Course #3573 Math& 107 OL01

Math in Society (5 credits)

Fall 2016

Instructor	Lynn Ellis
Class Website	WAMAP- www.wamap.org Course ID: 12832 Enrollment key: ellisf16
Contact Info	Email: lellis@tacomacc.edu Messaging: WAMAP messaging
Office Hours	Online, by appointment.
Response Time	Posts made Monday – Thursday can expect a 24 hour response time. Response times will be slower Friday – Sunday. Please plan accordingly and be prepared to post your questions ahead of time so that you can be sure to have them answered in a timely fashion. Questions posted just moments before an assignment due date are unlikely to be answered before the due date.

Overview

This is a course in modern mathematics. We will be exploring topics that have been developed fairly recently in the mathematical world, along with some more traditional ones.

This class will be nothing like your intermediate algebra course. We will be looking at topics that might not seem like math to you. Many of these topics will be explored in context of their applications.

The purpose of this course is to expose you to the wider world of mathematical thinking. There are two reasons for this. First, this course is designed to help you to understand the power of quantitative thinking and the power of numbers in solving and dealing with real world scenarios. Secondly, I want you to understand that there is more to mathematics then expressions and equations.

Catalog Description
This is a general education course investigating quantitative reasoning and its applications and role in society. Topics may include graph theory, statistics, coding, game theory, symmetry, and geometric and numerical patterns. Mathematical theory combined with quantitative skills will be used in applications to a variety of problems encountered in mathematics and the world. A thematic approach may be taken in this course. Prerequisite: MATH 095 with a minimum grade of C or assessment above MATH 095 and ENGL/ 095 with a minimum grade of C or assessment above ENGL/ 095

Course Goals
Upon successful completion of this course the successful student will be able to:

1. Discern and explain the use of mathematics in many facets of society.

2. State concrete examples of how quantitative reasoning and mathematical techniques can and have been used to model and solve real world problems.

3. Demonstrate the use of quantitative reasoning skills and problem solving in areas they can be expected to encounter in their own lives and cultures.

4. Solve problems, organize and write clear descriptions of how these problems are solved and how mathematics is used in solving problems including correct mathematical notation.

5. Use logic and critical thinking skills to read, organize, and analyze quantitative information.

6. Identify appropriate algorithms and correctly perform them in order to solve elementary problems that emulate some of society's problems.

7. Demonstrate knowledge of some topics of current interest in mathematics.

8. Create and interpret mathematical graphs and charts.

9. Use technology as an analytic tool to model and solve problems.

10. Work in small groups on group problems or projects.

Technical Expectations
To be successful in this course, you will need some technical skills. Most important is access to a computer with a reliable internet connection, and the ability to operate that computer and a web browser. If you are reading this, you're probably OK for this part. There will be a couple of

assignments that ask you to upload files, cut-and-paste internet addresses (URLs), etc. In most cases, a non-technical alternative is available if needed.

Textbook
A colleague of mine at Pierce College, David Lippman, got tired of students having to pay over $100 for the book. So he wrote a book that he offers free as open courseware. The book will be available free online in PDF format. If you prefer reading from print, you are welcome to print out the PDFs, or a link to order a bound printed copy is provided in WAMAP (usually cheaper than printing the entire book yourself).

If you wish to read beyond the materials I provide, you can find additional material online, or in more traditional textbooks available in the library. *Excursions in Modern Mathematics* by Tannenbaum is a good choice.

Format of the Course
This course is **not** self-paced. For each topic there will be a specific set of material to learn, and assignments and tests on that material. There will be fixed due-dates for those assignments. However, the course is **asynchronous**, which means that you can log into the classroom any times during the week that are convenient for you and complete the assignments.

For each topic, you will be given a reading assignment. Reading the textbook will be your primary way to learn the material for the course.

There will also be a playlist of videos that correspond with the examples in the book. You should use these to *supplement* the reading, not replace it, as there is a lot of content in the book that is not included in the videos. These videos will hopefully help you understand an example if you're having trouble following it in print.

The book and videos will provide the theory and skills needed to approach the exercises, quiz, and writing assignment. Unlike algebra classes, this class is about solving problems, not just replicating skills, so some questions may not be exactly like problems in the book. For those, you will need to figure out how to adapt what you've learned to solve the new and different problem.

A discussion forum will be provided where you can ask questions about the reading, and discuss the material with me and your classmates. This is how you can get help when you don't understand the book.

There will be a set of homework exercises assigned for each topic. The online homework exercises are required, and graded. However, if you miss a question, it will show the answer, allowing you to self-diagnose your mistake, and then you can try similar problems until you get the questions correct. You can ask questions in the discussion board about any homework questions you have difficulty with. These exercises will allow you to explore and practice the material from the chapter.

Each topic will have a "Skills Quiz". This will be a quiz consisting of problems similar to, but not necessarily identical to, the homework problems, that test your understanding of the material and your ability to perform any procedures or techniques presented in that chapter. These questions will be numerical, multiple-choice, matching, or fill-in-the-blank.

Additionally, there will be written/extended assignments not from the book for all but one of the units. These assignments will be more open-ended questions that usually require a bit more work, conceptual understanding, possibly some outside research, and may require a written solution or explanation. These questions provide a less procedural exploration of the topic being covered, focusing on critical thinking and quantitative reasoning.

I strongly encourage you **not** to wait until right before the due date to begin your assignments, as this does not allow time to seek out assistance if needed.

At the end of the course there will a ***proctored*** final exam. It will cover all material from the course. This exam will be a pencil and paper exam. More information will be given through WAMAP during the quarter.

This quarter we will be studying these topics (in order):

Voting Theory
Logic
Fair Division
Statistics: Describing Data
Historical Counting Methods
Final review (no new material)

Learning Outcomes
The course learning outcomes (aka objectives) describe what abilities and skills a successful student is expected to develop and demonstrate in this course. While often related, these are separate from the course content (the specific topics we'll be covering). Within each topic's folder, you will find a list of the topic-based learning outcomes, and how they related back to these course outcomes. You will be able to meet these learning outcomes by reading the book, making sure you understand the examples in the book, working through the online exercises, and seeking out assistance if you have difficulties. You will, of course, also need to apply your critical thinking skills, since part of the purpose of this course is to expand your ability apply the skills you've learned to new and different scenarios. In real life, problems rarely tell you how to solve them :)

Feedback
The homework exercises and skills quizzes are automatically graded by WAMAP, and you will receive instant feedback on those assignments.

Written/extended assignments I manually grade. I typically will grade these within three days after they're due. Your score, with feedback, will show in the WAMAP gradebook after they're scored.

Late Work Policy
You need to pay close attention to due dates for all assignments. The link to complete these assignments for credit will actually disappear at midnight on the due date, and the assignment must be completed before midnight. Because of this, I strongly recommend that students not wait until 11:50pm to start, in case if you have problems logging in or something

With that in mind, each student will be issued 5 late passes on WAMAP at the beginning of the course. Late passes can be used for Exercises or Skills Tests, and they must be used prior to the due date and time. Each pass gives a 48 hour extension from the due date and time – NOT from the time it is used. There is no penalty for using late passes and no extra credit for not using them. All late passes will be removed at the end of the last week of the quarter.

If something major comes up (a death in the family, hospitalization, etc.), please do send me a message to let me know, and we can work something out. It is most important to me that you have an opportunity to learn the material in this class.

About Taking an Online Course
Taking an online course for the first time can be a daunting undertaking. Compared to traditional on-campus courses, they have their pros and cons. More and more people are taking courses online mainly because of the convenience. This course is asynchronous, which means students and the instructor are not necessarily online at the same time. Messages are posted to the discussion boards by both students and facilitators any time of day or night. The online classroom is open 24 hours a day, seven days a week. This allows you to take a class anytime you want. You are not tied down to a specific hour of the day, Monday through Friday, as with traditional college and university courses.

Most students will agree that online courses require more involvement time than traditional classes. It is not uncommon to spend around 15 to 20 hours each week on a course. However, the amount of time you would normally spend commuting to a campus, waiting for class to start, and then commuting home, can now be spent constructively on the course. As a result, many studies have shown that online courses generally produce higher grades and greater learning than traditional courses. But it does require a very committed student.

Another con is the lack of physical interaction that occurs in a traditional course. This, however, can actually be a pro. Many personal and individual biases are eliminated because we can't see each other (unless you opt to post a picture of yourself). Quite often the person who is

normally inhibited in a traditional class is very active in an online class. Also with this asynchronous model there can be multiple "conversations" happening simultaneously. You can respond to any or all of the discussion threads at any time, something that is impossible in the traditional classroom. As a result, you will get to know your fellow classmates much better than any lecture class you have taken or will take. But, when your interaction is lacking, the entire class suffers. You have to be an active member of the class.

Getting Help
The discussion board is a forum where you can ask questions about the reading or homework, and get help from me or your classmates. The idea is to have the class operate like a study group - with all of you working together to further your learning. This is what distinguishes an online class from a traditional distance learning or math lab course.

Use the Discussion Board to ask for help on problems you don't understand how to do. If you do understand how to do the problems, help out your classmates by answering questions on the discussion board.

I will often monitor the homework discussion boards, and will respond to questions if they go unanswered, or if someone provides an incorrect response. If you have additional questions, didn't understand the answer someone gave you, or have a question that has gone unanswered, don't hesitate to send me a message and ask questions. However, please use the discussion boards first, so that others can benefit from your questions.

I can't stress enough that without being able to see the expression on your face, there's no way for me to judge if you understand my or a fellow student's explanation to your questions. So, you need to be proactive about your learning, and ask for more explanation when you need it. Again, you can do this via a message to me, or in the discussion boards.

Additionally, you can get help from the drop-in tutors at the MARC. However, be aware that not all tutors have taken this math course, and may have difficulty helping you on some topics.

Instructor Contact
You can contact me via the discussion boards, WAMAP messages, or my TCC email.

If you have general questions about the course, you can ask them in the "Ask the Instructor" discussion forum. If the question is of a personal nature, feel free to send me a message.
If you have questions about the homework or readings, you can ask them in the weekly discussion forums. Feel free to email me or call me for additional help.

When you send me a message, please understand that I am not online all the time. Please allow at least 24 hours for me to respond to your questions, possibly longer on the weekends (up to 48 hours). Because of the asynchronous nature of the course, please ask questions early enough to allow time for a response.

Grading
For each topic you will have online Homework.
For each topic you will have a Skills Quiz.
For three of the topics there will be a written/extended assignment.
There will be a proctored final test.

Online homework will count for 20% of your course grade.
Skills Quizzes will count for 30% of your course grade.
Written assignments will count for 20% of your course grade.
The Final will count for 30% of your course grade.

Your weighted percent in the class will be converted to a letter grade via this scale:
Course grades will be calculated using the percent-to-letter scale below.

A	93-100
A-	90-92.9
B+	87-89.9
B	83-86.9
B-	80-82.9
C+	77-79.9
C	73-76.9
C-	70-72.9
D+	67-69.9
D	63-66.9
D-	60-62.9
E	0-59.9

Academic Dishonesty
Students are expected to be honest and forthright in their academic endeavors. Cheating, plagiarism, fabrication or other forms of academic dishonesty corrupt the learning process and threaten the educational environment for all students. In this course, cheating on tests or exams, or representing the work of another as your own, will result in zero points for that assessment. A second infraction will result in an E grade for the course. For more information refer to the TCC Academic Dishonesty Policy at
http://www.tacomacc.edu/resourcesforstudents/studentpolicies/administrativeprocedureforacademicdishonesty.aspx

Accommodations
Students with Special Needs: All students are responsible for all requirements of the class, but the way they meet these requirements may vary. If you need specific auxiliary aids or services due to a disability, please contact the Access Services office in Building 7 (253.566.5328). They will require you to present formal, written documentation of your disability from an appropriate professional. When this step has been completed, arrangements will be made for you to receive reasonable auxiliary aids or services. The disability accommodation documentation prepared by Access Services must be given to me before the accommodation is needed so that appropriate arrangements can be made.

Etiquette for Classroom Dispute Resolution
If you have questions or concerns about this class or me, please talk with me about your concerns. If we are unable to resolve your concerns, you may talk next with the Chair of the Department, Carol Avery in building F2. The Chair can assist with information about additional steps, if needed.

Where to get help
A number of resources are available if you need additional help. Please make use of my office hours, listed at the beginning of this syllabus. Help is also available at the Al Kwarizmi Math and Advising Resource Center (MARC) in Bldg. 19, room 22 (253.566.5145). Simply drop in and ask a tutor your questions. The MARC is a great location for studying too, as tutors are available to answer your questions as they come up. You can also make appointments for one on one tutoring at the Writing & Tutoring Center in building 7. If you know you are *starting* to get behind or feel lost, the smartest thing you can do is ask for help!

The information in this syllabus is subject to change. Any changes may be made via announcements in WAMAP. Be sure to log in regularly to see if there are updates.