

**MATH 251**  
Linear Algebra I  
*Winter 2021*

- Preface:** Due to exceptional circumstances, this course will be taught and all assessments will be done completely online. The exams will be held online through the Moodle platform. There will be video lectures via Zoom during the scheduled course hours and the slides will be subsequently posted on Moodle.
- Instructor:** Dr. I. Cojocaru  
Email: [ionica.groparu-cojocaru@concordia.ca](mailto:ionica.groparu-cojocaru@concordia.ca)
- Office Hours:** TBA. (online via Zoom link)
- Class Schedule:** Mondays-Wednesdays, 16:15-17:30.  
Online via Zoom link (refer course Moodle page).
- Textbook:** *Linear Algebra*, 5th Edition, by S. Friedberg, A. Insel, L. 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:** You will be required to submit weekly assignments as PDF files to the Moodle site. An announcement will be made on how to do this. They reflect the content of the course. Solutions must be written up carefully, showing all work for full credit. No late assignments will be accepted.
- Class Test:** There will be one class test during online lecture time in the seventh week of classes, covering the first five weeks of the course. There will be no make-up test.
- Final Exam:** There will be a final examination scheduled by the University Examinations Office during the regular examination period. It will cover material from the entire course.

**Grading:** The final grade will be based on the higher of (a) or (b) below:

- a) 15% for the assignments,  
30% for the midterm test,  
55% for the final exam.
- b) 15% for the assignments,  
85% 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 class test(s) and final examination. The calculators are the **Sharp EL 531** and the **Casio FX 300MS**. For the list of approved calculators see:  
<http://www.concordia.ca/artsci/math-stats/services.html#calculators>

Week	Section	Topic	
1	1.2, 1.3	Vector Spaces, Subspaces	
2	1.4, 1.5	Linear Combinations, Systems of Equations Linear Dependence and Independence	
3	1.6	Basis and Dimension	
4	2.1	Linear Transformations, Null Spaces, Ranges	
5	2.2	Matrix Representation of Linear Transformation	
6	2.3	Composition of Linear Transformations, Matrix Multiplication	
7		<b>CLASS TEST</b>	
8	2.4 2.5	Invertibility and Isomorphisms Change of Coordinate Matrix	
9	3.1, 3.2, 3.3	Elementary Matrices, Rank of Matrices, Matrix Inverses, Systems of Equations	
10	3.4	Systems of Equations	
11	4.4 5.1	Summary about Determinants, Eigenvalues and Eigenvectors	

12	5.2	Diagonalizability	
13		<b>REVIEW</b>	

**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](http://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.

**Intellectual Property**

Content belonging to instructors shared in online courses, including, but not limited to, online lectures, course notes, and video recordings of classes remain the intellectual property of the faculty member. It may not be distributed, published or broadcast, in whole or in part, without the express permission of the faculty member. Students are also forbidden to use their own means of recording any elements of an online class or lecture without express permission of the instructor. Any unauthorized sharing of course content may constitute a breach of the [Academic Code of Conduct](#) and/or the [Code of Rights and Responsibilities](#). As specified in the [Policy on Intellectual Property](#), the University does not claim any ownership of or interest in any student IP. All university members retain copyright over their work.

**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.