MATH 232 Linear Algebra • MWF (4a) in CMC 210
Fall 2026 • Syllabus & Schedule

(Last Updated: Friday 11th September, 2026)

Instructor. Deewang Bhamidipati (he/him/his)
(You can address me by my first name, pronounced *thee-waang*, or as Professor B.)
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Email Communication: You can always email me if you wish to chat with me about anything!
Please make sure you give me as much information as you possibly can about the subject you intend to discuss when you email me. I check my email during work hours (Mon – Fri, 8:30a – 5:30p). You can expect a response from me within one working day. *Never hesitate to reach out; I always want to hear from you.*

Office Hours. This is when you can come and talk to me about anything and everything! For mathematics-related conversations, it helps to have thought about where you're stuck: my first question will always be *"what have you tried so far?"*, and your response will guide our discussion.

Drop-in Office Hours. Anyone can drop by during the following times:

Mon	Tue	Wed	Thu	Fri
3:30 – 5:00p	10:30 – 11:30a	2:30 – 4:00p	N/A	11:30a – 12:30p
CMC 210	CMC 326	CMC 210		CMC 328

Office Hours by appointment. You can schedule a 15 minute one-on-one by emailing me (no Thursday appointments).

Feel free to drop by my office (CMC 326) to chat; my door will indicate my availability.
Wide open: come in. *Slightly ajar:* knock and ask. *Closed:* unavailable or not in office; instead, please email me.

Description and Learning Goals. This is a first course in linear algebra.

- You will *solve* systems of linear equations by translating them into augmented matrices and carrying out Gaussian elimination, and *classify* each system as having a unique solution, infinitely many, or none.
- You will *compute* matrix products, inverses, and determinants, and *use* them to determine invertibility of a matrix.
- You will *determine* whether a set of vectors spans a space, is linearly independent, or forms a basis.
- You will *represent* a linear transformation by a matrix with respect to a chosen basis, *change* that representation under a change of basis, and *relate* the dimensions of its kernel and image.
- You will *calculate* the eigenvalues and eigenvectors of a square matrix and *assess* whether it is diagonalisable.
- You will *construct* orthonormal bases using the Gram—Schmidt process, and *compute* the orthogonal projection of a vector onto a subspace

Textbook. *Linear Algebra with Applications* (5th Edition) by Otto Bretscher

If the price of your textbook is an obstacle for you, there are a number of campus resources to support you including the Dean of Students Office. TRIO students can use the TRIO lending library. If you've exhausted these resources, and are not a TRIO student, then you can make use of the Math/Stat department lending library. We have a limited number of textbooks to lend out for the course. Contact Sue Jandro (sjandro@carleton.edu) in the Department of Mathematics and Statistics to reserve a book for the term.

Class Time. Attendance is encouraged: class is the primary place where you will see new content, and where you get an immediate opportunity to seriously engage with it. Class time will be a mixture of short lectures and group work. I encourage *limiting* the use of technology in class, like a laptop or a phone, unless a class activity requires its usage.

Creating a Welcome Environment. I strive to create an inclusive space where everyone – regardless of background or identity – can discover and develop their mathematical voice. I ask that you engage fully by reflecting on what you find hard, asking questions, and encouraging one another. When we cause harm, I expect us to listen, apologise sincerely, and do better. Behaviour that undermines another person's sense of belonging has no place here; please speak with me or college officials if you experience or witness discrimination or harassment.

Moodle. I will be using Moodle as the primary course repository, where you will receive course announcements, access homework, etc. (log in at https://moodle.carleton.edu/ with your Carleton ID).

Ed Discussion. We will be using Ed Discussion as a discussion forum for anything course related. It will be checked frequently and unresolved questions will be answered. You're highly encouraged to collaborate with each other and answer each other's questions; engaging in such discussions amongst yourselves is an invaluable part of succeeding in this course. You can access it via Moodle (join with this link: https://edstem.org/us/join/gtahCq).

Gradescope. All assignments are expected to be uploaded to Gradescope, which will be accessible via Moodle.

Assignments & Assessments. Linear Algebra is a skill best learned through consistent practice and reflection, and the assignments below are built to reward that consistency. Beyond the tests, which work as you would expect, everything else is designed to be a dialogue rather than a verdict on your ability: small, frequent chances to engage actively with the material, feedback along the way, opportunities to act on that feedback, and room to explore an idea at greater length.

Component	Weight
Homework	15%
In-class Worksheets	10%
Glossary	5%
Mock Tests	5%
Unit Tests	40%
Final Test	25%

- **Homework:** "Daily" homework will be assigned after each class. It gives you immediate practice with the new material, and is due 11:59p of the next class period: Mon → Wed, Wed → Fri, Fri → Mon. Deadlines will be adjusted for tests. Your 5 lowest scores will be dropped.

  The **purpose of homework** is to deepen your understanding of the day's content through consistent practice. Some of these problem types will appear on tests, while others are designed to develop your formal reasoning and help you see unexpected uses of our mathematical tools. I do want you to engage with all these different kinds of problems. If any are especially challenging, please reach out; attempting them is what matters. There's no expectation of perfection on homework.

  I encourage you to use every resource available to you (see Accessing Help & Support below).

- **In-class Worksheets:** A hybrid of lecture handouts and active problem-solving, these worksheets guide our in-class interaction. Each worksheet, apart from the lecture content, will also contain at most two "Recap Problems" based on the *previous* class. They are due 11:59p the day following class: Mon → Tue, Wed → Thu, Fri → Sat.

You may complete the lecture content during class, work with a group, or copy from the completed notes I provide; a completed submission will earn you 1 point. Each recap problem will be worth 2 points, and it is an opportunity for me to give you some quick feedback. *Spend a majority (~75%) of your effort on the Recap Problems.*

> **Extension Policy for Homework & In-class Worksheets.** You are expected to submit homework and in-class worksheets by the due date on Gradescope. If you need an *extension*, **all you need to do is ask**. However, you must **ask before 7:00p on the due date**. You are *guaranteed a one-day extension* if you request it by this time.
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> Only under exceptional circumstances will an extension of up to two days be considered.

- **Unit Tests:** There will be **2 in-class tests** in Weeks 4 & 8, and they are each worth 20%.

> **Corrections Policy.** You have the opportunity to earn back 33.33% (a third) of the points you missed on any problem where you lost $\geqslant 2$ points. **This policy applies exclusively to the two Unit Tests.**

- **Final Test:** There will be a **self-scheduled** comprehensive final.
- **Mock Tests:** Mock tests will be offered before all three Tests. For full credit, submit a complete attempt.
- **Glossary:** Over the course of the term you will build a personal glossary of new terms and concepts in the course. Each entry should be written by you, in your own words, and is expected to be accompanied by concrete objects that the concept applies to. There will be drafts collected before each Unit Test, and a final submission in Week 10 before the Final. Instructions and more details will be shared on Moodle later in the term.

Course Schedule. This is our **tentative plan** for the course. Indicated are sections of the book we plan to cover each day and when the tests fall. *This will most likely be updated throughout the term here:* Live Schedule.

Week	Mon	Wed	Fri
1	1.1	1.2	1.3
2	2.1	2.2	2.3
3	2.4	3.1	3.2
4	3.3	6.1	*Review*
5	6.2	**Unit Test 1**	7.1
6	Midterm Break	7.2	7.3
7	7.4	3.4	*Review*
8	4.1	**Unit Test 2**	4.2
9	4.3	5.1	5.2
10	5.3	*Review*	Reading Day

- **Unit Test 1** will test content from Weeks 1 – 4 (up to Section 3.3)
- **Unit Test 2** will test content from Weeks 4 – 7 (from Section 6.1 up to Section 7.4)
- **Final** (self-scheduled) is comprehensive (material from Unit Tests 1 – 2 and content from Weeks 7 – 10)

Accessing Help & Support. You will likely find parts of this class challenging, and that is expected. When something confuses you, pause and try to pin down exactly what is unclear rather than pushing past it. Getting stuck is part of the work, so when you do, seek help proactively; this material builds on itself, so confusion left alone tends to compound.

Please review class material and read the textbook first, then seek help from any or all of the following resources:

- **My Office Hours.** Drop by during the posted times and if they don't work, you may email me to make an appointment!
- **Ed Discussion.** Ask your questions (anonymously, if you prefer) here! Your questions might help your peers, and seeing how we collectively think through problems is valuable.
- **Math/Stats Skills Center**. Located in CMC 231. Tutors have wide availability to help you work through problems that you find difficult. I encourage you to try a problem before seeking help. All visits are drop-in; no appointments needed.
- **Work with Peers.** You are encouraged to work on assignments with your peers; form a study group! But *what you turn in must be written in your own words to ensure you've really internalised the mathematical ideas.*

You may seek clarification of concepts and definitions from other textbooks or online sources, but **do not intentionally search for solutions to specific problems**. *Using solution sites like Chegg or generative AI tools is considered academic dishonesty* (please refer to the Generative AI Usage Policy below). If you are **tempted to seek solutions**, please **pause and use one of the resources above**.

Grading Scale. A *pass* (or S) = **C–** or better. There is no **A+**

	B+ 87 – 89%	**C+** 77 – 79%	**D+** 67 – 69%	
A $\geq 93\%$	**B** 83 – 86%	**C** 73 – 76%	**D** 63 – 66%	**F** $< 60\%$
A– 90 – 92%	**B–** 80 – 82%	**C–** 70 – 72%	**D–** 60 – 62%	

Final grades are rounded at my discretion. When I do it, I look at your progress and work across the whole term, so there is no need to email me about a borderline percentage; asking will not change the outcome, and you can trust that I am already paying attention.

A Typical Week.

🏁 = *start* ⌛ = *submit to Gradescope*

Mon	Tue	Wed	Thu	Fri	Sat
Class	🏁 Mon HW	Class	🏁 Wed HW	Class	🏁 Fri HW
🏁 Mon Work.	⌛ Mon Work.	🏁 Wed Work.	⌛ Wed Work.	🏁 Fri Work.	⌛ Fri Work.
⌛ Fri HW	Office Hours	⌛ Mon HW		⌛ Wed HW	
Office Hours		Office Hours		Office Hours	

Generative AI Usage Policy. Artificial intelligence is now everywhere, and so it is worth being deliberate about what intellectual work you delegate to it. In mathematics, learning comes through practice, productive struggle, and developing your own problem-solving abilities. My main goal is to help you become a better mathematical communicator. I want to see your work and your thinking, not AI-generated solutions, because I am genuinely interested in how you think through the course material!

Limitations of AI Tools. AI tools like ChatGPT, Claude, and Gemini can sometimes be useful, but their output often contains biases, inaccuracies, and incomplete information. These tools present information with authority but are often incorrect or

are unaware of the specific context of our course — think of them as that overconfident friend who has strong opinions about a class they never took. Using AI requires careful evaluation, and you are responsible for ensuring accuracy. Moreover, relying on AI for assignments will not prepare you for exams or presentations where you must demonstrate your own understanding.

Permitted Uses of AI Tools. You may use generative AI tools in the following limited ways.

While these are permitted, I prefer you ask questions on Ed Discussion, come to office hours, or visit the MSSC for support before turning to AI.

- Asking AI to help explain difficult concepts. **Exercise critical thinking: AI often gives oversimplified or incorrect responses, or uses techniques and methodologies different from those emphasised in this course.**
- Looking up individual mathematical terms. **However, you must be able to explain any concept you use yourself.**

Remember: You use AI at your own risk. If AI provides incorrect information and you use it without verification, you remain responsible for the inaccuracy, and this will be reflected in your assignment grade.

Prohibited Uses of AI Tools. The following actions are strictly prohibited:

- Do not use AI to solve homework problems, provide solutions, or give step-by-step guidance for assignments.
- Do not use AI to brainstorm, outline, draft, or edit your mathematical writing.
- Do not use AI tools (like Otter.ai) to record or summarise class meetings, office hours, or lectures.
  (I retain the copyright to my teaching materials).

Take your own notes during class and rewrite them afterwards to digest information. This is how the material sticks; outsourcing it to AI defeats the purpose.

Academic Integrity. This course assumes that all work submitted by students, including drafts and final products, is generated by you, working individually or in groups. The easiest way to ensure your work does not come under suspicion is to avoid using AI for prohibited purposes. Remember that you have reliable human resources available — me, your peers, and the MSSC — to help you understand the material.

If You Suspect You Have Violated This Policy. If you realise you may have used AI inappropriately, please reach out to me immediately. I value honesty, and we will sort it out together constructively.

Subsequent addendums, if any, to this syllabus will be made via Moodle announcements.

I reserve the right to change any particular of the syllabus above.

(**any changes or addenda will be to your advantage**, and you will be informed of them promptly via Moodle.)

Other Important Information

Land Acknowledgement: We stand on the homelands of the Wahpekute and Mdewakanton bands of the Dakota Nation. We honor with gratitude the people who've stewarded the land through the generations and their ongoing contributions to this region. We acknowledge the ongoing injustices that we have committed against the Dakota Nation, and we wish to interrupt this legacy, beginning with acts of healing and honest storytelling about this place.

Accommodations for Students with Disabilities: The Office of Accessibility Resources (OAR) promotes access and equity for all students of Carleton. OAR collaborates with students who have disabilities to provide and/or arrange reasonable accommodations. If you have, or think you may have, a disability (e.g., mental health, attentional, learning, autism spectrum disorders, chronic health, traumatic brain injury and concussions, vision, hearing, mobility, or speech impairments), please contact oar@carleton.edu to arrange a confidential discussion regarding equitable access and reasonable accommodations.

Religious Accommodations: Carleton College welcomes diversity of religious beliefs and practices, recognising the contributions differing experiences and viewpoints can bring to the community. As your instructor, I am committed to providing equivalent educational opportunities to students of all belief systems. There may be times when an academic requirement conflicts with observance of religious holidays and cultural practices. If at all possible, please contact me during the first week of classes to discuss any such potential conflicts. We can work together to determine a reasonable accommodation for religious practices.

Student Well-Being: These are stressful times. Your health and well-being should always be your first priority. At Carleton, we have a wide-array of resources to support students. It is important to recognise stressors you may be facing, which can be personal, emotional, physical, financial, mental, or academic. Sleep, exercise, and connecting with others can be strategies to help you flourish at Carleton. For more information, check out Student Health and Counseling (SHAC), the Office of Health Promotion, or the Office of the Chaplain.

Title IX: Carleton is committed to fostering an environment free of sexual misconduct. Please be aware all Carleton faculty and staff members, with the exception of Chaplains and SHAC staff, are "responsible employees". Responsible employees are required to share any information they have regarding incidents of sexual misconduct with the Title IX Coordinator. Carleton's goal is to ensure campus community members are aware of all the options available and have access to the resources they need. If you have questions, please contact Carleton's Title IX Coordinator titleix@carleton.edu, or visit the Title IX website.

Academic Integrity: Academic integrity is the cornerstone of a college education. Academic dishonesty diminishes the college as an institution and all members of the college community. It tarnishes the value of a Carleton degree. All members of the Carleton community have an explicit responsibility to foster an environment of trust, honesty, fairness, respect, and responsibility. All members of the community are expected to present as their original work only that which is truly their own. Students must acknowledge all outside resources, collaboration, and external materials used in their work. All members of the community are expected to report observed instances of cheating, plagiarism, and other forms of academic dishonesty to ensure that the integrity of scholarship is valued and preserved at Carleton. Academic dishonesty cases are handled by the Academic Standing Committee, which determines responsibility and assigns appropriate sanctions. For the full policy and disciplinary procedures on academic dishonesty, students and instructors should refer to the section on Academic Integrity in the Campus Handbook.