MATH 122 - Linear Algebra I
Section 001

Fall 2021

General information

Instructor:	Martin Frankland
Email:	Martin.Frankland@uregina.ca
Office:	CW 307.17
Office hours:	Tuesday 6-7 PM, Wednesday 5-6 PM, Thursday 5-6 PM. The Zoom link is posted on UR Courses.
	In person meeting by appointment.
Lectures:	MWF 1:30 - 2:20 PM on Zoom. The link is posted on UR Courses.
Tutorials:	Fridays 2:30 - 3:20 PM on Zoom.
Textbook:	W. Keith Nicholson, *Linear Algebra with Applications*, version 2021-A. Open textbook available for free at:
	`https://lyryx.com/linear-algebra-applications/`
Prerequisite:	Precalculus 30, Mathematics B30 and C30, or Math 102.
UR Courses:	`https://urcourses.uregina.ca/`
	This site will contain announcements, additional course material, and solutions to selected problems. The site is updated throughout the semester, so please check back regularly.

Course outline

Linear algebra is the study of linear equations and their solutions. It has many applications within mathematics and to the sciences. MATH 122 is an introduction to linear algebra, which covers the following topics.

- Systems of linear equations.

- Matrices and matrix algebra.

- Determinants and invertible matrices.

- Eigenvalues and diagonalization.

- Vector geometry: lines, planes, and projections.

Tutoring services

- Math and Stats Tutoring:
  `https://www.uregina.ca/science/mathstat/undergrad/resources/help-centre.html`

- Student Success Centre:
  `https://www.uregina.ca/student/ssc/tutoring/math-stats-tutoring/`

- Global Learning Centre:
  `https://www.uregina.ca/international/global-learning-centre/glc-services-programs.html#tutoring`

- Campion College Math/Stats Help Centre:
  `https://campioncollege.ca/student-services/math-stats-tutoring/`

Grading scheme

- Exams: 90% (best 3 of 4)

- Homework: 10%

Course delivery and computer requirements

The course is taught **remotely**. At no point are you required to be physically in Regina.

Here are the technology requirements.

- A computer, laptop, or similar device, with a reliable internet connection.

- A way of submitting work online, e.g., a smartphone camera or a scanner. Writing on a tablet with a stylus is another option.

- A video camera and microphone are required for the Final Exam, which has an oral component. For the rest of the semester, a camera and microphone are not required, though recommended in order to facilitate participation.

  Note: Most laptops have a built-in camera and microphone, which work fine for our purposes.

The course has both synchronous and asynchronous components.

- **Synchronous**: Lectures during the designated schedule. Problem sessions during the tutorials.

- **Asynchronous**: Selected readings, additional notes and worked examples, online work.

Exams

- Midterm 1: **Wednesday September 29**.

- Midterm 2: **Wednesday October 27**.

- Midterm 3: **Wednesday December 1**.

- Final Exam: **Monday December 20**.

Details for each exam will be confirmed. Midterms will occur around the scheduled class time.

The Final Exam has a different format, consisting of a term paper and a short oral presentation.

All exams will be **open book**: the textbook, notes, class material, and simple scientific calculators are allowed. More details will be provided as to which resources are allowed and which are not.

Homework

Homework will be assigned more or less weekly and submitted online on WeBWorK.

Late homework will not be accepted.

The **lowest homework score** will be dropped.

Missed course work

Information about missed course work can be found in the *Academic Regulations*, section "Deferral of Final Exams or Course Work", available at:

https://www.uregina.ca/student/registrar/resources-for-students/academic-calendars-and-schedule/undergraduate-calendar/sections.html

See in particular the sections "Grounds for Deferral" and "Supporting Documentation".

Exam: If you miss an exam for any reason (illness, etc.), it will count as the lowest of the four exams being dropped. There will be no make-up exam.

For administrative purposes, the Final Exam plays the role of a fourth midterm. In particular, the section "Deferral of Final Exam" in the *Academic Regulations* does not apply here.

Homework: Likewise, if you miss a homework assignment for any reason, it will count as the lowest assignment being dropped. There will be no make-up homework.

Illness: If you are unable to meet a course requirement due to prolonged illness or other serious circumstances, please contact me as soon as possible. In that case, you should fill out the *Self-Declaration of Illness* and submit it to me. More information is available at:

`https://www.uregina.ca/hr/hsw/COVID-19-Resources/Response-Procedures-if-a-student-is-ill/`

Academic integrity

Working on practice problems with your peers is allowed. However, each student must write exams and homework **on their own**. Handing in suspiciously similar solutions will be considered an instance of cheating.

Handing in any material copied from the internet, a program, or another source will likewise be considered cheating.

Scholastic offences are taken seriously and will not be tolerated. For more information, please consult the *Student Code of Conduct and Right to Appeal*, section "Academic Misconduct", available at:

`https://www.uregina.ca/student/registrar/resources-for-students/academic-calendars-and-schedule/undergraduate-calendar/sections.html`

as well as the *Faculty of Science Student Handbook*, section "Academic Integrity", available at:

`https://www.uregina.ca/science/assets/docs/pdf/programpdf/new-student-manual.pdf`

Note: A grade penalty due to academic misconduct (e.g. zero on an exam) cannot be dropped. The lowest of the "natural" exam grades gets dropped.

Accessibility

Any student with special needs who may need accommodation should contact the Centre for Student Accessibility at:

`https://www.uregina.ca/student/accessibility/`

After I receive the letter from the Centre for Student Accessibility, please contact me to discuss the accommodation.