

MA 231 Course Syllabus

Calculus for Life and Management Sciences B

Table of Contents (**Yellow highlights** are links to pages you may want to consult often)

[INSTRUCTOR INFORMATION](#)
[COURSE INFORMATION](#)
[COURSE DELIVERY AND STRUCTURE](#)
[COMMUNICATION](#)
[COURSE LEARNING OUTCOMES](#)
[COURSE SCHEDULE](#)
[COURSE MATERIALS](#)
[TECHNOLOGY REQUIREMENTS](#)
[ONLINE LEARNING EXPECTATIONS](#)
[NETIQUETTE](#)
[COURSE AND INSTITUTIONAL POLICIES](#)
[STUDENT SERVICES](#)
[TECHNICAL SUPPORT](#)
[ELECTRONIC COURSE COMPONENTS](#)
[STUDENTS WITH DISABILITIES](#)
[COURSE EVALUATIONS](#)
[SYLLABUS MODIFICATION STATEMENT](#)

INSTRUCTOR INFORMATION

Name	Email	Office Hours
Molly Fenn	mafenn2@ncsu.edu	Dr. Fenn's appointment calendar
Kylan Schatz	kaschatz@ncsu.edu	M 9-10, Th 10-11 in zoom
Eric Schoen	ewschoen@ncsu.edu	TBD
Arnel Smith	aismith@ncsu.edu	TBD

Clicking any links above lead you to a google appointment calendar for the listed instructor. Clicking a time slot on the calendar creates a zoom appointment for that time on your google calendar and the instructor's. You can attend the office hours of any instructor. If you aren't able to find a time that works, you can email the instructor to set up an alternate time.

COURSE INFORMATION

Course Website: <https://wolfware.ncsu.edu/>

Course Credit Hours: 3

Course Meetings: Fridays--11:45-12:35, 12:50-1:40, or 1:55-2:45

Course Description

Functions of several variables - partial derivatives, optimization, least squares, Lagrange multiplier method; differential equations - population growth, finance and investment models, systems, numerical methods; MA 121 is not an accepted prerequisite for MA 231.

Prerequisites/Corequisites

MA 131 or MA 141

General Education Program (GEP) Information

This course satisfies the Mathematical Sciences GEP Category.

GEP Category Fulfilled

Mathematical Sciences

GEP Corequisites

None

COURSE DELIVERY AND STRUCTURE

Sections 301-306 and section 601 will all be coordinated tightly and will use the same course material, assignments, and tests. The only distinction will be whether you have the option to come to class on Friday in person or would rather access the same material and assignments from Friday's meeting asynchronously online.

Sections 301-306 and section 601 will all use the same asynchronous class material for 2/3 of the contact hours. This means that for the three contact hours of the course, two of those "contact hours" will be done asynchronously online. There will be a collection of short videos and self-assessment questions on Moodle you'll be responsible for completing each week along with homework related to those videos by Thursday night. Expect to spend two hours a week working through these online lessons and additional time working on and submitting the homework.

Sections 301-306 will meet once per week in person on Fridays. During those Friday meetings, there will likely be a short lecture and the rest of class time will be devoted to students working on an additional assignment together. The lecture portion of each Friday class will be recorded and posted for all students. Students in section 601 can view these recorded Friday lectures once they are posted and will be responsible for doing the assignments on their own.

Note that you will often be responsible for watching videos and doing graded homework through WebAssign on new material before we meet each week. This means you will need to keep yourself on track and will be learning a fair amount of material on your own. In using the online material, you will learn new concepts and check your knowledge. During class each week we will focus on more difficult applications of the material you've learned.

COMMUNICATION

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

- 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.
- We will do our best to respond to weekday emails and posts within 24 hours. Email messages or posts left on Friday will be responded to on the following Monday.
- If you would like to speak with an instructor one-on-one via zoom and you can't find an appointment slot on their appointment calendar, please email an instructor to schedule a time that is convenient. Include several time slots that would work for you in your email.
- Feedback for many assignments is automatic, either via self-check questions in Moodle or WebAssign.

- During class, you will have opportunities to ask questions of your instructor and get feedback about your work.
- For tests, grades and comments are returned within approximately one week.

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 email to another account.

If you have a question that the whole class may benefit from hearing, please post on the Moodle forum as appropriate. We will check these forums often to respond to open questions. You should also check frequently to answer or ask questions. Including pictures of your work on forums is encouraged as it can lead to more effective help.

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 photo of your work can help hasten the response. If an instructor receives 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.

COURSE LEARNING OUTCOMES

Upon completion of this course, students will be able to:

1. Use varying techniques, including partial differentiation, to explore the properties of a function of two or more variables;
2. Set up and solve optimization problems in various contexts;
3. Use least squares to fit linear and nonlinear functions to a given data set;
4. Give examples of how and why different disciplines use differential equations and mathematical models;
5. Create a mathematical model that describes a given problem from biology, economics, or business;
6. Carry out numerical simulations and mathematical analyses of a model.

COURSE SCHEDULE

Lesson and Topic	Online Lesson and Before Class HW Due Date (Thursdays)	After Class HW Due (Mondays)
Course Orientation	1/14	N/A
Lesson 1: Multivariable Functions	1/20	1/24
Lesson 2: Partial Derivatives	1/27	1/31
Lesson 3: Maxima and Minima	2/3	2/7
Lesson 4: Lagrange Multipliers	2/10	N/A
Test 1: Moodle portion 2/14-2/15, written portion 2/18		
Lesson 5: Introduction to Differential Equations	2/24	2/28
Lesson 6: Introduction to Modeling	3/3	3/7
Lesson 7: Separation of Variables	3/10	3/21
Lesson 8: Qualitative Theory of Autonomous Differential Equations	3/24	3/28
Lesson 9: Euler's Method and Slope Fields	3/31	N/A
Test 2: Moodle portion 4/4-4/5, written portion 4/8		
Lesson 10: Logistic Growth	4/14	4/18
Lesson 11: Two Population Models	4/21	N/A
Final Exam: 4/27-4/29		

Please note: course schedule is subject to change.

COURSE MATERIALS

Textbook

Calculus and Its Applications by Goldstein, Lay, Asmar, Schneider. 14th edition. 2017.

This class is taking part in NC State's All-In program. The course textbook is delivered electronically on the class moodle site. This is the most cost effective way for you to get the materials you need to succeed in the course.

You have free access to the text through the first two weeks of the semester by clicking the link on the moodle page. In order to continue being able to access it after that you must purchase access by opening the page below called 'Textbook Purchase' to navigate to the bookstore's website. If you do not purchase access within the first two weeks of the semester, YOU WILL LOSE ACCESS TO THE TEXTBOOK and will then have to acquire the text through another source.

Required WebAssign Purchase

Homework is done through WebAssign (<https://www.webassign.net/>). To use WebAssign you will need to purchase access online via credit or debit card. The access code costs around \$22.95. The **class key for WebAssign is ncsu 0552 0399**. Please [see here for WebAssign help and FAQs](#). You can use WebAssign for free for approximately the first two weeks of the semester. After that you will need to purchase access.

TECHNOLOGY REQUIREMENTS

Hardware

NC State's Online and Distance Education provides [technology requirements and recommendations](#) for computer hardware.

Software

- > **[Moodle and Wolfware](#)**
 - [Moodle Accessibility Statement](#)
 - [Moodle Privacy Policy](#)
 - [NCSU Privacy Policy](#)
- > **[Adobe Reader](#)** (for reading PDF files)
 - [Accessibility Statement](#)
 - [Adobe Privacy Policy](#)
- > **[G Suite](#)**
 - [Accessibility Statement](#)
 - [Privacy Policy](#)

- > [WebAssign](#)
 - [Accessibility Statement](#)
 - [Privacy Policy](#)
- > [Gradescope](#)

Minimum Computer and Digital Literacy Skills

- > Obtain regular access to a reliable internet connection
- > Proficient typing and word processing skills (MS Word, text editors, Google Docs)
- > Ability to use online communication tools, such as email (create, send, receive, reply, print, send/receive attachments), discussion boards (read, search, post, reply, follow threads), chats, and messengers.
- > Download attachments
- > Knowledge of copy/paste and use of spell check
- > Use computer networks to locate and store files or data
- > Internet skills and ability to perform online research using various search engines and library databases. Visit [Distance Learning Services](#) at NCSU Libraries for more information.

ONLINE LEARNING EXPECTATIONS

This section of MA 231 will be taught in an online/in-person blended format. This means that for the three contact hours of the course, two of those "contact hours" will be done asynchronously online. There will be a collection of short videos and self-assessment questions on Moodle you'll be responsible for completing each week BEFORE Friday. Expect to spend two hours a week working through these online lessons.

Note that you will be responsible for watching videos and doing graded homework through WebAssign on new material BEFORE we meet each week. This means you will need to keep yourself on track and will be learning a fair amount of material on your own. During class each week we will focus on more difficult applications of the material you've learned.

Feedback for many assignments is automatic, either via self-check questions in Moodle or WebAssign. During class you will have opportunities to ask questions of your instructor and get feedback about your work. For tests, grades and comments are returned within approximately one week.

NETIQUETTE & ETIQUETTE

Netiquette is the term used to describe the special set of rules for online communication.

Students should be aware that their behavior impacts other people, even online. I hope that we will all strive to develop a positive and supportive environment and will be courteous to fellow students and your instructor. Due to the nature of the online environment, there are some things to remember.

Tips for Success:

- > **Do:** Follow the same standards of behavior that you subscribe to offline. Keep in mind that all online communication is documented and therefore permanent.
- > **Don't:** Flame others in discussion forums. Flaming is the act of responding in a highly critical, sarcastic, or ridiculing manner – especially if done on a personal level. Remember that these discussions are meant for constructive exchanges and learning!
- > **Do:** Ensure you are responding to forums by the due date, in order to leave time for peers to comment on your response.
- > **Don't:** Go for long periods of time without communicating to your instructors or classmates. It is important to stay a part of the online community!
- > **Do:** Remember to read over your posts before selecting "Submit."
- > **Don't:** Use slang, poor grammar, and other informal language in discussion forums or email messages to instructors or classmates.

Additional resources

- > [**DELTA's Netiquette or Best Practices for Teaching Online**](#)
- > [**Netiquette – Ethics in Computing**](#)

Etiquette during class is also important. During class you may be working in groups of 3 or 4 on applying the knowledge gained in the online lesson. While collaborating with your instructor and peers, professional and respectful communication is expected.

COURSE AND INSTITUTIONAL POLICIES

Grading Policy

Your final letter grade will be based on the information below.

Grade Component	Weight	Details
Before Class Homework	20%	Before class homework is done through WebAssign. An assignment corresponding to the online lesson is due before class each week, Thursdays just before midnight . Your average will be calculated as a percentage of points you earn on the Before Class assignments out of the total possible 413 points.
After Class Homework	15%	During class students will actively work with their peers to apply the concepts learned in the online lessons to more detailed problems. Many assignments will be done through WebAssign and some may be turned in on paper. Assignments are due after class each week, usually Mondays just before midnight . Your average will be calculated as a percentage of points you earn on the After Class assignments out of the total possible 178 points.
Midterm Tests	40%	Two tests will be held on February 14-18 and April 4-8 . See below for more details.
Final Exam	25%	Comprehensive, 150-minute exam, April 27-29 .

Grading Scale

This course uses this grading scale:

Low	Letter	High
97 ≤	A+	≤ 100
93 ≤	A	< 97
90 ≤	A-	< 93
87 ≤	B+	< 90
83 ≤	B	< 87
80 ≤	B-	< 83
77 ≤	C+	< 80

73 ≤	C	< 77
70 ≤	C-	< 73
67 ≤	D+	< 70
63 ≤	D	< 67
60 ≤	D-	< 63
0 ≤	F	< 60

Homework Policies

Homework is done through WebAssign (<https://www.webassign.net/>). To use WebAssign you will need to purchase access online via credit or debit card. The access code costs around \$22.95. The **class key for WebAssign is ncsu 0552 0399**. Please see here for WebAssign help and FAQs. You can use WebAssign for free for approximately the first two weeks of the semester. After that you will need to purchase access.

Late Assignments

Extensions are requested and granted automatically through WebAssign, so long as you have not viewed the answer key for an assignment. You may request one extension per assignment at any time within one week of the original due date at a penalty of 20% on unearned points. After the extension is granted, you have 24 hours to complete the assignment within that 7-day window.

Tests and Exams

Two midterm tests will be given. The tests will be a combination of auto-graded questions in moodle and written portions done in class. Test 1 will have an auto-graded moodle portion open on **February 14-15** and a written portion scheduled with the DELTA Testing Center on **February 17 or 18**. Test 2 will have an auto-graded moodle portion open on **April 4-5** and a written portion taken with the DELTA Testing Center on **April 7 or 8**. The final exam window will be available over three days, **April 27-29**. The time limit will be 2.5 hours.

Attendance and Participation

Participation in weekly Friday classes is an integral part of the course, so attendance is highly encouraged. However, any relevant whole class discussions from Friday's meeting and any material provided will be posted on the moodle page for students who are not able to attend. Attendance will not be a factor in your course grade. For more information, see [NC State's Attendance Policy](#). Should you need to withdraw from the course, please read about [NC State's Withdrawal Process](#).

Electronically Hosted Components

Please be advised this course is being recorded for current and potential future educational purposes. By your continued participation in this recorded course, you are providing your permission to be recorded.

Incomplete Grades

At the discretion of the instructor, students may be given an IN grade for work not completed because of a serious interruption in their work not caused by the student's negligence. An IN must not be used, however, as a substitute for an F when the student's performance in the course is deserving of an F. An IN is only appropriate when the student's record in the course is such that the successful completion of particular assignments, projects, or tests missed as a result of a documented serious event would enable that student to pass the course. Work undertaken to make up the IN grade will be limited to the missed work.

An IN grade must be made up by the end of the next regular semester (not including summer sessions) in which the student is enrolled, provided that this period is not longer than twelve months from the end of the semester or summer session in which the work was due. In the event that the instructor or department offering the course is not able to provide a student with the opportunity to make up the incomplete work by the end of the next regular semester in which the student is enrolled or within twelve months, whichever is shorter, the instructor or department offering the course must notify the Department of Registration and Records of the date of the extended deadline for removing the IN grade.

Any IN grade not removed by the end of the next regular semester in which the student is enrolled or by the end of twelve months, whichever is shorter, or by the extended deadline authorized by the instructor or the department offering the course and recorded by the Department of Registration and Records will automatically become a Failing (F) grade and will count as a course attempted.

Academic Integrity and Honesty

Students are required to comply with the university policy on academic integrity found in the [**Code of Student Conduct**](#). Therefore, students are required to uphold the university pledge of honor and exercise honesty in completing any assignment.

Please refer to the [**Academic Integrity**](#) web page for a detailed explanation of the University's policies on academic integrity and some of the common understandings related to those policies.

Academic Continuity

In case of unforeseen changes to campus operations, the instructional team will be in contact with students via moodle announcements about any impact on due dates or course policies. We will do our best to ensure the smooth and seamless continuation of the course. If you find that

you are struggling with health or technology access issues, please be in touch with your instructors about any support you might need.

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.

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 <https://go.ncsu.edu/NCSUcares>

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/>

Coronavirus Related Course Policies

Due to the COVID-19 pandemic, public health measures continue to be implemented across campus. Students should stay current with these practices and expectations through the [Protect the Pack](https://www.ncsu.edu/coronavirus/) website (<https://www.ncsu.edu/coronavirus/>). The sections below provide expectations and conduct related to COVID-19 issues.

Health and Participation in Class

We are most concerned about your health and the health of your classmates and instructors/TAs.

- If you test positive for COVID-19, or are told by a healthcare provider that you are presumed positive for the virus, you should not attend any hybrid or face-to-face (F2F) classes and work with your instructor on any adjustments necessary; also follow other university guidelines, including self reporting ([Coronavirus Self Reporting](#)): Self-reporting is not only to help provide support to you, but also to assist in contact tracing for containing the spread of the virus.
- If you feel unwell, even if you have not been knowingly exposed to COVID-19, please do not come to a F2F class or activity.
- If you are in quarantine, have been notified that you may have been exposed to COVID-19, or have a personal or family situation related to COVID-19 **that prevents** you

from attending this course in person (or synchronously), please connect with your instructor to make alternative plans, as necessary.

- If you need to make a request for an academic consideration related to COVID-19, such as a discussion about possible options for remote learning, please talk with your instructor.

Health and Well-Being Resources

These are difficult times, and academic and personal stress are natural results. Everyone is encouraged to [take care of themselves](#) and their peers. If you need additional support, there are many resources on campus to help you:

- Counseling Center ([NCSU Counseling Center](#))
- Student Health Services ([Health Services | Student](#))
- If the personal behavior of a classmate concerns or worries you, either for the classmate's well-being or yours, we encourage you to report this behavior to the NC State CARES team: ([Share a Concern](#)).
- If you or someone you know are experiencing food, housing or financial insecurity, please see the Pack Essentials Program ([Pack Essentials](#)).

Community Standards related to COVID-19

We are all responsible for protecting ourselves and our community. Please see the [community standards](#) (which have been updated for 2021-2022) and Rule 04.21.01 regarding Personal Safety Requirements Related to COVID-19 [RUL 04.21.01 – Personal Safety Requirements Related to COVID-19 – Policies, Regulations & Rules](#)

Course Expectations Related to COVID-19:

- **Face Coverings:** All members of the NC State academic community are expected to follow all university policies and guidelines, including the [Personal Safety Rule](#) and [community standards](#), for the use of face coverings. Face coverings are required in instructional spaces. Face coverings should be worn to cover the nose and mouth and be close fitting to the face with minimal gaps on the sides.
- **Course Attendance:** NC State attendance policies can be found at: [REG 02.20.03 – Attendance Regulations – Policies, Regulations & Rules](#). Please refer to the course's attendance, absence, and deadline policies for additional details. If you are quarantined or otherwise need to miss class because you have been advised that you may have been exposed to COVID-19, you should not be penalized regarding attendance or class participation. However, you will be expected to develop a plan to keep up with your coursework during any such absences. If you become ill with COVID-19, you should follow the steps outlined in the health and participation section above. COVID 19-related absences will be considered excused; documentation need only involve communication with your instructor.
- **Technology Requirements:** This course may require particular technologies to complete coursework. Be sure to review the syllabus for these expectations, and see the [syllabus technical requirements](#) for your course. If you need access to additional

technological support, please contact the Libraries' Technology Lending Service: ([Technology Lending](#)).

Course Changes Related to COVID-19

NO LONGER AVAILABLE - Grading/Scheduling Changing Options Related to COVID-19

Two policies, enhanced S/U Grading Option and Late Drop, put in place at the beginning of the COVID-19 pandemic have been discontinued.

In some cases, an option may be to request an "incomplete" in the course. If you are experiencing difficult or extenuating circumstances, you should discuss possible options with your instructor and your academic advisor.

Need Help?

If you find yourself in a place where you need help, academically or otherwise, please review these [Step-by-Step Help Topics](#).

Other Important Resources

- Keep Learning: [Keep Learning](#)
- Protect the Pack FAQs: [Frequently Asked Questions | Protect the Pack](#)
- NC State Protect the Pack Resources for Students: [Resources for Students | Protect the Pack](#)
- Academic Success Center (tutoring, drop in advising, career and wellness advising): [Academic Success Center](#).
- NC State Keep Learning, tips for students opting to take courses remotely: [Keep Learning Tips for Remote Learning](#)
- Introduction to Zoom for students: <https://youtu.be/5LbPzzPbYEW>
- Learning with Moodle, a student's guide to using Moodle: <https://moodle-projects.wolfware.ncsu.edu/course/view.php?id=226>
- NC State Libraries [Technology Lending Program](#)

STUDENT SERVICES

> Academic Support

- **NCSU Libraries:** <https://www.lib.ncsu.edu/>
 - [Research Assistance](#)
 - [List of Subject Specialists](#)
 - [Ask a Librarian](#) - Live services from NCSU Libraries
 - [RefWorks](#) (Web-based tool to organize research) This is free for NCSU students

- [Citation Builder](#) - help with APA
- **NC State Tutorial Center:** <https://tutorial.dasa.ncsu.edu/>

- > [Academic Advising](#)
- > [Registering for Classes](#)
- > [Financial Aid](#)
- > [Accessibility Support](#)
- > [Online and Distance Education website](#)

TECHNICAL SUPPORT

NC State University HELP Desk:

- > Website: <https://help.oit.ncsu.edu/>
- > Email: help@ncsu.edu
- > Phone: 919.515.HELP

Students can receive computer support in these areas:

- > **Operating system**
Including virus and spyware removal
- > **Software**
Most software packages are easy to install, but if you encounter difficulty, Walk-in Center staff are happy to help.
- > **Network connectivity**
ResNet and the campus wireless network
- > **Warranty and hardware repair**
For computers and warranties purchased through the NC State Bookstore
- > **Unity account**
Including password resets, disabled accounts
- > **2SV support**
Duo and Google two-step verification support

ELECTRONIC COURSE COMPONENTS

This course uses the Moodle Learning Management System, WebAssign, and Gradescope. Information about accessibility and privacy policies can be found above in the Technology Requirements section of the syllabus.

Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course.

Students are responsible for reviewing the NC State University PRR's which pertains to their course rights and responsibilities:

- > [Equal Opportunity and Non-Discrimination Policy Statement](#) and [additional references](#)
- > [Code of Student Conduct](#)
- > [Grades and Grade Point Average](#)
- > [Credit-Only Courses](#)
- > [Audits](#)

STUDENTS WITH 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, Campus Box 7509, 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 \(REG02.20.01\)](#)

Students with disabilities should additionally contact their instructor about accommodations.

COURSE EVALUATIONS

ClassEval is the end-of-semester survey for students to evaluate instruction of all university classes. The current survey is administered online and includes 12 closed-ended questions and 3 open-ended questions. Deans, department heads, and instructors may add a limited number of their own questions to these 15 common-core questions.

Each semester students' responses are compiled into a ClassEval report for every instructor and class. Instructors use the evaluations to improve instruction and include them in their promotion and tenure dossiers, while department heads use them in annual reviews. The reports are included in instructors' personnel files and are considered confidential.

Online class evaluations will be available for students to complete during the last two weeks of the semester for full semester courses and the last week of shorter sessions. Students will receive an email directing them to a website to complete class evaluations. These become unavailable at 8am on the first day of finals.

- > Contact ClassEval Help Desk: classeval@ncsu.edu
- > [ClassEval website](#)
- > [More information about ClassEval](#)

SYLLABUS MODIFICATION STATEMENT

Our syllabus represents a flexible agreement. It outlines the topics we will cover and the order we will cover them in. Dates for assignments represent the earliest possible time they would be due. The pace of the class depends on student mastery and interests. Thus minor changes in the syllabus can occur if we need to slow down or speed up the pace of instruction.