

AM2811b—Linear Algebra II

January—April 2020

Instructor: Xingfu Zou

Office: MC284

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Office Hours: TBD

Lectures: Mon-Wed-Fri, 12:30-1:30pm, in FNB-1240.

Textbook and Contents: *Linear Algebra: A Modern Introduction*, by David Poole, 4th edition.

- This is the same textbook used for the course Math 1600 A/B. The course will cover Chapters 5, 6 and 7. A custom edition containing these three chapters only (4th edition) is also available at the Western Bookstore. If you already own or have access to the full textbook, you do not need to buy this custom edition.
- The contents include Orthogonality, QR Factorization, Gram-Schmidt Process, Matrix Diagonalization, Vector Spaces, Linear Transformations, Inner Product Spaces, Norms, Least Squares Approximations, Singular Value Decomposition.

Students should check OWL (<http://owl.uwo.ca>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class. Students are responsible for checking OWL on a regular basis.

Prerequisites: Applied Mathematics 1413 or Calculus 1301A/B or Calculus 1501A/B, and a minimum mark of 60% in Mathematics 1600A/B or the former Linear Algebra 1600A/B or Applied Mathematics 1411A/B.

Course Evaluation:

Midterm 1 (25%): Saturday, February 8, 7:00-9:00pm;

Midterm 2 (25%): Saturday, March 7, 7:00-9:00pm;

Final exam (50%): to be scheduled by the Registrar's Office.

Note: All materials covered in lectures (some may be extra to the text) up to the end of the course can be considered testable in the midterms and final exam. For this reason, students are advised not to miss classes. Some exercises will be assigned for practice purpose, and will not be collected and marked. Please be aware that final exam will be accumulative — approximately 20%-25% of the questions in the final exam could have appeared in the first or the second exam.

Learning Outcomes/Objectives: able to explain the notions of vector space, subspaces, base, dimension, inner product, orthogonality, distance and norm, Gram-Schmidt process; as well as to use them to solve problems in linear transforms, quadratic optimizations, least square approximations etc.

Accommodation and Accessibility

If you are unable to meet a course requirement due to illness or other serious circumstances, you must seek approval for the absence as soon as possible. Approval can be granted either through a

self-reporting of absence or via the Dean's Office/Academic Counselling unit of your Home Faculty. If you are a Science student, the Academic Counselling Office of the Faculty of Science is located in NCB 280, and can be contacted at scibmsac@uwo.ca.

For further information, please consult the university's policy on academic consideration for student absences:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf

If you miss the Final Exam, please contact your faculty's Academic Counselling Office as soon as you are able to do so. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam). You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (see http://www.registrar.uwo.ca/examinations/exam_schedule.html).

For the midterms, no make-up will be arranged. If you miss a midterm and your missing is approved, the missed midterm will be re-weighed to your other midterm (10%) and final exam (15%); if you miss both midterms and your missing is approved, the weights in the two midterms will all be moved to the final exam, meaning that the score you receive in your final exam will be your final grade in this course.

Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with the policy, <http://www.uwo.ca/its/identity/activatenonstudent.html>, the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

No electronic devices will be permitted in the midterms and final exam in this course.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

Support Services

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Student Accessibility Services (SAS) at 661-2147 if you have any questions regarding accommodations.

The policy on Accommodation for Students with Disabilities can be found here:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic%20Accommodation_disabilities.pdf

The policy on Accommodation for Religious Holidays can be found here:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

Students who are in emotional/mental distress should refer to Mental Health@Western

http://www.health.uwo.ca/mental_health

for a complete list of options about how to obtain help.

Additional student-run support services are offered by the USC, <http://westernusc.ca/services>.