

Instructor: Mrs. Maliha J. Luqman

Email: mluqman@gmu.edu

Office Hours: MW 9:00-10:00AM,
Exploratory Hall Room 4309

Please email if these don't work for you.

Course Information:

Section: 008 - 3 credits

Lectures: MW 10:30AM-11:45AM, Lecture Hall I

Course Description

Course Prerequisites: A grade of C or better in MATH 105 or a passing score on the Math Placement Test. If you have not met the formal prerequisites for the course, you cannot stay in the course. Information on the Math Placement Test is available at <https://science.gmu.edu/academics/departments-units/mathematical-sciences/mathematical-sciences-testing-center>

Course Description and Objective:

Introduces ideas of discrete mathematics and combinatorial proof techniques including logic, number theory, mathematical induction, sets, graphs, trees, recursion and enumeration.

Textbooks and Materials

Text: Goodaire, Edgar G., Parmenter, Michael M.; Discrete Mathematics with Graph Theory, 3E Prentice-Hall, NJ, 2006; ISBN: 978-0-13-468955-5

Technology: No calculators or computer programs will be allowed during exams.

Assessments and Grading Scale

Posting of Grades: Student assignments will be evaluated within a week and posted to Blackboard one week after the assignment due date.

Grading Scale:

A	A-	B+	B	B-	C+	C	C-	D	F
93-100	90-92	87-89	83-86	80-82	77-79	73-76	70-72	60-69	0-59

There are 3 components that will determine your grade:

1. Activity Sheets (12, will drop 2 lowest) – 10%
2. Exams (2 given in-class, about 1.5 hours each) – 30% x 2
3. Comprehensive Final Exam – 30%

Assessments

- **Attendance/Participation:** Math is an active sport, missing even one day can impair learning. Though Attendance is not part of your grade, there will be weekly in-class activities, you may miss three of these with no grade penalty. Students are expected to be in class on time and to be actively working on math while they are in class. Have all supplies near you when class starts (pencil and paper). Students should be respectful in class (participate only in discussions relative to the class, mute cell phones.)

- **Homework:** Though homework will not be graded, there will be suggested homework assignments per section. For college courses, expect to use the “2 for 1” rule, whereby you spend at least two hours for every one credit hour per week. Therefore, expect to spend 6 hours per week on studying and homework.
- **In-Class Weekly Activities:** Activity assignments will be assigned and due according to the course schedule. All assignments are to be submitted by the end of class on their due date. Late assignments will not be accepted, however your two lowest scores will be dropped at the end of the semester.
 - Your third lowest activity score can be *replaced* by one of the following options:
 - Your contributions to the Blackboard’s Discussion Forum OR
 - Submitting a copy of your notes (on the assigned dates)
- **Exams:** There will be two in-class exams in addition to the comprehensive final. Exams make up the majority of your grade. Cheating of any form will not be tolerated. Exams will be conducted in-class. I allow an exam-swap policy, whereby if the grade on your Final Exam is higher than your lowest exam score, the lowest exam score will be replaced with your final. As a result, missing exams for non-emergency reasons results in a zero on the exam.
- **Final Exam:** The final in-class exam is comprehensive. The final exam is worth 30% of your grade. There will be no make-ups permitted for the final exam. The date is already set by the university, so please do not make other plans on the date of the final exam such as appointments, early vacation departures, family outings, etc. Such changes are not negotiable.
- **Extra Credit:** There will be NO extra credit assigned. Please do not ask.

Course Policies

Communication

I frequently send announcements through email via Blackboard announcements. You can refer to past announcements in Blackboard if you have trouble going through your email. Faculty, staff, and administrators communicate with students through their official GMU email accounts (@gmu.edu). Students are likewise required to use their Masonlive email accounts (@gmu.edu or @masonlive.gmu.edu) to communicate with instructors and other college personnel and should check their email accounts regularly. I will use Blackboard to post announcements, grades and other important information pertaining to the class. You can access this by going to mymason.gmu.edu and logging on using your NetID.

Instructors receive a significant number of emails from students over the course of the semester. To specifically identify the course in which the student is enrolled, all email from the student must include the course and section number (e.g., MATH 125 – 008, Absence Excuse) in the subject of the email.

Cellphones, Smartphones, Laptops and Other Electronic Devices

Cell phones should be turned off or set to silent mode before entering class. Laptop and PDA use is permitted in class for note-taking purposes only, but the sounds should be turned off and care should be taken so that their use is not disruptive to the class.

You may not use cell phones, laptops, or PDAs during tests, not even as calculators. All cell phones or other communication devices should be put away prior to exams. You may not use music players during class or during exams.

Additional Resources and Information

Academic Integrity: Violations of the honor code will not be tolerated.

Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.

Mason Honor Code is available at: <https://oai.gmu.edu/mason-honor-code/>

Disabilities and Accommodations: GMU is committed to ensure all students have an opportunity to pursue a college education regardless of the presence or absence of a disability. Information regarding the Office of Disability Services is available at ds.gmu.edu and if you require accommodations, please contact Disability Services to provide the appropriate documentation.

Tutoring Center: The Mathematics Tutoring Center is offering online tutoring services to students currently enrolled in undergraduate math courses at GMU. Details: <http://math.gmu.edu/tutor-center.php>

ITS Support Center: The ITS Support Center serves as the central point of contact for the university community for requesting IT support or information. Additional details and resources are located at <https://its.gmu.edu/service/its-support-center/> Email support@gmu.edu or call 703-993-8870 for technical support.

Important Campus-wide Dates

Classes Begin	Monday, August 23
Last day to add	Monday, August 30
Labor Day – University closed	Monday, September 6
Last day to drop a class with a tuition refund	Tuesday, September 7
Last day to drop (50% refund)	Tuesday, September 14
Unrestricted Withdrawal Period (W on transcript)	September 15-27
Fall Break	Monday, October 11
Selective Withdrawal Period (W on transcript) <ul style="list-style-type: none"> • If you do not withdraw by this date and <u>do not complete your assignments</u>, your grade will be based on what you have submitted, this is usually an F. • Note a W does not contribute to your GPA, but does show on your transcript • You are limited to 3 withdrawals in your academic career 	September 28-October 27
Thanksgiving Break – University closed	Wednesday, November 24- Sunday, November 28
Final exam	Wednesday, December 8 – 10:30AM-1:15PM

Tentative Schedule

	Date	Sections and Topics:	Suggested Problems
Week 1	M: 08/23	Intro, 0.1 Compound Statements	2a, b, g, j, 5 a-g, i, k, l, 6a, b, e-h
	W: 08/25	1.1 Truth Tables, Activity 1 (A1)	1a-e, 2, 5, 6, 7, 8
Week 2	M: 08/30	1.2 The Algebra of Propositions	2, 3, 4, 5a, c, e, g, 6
	W: 09/01	1.3 Logical Arguments, A2	1, 3, 4a, c, f, 5a, c, e, g, i, k
Week 3	M: 09/06	<i>NO CLASS</i>	
	W: 09/08	2.1 Sets 2.2 Operations on Sets	1, 3, 7, 10, 11 2, 4, 10, 12a-d, 16, 17, 27
Week 4	M: 09/13	2.3 Binary Relations	3, 7, 9a-e
	W: 09/15	2.4 Equivalence Relations, A3	2, 3, 7, 11
Week 5	M: 09/20	3.1 Functions – Basic Terminology	1, 3, 13, 15, 25
	W: 09/22	3.2 Inverses & Composition, A4	1, 3, 7a, b, 9a-d, 12, 19, 22
Week 6	M: 09/27	Exam 1	0.1, 1.1-1.3, 2.1-2.4, 3.1-3.2
	W: 09/29	5.1 Mathematical Induction	1, 4a, d, f, 7a-e, 9e, h, 11, 12, 15
Week 7	M: 10/04	5.2 Recursively Defined Sequences	1, 2a, 4, 6, 20, 26, 27, 40, 55
	W: 10/06	5.3 Solving Recurrence Relations, A5	1, 7, 17
Week 8	M: 10/11	<i>NO CLASS</i>	
	W: 10/13	6.1 Principles of Inclusion-Exclusion, A6	1, 4, 6, 11, 22
Week 9	M: 10/18	6.2 The Addition and Multiplication Rules	1, 5, 6, 7, 8, 16, 17
	W: 10/20	7.1 Permutations, A7	1, 7, 8, 11, 15
Week 10	M: 10/25	7.2 Combinations	3, 7, 11, 14, 20, 25
	W: 10/27	7.3 Elementary Probability, A8	4, 10, 12
Week 11	M: 11/01	7.4 Probability Theory	1, 2, 3, 6, 7, 15, 16, 17
	W: 11/03	9.1 Gentle Introduction to Graph Theory, A9	1, 2, 3, 5, 6
Week 12	M: 11/08	Exam 2	5.1-5.3, 6.1-6.2, 7.1-7.4
	W: 11/10	9.2 Definition and Basic Properties 9.3 Isomorphism	2, 3, 6, 14, 15, 21, 23, 26, 28, 35 1-6, 10
Week 13	M: 11/15	10.1 Eulerian Circuits 10.2 Hamiltonian Cycles	1, 3, 4, 7, 9-13, 17 1, 2, 5, 9, 15, 23
	W: 11/17	10.4 Shortest Path Algorithms, A10	10, 14a-c
Week 14	M: 11/22	12.1 Trees and their Properties, A11	1, 4, 6, 10, 21
	W: 11/24	<i>NO CLASS</i>	
Week 15	M: 11/29	12.2 Spanning Trees 12.3 Minimal Spanning Trees	4-9 1-2
	W: 12/01	13.1-13.2, Planar Graphs and Colorings, A12	
Week 16	W: 12/08	Final Exam (10:30AM-1:15PM)	

****ITEMS ARE SUBJECT TO CHANGE AND WILL BE UPDATED ON BLACKBOARD ACCORDINGLY.****