

# MTH 106: Mathematics of Social Choice and Finance

Fall Term, 2019

University of Rhode Island, Department of Mathematics

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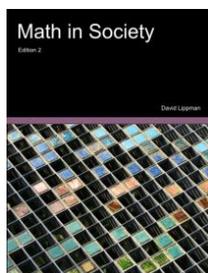
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 **Course Objectives and Goals:** This course shows that mathematics is a very practical discipline and it is fun, sometimes surprising. It is accessible to all URI students, even without a strong algebra background. You will have an opportunity to review Basic Math Skills. To better appreciate the variety of subjects within mathematics, you will be introduced to some exciting ideas in mathematics that come from a wide variety of disciplines along with real world applications such as apportionment problems, how to use data and everyday finance. The course intends to help students think logically and critically about mathematical information that abounds in our society.

 **Brief Course Description:** Math 106 is a special topics course that satisfies the general education requirement for math at the University of Rhode Island. The three general education skills addressed in this class are reading complex texts, using quantitative data, and utilizing information technology. The content is intended for students majoring in the liberal arts or other fields that do not have a specific mathematical requirement. The prerequisite is a basic high school algebra background. In more detail, the six main topics we will cover will be:

- Apportionment
- Modeling Growth
- Basic Statistics
- Describing Data
- Cryptography
- Everyday Finance

 **Textbook:** “Math in Society”. This is an open source textbook. Originally created by David Lippman.



Open source textbook. Click in the image above to get a copy of it.

 **Grade Description:** There will be 6 online quizzes, one for each chapter, and 6 worksheets, one for each chapter, and 1 project assignment. There are no make-up quizzes, worksheets of projects. Every item has to be delivered by the due date. The grade will be computed as follows:

<b>Online quizzes:</b>	30%
<b>Worksheets:</b>	30%
<b>Forums:</b>	20%
<b>Project:</b>	20%

 **Grade distribution<sup>1</sup>:**

92.00 - 100	A	71.00 - 74.99	C+
87.00 - 91.99	A-	68.00 - 70.99	C
82.00 - 86.99	B+	65.00 - 67.99	C-
78.00 - 81.99	B	61.00 - 64.99	D+
75.00 - 77.99	B-	55.00 - 60.99	D
		0.0 - 54.99	F

- **Quizzes: (Sakai → Tests & Quizzes)** Quizzes will be given through Sakai. There are 6 quizzes (one for each chapter). Each quiz will have 10 questions. The quiz for that chapter will only be available during the time we are covering the chapter. You will have a maximum of four hours for each quiz. **You will be allowed two tries per quiz.** The computer will accept the best score. Failure to take a quiz in the given time slot will be given a zero. No exceptions!

Quiz	Available
<b>Quiz 1 (Chapter 4):</b>	12:00 am September 4 - 11:55pm September 17
<b>Quiz 2 (Chapter 8):</b>	12:00 am September 18 - 11:55pm October 1
<b>Quiz 3 (Chapter 9):</b>	12:00 am October 2 - 11:55pm October 15
<b>Quiz 4 (Chapter 10):</b>	12:00 am October 16 - 11:55pm October 29
<b>Quiz 5 (Chapter 11):</b>	12:00 am October 30 - 11:55pm November 12
<b>PROJECT WEEK (Corrections):</b>	12:00 am November 13 - 11:55pm November 19
<b>Quiz 6 (Chapter 16):</b>	12:00 am November 20 - 11:55pm December 9

<sup>1</sup>Different grades may be given for borderline cases, to the discretion of the instructor.

- **Chapter Worksheets (Sakai→ Assignments)** The worksheets are designed to help you understand material are designed to provide practice and feedback. The worksheets are downloadable from the Assignment tool within Sakai as a pdf file. Worksheets **ARE DUE ON THE THURSDAY BEFORE THE END OF THE CHAPTER** (see quiz dates above). The idea is to receive feedback before the quiz is due. It is strongly recommended that you wait until having the feedback from the worksheet to attempt the quiz. You **must print the pdf file and use the space provided in the worksheet**. Then, scan them or take a digital picture of your handwritten assignment with a camera or smart phone. Compile all your images into a **SINGLE PDF FILE** (search in google how to do this if you don't know!). Finally, you **must upload your files in the CORRECT ORDER**. All worksheet answers must be submitted within Sakai. Worksheets with answers only will be given a zero. You must show the work for credit. **DO NOT SUBMIT ASSIGNMENTS VIA EMAILS OR FAXES!** I will not accept them! Do not ask to submit late worksheets. You will be allowed one RE-SUBMISSION per worksheet if you want to improve your grade. RESUBMISSIONS are due on the **SATURDAY AT 11:55PM BEFORE THE END OF THE CHAPTER** (2 days after the original submission).
- **Project (Sakai→ Assignments)** There will be one project this term. The project must be submitted by the due date using the Assignments tool in Sakai. **DO NOT SUBMIT PROJECTS VIA EMAILS OR FAXES!** I will not accept them! Do not ask to submit late projects. You should use a word processor (e.g. Microsoft Word or OpenOffice) for the text part of your project and leave a blank space for the computation/calculation part of your project. Then, you must print the file and fill in the blank spaces with the computations you need to make. Finally, you need to scan all the pages again and compile them in a single pdf file in the correct order. If I cannot open your file submission, I will allow only ONE resubmission. For all projects you must use concepts from the textbook, worksheets, or lecturer's comments. You **MUST** also use one other reference source and cite the reference. The project start date is October 30th and the due date (including a resubmission if you want to improve your grade) is November 19th at 11:55 pm. No submission or re-submission will be allowed **AFTER** November the 19th at 11:55 pm. If you want to have time to include the questions and comments I made after the first submission in the re-submission, please consider your time!
- **Participation (Discussion groups, i.e. Forums) (Sakai→ Forums)** You will be required to participate in the discussion groups, i.e. Forums. Topics are posted in the Forums link within Sakai. There will be one Forum for each chapter we cover. This is considered class participation and counts for 20% of your grade. At the end of a discussion I will grade each student. A student that receives 5 pts on each criterion would receive a grade of 10 pts for that discussion. No make-ups allowed. This is suppose to be interactive and you will lose points for not posting in a timely matter (see rubric below). **PLEASE** don't just answer with quickreplies as if it was an email. Example: Yes, No, I agree, You are right, Good point, etc. You **NEED** to engage in a discussion. **THE FORUM FOR EACH CHAPTER WILL BE OPENED THE SAME DATES AS THE QUIZZES** (see quizzes dates above), except for the Introduction which will be open just the first week of classes.

### Forums Grading Rubric

Criteria	5 pts	3 pts	1 pt
<b>Responses to Questions</b>	Student responds to the posted questions with thoughtful ideas, uses mathematical language and textbook concepts, and applies concepts to situations not covered in the textbook.	Student responds to the posted question in a way that does not clearly use the concepts. Uses some mathematical language, but does not apply concepts to other situations.	Student responds to the posted question but misses the main idea of the discussion topic. A student with INCORRECT fact or shows a misunderstanding of the concepts in their posting can only receive a maximum of 1 pt for response to questions. Check your facts!
<b>Participation</b>	Post in a timely manner. Postings encourage and facilitate interaction among members of the online community. Student responds to other postings. Must post 3 or more times to get 5 pts and show participation by reading at least 50% of the postings (determined via Sakai statistics tool for grading).	Postings rarely interact with or respond to other members of the online community. Not actively engaged in the discussion.	Postings to questions posed by the instructor only. Students rarely post to the discussion boards or post all postings in one day. Posting of "I agree" is not consider a posting.

 **Academic Honesty Policy:** Cheating is defined in the University Manual section 8.27.10 as the claiming of credit for work not done independently without giving credit for aid received, or any unauthorized communication during examinations. Students are expected to be honest in all academic work. Consequences for any charge of cheating or plagiarism will follow the guideline established in the University Manual 8.27.10-8.27.21, <http://web.uri.edu/manual/chapter-8/chapter-8-2/>.

 **Religious holidays:** Per policy of the University of Rhode Island, on an individual basis, the student has the opportunity to observe their traditional religious holidays. However, a written notification to each instructor is required.