Spring 2-1-2022

M 105.50: Contemporary Mathematics

Shurong Li
University of Montana, Missoula

Syllabus for MATH 105 Contemporary Mathematics Online

Instructor Information:

Shurong Li ➢ E-Mail: shurong.li@umconnect.umt.edu

➢ Office Hour: Tue 10 – 11 am via zoom https://umontana.zoom.us/j/96913878164

Wed 3 – 5 pm via zoom https://umontana.zoom.us/j/97235744150

Catalog Description:

M105 - Contemporary Mathematics Credits: 3. Offered every term. Prereq. M 090 with a grade of C or better, or M 095, or M01 placement ≥17, or ALEKS placement≥3, or ACT score of 22, or SAT score of 550 (with the new test), or completion of the M105 EdReady module. An introduction to mathematical ideas and their impact on society. Intended for students wishing to satisfy the general education mathematics requirement.

Learning Outcomes:

This course illustrates several ways in which mathematics occurs in the "real world". We will explore some topics of general interest not typically taught in a formal mathematics class. The goal is for you to see not only how much math is around you, but also some of its history, beauty, and influence on modern thinking.

Upon completion of this course, students will be able to:

1. Read mathematical material at an appropriate level, reason mathematically, and write using mathematical notation correctly.

2. Formulate a problem precisely, and interpret solutions.

3. Apply elementary probability theory to construct models of random phenomena, including the use of simulations.

4. Use elementary statistical tools such as measures of center and spread, graphical representations of data, and statistical estimation of population proportions.

5. Use tools from one or more areas of mathematics to evaluate claims based on mathematical evidence in popular media.

6. Explore other areas of culture and history through mathematics, including the influence of mathematical thought on religion and politics, mental math "tricks", and mathematical games.

General Education:

Upon completion of the mathematical literacy requirement, a student will be able to apply mathematical or statistical reasoning to a variety of applied or theoretical problems.

Required Materials:

1. Required Texts: *Math in Society (Lippman) , College Mathematics (Scottsdale Community College)*

The textbooks are *free* open educational resource (OER) textbooks and are included in MyOpenMath.

2. Online Homework: Watch this YouTube video for an orientation on working with MyOpenMath .

After creating an account, you will want to register for my class on MyOpenMath using the following information:

Course ID:131836 Course name: M105-02 Spring 22 Enrollment key: Seventh142857

3. Scientific calculator: Most scientific calculators will work. If you have access to a TI-83 or TI-84 many computations will be shorter. Demonstrations will be done with a TI-84 and Desmos.

How the Course is Run:

It is essential that you get an account on MyOpenMath as this is where the entire course takes place. Once you have registered for MyOpenMath, you will be able to access the ebook, assignments, view course materials, check your grades, utilize their resources and send email messages. We expect you to use email as your primary means of communicating with us. If you have difficulty using the software, you should consider taking this class in a different format.

Every section of the text covered in class has a corresponding assignment in MyOpenMath. Please note that there are specific due dates for the homework and exams. You have 5 LatePasses which extend the due dates by 4 days. This DOES NOT mean that you should wait until the last moment to work on your assignments. We assure you this is a quick way to place yourself in a less than optimal position to complete the course with any measure of success.

Learning math can be challenging in a classroom setting, but tackling it on your own in an online course presents even more of a challenge. Online classes require a lot of self-teaching and motivation. We are not saying this to scare anyone away; we just want you to be aware that it is very different from having a professor in front of the class explaining things. However, when you do learn it on your own, it is that much more satisfying!!! We realize that many of you may not be particularly fond of mathematics. Our hope is that through this course you may begin to see the beauty that exists in addition to the practical utility of the thought processes that naturally take place in mathematics. We are entirely sincere when we say to you that if you have any comments, questions or concerns, we are available to you and open to discussion. The Math Department has tutors available at the Math Learning Center daily and their hours will be posted. I'm also available by appointment to help you out: either on Zoom, or by email!

Suggestions/Advice:

1. It is strongly recommended that you check your campus email daily.

2. You should begin each chapter by reading the assigned sections in your textbook and watching the corresponding section videos. Some students find it useful to watch the videos first, and then read the text (and maybe watch the videos again). MyOpenMath also has resources that you should take advantage of.

3. Homework should be done daily. There is no time limit on homework assignments. You can attempt the same question up to 4 times and still receive full credit. Use your notes from the videos as well as your textbook when needed. You will receive a 100% grade for homework if all of the questions are answered correctly.

4. If any questions arise, PLEASE contact me. Your success in this course will depend upon the amount of time and effort you are willing to spend with the material. You should plan to spend at least six hours per week reading your text, reviewing notes, working on homework, and studying for exams.

5. It is assumed that you are able to use the basic features of your calculator and that you have a working knowledge of all material covered in the prerequisite course. While I understand that some of the material was not mastered by all students in the prerequisite course or that the prerequisite course was taken years ago, it is your responsibility to seek assistance if it is needed. You should start by reading the textbook and its examples. You will find that the material comes back quickly. You are strongly encouraged to ask questions.

6. Please contact me with any concerns you have during the semester, especially if there is something going on that is having an impact on your ability to succeed in the class. Don't wait until you are way behind to get help! It is strongly recommended that you communicate with me as much as possible so that we can work together to get you through the course successfully.

Grading:

Your final course grade is assigned accordingly:

60% MyOpenMath Homework

20% Exams

20% Other Homework and projects

Incomplete (I) Grades:

You must meet these conditions for an incomplete:

1. Attendance greater than 80% and a passing grade (C or better) up to 3 weeks before the semester ends; and

2. Inability to complete the course due to extenuating circumstances, which usually means serious illness or death in the family; and

3. A written agreement on how the course requirements will be completed within 12 months. If the incomplete will automatically revert to the grade assigned at the time of the incomplete.

Incompletes are only given at the discretion of the instructor, per University of Montana policies and procedures. See the current catalog for further information.

Important Dates:

· Jan. 26: Last day to add/drop, or change grading option on CyberBear

· Feb. 7: Last day to drop on Cyberbear with refund. Last day to withdraw from all classes with a partial refund. Last day to buy or refuse UM student health coverage.

· Mar. 29: Last day to drop with instructor and advisor approval in CyberBear ($10 fee applies). Last day to change grading options using CyberBear.

· Mar. 30 2 - May 6: Drop using the Course Add/Change/Drop link with instructor and advisor permission ($10 fee applies). A “WP” or “WF” will appear on the transcript. Change grading options using Course Add/Change/Drop link.

· May 6: Last day of class

· May 20: Grades posted to CyberBear!

University Holidays (no school, campus closed):

· February 21: Presidents’ Day

· March 21-25: Spring Break.

Misconduct:

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code.

Disability modifications:

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and the Office of Disability Equity (ODE). If you think you may have a disability adversely affecting your academic performance, and you have not already registered with ODE, please contact their office in Lommasson Center 154 or call 406.243.2243. We will work together to provide appropriate modifications.