

MATH 1313 – QUANTITATIVE REASONING

Spring 2015 – Course Syllabus

Course Coordinator: Martha Watkins

Instructor:

Office:

E-mail:

Office Hours:

Master Syllabus:

You are responsible for reading the MRTC Master Syllabus on the MRTC Webpage at <http://mrtc.uark.edu/7249.php>. Information about the textbook, software, and websites are located there.

Course Description:

Quantitative reasoning (QR) is a habit of mind and requires extensive interaction between students and teachers. This course seeks to include command of both the enabling skills needed to search out quantitative information and power of mind necessary to critique it, reflect upon it, and apply it in making decisions. Consider this course preparation for the “real world”.

Textbook/Required Materials:

- Madison, B. L., Boersma, S., Diefenderfer, C. L., & Dingman, S. W. (2012). *Case Studies for Quantitative Reasoning (3rd edition)*. Pearson Custom Publishing: New York.
- A calculator is required.

Note: 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.

- Bound or spiral notebook: Students must have a separate notebook which can be turned into the instructor when requested at various times throughout the semester. This notebook will function as the reading journal (see below).

Important Aspects:

- 1) **Writing assignments:** Students are responsible for the production of four written assignments during the semester. Each assignment is accompanied by peer review.
- 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 one article, and each student is encouraged to bring and discuss several articles.
What is expected?: You are to print off the article you used, conduct and show your own math that we have learned from class with some numbers used in the article (more advanced math is okay), and **type** a short synopsis of your findings. Make sure to cite your sources. Turn in your typed findings, and the original article after the presentation.
- 3) **Reading journal:** Students are required to keep a reading journal which will consist of the 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.

Grading:

Four writing assignments with peer review:	5% Each
One reading journal:	10%
Homework/Quizzes:	15%
Participation:	10%
Midterm (including chance to make-up):	20%
Final:	25%

Letter Grades:

- A: 90 – 100%
- B: 80 – 89.9%
- C: 70 – 79.9%
- D: 60 – 69.9%
- F: Below 60%

Tentative Schedule:

- Section 1)** Extracting Data
- Week 1: Units and Rate / Bring in Article
 - Week 2: Large Numbers
 - Week 3: First Writing Assignment
 - Week 4: Ratio and Percent / Bring in Article

- Section 2)** Considering / Comparing Data
- Week 5: Percent Change
 - Week 6: Contextual Accuracy
 - Week 7: Midterm
 - Week 8: Misleading Numbers
 - Week 9: Second Writing Assignment
 - Week 10: Averages

- Section 3)** Making Decisions
- Week 11: Linear vs Exponential Growth
 - Week 12: Third Writing Assignment
 - Week 13: Probability
 - Week 14: Fourth Writing Assignment
 - Week 15: Review

Final

Dynamics of the QR Classroom: This is not your typical math class. Reading and writing are huge components of this class. In order for a student to be successful in this class, reading and writing appropriately are of great importance. Techniques for writing and computation will be explored by input from the instructor and by organic generation from the group members.

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.

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. Please do not contact the Mathematical Sciences department with weather related inquiries; you may e-mail me directly with those questions.

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.

NOTE: The instructor reserves the right to make changes to the syllabus as needed. If changes are made, you will be notified of the changes in class or by your university e-mail address.