

NCSU DEPARTMENT OF MATHEMATICS
MA 132 Spring 2021

MA 132: Computational Mathematics for Life and Management Sciences

Instructor: Molly Fenn, mafenn2@ncsu.edu

Online Office Hours

Click to schedule a zoom appointment with me. Clicking on an Appointment Slot will add the appointment and zoom link to your google calendar and mine. If you can't find a time that works, just send me an email and we'll set something up at another time.

Scope and Objectives

In this course, we'll use two software tools, Excel and Maple, to model and interact with real-world phenomena and data. We will use this software to handle the "grunt work" of calculus so that we can focus on applying mathematical concepts -- derivatives, differential equations, finite-difference equations, etc. -- to understand the world. After taking this course, a successful student will be able to:

- learn basic ways of working with data and mathematical models
- become competent at using spreadsheets and computer algebra systems (Excel and Maple)
- solidify your understanding of the concepts of calculus
- apply your knowledge to real-world problems

Prerequisites

The prerequisites are at least a C grade in the first semester of calculus such as MA 121 or 131. I will expect you to be passingly familiar with the calculus of a single variable. You may on occasion need to go back and consult your Calculus I notes or a textbook, but probably not -- the computer's going to do most of the work for us.

Assignments

The semester grade is based solely on 16 assignments, submitted via WebAssign.

WebAssign is purchased online by each student at <http://webassign.ncsu.edu>

Assignments are roughly one per week during the semester.

All assignments are visible in WebAssign from the beginning of the term.

The due date for all assignments is **April 30**. You should not do them all the day before! You should plan to do roughly 1 assignment per week.

Feel free to work the assignments "out of order." Assignments numbered like 6-I and 6-II are related, so you may wish to work on them at the same time.

WebAssign allows multiple attempts on each part of each problem of each assignment.

Software

You will need access to a computer with Maple and Excel. Almost all NCSU Libraries computers have these programs, and they are accessible via the [Virtual Computing Lab](#). You may be able to [download Maple here](#). Software purchase is not required.

Grading Policies

Each regular assignment is worth 7.6 points; the introductory practice assignment is worth 1.2 points.

The lowest two 7.6-point assignment scores will be dropped.

There will be no make-up or excused assignments.

There will be no extra credit.

Your semester grade will be computed from your total score on the introductory assignment and the best 13 assignments, according to the following table:

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

Remark: Under S/U grading, an S is a C- or above.

WARNING: WebAssign's gradebook feature doesn't support this kind of dropping-and-averaging; your grade as reported in WebAssign may differ slightly from the grading policy above. At the end of the semester I compute all grades in my own spreadsheet rather than using WebAssign's reported semester grade.

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](#) 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.

Accommodations 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 Resources Office (<https://dro.dasa.ncsu.edu/>), 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation at <http://policies.ncsu.edu/regulation/reg-02-20-01>.

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. Once in the site, you can Bookmark or add the site as a Favorite in your web browser so that you can return directly to that page.

Course Communications

Modes of communication in use for this course include email, office hours, and Moodle. Communication is KEY--if you are having difficulties that relate to this class, please talk to me AS SOON AS POSSIBLE so we can work together.

- Moodle discussion forums will be used to facilitate class discussion. Check these forums often and please feel free to reply to your fellow students' posts.
- I will do my best to respond to weekday emails and posts within 24 hours. Email messages or posts left after 4 pm Friday will be responded to by Monday evening.
- If you would like to speak with an instructor in person and you can't make it to the posted office hours, please email me 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 do not regularly use your ncsu.edu account, there are settings within Gmail that allow you to forward your e-mail to another account. For more information, please see <http://google.ncsu.edu/what-best-way-forward-my-nc-state-gmail-non-nc-state-e-mail-address>

.

If you have a question that the whole class may benefit from hearing the answer to, please post on the "Q&A" forum. I will check this forum 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 me with your question. Including a file, scan, or photo of your work can help.

Trans-Inclusive Statement

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 what is listed in the student directory.

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 in 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/>

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 classmate's 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 State's Students of Concern website (<http://go.ncsu.edu/NCSUcares>).

List of Policies

Students are responsible for reviewing the NC State University PRRs (policies, rules and regulations) that pertain to their course rights and responsibilities:

- Equal Opportunity and Non-Discrimination Policy
Statement <https://policies.ncsu.edu/policy/pol-04-25-05/> with additional references at <https://oied.ncsu.edu/equity/policies/>
- Code of Student Conduct <https://policies.ncsu.edu/policy/pol-11-35-01/>
- Grades and Grade Point Average <https://policies.ncsu.edu/regulation/reg-02-50-03/>
- Credit-Only Courses <https://policies.ncsu.edu/regulation/reg-02-20-15/>
- Audits <https://policies.ncsu.edu/regulation/reg-02-20-04/>