Math 2183 Mathematical Reasoning
Course Description and Procedures – Spring 2016

Course Coordinator: Professor Bernard L. Madison, SCEN 326

Textbook/Required Materials:
The Book: *Case Studies for Quantitative Reasoning (3rd edition).* Pearson Custom Publishing: New York. By Madison, B. L., Boersma, S., Diefenderfer, C. L., & Dingman, S. W. (2012).

A graphing calculator is required – one of TI- 82, 83, 84, 85, 86, or 89. It is important that these models be used—certain activities in class require the use of functions found on the TI calculator. Cell phone calculators are not allowed on quizzes and tests.

 A Homework/Notes folder: This can be a three ring binder or something else, but you want to make sure it has pockets and is good for organizing your notes and homework as you will be expected to keep up with both.

 An additional Bound or spiral notebook: Students must have a separate notebook that can be turned into the instructor when requested at various times throughout the semester. This notebook will function as the reading journal (see below).   Please note this is separate from your Homework/Notes folder.

Notes:
1. **You must bring all required material to class each day**
2. **This class relies on technology to assist in the collection of pertinent information. Students are encouraged to bring laptops and tablets to class. All technology should be used in a manner befitting the classroom environment.**

The **content of the course** will consist of a broad range of uses of mathematics in public media. Most of the mathematical topics and processes fall into one of the broad areas below:
- Numbers and Quantities
- Percent and Percent Change
- Measurements and Indices
- Linear and Exponential Growth
- Graphical Interpretation and Production
- Counting, Probability, Odds and Risk

The major source materials for this course will be newspaper and magazine articles. We will read, analyze, interpret, and critique the mathematics, statistics, and other quantitative information in the articles.

The major goal of the course is as follows: *Students will develop the power and habit of mind to search out quantitative information, critique it, reflect upon it, and apply it in their public, personal and professional lives.*

Citations: You are required to cite any information that you obtained from any source other than your own brain. For example, if you Google the "best things about being a student at the University of Arkansas" and use a list of the information obtained in a project/paper, you must

cite the source of your list. If you fail to cite any source, it is considered plagiarism and academic dishonesty and is punishable under university regulations.

A major project for this course is producing two new case studies following the same format as the ones in the textbook

Most of the scheduled 75-minute class periods will contain the following important aspects:

1) **Writing assignments**: Students are responsible for the production of two case study writing assignments

2) **News of the Day.** Students will bring items to class from recent publications and present the material to the class. Credit will be given for bringing news items that contain mathematics and explaining the mathematical content to the class or raising valid questions about the mathematics. Each student is expected to bring and present at least **three articles**, and each student is encouraged to bring and discuss several articles. **What is expected?:** You are to print off the news of the day assignment sheet that can be found on Blackboard. Write a brief summary of the article and then conduct and show your own math that we have learned from class with some numbers used in the article (more advanced math is okay). Make sure to cite your sources. Turn in your news of the day assignment after the presentation.

3) **Reading/Math journal:** Students are required to keep a journal which will consist in class new of the day reflection, out of class reflection on mathematical concepts discussed in class and a summarization of one article (containing math and/or quantitative reasoning) per week throughout the semester. Students should be prepared to turn in this journal upon request from the instructor. Students may use the same article for the News of the Day and journal assignments.

4) **Quizzes/homework:** Students are expected to complete all quizzes and homework. Homework is not graded. However, the quizzes assess assigned homework.

5) **Participation**: An important aspect of this class is attendance. Students will need to be present for peer reviews, quizzes, and the delegation of homework assignments.

6) **Case Studies.** Discussion of news article(s) that contains substantial mathematical material and extending the mathematics. Sometimes the case study will be discussed for more than one class period. Group exercises will contain questions about the articles.

7) **Examination Material:** This will include questions similar to material presented in group exercises and homework, questions about mathematical and statistical concepts discussed in class, and new material contained in newspaper and magazine articles. Students are required to take a midterm and a final exam.

Course grades will be determined by student performances on the quizzes, group exercises, contributions to today's news, homework scores, and two examinations – one about mid-term and the final examination at the time in the University schedule.

Total points:

Homework, quizzes, and group exercises – 250 points
Attendance and Participation – 100 points (loss of points for unexcused absences)
News of the day article presentation- 200 points
Mid-term group case study (new case study following examples in book) – 75 points
Mid-term exam – 150 points
Final case study by individual students – 75 points
Final exam – 150 points

Today's news contributions beyond the one required or other significant contributions to enriching class discussions will add bonus points.

Earning 90% of the 1000 points will merit a grade of A, 80% for a B, 70% for a C, and 60% for a D.

Class attendance is essential – be on time, too. Attendance will be taken each class period, and unexcused absences will result in loss of points for participation and attendance. Work done in class for scoring can be made up only if you are excused from attendance for valid reasons and you complete the work by the next class you attend. Scores for late assignments will be penalized an amount based on how late and the reasons for being late.

Academic Integrity:
As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail.

Each University of Arkansas student is required to be familiar with and abide by the University's Academic Integrity Policy which may be found at http://provost.uark.edu/. Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor.

Inclement Weather Policy:
Class will meet unless the University is closed. You should make your own decisions in the best interest of personal safety. If attendance is severely affected by weather, deadlines and exam dates may be adjusted.

Accommodations:
Under University policy and federal and state law, students with documented disabilities are entitled to reasonable accommodations to ensure the student has an equal opportunity to perform in class. If any member of the class has such a disability and needs special academic accommodations, please report to the Center for Educational Access (CEA). Reasonable accommodations may be arranged after CEA has verified your disability. You must submit your paperwork to me as soon as possible. This must be done before accommodations can be arranged for any class assignments, quizzes, or exams.