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## Coordination Information

**MATH-UA 123 Calculus III** is coordinated with a departmental syllabus and common exam. The coordinator for Calculus III in Fall 2019 is Prof. Hesam Oveys.

**MATH-UA 129 Honors Calculus III** (this course) does follow the coordinated syllabus. The textbook, assignments, and exams are different.

## Instructor

Prof. Matthew Leingang, CIWW (Warren Weaver Hall) 718.

My office hours are Wednesdays and Thursdays, 1:30–2:30pm. In the event that I will need to move or cancel my office hours I will announce it.

My email address is [leingang@nyu.edu](mailto:leingang@nyu.edu). I'm on [Facebook](#), [Twitter](#), and [Instagram](#), and I follow back all students. Besides math, I'm into cooking, running, and my family.

I use he/him pronouns.

## Homework

There will be no WebAssign in this section. Each section of the textbook that we cover will have a practice problem set, consisting of odd-numbered problems. The problems will not be collected nor graded; the solutions to all odd-numbered problems are in the back of the textbook. Practice problems are a good way to make sure you understand the major topics of the section. The Piazza boards are a good place to discuss problems.

There will be weekly written homework assignments. Weekly written assignments are due Fridays at 12:00noon, but cover the previous week's worth of material. So you will have a full week to do them; the sooner you start the better your chance of success.

Your written homework will be uploaded to Gradescope and will be graded by a human grader. For full credit on written homework, your answers must be explained in complete English (and mathematical) sentences. See the departmental website for the complete rubric.

Homework will be evaluated using the following rubric. Notice that full credit requires more than just a few lines of calculation and an answer with a box around it. We will be expecting you to learn how to write clear, correct, and precise mathematical arguments.

Homework rubric

Elements	Competent	Approaches Competency	Beginning Competency
<b>A.1.</b> <b>Conceptualization:</b> <b>Finds the necessary information</b>	Accurately identifies/extracts relevant information	Shows only a partial understanding of relevant information	Draws incorrect conclusions about information presented
<b>A.2.</b> <b>Conceptualization:</b> <b>Makes a plan to solve the problem.</b>	Determines an appropriate strategy that can be used to solve the problem	Provides an appropriate but incomplete strategy that can be used to solve the problem	Is unable to identify an appropriate strategy that can be used to solve the problem.

Elements	Competent	Approaches Competency	Beginning Competency
<b>B.1. Computation: Performs the Calculation or Analysis</b>	A sequence of clearly logical and correct steps is performed to apply the strategy	Methods attempted are either unsuccessful or represent only a portion of the calculations required to comprehensively solve the problem	Methods attempted are both unsuccessful and not comprehensive.
<b>B.2. Computation: Checks The Answer For Accuracy</b>	Makes competent judgments, drawing reasonable and appropriately qualified conclusions for this work.	Draws plausible conclusions, which may be inaccurate.	Draws implausible conclusions.
<b>C.1. Communication: Explains The Steps Taken</b>	Clearly explains the steps taken in the process, using appropriate terminology.	Explains most of the steps taken in the process, using sometimes inappropriate terminology.	Attempts to explain the steps taken in process, but is not thorough and uses inappropriate terminology.
<b>C.2. Communication: Articulates The Solution</b>	Clearly articulates the solution to the problem using appropriate terminology.	Interpretation of findings does not indicate a clear understanding of the solution.	Hesitant or uncertain about drawing conclusions from this work.
<b>C.3. Communication: Presents The Problem And Solution In An Organized, Clear, And Concise Manner.</b>	The presentation framework chosen is appropriate for the purpose and all symbols, diagrams, and illustrations are properly typeset and formatted. The layout is appropriate for ease of understanding.	The presentation framework chosen might be adequate for the purpose but not all symbols, diagrams, and illustrations are properly typeset and formatted. The layout makes it hard to follow.	The presentation framework chosen is inadequate for the purpose, not allowing for symbols, diagrams, and illustrations to be properly typeset and formatted. The presentation is hard or impossible to follow

This is based on American Association of Colleges and Universities VALUE Rubric for Quantitative Literacy, and the [University of Rhode Island Mathematical, Statistical or Computational \(MSC\) Strategies rubric](#)

Each problem or part of problem will be scored on a 0-5 scale:

- **5 points** if the majority of evaluations are in the left column (Competent), and **all three of C1, C2, and C3** are rated competent.
- **4 points** if the majority of evaluations are in the left column, some of C1, C2, and C3 are in the middle column, and **none** are in the right column. So the main difference between 4 and 5 is on the “communication” axis.
- **3 points** if the majority of evaluations are in the middle column, and **none** are in the right column.
- **2 points** if there are 1-2 evaluations in the right column

- **1 point** if there are 3 evaluations in the right column
- **0 points** if there are 4 or more in the right column.

## Topics and Goals

Mathematically speaking, this is the course description:

- vectors and the geometry of space
- partial derivatives and multivariable analysis
- multivariable integration and the vector calculus theorems of Green, Gauss, and Stokes.

For the most part, these are the same topics as for MATH-UA 123 Calculus III. So how is this course different?

- We will pay slightly more attention to proof (though not at the level of MATH-UA 325 Analysis)
- We will consider generalizations of Calculus III to higher dimensions than 3
- The workload will be higher than in an average section of MATH-UA 123.

This course is recommended, though not required, for students interested in the honors program in mathematics. The course is designed to prepare you for Honors Analysis and Algebra.

## Quizzes and Exams

### Quizzes

There will be a quiz the first class day of each week, except the exam weeks. Quizzes take place at the beginning of class and will last 20 minutes. The topics for each quiz are listed on the calendar. With a few exceptions, it's whatever we did the week before. The practice problem sets are a great way to study for the quiz

### Exams

There will be two midterm exams. These will take place in class and last the entire class period.

*The final exam is cumulative.* Please make a note of the date on the class calendar and adjust your holiday break travel plans accordingly. We cannot reschedule the final to accommodate an earlier flight.

## Participation

### Participation

There are two components to participation measured in each class.

- *Attendance (50%):* I will take attendance daily. Late arrivals count 2/3 as much as presence at the beginning of class. Documented absences may be excused.
- *Engagement in class (50%):* this will be measured by asking and answering questions in class, working on class exercises, participating in group discussions, and presenting problems on the board. *Distraction of the electronic variety can negatively impact your score here.* Scores will be taken using the following rubric:

Points	Description
5	Listens attentively and is focused on classroom activity. Asks and answers questions. Contributes meaningfully to group discussions. Presents worked out problems at the board.
3	Listens attentively and is focused on classroom activity. Participates in group discussions.
1	Listens and is partially focused on classroom activity. Distracted by other course work, social media, or electronic conversations. Does individual work during group discussion time.
0	Is not at all focused on classroom activity. Does not participate at all in group discussion. Absent or asleep.

Participation does count towards the final grade, but not because I want you to participate for its own sake. You can't learn math by watching passively any more than you can learn to swim by turning on the Olympics. You need to engage with the material to make the connections that lead to learning.

## LaTeX

Assignments must be typed in the LaTeX document preparation system. The problems will be distributed through [Overleaf](#) as LaTeX documents; the easiest option is to edit the file within Overleaf including your solution. NYU has a site license for Overleaf, so you should be able to use it without additional accounts or passwords.

There are other options to prepare LaTeX documents offline. If you'd prefer to do that, let me know and I can walk you through the process depending on your machine's operating system.

## Textbook

The textbook for Honors Calculus III is *Vector Calculus* (6th edition) by Marsden and Tromba. The ISBN is 978-1429215084. It is available at the NYU Bookstore and countless others.

We are participating in the Follett Access program. To promote affordability, NYU has partnered with the NYU Bookstore to offer you this program to give you substantial savings on your course materials.

The book will be delivered to you digitally. If you were on the roster when before classes began, you should have received an email giving you the link to access the material. The cost of the book is \$48.50, which will be added as a "book charge" to your bursar bill; this is a savings of \$161.50 over the new hardcopy price.

If you did not receive this email, simply [use this link to activate](#) your account and access your bookshelf. Your username is your school email address.

Should you choose, you may remove yourself from the program and find your course materials elsewhere. You must login [here to the student portal](#) and opt out of having the course materials provided to you.

Information you should know:

- The deadline to opt out is September 16th
- Once you have opted out of a course, you cannot opt back in.

If you have any questions, contact the bookstore at (212) 998-4656 [wsq.text@nyu.edu](mailto:wsq.text@nyu.edu)

If you're looking for optional texts for extra perspective, here are two:

- *Essential Calculus* by James Stewart. This is the text for MATH-UA 123 Calculus III
- *Calculus III* by Marsden and Weinstein (same Marsden). The link takes you to the Library page, from which you can access the entire text online.

You may want to get a reference book for single variable calculus as well. There are lots available in the NYU Library system too. Here are a few:

- *Calculus II* by Marsden and Weinstein
- *Calculus I* by Marsden and Weinstein
- *Calculus Problems* by Baronti, de Mari, et al.

## Gradescope

Written homework will be collected and scored through a site called [Gradescope](#). If you were on the roster at the start of the semester, you should have received an email adding you to the course and inviting you to login. If you added the course after that point, you can

create an account yourself.

- Go to <https://gradescope.com/>
- click "Sign Up", then "Student"
- enter our Course Code: 9YBJR5
- enter your NYU email address
- enter your N number (with the N)
- click "Sign up as a student"

After logging in, be sure to read the [submitting homework guide](#) and/or [watch the video](#).

## Campuswire

This term we'll be using [Campuswire](#) for all class Q&A, announcements, and discussions. I'll post all class announcements on Campuswire and you should use it to ask any class-related questions. I will check Campuswire frequently and answer unresolved questions, but you're also encouraged to collaborate with each other and answer each other's questions. Asking and answering questions on Campuswire counts as participating in the class.

If you were on the roster at the beginning of the class, you should have received an email invitation to join the class on Campuswire. If you added the class after that, you can enroll yourself by going to <https://campuswire.com/p/G65C6E2EA>. Enter the class code **3361** when prompted.

## Grading

The items above will be averaged with the following weights:

Midterms            40%

Weekly Homework 10%

Quizzes            10%

Participation      10%

Final Exam        30%

We will then convert these numbers to letters based on the departmental scale:

93 A

90 A-

87 B+

83 B

80 B-

75 C+

65 C

50 D

As for a “curve”, these cutoffs may be adjusted in the downward direction (creating more higher grades) to bring the grade distribution in line with departmental norms.

## Section Calendar

The course calendar is available as an ICS

feed: [https://calendar.google.com/calendar/ical/nyu.edu\\_i3c7er9hf3421idd65sopiegt8%40group.calendar.google.com/public/basic.ics](https://calendar.google.com/calendar/ical/nyu.edu_i3c7er9hf3421idd65sopiegt8%40group.calendar.google.com/public/basic.ics)

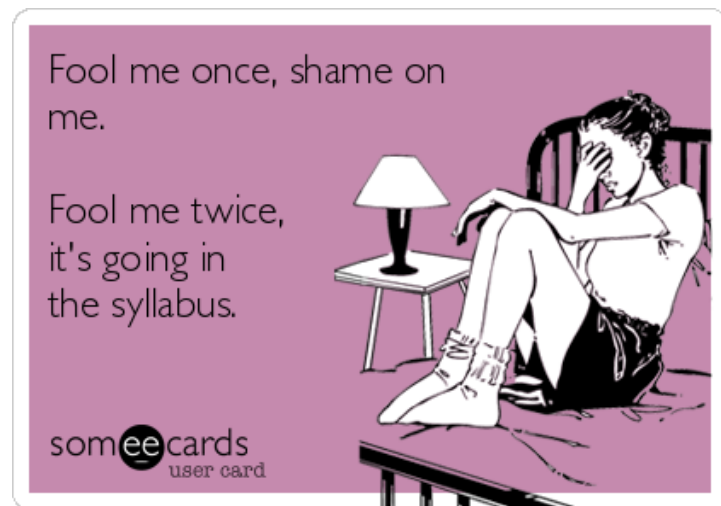
- How to [add to this feed to a Google calendar](#) (like your NYU Google calendar)

## The Fine Print

We hope you enjoy the class! However, we have to get a few more things out the way.

These are minor and technical rules and policies that will not seem necessary at the beginning of the course. I do not like to dwell on them because they distract from my goal and yours, which is engaging in the course material as soon and as much as possible.

However, you should read them and we will abide by them. Some of this may sound a little snarky, and I apologize in advance for that, but all of these issues happen enough that they should be addressed.



**In class** Attendance and participation in class (including asking and answering questions) is expected and will count in your final grade. Electronic distractions during class such as texting, surfing the web, doing homework for another course, etc., are an impediment to participation and therefore can result in deductions from the participation grade. *Your fellow students also find them extremely distracting.* You may use electronic devices such as laptops, phones, and tablets only in connection with class content.

Falling asleep in class is also indicative of a lack of participation. If I catch you nodding off I'll probably wake you up gently at first. I understand that all students work hard and late into the night. But if you are really unable to stay awake I may ask you to leave class and go back to bed.

**Homework, extensions, and drops** All homework assignments are published in advance of their due dates. The class calendar shows you the upcoming assignments and their due dates. You are responsible for turning in your homework on time.

*Occasionally* I will grant extensions on homework if you have other important assignments from other classes due at the same time. It helps to consider this, and ask for it, well in advance of the due date. “I forgot” is not an admissible reason to earn an extension. “I

overslept” is not an admissible reason to earn an extension. “I didn't realize there was an assignment” is also not an admissible reason to earn an extension.

I know that life happens. So in computing the final grade, we will drop:

- the lowest two (2) weekly written homework assignments
- the lowest two (2) quizzes

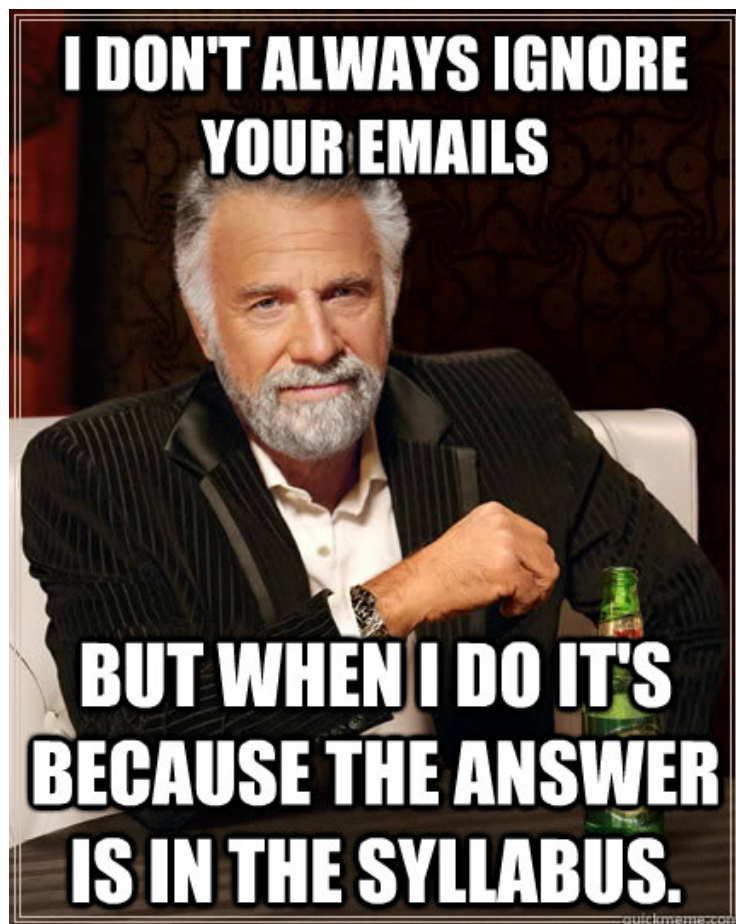
If you ask for an extension and don't get a response, the answer is no (sorry).

**Exams** Exams will contain a mixture of fixed-response (e.g., multiple-choice) and free-response questions.

The final is cumulative. The final is cumulative. The final is cumulative. (I get asked that a lot!)

**Email** I try to answer all emails in a timely fashion (one business day), but I usually don't read my work email between 4pm and 5am. Some nights I'll be working but most evenings, nights, and weekends are family and sleep time for me.

Campuswire is the official course platform for questions and answers. These can be related to specific homework or quiz questions, general topic discussion, course logistics, "where is the final?", etc. Asking on Campuswire will get more people to see and answer your question quicker.



*Before reaching out to me personally*, please check if the question you are about to ask can be answered without asking me. I put a significant amount of information on the course website, such as what topics are covered on which days, what topics will be tested on upcoming quizzes and exams, and where the final exam will be held. Most of the information you can find on this syllabus; if there are clarifications or updates I usually post them as announcements and email them to the class. I understand it's quicker *for you* to ask than to seek, but not on my end. If you email me with a question that is clearly answerable by skimming the website, I might answer it, but I also may respond by telling you to look at the website, or I might not respond at all.

I get a lot of emails from a lot of people. To help me keep them organized, use the subject line to summarize the message. If you're starting a new conversation, write a new email rather than replying to an old one. Email is not texting—my mail program sorts messages by conversation and if you change the subject it will be harder for me to find.

Use your NYU email address for email correspondence, not a personal Gmail or Hotmail address. This helps us keep your personal educational information away from Google's prying eyes. You should read your school email at least once a day as it's my (as well as the rest of the University's) official line of communication to you.

**Makeups** If you miss a quiz or test for medical reasons, inform me **before** the quiz/test that you will be seeking medical attention.

Documentation must be provided. Quizzes and tests must be made up within **one (1)** university business day of the missed assessment, except in extreme emergency situations involving extended medical care. Otherwise, the quiz or test will be scored as zero (but eligible to be dropped).

**Returns and Regrades** Quizzes and tests will be scanned and returned via the File Drop feature on NYU Classes. I will keep the hard copies and destroy them at the end of the term. If you discover an arithmetic error in computation of your score (it happens), please let me know and I will correct the record. If you have a question about how a problem was scored, please ask and I can confer with the graders. Graders work with a rubric and consistency is the biggest concern. *The score on an assignment, quiz, or test is considered final five (5) university business days after it is returned.*

**Moses Center** I am happy to comply with any and all accommodations as determined by the Moses Center. Please reach out so we can make the proper arrangements a minimum of five (5) university business days before any exam. I prefer to administer out-of-sequence quizzes in my office and exams at the Moses Center. The Moses Center tends to fill up on days when many students have exams, so the sooner the arrangements are made the better.

**Religious Holidays** If you need to miss class or turn in an assignment late in observance of a religious holiday please let me know in advance. I'm aware of most Christian and Jewish holidays but I sometimes forget when they occur. I'm less aware of Muslim or other holidays. I'll happily accommodate any of them.

**The curve** *No scores will be adjusted or "curved" during the semester.* I will let you know the average and standard deviation on each exam so you can measure yourself relative to the rest of the class. At the end of the semester, the letter grade cutoffs may be lowered in order to raise letter grades.

*I do not like talking about grades. I like talking about math.* No matter your current standing in the course, the best path to a higher grade is to learn the course material thoroughly, and I will be more than happy to help with that.

**Help** Office hours are a drop-in time to talk about any math issue. If you have a personal issue (or if my normal office hours conflict with your schedule) feel free to [make a private appointment](#). For additional math help visit the [Courant tutoring center](#) on the 5th floor of Warren Weaver, or the [University Learning Center](#). Before taking the drastic and expensive step of hiring a tutor, try to find a study group to work with regularly, and make sure you exhaust all available free resources. We don't endorse any private tutor, and advertisement on university property does not constitute departmental endorsement. Some tutors are good, but some can be scammy.

**Academic Integrity** All students are expected to abide by the CAS Honor Code to be found in the [Academic Policies](#) page, and should be familiar with the procedures for prosecuting it and the possible consequences. The following are considered violations of academic integrity (though there are others):

- Copying answers from Wolfram Alpha or another computational website to homework. You can use technology to check your work, but if you submit it without thought you are cheating yourself of the point of the exercise.
- Copying answers to homework problems from another website such as Yahoo! Answers, Chegg, etc., The graders can google as well as you can, and will be able to detect if you've copied your work. Aside from the integrity issue, students who short-circuit the homework process usually do not do well on quizzes and exams.
- Copying answers from another student's paper during a quiz or exam
- Allowing your paper to be copied during a quiz or exam
- Arranging for another person to take a quiz or exam in your stead
- Altering graded work to raise scores
- Fabricating excuses or forging documentation for makeup exams

I would not list these if they had not been tried. Cheating is unfair to your fellow students, to me (I work very hard and take my job seriously, and am personally offended by cheating), and to yourself. Penalties can range from a zero on the assignment, quiz, or test, to an F in the course. Violations will also be reported to the Dean for Students, and can lead to probation, suspension, or expulsion.

Please also abide by the NYU policy on illegal downloading of copyrighted material: [don't](#).



