MAT 211: Intro Linear Algebra, L03, Spring 2023
General Course Information

Teaching Staff

Instructor: Aleksey Zinger (azinger@math), *OHs:* Tu 5-7pm in Math 3-111
Grader: Yi Wang (yi.wang.10@), *OHs:* M 6-8pm, Tu 8:30-9:30am on Zoom (link on MLC website)

Course Website and BrightSpace

You can access the course website through *BrightSpace* or directly. The direct link is

$$\texttt{http://math.stonybrook.edu/}\sim\texttt{azinger/mat211/.}$$

All homework assignments, exam information, etc. will be posted on the course website. *Please visit it at least twice a week.*

Your grades will be available through *BrightSpace*. Please check them regularly and notify the grader of any inaccuracies quickly. Any issue with a midterm grade must be resolved within 2 weeks of the date of the midterm; any issue with a homework grade must be resolved within 2 weeks of the problem set due date. There will be *no* changes to the grades after these deadlines.

Key Course Policies

Prerequisite: C in AMS151/MAT131, or coreg. in MAT126, or level 7 on the Math Placement Exam
Required course materials: D. Poole, *Linear Algebra: A Modern Introduction*, 4th ed. and WebAssign HW (both available through WA; link in *BrightSpace*)

> *Presentations* 5%, *Homework* 15%, *Midterm I* 22.5%, *Midterm II* 22.5%, *Final* 35%

Midterm I: Wed., 02/22 (snow date: 02/27), 4:25-5:45pm   Midterm II: Wed., 04/05, 4:25-5:45pm
Final Exam: Wed., May 10, 11:15am-1:45pm

There will be **NO** make-up exams. If you have a *legitimate* **and** *well-documented* reason for missing a midterm exam, your score on the final exam (scaled relative to the maximum scores) will be substituted instead. You must advise the course instructor of your legitimate absence from a midterm and provide supporting documentation as soon as possible; each of these must be done *as soon as possible* even if it is not possible to do them at the same time. Depending on the circumstances, *as soon as possible* may be months before the exam or immediately after. Having a conflict with another class is not a legitimate excuse. Since LIRR is notoriously unreliable and road traffic is notoriously unpredictable, any travel disruption of these kinds is not a legitimate excuse either.

This class is not "curved". Your letter grade for the semester will be determined exclusively by your weighted total. The letter grade cutoffs for the semester will be determined by the difficulty of the three exams and the homework. Please do not ask the instructor to change your semester grade based on what grade you "need" for whatever purposes; this would be completely inappropriate. According to the university policy, a C means "satisfactory work" and A means "superior work". This has nothing to do with how many people do better or worse than you or with what grade you to "need" for whatever purposes.

There are 3 other lectures of MAT211 for you to choose from. Their *final exam* will be at the same time, but otherwise they are run completely separately. If either of the midterms does not fit your schedule or any aspect of this lecture is not to your liking, please find a lecture that works out better for you.

Caution on the G/P/NC Option

The purpose of this grading option is to encourage exploration of courses that are not directly required for one's degree. It can have unfortunate repercussions if used improperly for courses in which a C is needed for the degree. Before you choose to G/P/NC MAT 211 at $C+$ or higher, please consider whether repeating this course (and potentially delaying your graduation) if you get a C in it is preferable to getting a C on your transcript and being done with MAT 211. As you might also be aware, many courses fill up before it is possible to register for them for a second attempt; this could exacerbate any problems arising from improper use of the G/P/NC option even further.

Course Description

MAT211 is a fairly gentle introduction to linear algebra, with focus on computations. The topics covered include systems of linear equations, multiplication and determinants of matrices, vector spaces and linear transformations, eigenvalues and eigenvectors. They have applications throughout much of mathematics, science, and engineering.

Presentations

You will need to partner with another student in the class to prepare two short, 10-20 minute, presentations on topics from different chapters in the book (listed under *Applications*, *Exploration*, and *Vignette*). Each of you will present once, but your partner may help during the presentation if need be and you will prepare both presentations together (with help from others if need be). The latter should include a timed practice run. Both of you will receive the same score of the form *.*/5 for each of the two presentations, which be averaged together for your presentation grade for the class (if the number of students in the class ends up being odd, there will be one group of three, for whom the average of three scores will be taken). The score for each presentation will be based on the mathematical correctness, the clarity of the presentation, the engagement of the audience, and your own assessment of your presentation in these regards (about half a page typed, to be submitted the day after the presentation). Each presentation will take place at the beginning of the lecture immediately after the relevant material is covered in class.

These presentations are not intended to be some kind of public examination/interrogation/embarrassment. The aim of these presentations is to provide you with an opportunity to understand some topic in the course well enough to present it to others. You may end up getting a very good score for your presentation even if it is somewhat off mathematically or in other aspects. If you are not presenting, please be supportive of the presenter by paying attention.

Bonus: You may receive up to 1 point bonus for the semester (that is out of 100 points) for meaningfully contributing to other students' presentations with questions and/or comments.

Homework Grading Policy

There will be 12 problem sets in this class, consisting of online problems (to be completed through *WebAssign*) and written problems (to be handed in to your instructor). Your lowest problem-set score (as percentage of the maximum possible score) will not be counted toward the total homework score for the semester. Each of the other 11 problem-set scores will contribute equally to the total homework score, even though the problem sets will be of different lengths. All homework scores will be recorded in *BrightSpace*, which will compute the homework grade and the weighted total.

$$\boxed{\textbf{NO late homework will be accepted}}$$

The above framed statement means **precisely** what it says; a deadline is a deadline. For example, once the instructor starts the lecture before which the written portion of the homework is due, this homework will no longer be accepted. While this policy is relatively harsh, the reality is that "nice" policies on late assignments tend to harm the responsible students (those who in particular hand in their assignments on time). One of the reasons for this homework policy is that all rules (including deadlines) should be clear and should apply to everyone in the same way. If you might not get to the lecture ontime, please drop off your homework in Math 3-111 (slide it under the door) before 4pm of the day it is due or hand it in in lecture *earlier* in the week. If something completely unexpected comes up, then you'll benefit from the *lowest homework score dropped* policy. Since the homework counts for 15% of the total grade, it is quite possible for a late homework to effect your letter grade at the end of the semester; so **hand in your homework before it is due**.

If you would like to discuss how the written portion of your problem set was graded, please speak with the grader. Since the aim is to grade everyone's work consistently, the grader may then re-examine how the entire problem set was evaluated; your total grade may then go up or down. Your grade will be changed (up or down) only if the grader is convinced that your problem set was graded inconsistently with others.

You may receive no credit for problems containing *grievous* errors (see *About this Course* below), even if the rest of the solution to the problem is correct. Such errors will be crossed out with **X!**. The aim of this policy is to draw your attention to such errors in the hope that you would not repeat them on an exam (when such errors would cost you way more).

Your solutions must be stapled *before* they are handed in. If they are not stapled, you may receive credit for the problems on only one of the sheets that has your name on it (whichever one the grader sees first, not necessarily the one with the highest number of points). The problems in your solutions must be written in the order they are listed on the assignment (though you can still skip problems); the grader may choose to award no credit for any of the problems done out of order.

$$\boxed{\begin{array}{l}\text{All homework solutions must be stapled (no paper clips) and have your name and}\\\text{lecture number in the upper-right corner on the first page.}\end{array}}$$

Please write your solutions legibly; the grader WILL disregard solutions that are not readily readable.

About WebAssign

You will need to complete most of the homework problems online, through *WebAssign*, which can be accessed via *BrightSpace*. You will need to purchase a *WebAssign* access code if you do not already have one.

The *WebAssign* problems come in several forms. Some questions are multiple-choice (sometimes with just two possible answers to choose from). For some questions, you will simply enter numbers. Some questions require using math symbols, such as fractions and square roots; a *CalcPad* window would then appear after you click on the answer box. Some of the *WebAssign* problems are "tutored exercises"; these consist of a sequence of questions which must be answered in order (more or less) and which lead you to the answer. For all questions on *WebAssign*, you'll get feedback as soon as you submit your answer.

The *WebAssign* homeworks will be made available at least one week before they are due. You can print them out, work on them anywhere, and submit your answers later (before the deadline, of course). Since each of the problems has many variants, do not try to compare your answers with classmates, but you are encouraged to compare solutions. You can save and/or submit answers to an entire assignment or to each individual question. Please note that *WebAssign* will not automatically submit your answers for scoring if you only save your work; if you save your answers and forget to submit them before the deadline, you will *not* receive an extension.

With most *WebAssign* problems, you'll have five chances to get the answer right, losing 20% for each incorrect answer. For example, if you get the answer to a 3-point question right on the second try, you'll get 2.4 points. However, if you are given a choice between 2 possible answers, you'll have only one chance to get the answer right. Most *WebAssign* questions will come with **bonus points for early completion**. The bonus points will be a percentage of your score on the given question and will be specified in the assignment (on the handout from the course website and in the information box for each question on *WebAssign*). For example, if a 3-point question carries 20% early-completion bonus, allows 5 submissions, and you get the answer right on the second attempt (losing 20%), but before the early submission deadline, you'll receive 3*.8*1.2=2.88 points.

> Complete the *WebAssign* problems as early as possible in order to avoid any technical issues

The *WebAssign* site will be available starting Monday, January 23. You should have 2 weeks from this date to pay for your access to *WebAssign* (or enter an access code). Thus, you can submit the first *WebAssign* homework before paying for access. Please access *WebAssign* as soon as possible and contact them if you are unable to do so.

About Homework Assignments

The reading and written homework assignments will be posted on the course webpage, along with the deadlines for the *WebAssign* problems. The written assignments will generally be due **before** the start of Wednesday's lecture. The *WebAssign* problems will be due usually **before** 9am on Wednesdays (the due time on *WebAssign* will be set to 8:59am).

You can*not* learn math without working on exercises. Nearly all of the assigned problems will be fairly routine exercises. In addition to working on the assigned problems, you should actually do *all* of the

problems in the textbook; just looking at them and deciding that you know how to do them is not enough. This will be time-consuming at first, but if you actually figure out what is going on in each section, the exercises will take you seconds to do (a minute or two for longer ones) after you do the first few of them. This should greatly help you on the exams.

Starting on the homework as soon as possible after each class should save you a lot of time and help pass the course. You should try to do every homework problem by yourself first, not "with friends". If you can't figure out at least half of the problems *completely* by yourself, you are very unlikely to do sufficiently well on the exams to pass this course. If you are unable to do a problem, even after re-reading the relevant sections from the textbook, then discuss it with someone (other students, course instructor/grader, MLC/RTC tutors, etc.). While you are encouraged to compare your answers and solutions to the homework exercises with each other,

> you must **write your own solutions** to the problem sets

While 15% for the homework may not seem like a lot, in the end it will no doubt make a difference in your letter grade for the semester. If your weighted total for the semester (rounded to one decimal place) falls just .1 below the C cutoff, you will receive a C- for the semester and would likely need to repeat this course (depending on your department's policy). You can avoid such an unpleasant scenario by putting more effort into the homework (as well as into the exams) throughout the semester and by making sure you *always* hand in your homework on time. Even more importantly, doing the homework should help you on the exams; you thus should not skip *any* homework assignment, even though the lowest homework grade is dropped. It is also essential that you actually *work* on the homework yourself, instead of copying it from friends or MLC/RTC tutors; the latter would help you with the homework grade, but is likely to hurt your exam scores and thus your chances of passing this course.

Please read the assigned sections in the textbook thoroughly and *before* the lecture. Each section contains a number of examples that are worked out in detail. You should try to do these examples yourself before going through the book's explanation; this might help with the homework problems. *You will be responsible for the material contained in the assigned sections of the textbook, whether or not it is directly covered in lecture.* Please do not attempt the homework exercises until you have read the corresponding section in the book.

Since it is not possible to spend much time for review in each lecture, you are expected to be familiar with the material covered in the preceding lectures. Please keep up with the class; it will be harder to catch up later. You are encouraged to discuss any aspect of this class, including the material covered in lectures, the readings, and the homework exercises, with anyone, including other students in the class and the MLC/RTC tutors. You can also consult any source that may help you with the class in general and the exercises in particular.

Since this class is not "curved", please do not hesitate to help each other; by helping others understand the material, you may end up helping yourself as well. However, letting someone copy your solutions to the homework is not helping them, as it will hurt them on the exams.

Special Needs

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact Disability Support Services at (631) 632-6748 or

http://studentaffairs.stonybrook.edu/dss/.

They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential. Students who require assistance during emergency evacuation are encouraged to discuss their needs with their instructors and Disability Support Services. For procedures and information, please visit the following website:

https://ehs.stonybrook.edu/programs/fire-safety.

Academic Integrity

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology and Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at

https://www.stonybrook.edu/commcms/academic_integrity/.

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.