# MA 114 Introduction to Finite Mathematics with Applications

2019 Summer Session 1 Section 001

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| **Time:** | MoTuWeThFr 11:40AM – 1:10 | **Place:** | Daniels Hall 222 |
| **Instructor:** | Wes Nelson | **Email:** | wlnelson@ncsu.edu |

**Office Hours:**

- Wes Nelson: SAS 4117; MoWe 2-3pm, Fr 10-11am, and by appointment
- Free Tutoring through MMC: SAS 2103/2105; MoTuWeTh 9-5, Fr 9-4 (summer schedule might differ)
  `https://math.sciences.ncsu.edu/undergraduate/courses-faq/math-multimedia-center/`

**Textbook:**

Finite Mathematics by Waner and Costenoble, 6th edition. The eBook is available in WebAssign.

**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; Markov chains; applications in behavioral, managerial and biological sciences. Computer use for completion of assignments.

**Prerequisites:**

MA 101 or equivalent completed in high school.

**Grades:**

This course uses standard NCSU letter grading, with no rounding.

- $90 \leq$ A- $< 93$ $\quad 93 \leq$ A $< 97$ $\quad 97 \leq$ A+ $\leq 100$
- $80 \leq$ B- $< 83$ $\quad 83 \leq$ B $< 87$ $\quad 87 \leq$ B+ $\leq 90$
- $70 \leq$ C- $< 73$ $\quad 73 \leq$ C $< 77$ $\quad 77 \leq$ C+ $\leq 80$
- $60 \leq$ D- $< 63$ $\quad 63 \leq$ D $< 67$ $\quad 67 \leq$ D+ $\leq 70$
- $0 \leq$ F $< 60$

| Grade Component | Weight | Details |
|---|---|---|
| WebAssign Homework | 30% | Homework will be done through WebAssign and will be due frequently. |
| In-Class Tests | 45% | There will be three in-class tests, each worth 15% of your grade. |
| Final Exam | 25% | The final exam is on Wednesday, June 19th from 1-4pm. |

**Schedule:**

We will be following the approximate schedule below:

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| Week 1 (5/15-5/7) | Section 1.3 (Linear Functions and Models) |
| | Section 3.1 (Systems of Two Equations in Two Unknowns) |
| | Sections 4.1 and 4.2 (Matrix Algebra) |
| Week 2 (5/20-5/24) | Section 3.2 (Using Matrices to Solve Systems of Equations) |
| | Sections 4.3 (Matrix Inversion) |
| | Review |
| | Test 1 (Sections 1.3, 3.1-3.2, 4.1-4.3) |
| | Sections 5.1 (Graphing Linear Inequalities) |
| Week 3 (5/28-5/31) | Sections 5.2 (Solving Linear Programming Problems Graphically) |
| | Sections 5.3 and 5.4 (The Simplex Method) |
| | Sections 6.1 and 6.2 (Sets, Set Operations, and Cardinality) |
| | Sections 7.1 (Sample Spaces and Events) |
| Week 4 (6/3-6/7) | Review |
| | Test 2 (Sections 5.1-5.4, 6.1-6.2, 7.1) |
| | Sections 7.2 (Relative Frequency) |
| | Sections 6.3 (Decision Algorithm) |
| | Sections 6.4 (Permutations and Combinations) |
| Week 5 (6/10-6/14) | Sections 7.3 and 7.4 (Probability Models and Counting Techniques) |
| | Sections 7.5 (Conditional Probability and Independence) |
| | Review |
| | Test 3 (Sections 6.3-6.4, 7.2-7.5) |
| | Sections 7.6 (Bayes' Theorem and Applications) |
| Week 6 (6/17-6/18) | Sections 7.7 (Markov Chains) |
| | Review |

Important dates:

- Test 1: Thursday, May 23th

- Test 2: Tuesday, June 4th
- Test 3: Thursday, June 13th
- Final: Wednesday, June 19th from 1-4pm

It is the responsibility of the student to coordinate with the instructor to schedule a time to take missed tests. Such notification should be done prior to any test being missed.

**IMPORTANT:** Before the first test 3 small blue books and 1 large blue book must be passed in to the instructor. Five points on the first exam come from passing in blue books by May 23rd. **Do not write on blue books when passing them in.**

**Grading Disputes:** If after recieving a graded test a student believes there is a grading error or believes that a mistake has been made a re-grade request may be made. Such a request involves writing down the percieved issue and passing in both the test blue book and the written synopsis of the situation to the instructor or TA. The instructor or TA will then evaluate the situation, make any changes if necessary, and will ultimately return the blue book to the student.

**Attendance:**

After May 17th (Official Enrollment Date) regular attendance will be recorded. A sheet containing first and last initial and the last two digits of student id will be passed around for students to check off their presence. At the end of the semester, students with 4 or less absences will have their lowest test grade replaced with their final exam grade (only if this is advantageous for the student). **Grade replacements will only be used in the calculation of final grades; recorded test scores on Moodle will not change.**

**Course Website:**

We will be using the Moodle learning management system (`http://wolfware.ncsu.edu`) for this course. You will log in using your Unity ID and password. (Refer to online information at `http://oit.ncsu.edu/unityid` or contact (919) 515 - HELP or HELP@ncsu.edu for assistance with your Unity ID). After the beginning of the semester, you will see a link to our course site.

Homework will be managed through WebAssign (`https://webassign.net/ncsu/login.html`).

**Course Communications:**

Modes of communication in use for this course include email, office hours, and Moodle.

- Moodle discussion forum will be used to facilitate class discussion. Check these forums often and please feel free to reply to your fellow students' post.
- The instructor will do their best to respond to weekday e-mails and posts within 24 hours. Email messages or posts left after 4pm Friday will be responded to by Monday evening.
- If you would like to speak with the instructor in person and you can't make it to the posted office hours, please email them to schedule a time that is convenient. Include several time slots that would work for you in your email.

Please be aware that ALL email communications for this course will be sent to your NCSU unity email.

If you have a question that the whole class may benefit from hearing the answer to, please post on the "Course Content Q&A" forum. The instructor will check this forum often to respond to open questions. You should also check frequently to answer or ask questions.

If you have a question that is very specific to the work you have done (i.e. if you nearly finished your work but got stuck towards the end), you can email your instructor with your question. Including a scan or phote of your work can help. If the instructor recieves an email with a question more appropriate to the forum, they may copy and paste the question there without identifying the student who sent it.

**Academic Integrity:**

Students are required to comply with the university policy on academic integrity found in the Code of Student Conduct found at http://policies.ncsu.edu/policy/pol-11-35-01. The NCSU Student Code of Conduct (https://studentconduct.dasa.ncsu.edu/code/ covers all work done in this course. Any suspected violations will be promptly reported. Academic dishonesty will result in an automatic failing grade for the course.

**Course Evaluations:**

A formal evaluation is conducted by the University at the end of the semester and the goal is to achieve 100% class participation in this survey. Online class evaluations will be available for students to complete during the last two weeks of class. Students will receive an email message directing them to a website where they can login using their Unity ID and complete evaluations. All evaluations are confidential; instructors will never know how any one student responded to any question, and students will never know the ratings for any particular instructor.

**Accomodations for Disabilities:**

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 States policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (REG02.20.01) (https://policies.ncsu.edu/regulation/reg-02-20-01/).

**Non-Discrimination Policy:**

NC State University provides equality of opportunity in education and employment for all students and employees. Accordingly, NC State affirms its commitment to maintain a work environment for all employees and an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation is a violation of state and federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, or sexual orientation also is a violation of state and federal law and/or NC State University policy and will not be tolerated.

Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at http://policies.ncsu.edu/policy/pol-04-25-05 or http://www.ncsu.edu/equal_op/. 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 (OEO) at 919-515-3148.

**Copyrighted Materials:**

The course website contains copyrighted materials and was developed for instructional purposes to be used by students at North Carolina State University. Students currently registered in this course are permitted to print or make copies of parts of this site for their own personal use in conjunction with completing the course. Text, audio files, images or design of this website may not otherwise be distributed or modified in any manner without the prior written permission of the instructor.