Department of Applied Mathematics, University of Western Ontario

AM2811b—Linear Algebra II
January—April 2017

Instructor: Xingfu Zou
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Office Hours: Mondays 12:30-1:30pm

Lectures: Mon-Wed-Fri, 12:30-1:30pm, in KB-K203

Textbook: *Applied Linear Algebra* by Peter J. Olver and Chehrzad Shakiban Prentice Hall, 1st edition, 2006, ISBN-10: 0131473824

A Solutions Manual also exists for this book but it does not have much more information than the answers at the back of the book.

Authors Web Page for Text: http://www.math.umn.edu/olver/ala.html
(The web page has some corrections to the Solutions Manual, for example.)

Contents: The course covers Chapters 2, 3, 4, 5 and 8, including the following topics:

Vector space examples, inner products, orthogonal sets including trigonometric functions, wavelets, projections, least squares, normal equations, Fourier approximations, eigenvalue problems, diagonalization, defective matrices, coupled difference and differential equations, singular value decomposition, image approximations, linear transformations. Applications to the sciences and other areas will be an integral part of the course.

Course Evaluation:

Midterm 1 (25%), Wednesday, February 15, 7:00-9:00pm;

Midterm 2 (25%), Wednesday, March 15, 7:00-9:00pm;

Final exam (50%), date and time to be set by the rgistrar's office.

Notes:

(i) All materials covered in lectures (some may be extra to the text) up to the end of the course can be considered testable in exams. 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.

(ii) No make-up for missed midterm exam will be arranged. If for a reason acceptable by the university's policy you have to miss a midterm exam, you need to obtain a permission from the Science Dean's office and I have to be notified of the permission **in advance**; in such a case, I will re-weight your missed midterm to your other midterm and final exam.

Other things you need to know

[1] Responsibility for checking prerequisites: Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

[2] Statement on academic offences: 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:

www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

[3] Use of plagiarism-checking software: All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (http://www.turnitin.com)

[4] Use of cheating-analysis software: Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

[5] Statement on services for students in emotional/mental health distress: Students who are in emotional/mental distress should refer to Mental Health Western:

www.uwo.ca/uwocom/mentalhealth/ for a complete list of options about how to obtain help.

Addendum to all Applied Mathematics Course Outlines

Accessibility Statement: Please contact the course instructor if you require material in an alternative format or if you require any other arrangement to make this course more accessible to you. You may also wish to contact Service for Students with Disabilities (SSD) at 661-2111 ext 82147 for any specific question regarding an accommodation.

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to your faculty's Dean's office as soon as possible and contact your instructor immediately. It is the students responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a Recommendation of Special Examination form must be obtained from your faculty's Deans Office immediately. For further information please see:

http://www.uwo.ca/univsec/handbook/appeals/medical.pdf

A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility or request a Records Release Form (located in the Dean's office for visits to Student Health Services. The form can be found here:

https://studentservices.uwo.ca/secure/medicaldocument.pdf