

Contemporary Mathematics: MATH 1007 - 64979

1 Contact Information

Professor: Dr. Blake Farman
Phone Number: (318) 342 - 1851
Email Address: farman@ulm.edu
Website: <https://ulm.edu/~farman>
Office: Walker 3-34
Office Hours: Monday/Wednesday: 8:00 AM - 11:00 AM
12:15 PM - 12:30 PM
1:45 PM - 3:30 PM

1.1 Preferred Method of Communication

The best way to communicate with me during the semester is through email. I monitor my email during regular business hours and try to respond within one business day.

1.1.1 Official University Email Addresses

The University provides each student with an email address, username@warhawks.ulm.edu, and all official course correspondence will **only** be conducted using official university email addresses.

1.1.2 Email Etiquette

When you send an email, your message should contain the following information

Subject: A few words that describe the content of your email along with the course identifier (MATH 1007-64979).

Salutation: A professional greeting such as “Dear” or “Hello” followed by the appropriate honorific and the recipient’s last name.

Body: A concise message that clearly expresses the purpose of your email.

Signature: A simple closing (e.g. “Sincerely,” “Thank you,” “Best regards,” etc.) followed by your first and last name.

For your convenience, included below is an example email.

Subject: Meeting - Math 1007 - 64979

Dear Professor Farman,

I am having trouble with this week’s homework. I have tried working through the examples in the text, but I am struggling to understand the concepts involved. Could we schedule a time to meet before the next class to discuss some of the concepts in more detail?

Thank you,

Jane Doe

2 Course Description

Selected topics from contemporary mathematics including logic, graph theory, set theory, number theory, probability, statistics, voting theory, and consumer mathematics.

3 Course Objectives

The goal of this course is to develop both critical thinking and problem-solving skills needed to solve and interpret problems in areas of discrete mathematics. The course will help the student appreciate some of the recent advances in mathematics and their impact on many areas of life.

4 Course Topics

Course topics include graph theory, logic, set theory, voting theory, apportionment, and number theory.

4.1 Set Theory

- a. Set Notation
- b. Subsets and Venn Diagrams
- c. Operations with Sets
- d. Applications and Survey Analysis

4.2 Logic

- a. Logic Statements and their Negations
- b. Truth Tables
- c. Logical Equivalence and De Morgan's Law
- d. Valid Arguments and Fallacies

4.3 Graph Theory

- a. Introduction to Graph Theory
- b. Trees
- c. Matchings
- d. Planar Graphs

4.4 Voting & Apportionment Theories

- a. How to Determine a Winner
- b. Flaws in Voting Methods
- c. Apportionment
- d. Weighted Voting Systems

4.5 Number Theory

- a. Prime Numbers
- b. Modular Arithmetic
- c. Fermat's Little Theorem and Prime Testing
- d. Fermat's Little Theorem and Public-Key Encryption

5 Instructional Methods

This course is offered as a face-to-face course.

- Learning will be facilitated through face-to-face lectures and the textbook.
- Homework assignments and Exams will be completed using Hawkes Learning.
- ULM offers one-on-one tutoring in the MATH Center.
- It is the student's responsibility to learn how to use Hawkes Learning. To register for Hawkes Learning, follow the instructions posted in Moodle. For technical questions concerning Hawkes Learning, go to

<https://support.hawkeslearning.com/supportcenter/>

and click Support or call 800.426.9538.

5.1 Temporary Remote Instruction (TRI)

During the semester, class and/or campus operations might be disrupted by an occurrence such as a tornado, fire, or illness outbreak that temporarily prevents in-person instruction. Until in-person instruction is possible, the class will enter a phase of temporary remote instruction (TRI). During this phase, instruction will take place via virtual means, either synchronously or asynchronously. Your instructor will alert you when this happens via e-mail and will include a description of how the course will proceed.

5.2 Technical Requirements During TRI

During a period of temporary remote instruction, the need for the course to continue in a virtual manner means that you will be required to have appropriate equipment, software, and telecommunication access to allow you to participate. This course will require that you have the following, should we have to go into TRI:

- A stable internet connection that is capable of joining Zoom meetings and taking assessments.
- A web camera (internal or external) and a microphone that can be used for Zoom meetings.

6 Evaluation

6.1 Grade Assignment

6.1.1 Scale

For the course total, the final grade will be determined as follows:

A:	At least 90%
B:	At least 80% and less than 90%
C:	At least 70% and less than 80%
D:	At least 60% and less than 70%
F:	Less than 60%

6.1.2 Weights

Grades will be calculated with the following weights:

Tests:	40%
Homework:	30%
Review Quizzes:	30%

6.2 Tests

- There will be five 55-minute tests administered through Hawkes Learning. Tests will be taken during class time in the MRC as shown on the course schedule found at the end of this document. Tests will be computer graded and results will be displayed to the student immediately after test submission.
- Required materials for testing include: notes, a calculator, pencils, and a ULM or valid picture ID to show the instructor. Students who fail to bring a picture ID on the day of a test will not be allowed to take the test.
- Cell phones and other electronic devices must be OFF and out of sight during tests.
- Students in need of additional testing adjustments must contact the Counseling Center (<http://www.ulm.edu/counselingcenter/>).
- Tentative test dates are: February 1, February 22, March 15, April 5, and May 1.

6.3 Homework

- Completing the assigned homework is absolutely essential in order for students to complete the course successfully and to keep students current with the material and its applications. Homework will be administered online through Hawkes Learning and can be completed anywhere with an internet connection.
- Homework assignments will be available at the beginning of each testing unit. It is strongly recommended that students complete the homework by the due date shown in Hawkes Learning. Technology issues arise but will not be accommodated.
- There is no limit to the number of attempts at the homework assignments prior to the due date.

6.4 Review Quizzes

- Review quizzes will be administered online through Hawkes Learning and can be completed anywhere with an internet connection. **Working the assigned review quizzes repeatedly without the use of notes is one of the best ways to prepare for tests.**
- There will be one review quiz for each test that will be available at the beginning of each testing unit. There is no limit to the number of attempts at the review quizzes prior to the deadline.
- The review quizzes are timed and must be completed by the due date shown in Hawkes Learning; however, it is strongly recommended that students begin working the quizzes as soon as possible.
- Technology issues arise but will not be accommodated.

7 Class Policies and Procedures

At a minimum, all policies stated in the current ULM student policy manual & organizational handbook should be followed (see <http://www.ulm.edu/studentpolicy/>). Additional class policies include:

7.1 Textbook

The required text for this course is

Viewing Life Mathematically Software + eBook, 2nd Edition, ISBN: 978-1-64277-496-2.

You may purchase access through the ULM Bookstore or directly from Hawkes Learning.

7.2 Calculator

A scientific calculator is required, preferably one with a two-line display such as TI-30X IIS or TI-30X IIB. A cell phone cannot be used as a calculator.

7.3 Other Materials Needed

ULM student ID, paper, writing utensils, lecture notes, Hawkes Learning user name and password.

7.4 Statement on COVID-19 Protocols (all classes)

Since the beginning of the COVID-19 pandemic, ULM has followed the guidance of the CDC and the ULS System regarding what measures to put in place at various stages of the outbreak. This situation is unchanged in the coming semester, as the CDC guidance on the need for social distancing, mask wearing, and vaccinations will be followed as the outbreak continues to evolve. Therefore, please continue to monitor university e-mails and websites (<https://www.ulm.edu/coronavirus/>) for any new updates on the pandemic.

7.5 Attendance Policy

Students are expected to adhere to the Class Attendance Policy outlined in the ULM Student Policy Manual.

- Class attendance is regarded as an obligation and a privilege, and all students are expected to attend all required classes in which they are enrolled regularly and punctually. Failure to do so may jeopardize a student's scholastic standing and may lead to suspension from the University. **Students are responsible for the effect absences have on all forms of evaluating course performance.**
- In accordance with University policy, the instructor will take roll regularly. It is the student's responsibility to ensure that his/her attendance is recorded.
- Each student is responsible for all class material and assignments whether or not the student is present. If a student misses class, then he/she is expected to check Moodle and ULM email for announcements and work on the assignments listed in Hawkes Learning.
- A student accumulating absences of 25% of the class meetings regardless of the reasons (excused or unexcused) will be reported to the Dean of Arts, Education, & Sciences which could result in academic withdrawal from the course or a course grade of F. This may be avoided if the course is dropped; however, it is the responsibility of the student to drop the course. Class removal carries with it the penalties of being assigned a grade of W or F, whichever is appropriate, and no credit for the course. Academic withdrawal may negatively impact a student's full-time status.
- University Excuses: Any University-related activity requiring an absence from class will count as an absence when determining if a student has met the minimum attendance requirement.
- Only students registered in MATH 1007 may attend the lectures.
- Only students registered in mathematics courses may enter the Math Resource Center (MRC).

7.6 Late Policy

Late homework and review quizzes will be accepted with the following penalties:

- 0% penalty for up to 2 day(s) late
- 25% penalty for up to 3 day(s) late
- 50% penalty for up to 4 day(s) late
- 75% penalty for up to 5 day(s) late
- 100% penalty for more than 5 day(s) late

7.7 Make-up Policy

- Students cannot make up exams. The lowest exam grade will be dropped at the end of the semester. Any further missed exams will be recorded as a grade of 0.
- Since homework assignments are available well before deadlines, students cannot make-up missed homework assignments.
- Students cannot make-up review quizzes, which are available online well in advance of the due date.

7.8 Academic Integrity

Faculty and students must observe the ULM published policy on Academic Dishonesty (see the ULM Student Policy Manual – <http://www.ulm.edu/studentpolicy/>).

Any student caught turning in work that is not his/her own will be reported to the School of Sciences. If the student is found to be responsible for such a violation, then a formal report will be made to the Office of Student Services and the student will receive **a grade of F for the course.**

7.9 Course Evaluation Policy

At a minimum, students are expected to complete the online course evaluation.

8 Academic Services

8.1 MATH Center

The MATH Center is a mathematics only tutoring facility located in Walker Hall Room 3-46. MATH Center tutors are available during the hours listed on Moodle for tutoring.

8.1.1 MATH Center Procedures:

- You must scan in and out of the MATH Center using a ULM student ID or valid photo ID.
- You should bring all materials to the MATH Center: notebook, calculator, writing utensils, etc. No materials will be provided for students in the MATH Center.
- Cell phone usage is not allowed in the MATH Center. Cell phones must be turned off and stored out of sight. Any visibility or use of a cell phone by a student within the MATH Center is grounds for immediate removal from the MATH Center.

8.2 Mathematics Resource Center (MRC)

The Mathematics Resource Center (MRC), operated by the ULM mathematics faculty, is located on the third floor of Walker Hall. The MRC is a mathematics learning center used for hands-on classroom experience and testing. The MRC is available for use by ULM faculty/students any time classes are in session. Testing is available only by appointment or faculty assignment.

9 Student Services

You can find information about the following available ULM student services at the websites listed below.

- Student Success Center (<http://www.ulm.edu/cass/>).
- Counseling Center (<http://www.ulm.edu/counselingcenter/>).
- Special Needs (<http://www.ulm.edu/counselingcenter/special.htm>).
- Library (<http://www.ulm.edu/library/referencedesk.html>)
- Computing Center Help Desk (<http://www.ulm.edu/computingcenter/helpdesk>)

Additional information can be found on The Student Services web site (<http://www.ulm.edu/studentaffairs/>).

9.1 Disability Accommodations

The University of Louisiana at Monroe strives to serve students with special needs through compliance with Sections 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. These laws mandate that postsecondary institutions provide equal access to programs and services for students with disabilities without creating changes to the essential elements of the curriculum. While students with special needs are expected to meet our institution's academic standards, they are given the opportunity to fulfill learner outcomes in alternative ways. Examples of accommodations may include, but are not limited to, testing accommodations (oral testing, extended time for exams), interpreters, relocation of inaccessible classrooms, permission to audiotape lectures, note-taking assistance, and course substitutions.

Current policies on serving students with disabilities can be obtained from the ULM website: <http://ulm.edu/counselingcenter/>. If you need accommodation because of a known or suspected disability, you should contact the director for disabled student services at:

- Voice phone: (318) 342 - 5220
- Fax: (318) 342 - 5228

- Walk In: ULM Counseling Center, 1140 University Avenue (this building and room are handicapped accessible).

If you have special needs of which I need to be made aware, you should contact me within the first two days of class.

9.2 Mental Wellness

If you are having any emotional, behavioral, or social problems, and would like to talk with a caring, concerned professional please call one of the following numbers:

- The ULM Counseling Center (318) 342 - 5220
- The Marriage and Family Therapy Clinic (318) 342 - 9797
- The Community Counseling Center (318) 342 - 1263.

9.3 Title IX

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds, including federal loans and grants. Furthermore, Title IX prohibits sex discrimination to include sexual misconduct, sexual violence, sexual harassment and retaliation. If you encounter unlawful sexual harassment or gender-based discrimination, please contact Student Services at (318) 342 - 5230 or to file a complaint, visit www.ulm.edu/titleix.

Remember that all services are offered free to students, and all are strictly confidential.

9.4 Emergency Procedures

The emergency number for the ULM Police Department is (318) 342 - 5350 and should be used for emergency calls. If the campus police are contacted about an emergency for a student, they will go to the student's class to inform the student.

9.5 Discipline / Course Specific Policies

Any policies given here may be altered by the professor if deemed necessary. If this occurs, ample notice will be given.

9.6 FERPA

Do not email or call your professor regarding your course grades. The Family Education Rights and Privacy Act (FERPA) prohibits your professor from discussing your grade in any manner except in person. Please do not have family members, friends, or anyone else contact your professor about your grade as FERPA prohibits your professor from sharing that information with them.

10 Tentative Course Schedule

10.1 Contact Information

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12:15 PM - 12:30 PM
1:45 PM - 3:30 PM

Week 1

Day	Date	Assignment Due (Hawkes)
Wed	1/11	Set Notation

Week 2

Day	Date	Lesson Due (Hawkes)
Mon	1/16	<i>No Classes (MLK Day)</i>
Wed	1/18	Subsets and Venn Diagrams

Week 3

Day	Date	Lesson Due (Hawkes)
Mon	1/23	Operations with Sets
Wed	1/25	Applications and Survey Analysis

Week 4

Day	Date	Lesson Due (Hawkes)
Mon	1/30	Review
Wed	2/1	Exam 1: Sets Review Quiz Due by 11:00 am

Week 5

Day	Date	Lesson Due (Hawkes)
Mon	2/6	Logic Statements and Their Negations
Wed	2/8	Truth Tables

Week 6

Day	Date	Lesson Due (Hawkes)
Mon	2/13	Logical Equivalence and De Morgan's Laws
Wed	2/15	Review

Week 7

Day	Date	Lesson Due (Hawkes)
Mon	2/20	<i>No Classes (Mardi Gras)</i>
Wed	2/22	Exam 2: Logic Review Quiz Due by 11:00 am

Week 8

Day	Date	Lesson Due (Hawkes)
Mon	2/27	Introduction to Graph Theory
Wed	3/1	Trees

Week 9

Day	Date	Lesson Due (Hawkes)
Mon	3/6	Matchings
Wed	3/8	Planar Graphs

Week 10

Day	Date	Lesson Due (Hawkes)
Mon	3/13	Review
Wed	3/15	Exam 3: Graph Theory Review Quiz Due by 11:00 am

Week 11

Day	Date	Lesson Due (Hawkes)
Mon	3/20	How to Determine a Winner
Wed	3/22	Flaws in Voting Methods

Week 12

Day	Date	Lesson Due (Hawkes)
Mon	3/27	Apportionment
Wed	3/29	Weighted Voting Systems

Week 13

Day	Date	Lesson Due (Hawkes)
Mon	4/3	Review
Wed	4/5	Exam 4: Voting Theory Review Quiz Due by 11:00 am

Week 14

Day	Date	Lesson Due (Hawkes)
Mon	4/10	<i>No Classes (Spring Break)</i>
Wed	4/12	<i>No Classes (Spring Break)</i>

Week 15

Day	Date	Lesson Due (Hawkes)
Mon	4/17	Prime Numbers
Wed	4/19	Modular Arithmetic

Week 16

Day	Date	Lesson Due (Hawkes)
Mon	4/24	Fermat's Little Theorem and Prime Testing
Wed	4/26	Fermat's Little Theorem and Public-Key Encryption

Week 17

Day	Date	Lesson Due (Hawkes)
Mon	5/1	Exam 5: Number Theory Review Quiz Due by 11:00 am
Wed	5/3	<i>No Classes (Student Study Day)</i>