Department of Mathematics and Statistics
Concordia University

MATH 252
Linear Algebra II
Winter 2021

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Office Hours: _____

Delivery Method: **Due to exceptional circumstances, this course will be taught online, and all assessment will be entirely done online. The exams will be held online through the course's Moodle site. There will be Zoom video lectures during the scheduled class times, which will be posted on Moodle.**

Text: Linear Algebra, 5th Edition, by Friedberg, Insel & Spence, Prentice Hall. The textbook will be available at:
https://www.bkstr.com/concordiastore/home
Note: Students should order textbooks as early as possible, especially for printed versions in case books are backordered or there are any shipping delays.

Assignments: Given weekly. Submissions accepted as PDF files via the course's Moodle site. No late assignments will be accepted. A reasonable and representative subset of each assignment may be graded. Students will not be told in advance which subset of the assigned problems will be marked and should therefore attempt all assigned problems.

Midterm Test: There will be one midterm exam in the seventh week. There will be no make-up midterm exam.

Final Exam: The final exam will be three hours long. It will cover material from the entire course.

Final Grade: The final grade will be based on assignments, the midterm test, and the final exam, weighted as follows:
10% for the assignments, 30% for the midterm test, and 60% for the final exam.

If the grading scheme for this course includes graded assignments, a reasonable and representative subset of each assignment may be graded. Students will not be told in advance which subset of the assigned problems will be marked and should therefore attempt all assigned problems.

Calculators: Only calculators approved by the Department are permitted in the midterm test and final exam. The calculators are **Sharp EL 531** and **Casio FX 300MS.** A list of approved calculators can be found at http://www.concordia.ca/artsci/math-stats/services.html#calculators

Week	Section	Topics	Assignments
1	Appendix D 2.2	Complex Numbers Vector Spaces over R or C Matrix $[T]_\beta$ for T:V->V	Page 84: 2bef, 5af, 8,10
2	2.5 5.1	The Change of Coordinate Matrix Eigenvalues and Eigenvectors	Page 116: 2bd, 3d, 6d Page 256: 3bd, 4c
3	5.2	Diagonalizability (Section on Direct Sums excluded)	Page 279: 2df, 3bf, 8, 14abc
4	5.4	Invariant subspaces The Cayley-Hamilton Theorem	Page 321: 3, 6bd, 9bd, 10bd, 18ab
5	6.1	Inner Products and Norms	Page 336: 5, 9, 11
6	6.2	The Gram-Schmidt Orthogonalization Process and Orthogonal Complements	Page 352: 2df, 9, 19c
7		**Review** **Midterm Exam**	
8	6.3	The Adjoint of a Linear Operator	Page 365: 2b, 3b, 8, 12a, 19, 20c
9	6.4	Normal and Self-Adjoint Operators (Definition of a positive definite operator Page 377)	Page 374: 2cf, 6, 11, 20
10	6.5	Unitary and Orthogonal Operators and their Matrices	Page 392: 2bce, 3, 11, 17

11	7.1	The Jordan Canonical Form I	Page 494: 2abcd
12	7.2 7.3	The Jordan Canonical Form II The Minimal Polynomial	Page 509: 4bcd Page 522: 2, 3
13		**REVIEW**	

Academic Integrity and the Academic Code of Conduct
This course is governed by Concordia University's policies on Academic Integrity and the Academic Code of Conduct as set forth in the Undergraduate Calendar and the Graduate Calendar. Students are expected to familiarize themselves with these policies and conduct themselves accordingly. "Concordia University has several resources available to students to better understand and uphold academic integrity. Concordia's website on academic integrity can be found at the following address, which also includes links to each Faculty and the School of Graduate Studies: concordia.ca/students/academic-integrity." *[Undergraduate Calendar, Sec 17.10.2]*

Behaviour
All individuals participating in courses are expected to be professional and constructive throughout the course, including in their communications.

Concordia students are subject to the Code of Rights and Responsibilities which applies both when students are physically and virtually engaged in any University activity, including classes, seminars, meetings, etc. Students engaged in University activities must respect this Code when engaging with any members of the Concordia community, including faculty, staff, and students, whether such interactions are verbal or in writing, face to face or online/virtual. Failing to comply with the Code may result in charges and sanctions, as outlined in the Code.

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Extraordinary circumstances
In the event of extraordinary circumstances and pursuant to the Academic Regulations the University may modify the delivery, content, structure, forum, location and/or evaluation scheme. In the event of such extraordinary circumstances, students will be informed of the change.