YEAR COURSE OFFERED: 2016

SEMESTER COURSE OFFERED: Spring Session

DEPARTMENT: MATH

COURSE NUMBER: 2311-06 (16159)

NAME OF COURSE: Introduction to Probability and Statistics

NAME OF INSTRUCTOR: Matthew Caputo

information contained in this class syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

Learning Objectives

The student will be able to:

- Demonstrate the ability to compute basic descriptive statistics.
- Interpret statistical data.
- Understand statistical inference and interpretation.
- Apply statistical concepts to actual data.

Instructor Information

- Instructor: Matthew G. Caputo, Ed.D.
- Office: 620 PGH
- Office Hours: Monday: 10:30 11:30, 1:30 3:00; Tuesday: 12:00 3:00; Wednesday: 10:30 11:30, 1:30 3:00
- Email: caputo@math.uh.edu

Major Assignments/Exams

Assessments	
Poppers	10%
Online Quizzes	10%
Homework	10%
Exams (3 exams)	45% (15% each)
Final Exam	25%

Note: The percentage grade on the final exam can be used to replace your lowest test score.

GRADING SCALE

90% and above - A at least 80% and below 90% - B at least 70% and below 80% - C at least 60% and below 70% - D below 60% - F

INSTRUCTIONS FOR POPPERS

- For each lecture starting on the third week of classes you will be asked a series of problems that will have to do with the lecture.
- This requires a buying a poppers package from the bookstore. Make sure that the package is for section 21613.
- You are required to fill in your id number, popper number and blacken the correct circles. Make sure that your id number and popper number are correct before turning in the popper at the end of the lecture. If these are not filled out correctly or if the darken circles are too light you will not get credit for that day's lecture even if you attended.
- The total number of questions for the course will be counted, 80% of the total number of questions will be the 100%. For example, if there are 5 questions each class for 24 classes, which is 120 questions. Your grade will be calculated out of 120(.8) = 96 points.

INSTRUCTIONS FOR QUIZZES

- All of the quizzes are open and will close every Saturday at 11:59 pm starting on January 30th.
- One of the lowest quizzes will be dropped.
- You have 20 times to take each quiz.
- There is a 90 minute time limit for each quiz.
- The following table shows what sections each quiz covers.
- These are linked to copies of one version of each quiz.

Quiz	Sections Covered	Date Closed
<u>Quiz 1</u>	1.1-1.5	January 30
Quiz 2	2.1-2.4	February 6
Quiz 3	2.4-3.1	February 13
Quiz 4	3.2-3.3	February 20
<u>Quiz 5</u>	4.1-4.3	February 27
<u>Quiz 6</u>	4.3-4.4	March 5
<u>Quiz 7</u>	5.1-5.3	March 12
<u>Quiz 8</u>	5.4-5.6	March 26
Quiz 9	6.1-6.3	April 2
<u>Quiz 10</u>	7.1-7.3	April 9
<u>Quiz 11</u>	7.4-7.5	April 16
<u>Quiz 12</u>	8.1-8.2	April 23
<u>Quiz 13</u>	8.3-8.5	April 30
<u>Quiz 14</u>	8.6 & mixed hyp test review	May 2 (Monday)

INSTRUCTIONS FOR HOMEWORK

- There are weekly assignments due every Tuesday starting on January 26th.
 - There are two parts to the weekly homework and each will be graded separately at 15 points each.
 - One part is written homework, problems from the textbook or assigned according to the instructor.
 - Second part is electronic multiple choice problems.
- Both parts will be submitted in the CASA CourseWare website. See instructions on the instructor's web page for how to upload the homework.
- Two of the lowest homework scores will be dropped.

LATE ASSIGNMENT, MAKE-UP AND INCOMPLETE POLICIES

- This course is a cumulative course. You as a student need to keep up with the reading, homework assignments and exams. Thus late work or make-ups will not be accepted.
- The following is calculated for the final grade:
 - Two of the lowest homework assignments are dropped.
 - One of the lowest discussion quizzes are dropped.
 - 80% of the total number of popper questions will be the 100%.
 - The final exam score can replace the lowest exam score out of three.
- Incomplete policy: A notation of "incomplete" may be given in lieu of a final grade to a student who has carried a subject successfully until the end of a semester but who, because of illness or other unusual and substantiated cause beyond the student's control, has been unable to take or complete the final examination or to complete some limited amount of term work.

EXAM INFORMATION

MIDTERM EXAMS Exam 1: Covers chapters 1, 2 and 3 Feb 18 - 20 Exam 2: Covers chapters 4, 5 and 6 March 31, April 1 & 2 Exam 3: Covers chapters 7 and 8 April 28 - 30

- All sections of Math 2311 take common exams.
- The three exams will be given in CASA located on the second floor of Garrison or in CBB, see the exam scheduler for details.
- You can access the scheduler for these exams by logging into Courseware.
- The exams given in CASA will consist of both multiple choice and written questions.
- The multiple choice questions will be machine graded.
- The written questions will be graded by the instructors and teaching assistants for all sections of Math 2311.
- The scheduler will be available approximately 2 weeks prior to the start of the exam cycle. Exam dates are listed below.
- There are practice exams available. 10% of the score that you receive for the practice test that is online in the CASA CourseWare site under the Online Assignments will be added to your test score as extra credit.

FINAL EXAM

- There a comprehensive final exam. May 9 11
- You can access the scheduler for this exam by logging into Courseware.
- If your final numerical score for the course is 80.00 or higher as calculated by the official Math Department Grade Calculator and you have completed the teacher evaluation, then you may CHOOSE to be exempt from the final. Your grade will be the grade calculated by the grade calculator at the time of the deadline.
- The dates for choosing exemption for the spring semester of 2016 are May 3rd and 4th. If you are eligible for exemption and do NOT select to exempt (opt out) on May 3rd and 4th, then you must take the final. If you choose to exempt, you may not change your mind after the deadline has passed.
- If you do not have a semester numerical average that is 80.00 or higher by the exemption deadline, then you must take the final (note that there is no rounding of grades for exemptions).
- See <u>SPRING 2016 OPT OUT INFORMATION</u>.

Required Reading

- Course webpage: <u>http://www.math.uh.edu/~caputo/Math2311/</u>
- The textbook, online quizzes, and additional help materials will be made available by logging into CourseWare at http://www.casa.uh.edu. The first portion of these materials are freely available for the first two weeks of class. All students must purchase a Course Access Code and enter it on CourseWare by the Saturday of the second week (January 30th) of class to continue accessing the course learning materials. A Course Access Code must be purchased for \$50 from the University Bookstore..

List of discussion/lecture topics

LECTURE SCHEDULE

This table is tentative and may need to be updated during the semester. Updates will be announced in lecture and posted on the course

Week	Sections	Торіс
Week 1	Introduction, 1.1,	Types of data, Mean and Median, Variance, Standard deviation and variance, Range,
	1.2, 1.3- 1.5	IQR and Finding outliers, Graphs and describing distributions
Week 2	2.1, 2.2, 2.3, 2.4	Counting Techniques, Combinations and Permutations, Sets and Venn Diagrams,
		Basic Probability Models, General Probability rules
Week 3	3.1	Discrete Random Variables
Week 4	3.2, 3.3	Binomial Distribution, Geometric Distribution
Week 5	4.1,4.2,4.3,Review	Density Curves, The Normal Distributions and Standard Normal Distributions
Week 6	4.3, 4.4	Standard Normal Distributions, Sampling Distributions of the sample mean and
Week 7	5.1, 5.2, 5.3	Scatter Plots and Correlation, The Least Squares Regression Line
Week 8	5.4, 5.5, 5.6	Residuals and Non-Linear Models, Relations in Categorical Data
3/13 - 3/19	Spring Break	
Week 9	6.1, 6.2, 6.3	Sampling and Designing Experiments, Simulating Experiments
Week 10	Review,7.1,7.2,7,3	Margins of Error and Estimates, Confidence Interval for a Proportion, Difference of two
		Proportions
Week 11	7.4, 7.5	Confidence Interval for a Mean, Difference of two Means
Week 12	8.1, 8.2	Inference for the Mean of a Population, Population Proportion
Week 13	8.3, 8.4, 8.5	Comparing Two Means or Two Proportions, Goodness of Fit Test (Chi-Square
Week 14	Review, 8.6	Inference for Two-Way Tables
Week 14	Review for Final	
5/9 - 5/11	Final Exam	

COMPUTER REQUIREMENT

- Knowledge of a statistical package is an indispensable part of the modern statistics. The class presentations, some homework assignments, and the exams are computer based.
- The statistical package R-studio is used in this class for exploring statistical concepts and demonstrating statistical analysis of actual data useful for business decisions. No previous knowledge of this software is assumed.
- This software is a free package that you can download on to your personal computer. This will be available to you for your exams in CASA.
- You first need to download R: <u>http://cran.cnr.berkeley.edu/</u>
- Then you can download Rstudio: <u>https://www.rstudio.com/</u>