Math 170 002, Spring 2023
Finite Mathematics
Monday & Wednesday 3:55 – 5:10 Close-Hipp 201

Instructor: Jack Dalton

Office Hours: (Tentatively) Monday and Wednesday 12:00 PM – 1:30 PM or by appointment in LeConte 121 (or online on Blackboard Collab if arranged in advance)

Email: jrdalton@mailbox.sc.edu

Prerequisite: Qualification through placement, or a grade of C or better in Math 111 or 115.

Class Meetings: This is an in-person class. We will meet face-to-face on Monday and Wednesday. In the event that the course is moved online, we will meet at our scheduled class time via Blackboard Collaborate.

Text: Finite Mathematics (7th edition) by Waner and Costenoble.

Calculator: Each student is required to have a graphing calculator. My instructions will predominantly be for the TI-83. If you have another calculator, it will be your responsibility to make sure it has the features you will need in this course and learn how to use those features.

Learning Outcomes: Upon successful completion of the course, students should be able to:

- Learn basic mathematical concepts and procedures related to Matrices, Linear Programming, Combinatorics, and Probability
- In mathematics, we have a unique opportunity to challenge, test, and develop our critical thinking skills through problem solving. In finite mathematics we will focus on problems involving linear optimization, computation of present and future values, counting problems that involve permutations and/or combinations, probability, and/or logic. Examples include resource allocation problems, in which some parameter (such as profit) is optimized when subject to linear constraints. A combinatorial example is to use counting techniques to determine the probability of a specific poker hand.
- Translate word problems into mathematical statements that can be solved using the above techniques together with basic algebra, geometry, and arithmetic.

Important dates: Monday March 28th – last day to drop a course without a grade of WF
        Final Exam: Friday, April 28th @ 4:00 PM

Grading:		
	3 tests @ 80 points each	240 points
	3 homework sets @ 20 points each	60 points
	Group worksheets/presentations	50 points
	Class participation/office visits	10 points
	Cumulative final exam	120 points
	Total	480 points

ONLY WORK DONE IN PENCIL WILL BE ACCEPTED.

THERE ARE NO MAKE-UPS. Any test missed will be given a zero.

Final Grade: Total points earned will be divided by the total possible and converted to a percentage. If a student is borderline, attendance and final exam score will be considered. Letter grades will be assigned as follows.

91% - 100%	A	86% - 90%	B+
81% - 85%	B	76% - 80%	C+
71% - 75%	C	66% - 70%	D+
60% - 65%	D	below 60%	F

Homework: Homework problems will be assigned from the book and collected in <u>stapled</u> sets. Practice is essential to your success with this material! Due to the length of many problems, it is not feasible to always answer homework questions during class. Students with further questions should see the instructor during office hours or utilize free tutoring on campus. Students are encouraged to discuss the problems and help each other but all work turned in must be your own! Each homework set will be spot graded for accuracy and work shown.

Tutoring: The purpose of tutoring is for students to develop the habits of getting help and asking questions before earning poor grades. However SI is not offered for this course. After test 1, <u>students making below a B on the test and students who do not submit homework assignments will be required to meet with the instructor</u> at least once before test 2. Failure to do so will result in the loss of the 10 participation points in the student's final grade. The same process will occur after test 2. Additionally, the math department offer free tutoring. More information is available at https://sc.edu/study/colleges_schools/artsandsciences/mathematics/study/tutoring/index.php

Attendance: You are expected to come to every class on time and stay until the end of class. **To be considered present, you must be attentive to the lesson.** Please keep all cell phones off (or at the very least on vibrate) during class time. **Students seen using their cell phone during class will be considered absent.** Late arrival, leaving class early, disrupting class or putting head down may also constitute an absence.

Absences will be considered unexcused unless a student notifies me through email by 8:15AM the day of the scheduled class with an acceptable excuse. **If you are not feeling well, please do not come to class and send me an email** explaining the situation. <u>If you know in advance you will not be able to attend a class or if you need to quarantine, you must provide documentation and let me know before 8:15AM the day of class</u>. If you are well enough to join virtually, please do so. Students who submit documentation of illness or other pre-approved excuses and complete the class notes or worksheet will not have their absence counted against them. These absences will be considered excused.

After three unexcused absences from class, each class period missed for <u>any</u> reason will result in the loss of 5 points on your final grade. Students with perfect attendance (which includes excused absences with online attendance) to class will have 5 bonus points added to their final grade.

If you must miss class, <u>do not wait</u> for the next class to get caught up. First check Blackboard, under course documents, and print out any notes or handouts you missed. Then contact another student from the class or a math tutor to get

the material you missed. Attempt the homework before the next class. Notify the instructor (e-mail or call) of your progress and ask your remaining questions.

Make-up Policy: **THERE ARE NO MAKE-UPS**. <u>No late work is accepted</u>. Please plan accordingly. User error does not qualify you for any kind of makeup or retake opportunity. Any test or assignment missed will be given a zero. This means NO arrangements will be made for missed homework so please be careful in choosing to miss an assignment. If needed, I will work with students who may miss an exam due to illness as an excused absence (see above). <u>Tests given in class must be made up in person.</u>

Course Communication:
I will be communicating with you regrading assignments and deadlines. If you need to get in touch with me, the best method if via email. Generally, I will reply to emails within 24 hours. If you have not received a response within this timeframe, please double check the email address and resend. If you are having trouble with this course or its material, you should contact me via email to discuss the issue.

Emails will be sent to your email address in Blackboard. If you primarily use another email account, you should make sure that the Blackboard account is linked to that address.

Cheating: Cheating will not be tolerated and it will be dealt with in accordance with University guidelines. At the very <u>least</u> any cheating will result in a score of 0. The first tenant of the Carolinian Creed is, "I will practice personal and academic integrity." This includes refraining from plagiarism, cheating, falsifying work and/or assisting other students in violating the Honor Code.

Face Coverings: Faculty, students and staff are encouraged to wear an appropriate face covering in all classrooms and in other designated areas on campus when sick but well enough to attend campus.

Accommodations:

Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, contact the Student Disability Resource Center. All accommodations must be approved through the Student Disability Resource Center.

Help is available:

At this point in your mathematics career, you may find it helpful to form study groups. A great way to learn a concept is to explain it to others. Working together on homework assignments is a great way to learn mathematics so I encourage this. Remember you can also come ask me questions and I want to help you! Please take advantage of office hours – they are a time set aside just for you.

<u>Tentative </u>Course Outline:

Week of	Section(s)	Topic(s)
Jan. 9th	1.2, 1.3, 3.1	Modeling with linear equations; elimination method
Jan. 16th	3.1, 3.2	Solving systems of equations using elimination and matrices
Jan. 23th	3.2, 3.3	Using matrices to solve systems of equations; HW # 1 due
Jan. 30st	3.3	Test 1 (date TBA)
Feb. 6th	4.1 – 4.3	Matrix operations
Feb. 13th	5.1, 5.2	Linear programming
Feb. 20st	5.2, 5.3	Linear programming continued and intro to simplex method; HW # 2 due
Feb. 27th	5.3 and Test 2	Simplex method, Test 2
March 6th	Spring Break	
March 13th	6.1, 6.2	Sets and cardinality of sets
March 20st	6.3	Counting outcomes
March 27th	6.4	Permutations and combinations
April 3th	7.1, 7.2, 7.3	Sample space, relative frequency, theoretical probability; HW # 3 due
April 10th	7.3, 7.4, 7.5	Theoretical and conditional probabilities – Test # 3 is April 13th
April 17th	7.6, 7.7	Bayes Theorem, Markov Systems
April 24th	Review	
April 27th	Final Exam	