MHF3202 Sets and Logic 04G2   **Summer A 2023**
MTWRF 3rd Period (Time 11:00-12:15 PM) Little Hall 205

Instructor: Dr. Jason Harrington
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Course Description: Examples of sets, operations on sets, set algebra, Venn diagrams, truth tables, tautologies, applications to mathematical arguments, and mathematical induction. Can also be very useful for prospective and in-service secondary and middle school teachers. Taking one, but not both, of MAS 3300 or MHF 3202 is required of mathematics majors.

Prerequisites: MAC 2312 with a minimum grade of C.

Textbook: *Book of Proof* by Richard Hammack Third Edition. (ISBN: 978-0-9894721-2-8) This textbook is also available for free online: https://www.people.vcu.edu/~rhammack/BookOfProof/

Office Hours: I will be available after class 4th period on MWF or by appointment.

Grades: Your course grade is based on 2 exams worth 40% total, a final exam worth 20%, homework will count 20% total, attendance 10%, and the Discussion Board is work 10%.

We will use the following scale:
A [90,100];   A-[87,90);   B+[83,87);   B [80,83);   B-[77,80);   C+[73,77);   C [68,73);
                C-[64,68);   D+[62,64);   D [57,62);   D-[55,57);   E [0,55)

Your grade is your responsibility. You have exactly one week once your assignment has been returned to you to discuss that grade. After that week, the grade is final. You can discuss the content of the assignment anytime but grade disputes must be resolved within one week of the graded assignment.

Assignment	Weight
Homework	20%
Attendance	10%
Discussion Board	10%
Exam (Two exams, 20% each)	40%
Final Exam	20%

Homework: Exercises will be assigned mainly from the textbook. These exercises, along with classroom examples will form the basis for all exams. Not every textbook homework assignment will be checked, but it will be randomly collected periodically. You may check Canvas for the assignments.

Exams: There will be 2 exams in class. The 2 exams dates provided on the course schedule are TENTATIVE. Exam 1 is May 26th and Exam 2 is June 9th.

Final Exam Date: June 23rd in LIT 205 during 3rd period.

Attendance Policy: Registration in this course obligates the student to be regular and punctual in class attendance. Makeup exams will only be given in case of documented illness or for students participating in official College events. All late work will be penalized. Students will **NOT** be given the opportunity to complete old assignments at the end of the semester to improve their grades. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Discussion Board Participation: Each module will have a discussion board available to discuss the current content. You may earn credit by participating in the discussion board, either by asking questions or posting answers. Feel free to post questions about homework, lectures etc.

Online course evaluation: Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at https://evaluations.ufl.edu

Academic Honesty: On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied:

"On my honor, I have neither given nor received unauthorized aid in doing this assignment."

The UF honor code is available here: https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/

Students with Disability: Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center. https://disability.ufl.edu/get-started/ to get started with the Disability Resource Center. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Resources: Free tutoring is available at the Teaching Center which is located on the ground level of SW Broward Hall. The regular hours are Monday-Friday, 8am-5pm. Please check the website http://www.teachingcenter.ufl.edu/ for any changes.

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.

GatorWell Health Promotion Services: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-273-4450.

MHF3202, Summer Semester A, 2024

Monday	Tuesday	Wednesday	Thursday	Friday
May 15th 1 First day of Classes §1.1/1.2 Sets and The Cartesian Product	16th 2 Last day for Drop/Add §1.3/1.4 Subsets and Power Sets	17th 3 §1.5/1.6 Union, Intersection, Difference and Complement	18th 4 §1.7/1.8 Venn Diagrams and Indexed Sets	19th 5 §1.9/1.10 Sets That Are Number Systems and Russell's Paradox
22nd 6 §2.1/2.2 Statements and And, Or, Not	23rd 7 §2.3/2.4 Conditional Statements and Biconditional Statements	24th 8 Withdrawal with 25% Refund §2.5/2.6 Truth Tables for Statements and Logical Equivalence	25th 9 §2.7/2.8 Quantifiers and More on Conditional Statements	26th 10 Fee Payments (by 3:30pm) Exam 1
29th Memorial Day	30th 11 §2.9/2.10 Translating English to Symbolic Logic and Negating Statements	31st 12 §4.1/4.2 Theorems and Definitions	June 1st 13 §4.3/4.4 Direct Proof and Using Cases	2nd 14 §5.1/5.2 Contrapositive Proof and Congruence of Integers
5th 15 §6.1/6.2 Proving Statements with Contradiction and Proving Conditional Statements by Contradiction	6th 16 §6.3/6.4 Combining Techniques and Some Words of Advice	7th 17 §7.1/7.2 If-and-Only-If Proof and Equivalent Statements	8th 18 §7.3/7.4 Existence Proofs and Constructive Versus Non-Constructive Proofs	9th 19 Exam 2
12th 20 §8.1/8.2 How to Prove $a \in A$ and How to Prove $A \subset B$	13th 21 §8.3/8.4 How to Prove $A = B$ and Examples: Perfect Numbers	14th 22 §9.1/9.2 Counterexamples and Disproving Existence Statements	15th 23 §10.1/10.2 Proof by Induction and Proof by Strong Induction	16th 24 §10.3/10.4 Proof by Smallest Counterexample and The Fundamental Theorem of Arithmetic
19th Juneteenth	20th 25 §10.5 Fibonacci Numbers	21st 26 Review and Recap of Important Concepts	22nd 27 Problem Solving and Practice Session	23rd 28 Final Exam

*Please note that this calendar is subject to change.