

MATH 201 Spring 2009 Course Syllabus

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Required Text: The Basic Practices of Statistics, fourth ed., David S. Moore

Course Description and Objectives

A study of both descriptive and inferential statistics. Topics for the course include: data presentation, and analysis, measures of central tendency and dispersion, sampling distributions, parameter estimation hypothesis testing, and linear regression.

Prerequisites and Class Policy

A grade of C- or higher in MATH 095 or permission of the Mathematics Department is required to enroll in this class. **Students are expected to go to the online class every day.**

Homework

Each homework assignment is worth 10 points (with all work shown). The total homework score for the course will be based upon a 100 point scale. Homework will be collected periodically throughout the course. The list of homework problems are attached to this syllabus.

Quizzes

Quizzes will be given periodically throughout the course as a means of practice and to test knowledge on the current section. Each quiz will be worth up to 5 points, with partial credit given for demonstration of knowledge. Also, each exam will be corrected for a 10 point quiz. The total quiz score for the course will be based upon a 100 point scale.

Exams

Four midterm exams will be given during the course. Each midterm exam is worth 100 points. No makeup exams will be given. If a midterm exam is missed for an extreme circumstance, then your final grade will be based upon the remaining exams. Excusable circumstances will be left to the discrepancy of the instructor.

Final Project

Every student will be expected to turn in a final project. The final project is worth 150 points. A brief presentation over the final project is also required to be submitted by Wednesday March 18th. The presentation is worth 50 points. The instructor will answer any questions or concerns about the final project and the final presentation. Be sure to have all questions answered one day before the final projects and presentations are due.

Grading Procedure

Homework	100 pts
Quizzes	100 pts
Midterm Exams	400 pts
Final Project	150 pts
Final Presentation	<u>50 pts</u>
Total	800 pts

Grading Scale

720-800 points	A
640-719 points	B
560-639 points	C
420-581 points	D
< 420 points	F

Special Services and Student Accommodations

If you have a disability and need accommodations, please contact Claudia Angus, the Disabilities Coordinator.

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Final Project

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For this project you will need to address a question (or questions) of interest to you for which the statistical methods from this class are relevant. You must decide upon the question(s) that you want answered, devise a method for collecting the data, collect **your own** data, and analyze the data in order to form a conclusion. You may do this individually, or in groups of at most three people.

Choosing a Topic

To begin this project, you will first need to define a clear hypothesis. Before you start to collect data, try to think of some questions that are of interest to you. Once you make a decision about the topic you want to address, **get it approved by me before you start collecting data.**

Choosing a Method for Collecting Data

Once you have chosen a topic, you will need to devise a way of collecting data about the topic. Be aware that it will be difficult to obtain unbiased data, especially in a short amount of time. We'll overlook this drawback for now, but if there is a bias it should be noted in your final write-up. Once you have a method for collecting data **get it approved by me before you start.**

Final Paper

The final project should include the following elements in the write-up:

1. A clear statement of the question(s) or problem the study is about.
2. A clear description of the data and how it was collected. Be sure to include all the variables, the population, the sample, the parameters you want to estimate, and the statistics you found.
3. A clear description of the analysis used to answer the question(s). This should include graphs, confidence intervals, hypothesis tests, etc.
4. A clear description of the results of your study should be given. Be sure to answer your original question(s) and use the relevant descriptive statistics to do so. Use graphs only when relevant.
5. Give an analysis of the overall project. Were there any biases? Were there any problems with the data collection? How confident are you with your results? If you had to do this again would you change anything?
6. Include the raw data collected in an appendix.
7. You should perform each type of statistical inference we learn in class. i.e. single sample confidence interval and test of significance, two sample confidence interval and test of significance, and a chi-square test. You may do inference on the mean or on the proportion. You may also choose to use regression in your project.

Project Presentation

By June 8th these projects will be presented to the class on the discussion forum labelled Final Project Presentations. You are required to read all your classmates presentations and to comment on the statistics within the presentation. Keep it somewhat short, use charts, spreadsheets, power point, etc. Be sure to present the data in a clear and interesting way to the class.