

University of Alberta

MATH 225- A1 Linear Algebra II Fall 2023

Instructor: Brandon Gill

Office: CAB 546

E-mail: btgill@ualberta.ca

Office Hours: TBA

Course Format: MWF 10:00-10:50 AM ETLC E1-013 (in person unless otherwise announced in class)

COURSE CONTENT

Course Description:

Vector spaces. Inner product spaces. Examples of n -space and the space of continuous functions. Gram-Schmidt process, QR factorization of a matrix and least squares. Linear transformations, change of basis, similarity and diagonalization. Orthogonal diagonalization, quadratic forms. Applications in a variety of fields.

Course Prerequisites: One of MATH 100, 113, 114, 117, 134, 144, 154 or SCI 100, and one of MATH 102, 125 or 127. Note: Credit can be obtained in at most one of MATH 225 or 227.

Course Schedule: Posted on eClass

LEARNING RESOURCES

Recommended Textbook: *Linear Algebra: A Modern Introduction*, (4th Edition) by David Poole. More information will be posted on eClass about how to access/purchase the book.

Academic Success Centre:

The [Academic Success Centre](#) provides professional academic support to help students strengthen their academic skills and achieve their academic goals. Individual advising, appointments, and group workshops are available year round in the areas of Accessibility, Communication, Learning, and Writing Resources. Modest fees apply for some services.

Decima Robinson support center: The support center found in CAB 528 is a TA staffed help center open from nine until three Monday through Friday. This is an excellent resource for additional help, as well as a place to work on both homework and the formative assessments.

GRADE EVALUATION

Assessment	Weight	Date
Midterm	30	In class, October 27
Homework	20	4 homework assignments, see due dates on eClass
Final Exam	50	Dec 21, 9am – 12pm (Tentative)

Students must verify this date on BearTracks when the Final Exam Schedule is posted.

Grades are unofficial until approved by the Department and/or Faculty offering the course.

Re-examination:

A student who writes the final examination and fails the course may apply for a re-examination. Re-examinations are rarely granted in the Faculty of Science. Re-examinations are governed by [university-wide Academic Regulations](#) and [Faculty of Science Academic Regulations](#). Misrepresentation of Facts to gain a re-examination is a serious breach of the *Code of Student Behaviour*.

Past or Representative Evaluative Material: will be posted on eClass

POLICIES FOR LATE AND MISSED WORK

Missed Term Work:

A student who cannot complete either the in-class or take-home quiz due to incapacitating illness, severe domestic affliction or other compelling reasons (including missing an in-person assessment due to the requirement to self-isolate when experiencing COVID-19 symptoms or with a positive test result) can apply for an excused absence. To apply for an excused absence, you must contact the instructor within two working days of missing the assessment or as soon as possible. If an excused absence is granted, then the weight of the Quiz will be transferred to the final Exam. An excused absence is a privilege and not a right. There is no guarantee that an absence will be excused. Misrepresentation of facts to gain an excused absence is a serious breach of the Code of Student Behaviour. In all cases, instructors may request adequate documentation to substantiate the reason for the absence at their discretion.

Missed Assessments Where the Cause is Religious Belief:

For an excused absence where the cause is religious belief, a student must contact the instructor(s) within two weeks of the start of Fall or Winter classes to request accommodation for the term (including the final exam, where relevant). Instructors may request adequate documentation to substantiate the student request. Students who failed at the start of term to request exam accommodations for religious beliefs are expected to follow the deferred final examination process outlined below.

Deferred Final Examination:

A student who cannot write the final examination due to incapacitating illness, severe domestic affliction or other compelling reasons (including missing the in-person examination due to the requirement to self-isolate when experiencing COVID-19 symptoms or with a positive test result) can apply for a deferred final examination. Such an application must be made to the student's "home" Faculty office within two working days of the missed examination and must be supported by appropriate documentation or a Statutory Declaration (calendar.ualberta.ca/content.php?catoid=34&navoid=10107#attendance). Note that the Department of Mathematical & Statistical Sciences does not directly accept, review or make decisions regarding deferred final examination applications.

Deferred examinations are a privilege and not a right; there is no guarantee that a deferred examination will be granted. Misrepresentation of facts to gain a deferred examination is a serious breach of the Code of Student Behaviour. Approved deferred exams will be scheduled for

Saturday 13 January 2024

and all students should plan to meet on the **3rd floor of CAB by 08h30 on Saturday 13 January 2024**, to have their photo identification verified, prior to writing their deferred final exam

STUDENT RESPONSIBILITIES

Academic Integrity:

"The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at www.governance.ualberta.ca) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University."

All forms of academic dishonesty are unacceptable at the University. Any suspected offence in this course will be reported to the Faculty of Science. The Faculty of Science is committed to student rights and responsibilities, and adheres to due process and administrative fairness as outlined in the Code of Student Behaviour. Anyone who is found in violation of the Code of Student Behaviour is likely to receive a sanction.

Typical sanctions include conduct probation, a mark reduction or a mark of 0 on an assessment, a grade reduction or a grade of F in a course, a remark on the transcript, and a recommendation for suspension or expulsion.

Students are expected to familiarize themselves with the [Academic Integrity](#) resources (covering the topics of cheating, collaboration, plagiarism, and substantial assistance) on the website of the Office of the Dean of Students.

Appropriate Collaboration: Students are encouraged to collaborate and help one another for the ungraded weekly formative assessments. However, the graded homework and exams are expected to be completed independently (although you are of course welcome to ask for assistance during office hours)

Exam Conduct:

- Your student photo I.D. is required at exams to verify your identity.
- Students will not be allowed to begin an examination after it has been in progress for 30 minutes. Students must remain in the exam room until at least 30 minutes has elapsed.
- All cell phones must be turned off and stored in your bags.

Cell Phones:

Cell phones are to be turned off during lectures, labs and seminars.

Students Eligible for Accessibility-Related Accommodations:

Eligible students have both rights and responsibilities with regard to accessibility-related accommodations. Accommodations are coordinated through the [Academic Success Centre](#). Scheduling exam accommodations in accordance with established deadlines and procedures is essential. Please note adherence to procedures and deadlines is required for U of A to provide accommodations. See [Academic Accommodations](#) for further information.

Recording and/or Distribution of Course Materials:

Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s).

Learning and Working Environment:

The Faculty of Science is committed to ensuring that all students, faculty and staff are able to work and study in an environment that is safe and free from discrimination and harassment. It does not tolerate behaviour that undermines that environment.

If you are experiencing harassment, discrimination, fraud, theft or any other issue and would like to get confidential advice, please contact any of these campus services:

- [Office of Safe Disclosure & Human Rights](#): *A safe, neutral and confidential space to disclose concerns about how the University of Alberta policies, procedures or ethical standards are being applied. They provide strategic advice and referral on matters such as discrimination, harassment, duty to accommodate and wrong-doings. Disclosures can be made in person or online using the [Online Reporting Tool](#).*

- [University of Alberta Protective Services](#): Peace officers dedicated to ensuring the safety and security of U of A campuses and community. Staff or students can contact UAPS to make a report if they feel unsafe, threatened, or targeted on campus or by another member of the university community.
- [Office of the Student Ombuds](#): A confidential and free service that strives to ensure that university processes related to students operate as fairly as possible. They offer information, advice, and support to students, faculty, and staff as they deal with academic, discipline, interpersonal, and financial issues related to student programs.
- [Office of the Dean of Students](#): They can assist students in navigating services to ensure they receive appropriate and timely resources. For students who are unsure of the support they may need, are concerned about how to access services on campus, or feel like they may need interim support while you wait to access a service, the Dean of Students office is here to help.

Feeling Stressed, Anxious, or Upset?

It's normal for us to have different mental health experiences throughout the year. Know that there are people who want to help. You can reach out to your friends and access a variety of supports available on and off campus at the [Need Help Now](#) webpage or by calling the 24-hour Distress Line: 780-482-4357 (HELP).

Policy about course outlines can be found in [Course Requirements, Evaluations Procedures and Grading](#) of the University Calendar.

Land Acknowledgement:

The University of Alberta respectfully acknowledges that we are situated on Treaty 6 territory, traditional lands of First Nations and Métis people.

To learn more about the significance of this land acknowledgement, please read [this](#) useful article and associated links to more information.

Disclaimer:

Any typographical errors in this Course Outline are subject to change and will be announced in class. The date of the final examination is set by the Registrar and takes precedence over the final examination date reported in this syllabus.

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