

MA 114-001: INTRODUCTION TO FINITE MATHEMATICS WITH APPLICATIONS

NORTH CAROLINA STATE UNIVERSITY - SUMMER 1 2021

Class via Zoom: Monday, Tuesday, Wednesday, Thursday, Friday
11:40am-1:10pm

Office Hours via Zoom: Tuesday & Thursday 1:15-2:45pm
(*subject to change*)

1 IMPORTANT DETAILS

- Instructor: Ms. Toryn Avery
- Email: teavery@ncsu.edu

Please be respectful and professional during class and when sending emails. Via email, please identify yourself and the class clearly. Your subject line should include the course and section number (*MA 114-001*) as well as the reason for emailing (e.g. *HW # 3.1 Problem 2*). In the email itself, you should include what you have already attempted to do to resolve the issue along with your question. If you have a specific question about a homework problem you are working on, please include and scan or photo of your work.

- Textbook: Finite Mathematics by Waner and Costenoble, 7th edition. The textbook is available as an electronic-book through WebAssign and the textbook website is available on Moodle. I expect you to read sections of the textbook around the time of lectures. The homework in WebAssign correlates to the exercises in the textbook.
- WebAssign: Go to <http://cengage.com>, create a Cengage account (I recommend using your NCSU email address). See this Google Doc for instructions on setting up this account and lots of WebAssign details and FAQs. Once you have a Cengage account, go to <http://webassign.net> to login into WebAssign. You must add yourself to our WebAssign roster using **our class key: ncsu 0360 1717**. To access our textbook and homework assignments, use the following: WebAssign *Resources* tab → textbook. WebAssign *Assignments* tab → homework. WebAssign is free for the first 2 weeks, then you will need to purchase. The total cost of the textbook and homework access for our class is \$100. See the same Google Doc for purchasing details and instructions.
- Moodle: Link to our course Moodle page: <https://wolfware.ncsu.edu>. Any announcements posted on the Moodle page will also be sent to your NC State email address. Please check your email notification settings in Moodle to ensure that you receive course announcements, and please check your NC State email often.

2 COURSE DETAILS

2.1 Course Description.

Elementary matrix algebra including arithmetic operations, inverses, and systems of equations; introduction to linear programming including simplex method; sets and counting techniques, elementary probability including conditional probability; applications in the behavioral, managerial and biological sciences. Computer use for completion of assignments.

2.2 Structure.

- Class via Zoom: Class will be held five days a week (Monday-Friday, 11:40am-1:10pm) via Zoom, unless otherwise specified. Each session will be recorded and posted to the course Moodle site. These sessions will be essential to your success in the course as this will be a good chance for you to ask questions about the material and have a discussion with the class. Breakout rooms may be utilized so that you may work together in small groups.
- Zoom Expectations: I strongly encourage that everyone has their cameras on, if possible. This allows me to get to know your faces, as well as gauge class understanding. If I look out on the class and see heads nodding, that's great! If I see confused faces, I will revisit the material. This way, everyone's confusion is anonymous, yet heard. You will never be penalized for having your camera off. Also, be mindful when your camera is on. Treat the classroom as a professional environment. Please be appropriately clothed, refrain from consuming alcoholic beverages and/or smoking, remain muted unless sharing with the class, etc. I also understand that sometimes disruptions are out of your control. In these situations, it is expected that you turn off your video so as not to disrupt class. Help us create a respectful environment conducive to learning!
- Office Hours: These are completely optional meetings where I will be available to ask whatever questions you have about the class material, homework problems, textbook problems, etc. These will not be recorded as students will be allowed to speak freely. The times specified above are subject to change based on attendance and my availability.
- Homework: Homework is accessed and submitted online by the posted due dates on the course WebAssign site. Each WebAssign homework assignment is due online by 11:59pm on the posted due date, and are subject to change based on the pacing of the class. I *highly recommend* keeping a written copy of your work for each homework problem. It is important that you keep up with this work and not save it for the last minute; the system can be finicky, but more importantly, timely completion will help your understanding. If needed, extensions may be available, but there may be a small penalty to help motivate you to keep up with your work in a timely manner. **Do note, when calculating your final homework grade, the total will be taken out of 1100 points (there are 1219.5 total points available in WebAssign).**
- Tests: Two online exams will be submitted through our course Moodle site:
 - **Friday, May 28, 2021**
 - **Friday, June 11, 2021**

Exams will be hosted via Zoom during our course lecture time. You will have the 1.5 hours of class time to complete, scan, and upload your work/solutions. Students will be required to turn on their video during the Zoom meeting and adhere to additional guidelines. Information and instructions pertaining to each test will be announced beforehand.

- **Final Exam: Thursday, June 24, 2021, 12:00pm-2:30pm.** The final exam is comprehensive and will cover all course material. The final exam will be via Zoom and will follow the same format as the other exams.

2.3 Attendance Policy.

Attendance will taken during each daily class via Moodle. Attendance does not count as a percentage of your overall grade, however, it is highly encouraged that you attend each class, if possible. You will not be penalized if you are unable to attend a session. Each session will be recorded and posted to our course Moodle site to accommodate each students' varying schedules and needs.

2.4 Grading.

This course will use the following letter grading cutoffs:

A+	97-100	A	93-96.99	A-	90-92.99
B+	87-89.99	B	83-86.99	B-	80-82.99
C+	77-79.99	C	73-76.99	C-	70-72.99
D+	67-69.99	D	63-66.99	D-	60-62.99
		F	0-59		

Satisfactory/Unsatisfactory and Audit grading per University policy (REG 02.20.15 – Credit-Only Courses). **Grades will not be curved.** Your grade depends only on *your* performance, *not* on how everyone else in the class performs. Your final grade will be determined by the following grading scale:

WebAssign Homework	25%
2 Tests	50% (25% each)
Final Exam	25%

2.5 Grading Disputes.

Answer keys for all tests will be posted on Moodle once all exams are graded and returned. If a grading error is found after looking at the posted answer key, then you should provide a **written explanation of the error, attached with the original test**, to Ms. Toryn Avery within **2 class days** after the exam was returned. **Do not alter the original work.** The entire exam may be re-graded, and the grade is subject to remain the same, increase, or decrease.

2.6 Exam Make-up Policy.

If one of the two scheduled exams is missed for any reason, students must notify the instructor within two days of the exam. These students will be given the option to replace their missed test grade with their final exam grade. If the instructor is not notified within the specified time, the exam grade will remain a 0.

2.7 Tentative Course Schedule.

Date	Text Section	Topic
5/19 W1	Syllabus & Sec 3.1	3.1: Systems of Two Equations and Two Unknowns
5/20 W1	Sec 4.1 & 4.2	4.1: Matrix Addition and Scalar Multiplication 4.2: Matrix Multiplication
5/21 W1	Sec 4.2 & 3.2	3.2: Using Matrices to Solve Systems of Equations
5/24 W2	Sec 3.2 & 3.3	3.3: Applications of Systems of Linear Equations
5/25 W2	Sec 3.3 & 4.3	4.3: Matrix Inversion
5/26 W2	Sec 4.5	4.5: Input-Output Models
5/27 W2	Exam 1 Review	Sections 3.1 - 3.3, 4.1 - 4.3, 4.5
5/28 W2	Exam 1	Sections 3.1 - 3.3, 4.1 - 4.3, 4.5
5/31 W3	NO CLASS	
6/1 W3	Sec 5.1 & 5.2	5.1: Graphing Linear Inequalities
6/2 W3	Sec 5.2 & 5.3	5.2: Solving Linear Programming Problems Graphically
6/3 W3	Sec 5.3 & 5.4	5.3: The Simplex Method
6/4 W3	Sec 5.4	5.4: The Simplex Method for Nonstandard Problems
6/7 W4	Sec 6.1 & 6.2	6.1: Sets and Set Operations & 6.2: Cardinality
6/8 W4	Sec 6.3	6.3: Decision Algorithms
6/9 W4	Sec 6.4	6.4: Permutations and Combinations
6/10 W4	Exam 2 Review	Sections 5.1 - 5.4, 6.1 - 6.4
6/11 W4	Exam 2	Sections 5.1 - 5.4, 6.1 - 6.4
6/14 W5	Sec 7.1 & 7.2	7.1: Sample Spaces and Events & 7.2: Relative Frequency
6/15 W5	Sec 7.2 & 7.3	7.3: Probability and Probability Models
6/16 W5	Sec 7.3 & 7.4	7.4: Probability and Counting Techniques
6/17 W5	Sec 7.5	7.5: Conditional Probability and Independence
6/18 W5	NO CLASS	
6/21 W6	Sec 7.6	7.6: Bayes' Theorem and Applications
6/22 W6	Catch up day & Final Exam Review	Cumulative (all sections)
6/23 W6	Final Exam Review	Cumulative (all sections)
6/24 W6	Final Exam	12:00pm-2:30pm via Zoom

Our tentative schedule represents a flexible agreement. It outlines the topics we will cover and the order in which we will cover them. The pace of the class depends on student mastery and interests. Thus, minor changes to the syllabus can occur if we need to slow down or speed up the pace of instruction. As the semester progresses, modifications to the course syllabus will be available on the course Moodle page.

3 MISCELLANEOUS

3.1 Community Standards Related to COVID-19

We are all responsible for protecting ourselves and our community. Please see the community standards and RUL 04.21.01 – Personal Safety Requirements Related to COVID-19.

3.2 Disability Services.

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with the Disability Resource Office at Holmes Hall, Suite 304, 2751 Cates Avenue, Campus Box 7509, 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see <http://policies.ncsu.edu/regulation/reg-02-20-01>.

3.3 Code of Student Conduct.

This will be upheld, and documentation will be submitted to the Office of Student Conduct for students who violate University regulations on academic integrity. Your name or signature on any test, assignment, or other online submission indicates your adherence to the NC State Honor Pledge: "I have neither given nor received unauthorized aid on this test or assignment." See <http://policies.ncsu.edu/policy/pol-11-35-01> for a detailed explanation of academic honesty.

3.4 Non-Discrimination Policy.

NC State provides equal opportunity and affirmative action efforts, and prohibits all forms of unlawful discrimination, harassment, and retaliation that are based upon a person's race, color, religion, sex, national origin, age, disability, gender identity, genetic information, sexual orientation, or veteran status. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at <http://policies.ncsu.edu/policy/pol-04-25-05>. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity.

3.5 Diversity and Inclusivity.

Diversity and inclusivity are important to the success of our students at NC State. Everyone who comes to NC State enriches us through their varied perspectives, knowledge, and backgrounds. Our classroom is one in which every student is respected and feels heard.

In an effort to affirm and respect the identities of transgender students in the classroom and beyond, please contact me if you wish to be referred to using a name and/or pronouns other than those listed in the student directory.

3.6 Basic Needs Security

Any student who faces challenges securing their food or housing or has other severe adverse experiences and believes this may affect their performance in the course is encouraged to notify the professor, if you are comfortable doing so. Alternatively, you can contact the Division of Academic and Student Affairs to learn more about the Pack Essentials program, <https://dasa.ncsu.edu/pack-essentials/>.

3.7 Supporting Fellow Students in Distress.

As members of the NC State Wolfpack community, we each share a personal responsibility to express concern for one another and to ensure that this classroom (as well as the campus as a whole) remains a healthy and safe environment for learning. Occasionally, you may come across a classmate whose personal behavior concerns or worries you, either for your classmates well-being,

for your well-being, or for the well-being of others. When this is the case, I would encourage you to report the behavior on the link located on NC States Students of Concern website <https://prevention.dasa.ncsu.edu/nc-state-cares/about/>.

4 Zoom Instructions

4.1 Downloading Zoom

- You can access your NCSU Zoom account here (use your NCSU login): <https://ncsu.zoom.us>.
- The first time any user runs Zoom, they will be prompted to download the program if it has not already been downloaded.
- If you would like to manually download it, you can use the link below (the download will start immediately):
<https://zoom.us/client/latest/Zoom.pkg>
- If you download the Zoom app or click on the Zoom program on your computer, you may need to Sign In. To do this effectively, click “Sign In” with Google and then use your NCSU unity ID login.

4.2 Joining a Zoom Meeting:

- In general, it is very easy to join a Zoom meeting, and I would recommend starting and joining meetings through the Meeting link on Moodle rather than by opening the program and signing in.
- To join a Zoom meeting, either class or office hours,
 - Click “Class Zoom Meeting” or “Office Hours”
 - Click “Join link” or “Start Meeting”
 - When asked “Do you want to allow this page to open “zoom.us”? Click Allow. (The program may need to download at this point.) You should now be in the meeting.
- I recommend that you use computer audio and mute yourself whenever you are not speaking.
- It is requested, not required, that everyone has their cameras turned on.
- If you prefer, you can also type questions/concerns/comments in the chat window.