10 points deducted from your overall participation grade).
2. **Conceptual Toolkit (SLO #1):** One of the keys to success in statistics is having a deep and broad understanding of statistical concepts and terms. Over the course of the semester, you will build a conceptual toolkit, which will help increase your knowledge and understanding of the statistical concepts. Each week reading is assigned, you will be responsible for adding to the toolkit. The weekly toolkit assignments will be graded on a 10 point scale. There are 10 class periods in which reading is assigned; you will be able to drop your lowest weekly toolkit score. Only the 9 highest scores will count toward your final grade. **More details on the toolkit will be passed out in a handout on the first day of class. This handout will also be posted on Blackboard.**
3. **In-Class Exercises (SLO #2, #3, #4, #5):** The best way to learn statistics is by doing, and in this class, you will have plenty of opportunities to get your hands "dirty." At the end of each class period, you will hone your skills at doing statistics. These exercises will have a mixture of question types that you will need to answer. Some questions will involve simple calculations by hand while other questions will ask you to provide an interpretive or analytical response. Over the course of the semester, you will learn how to do all the "basics" of a statistics course: organize, summarize, and interpret data. You'll also learn how to conduct hypothesis tests. The work from these exercises will be due at the end of the class period. I encourage you to work with your fellow students on all exercises, but what you hand in should be written independently. The exercises will be graded on a 20 point scale. You will be able to drop your lowest in-class exercise score; only your 9 highest scores will count toward your final grade.
4. **Exams:** You will complete a midterm and a final. Please refer to the 'policy' section of the syllabus for make-up exam details and procedures. The midterm will take place in class on **Week 7** and the final will take place during finals week on **Week 16**.
5. **Survey Project (SLO #2, #3):** This semester you will put the methods we learn to good use by creating your own survey, collecting data, and analyzing this data. You will find a topic that you are interested in studying further, and you will create a survey that you will administer to collect data on this topic. You will be responsible for creating and administering a small survey to at least 50 people. You will then complete two assignments that will require you to analyze data from the survey you have created. The

goal of the survey project is to demonstrate your ability to calculate and analyze social statistics using the statistical software SPSS. The survey project will encompass multiple steps, as we will work through the process together as a class. **More details on the Survey Project will be forthcoming in a handout.**

Grades:

The breakdown of your grade will be as follows:

Participation:	5%
Conceptual Toolkit:	10%
In-Class Exercises:	15%
Midterm:	20%
Final:	20%
Survey Project:	30% total
Topic Proposal	2%
Survey	8%
Descriptive Analysis	10%
Inferential Analysis	10%

The following grading scale will be used:

A = 100-94	A- = 93-90	
B+ = 89-87	B = 86-83	B- = 82-80
C+ = 79-77	C = 76-73	C- = 72-70
D+ = 69-67	D = 66-63	D- = 62-60
F = 59 and below		

Course Schedule:

Week 1 – Introduction and Overview of Course

Week 2 – Introduction to Statistics and Data Analysis

- *Chapter 1: The Why and What of Statistics*
Research Topic Due

Week 3 – Visual Representations and Frequency Distributions

- *Chapter 2: The Organization and Graphic Presentation of Data*

Week 4 – Measures of Central Tendency

- *Chapter 3: Measures of Central Tendency*
Survey Questions Due

Week 5 – Measures of Variability

- *Chapter 4: Measures of Variability*

Week 6 – The Normal Distribution

- *Chapter 5: The Normal Distribution*

Week 7 – MIDTERM

Week 8 – No Class – Spring Break!

Week 9 – Survey Project Day

Data needs to be collected!

Week 10 – Sampling and Estimation

- *Chapter 6: Sampling and Sampling Distributions*
- *Chapter 7: Estimation*

Week 11 – Hypothesis Testing

- *Chapter 8: Testing Hypotheses*
Descriptive Analysis Due

Week 12 – Crosstabulations

- *Chapter 9: Bivariate Tables*

Week 13 – ANOVA

- *Chapter 10: Analysis of Variance*

Week 14 – Regression and Correlation

- *Chapter 11: Regression and Correlation*
Inferential Analysis Due

Week 15 – Review for Final Exam

Week 16 – FINAL