Course syllabus

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Instructors:

Kai Behrend, **Section 922**

Ming Zhang, **Section 921**

TA: Qidi Zhang

Lectures:

Mon, Thu, Fri: 14:00-16:00 PDT,   Wed: 14:00-15:00 PDT

Lectures will take place on **Collaborate Ultra** and will be common for both sections.

Recordings of lectures and class notes will be posted in **Files**.

First day of classes: May 11, Last day of classes: June 18, Holiday: May 18.

Piazza:

We will use **Piazza**   **(https://piazza.com/class/k98pv7wxkz836#)** for discussion. Ask your questions about course material, homework, exams on Piazza.

Textbook:

We will use the following online text in this course.

Interactive Linear Algebra   **(https://textbooks.math.gatech.edu/ila/index.html)**

The originally proposed textbook (Lay) is not available online and has been dismissed for this reason.

Homework:

There will be webwork assignments and matlab assignments. Each count 20% towards your final grade. For each, your lowest score will be dropped for grade calculation. No further concessions will be made, including for medical reasons.

The best place to ask questions about homework is piazza.   You are encouraged to discuss homework with fellow students, and to do online research, but you are expected to enter your solutions into WebWord and MatLab by yourself.   The homework you submit should represent your own work.

Exams:

There will be two midterm exams and one final exam.   **The exams will be invigilated with Collaborate Ultra. You will be required to have a webcam turned on during the exams, and to show your student ID.**

The midterms count 15% each, the final exam 30% of your final mark. If you miss a midterm exam, you need to submit a **Student Declaration of Academic Concession for Math courses (http://www.math.ubc.ca/Ugrad/ugradForm/Student_Declaration_Academic_Concession_MATH.pdf)** as soon as possible. No makeup exams will be given, your grade will be calculated using the remaining course components.

There will be no calculators or electronic computing help allowed during exams. The exams are closed book: no notes are books are allowed. You are required to be entirely off-line during the exam, except for the Collaborate Ultra session used for invigilation.

Academic Honesty

By enrolling as a student at UBC, you have agreed to abide by the University Rules on Academic Honesty.   Here is what you have agreed to and are bound by:

"Academic honesty is essential to the continued functioning of the University of British Columbia as an institution of higher learning and research. All UBC students are expected to behave as honest and responsible members of an academic community. Breach of those expectations or failure to follow the appropriate policies, principles, rules, and guidelines of the University with respect to academic honesty may result in disciplinary action.

It is the student's obligation to inform himself or herself of the applicable standards for academic honesty. Students must be aware that standards at the University of British Columbia may be different from those in secondary schools or at other institutions. If a student is in any doubt as to the standard of academic honesty in a particular course or assignment, then the student must consult with the instructor as soon as possible, and in no case should a student submit an assignment if the student is not clear on the relevant standard of academic honesty.

If an allegation is made against a student, the Registrar may place the student on academic hold until the President has made his or her final decision. When a student is placed on academic hold, the student is blocked from all activity in the Student Service Centre."

Description:

Math 221: Matrix Algebra is an introductory course in linear algebra.

Linear algebra is a fundamental and extremely important topic in mathematics. Many other branches of mathematics are concerned with reducing more complicated questions to problems in linear algebra. For instance, calculus tries to reduce questions about curves and surfaces (or higher-dimensional shapes) to ones about their tangent lines or tangent planes. These lines and planes are concepts in linear algebra.

This course is a study of linear maps. We will learn what they are, how to manipulate them as well as tools (determinants, eigenvectors/eigenvalues, diagonalization) to visualize them better. Along the way, we will also touch on various applications.

Expectation and learning goals

A page describing learning goals, broken down by section, appears on the website. In order to get a B-grade or better in this course, you should meet these goals and be able to apply what you have learned accurately in straightforward problems. To get an A-grade in the course, you should meet these goals, be able to apply what you have learned quickly and accurately, and in more complicated problems.

Where to look for help, and other advice

For problems with the material or homework, please use Piazza. This is the best way to have a question answered quickly.

Visit the **MATLAB Help Centre** to get help with your MATLAB assignments.

You can also attend the office hours of the instructor of your section.

For all other problems, please contact the instructor of your section via email or through Canvas.

University Values and Policies

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes

that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence.

UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom.

UBC provides appropriate accommodation for students with disabilities and for religious, spiritual and cultural observances.

UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available **here** **(http://senate.ubc.ca/policies-resources-support-student-success)** .

Course summary:

Date	Details	
Tue, 19 May 2020	**Webwork1 (https://canvas.ubc.ca/courses/50174/assignments/527315)**	due by 23:59
Tue, 26 May 2020	**Webwork2 (https://canvas.ubc.ca/courses/50174/assignments/527528)**	due by 23:59
Wed, 27 May 2020	**Midterm Exam 1 (https://canvas.ubc.ca/courses/50174/assignments/527501)**	due by 15:00
Tue, 2 Jun 2020	**Webwork3 (https://canvas.ubc.ca/courses/50174/assignments/527530)**	due by 23:59
Tue, 9 Jun 2020	**Webwork4 (https://canvas.ubc.ca/courses/50174/assignments/527534)**	due by 23:59
Wed, 10 Jun 2020	**Midterm Exam 2 (https://canvas.ubc.ca/courses/50174/assignments/527508)**	due by 15:00
Tue, 16 Jun 2020	**Webwork5 (https://canvas.ubc.ca/courses/50174/assignments/527537)**	due by 23:59

Final Exam (https://canvas.ubc.ca/courses/50174/assignments/527510)

MATLAB Assignment 1 (https://canvas.ubc.ca/courses/50174/assignments/513889)

MATLAB Assignment 2 (https://canvas.ubc.ca/courses/50174/assignments/513890)

MATLAB Assignment 3 (https://canvas.ubc.ca/courses/50174/assignments/513891)

MATLAB Assignment 4 (https://canvas.ubc.ca/courses/50174/assignments/513892)

MATLAB Assignment 5 (https://canvas.ubc.ca/courses/50174/assignments/513893)

MATLAB Assignment 6 (https://canvas.ubc.ca/courses/50174/assignments/513894)

MATLAB Score (https://canvas.ubc.ca/courses/50174/assignments/513895)

webwork link (https://canvas.ubc.ca/courses/50174/assignments/527313)