

Faculty of Science Course Syllabus
Department of Mathematics and Statistics
MATH 2030, section 02
Matrix Theory/Linear Algebra I
Summer 2017/2018

Instructor(s): Dallas Sawtell djsawtel@dal.ca Chase

Lectures: Tuesdays and Thursdays, 18:05-21:25 *Computer Science 127*

Office Hours: 5:30-6:00 pm in the classroom

Course Description

This course is a self-contained introduction to Matrix Theory and Linear Algebra. Topics include: subspaces, linear transformations, determinants, eigenvalues and eigenvectors, systems of linear equations. Students should note that this is a second-year course and, although it has no formal first year prerequisites, certain mathematical maturity is expected.

Course Prerequisites

Nova Scotia Advanced Mathematics 11 or 12 (or equivalent)

Course Objectives/Learning Outcomes

Students will learn the basic concepts of linear algebra, including vector operations, lines and planes in n -dimensional space, the qualitative and quantitative solution of linear systems, matrix operations and matrix algebra, rank and determinant, eigenvalues and eigenvectors, linear independence and dependence, subspaces and spanning sets, bases and dimension.

Course Materials

- Textbook: "A First Course in Linear Algebra", Dalhousie 2017/18 edition. (open source, available on Brightspace)
- *Brightspace: Assignments will be hosted through Brightspace (via Webwork), as well as important announcements (please keep notifications on) and other course information.*
- *Webwork: Your online assignments will appear in Webwork, accessed through links appearing under Content in Brightspace.*

Mathematics and Statistics Learning Centre

- *The Mathematics and Statistics Learning Centre, located in Chase 119, is there for you! It is a dedicated room for math and stats help for undergraduate students. For more information, including a schedule, see <https://www.dal.ca/faculty/science/math-stats/about/learning-centre.html>.*

Office hours

The instructor is also there to help you! Office hours are set up to give students a time slot to ask their instructor questions outside of class. Also, if you cannot attend the scheduled office hour times, please email the instructor to set up an alternate time to meet.

Other course requirements

- *There are assigned readings for the course which are posted on Brightspace.*
- *Students are expected to do questions that are at the end of the sections in the textbook.*
- **Quizzes** *will be held every thursday during class time. No calculators.*
- **Assignments** *will be available online through Brightspace. All assignments are equally weighted. Assignments are set up to help students stay on track with the course material and assess their understanding.*

Course Assessment

Component	Weight (% of final grade)	Date
Midterm exam 1	15%	May 17 (in class)
Midterm exam 2	15%	May 31 (in class)
Final exam	50%	June 14, 6:05 – 9:25pm (in class)
Quizzes	10%	Every Thursday
Assignments (webwork)	10%	weekly

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+ (90-100)	B+ (77-79)	C+ (65-69)	D	(50-54)
A (85-89)	B (73-76)	C (60-64)	F	(<50)
A- (80-84)	B- (70-72)	C- (55-59)		

Course Policies

- *Late assignments will **not** be accepted.*
- *Examinations (quizzes, midterms and final) will be held in class. The exams will be closed book, and calculators will **not** be allowed during quizzes, the midterms or the final examination. In fact, only writing utensils (pencils, lead, erasers, pens, white-out) will be allowed.*

- *There will be no makeup midterms. If a student misses a midterm for a medical reason, the weight of that midterm will be moved to the final exam (for example, if you miss one midterm, your final exam will be worth 65% of your final grade). You must notify the instructor **prior** to the exam, and provide a medical note upon your return.*
- *Information about the course may be given during class. It is the responsibility of the students to ensure that they are made aware of what occurs during classes.*
- *No recordings of the class are permitted.*

This is a tentative outline.

Course Content

Dates	Topics
May 8	Systems of equations, vectors in \mathbb{R}^n
May 10	Vectors in \mathbb{R}^n , lines and planes
May 15	Matrix operations
May 17	Midterm 1 Transpose, inverse
May 22	Last day to drop without a "W" Elementary matrices, linear transformations
May 24	Spans and linear independence
May 29	Subspaces and bases
May 31	Midterm 2 Determinants and cofactors
June 5	Eigenvalues and Eigenvectors
June 7	Last day to drop with a "W" Diagonalization
June 12	Review
June 14	Final Exam

ACCOMMODATION POLICY FOR STUDENTS

Students may request accommodation as a result of barriers related to disability, religious obligation, or any characteristic protected under Canadian Human Rights legislation. The full text of Dalhousie's Student Accommodation Policy can be accessed here:

http://www.dal.ca/dept/university_secretariat/policies/academic/student-accommodation-policy-wef-sep--1--2014.html

Students who require accommodation for classroom participation or the writing of tests and exams should make their request to the **Advising and Access Services Centre (AASC)** prior to or at the outset of the regular academic year. More information and the ***Request for Accommodation*** form are available at www.dal.ca/access.

ACADEMIC INTEGRITY

Academic integrity, with its embodied values, is seen as a foundation of Dalhousie University. It is the responsibility of all students to be familiar with behaviours and practices associated with academic integrity. Instructors are required to forward any suspected cases of plagiarism or other forms of academic cheating to the Academic Integrity Officer for their Faculty.

The Academic Integrity website (<http://academicintegrity.dal.ca>) provides students and faculty with information on plagiarism and other forms of academic dishonesty, and has resources to help students succeed honestly. The full text of Dalhousie's ***Policy on Intellectual Honesty*** and ***Faculty Discipline Procedures*** is available here:

http://www.dal.ca/dept/university_secretariat/academic-integrity/academic-policies.html

STUDENT CODE OF CONDUCT

Dalhousie University has a student code of conduct, and it is expected that students will adhere to the code during their participation in lectures and other activities associated with this course. In general:

"The University treats students as adults free to organize their own personal lives, behaviour and associations subject only to the law, and to University regulations that are necessary to protect

- the integrity and proper functioning of the academic and non – academic programs and activities of the University or its faculties, schools or departments;
- the peaceful and safe enjoyment of University facilities by other members of the University and the public;
- the freedom of members of the University to participate reasonably in the programs of the University and in activities on the University's premises;
- the property of the University or its members."

The full text of the code can be found here:

http://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

COPYRIGHT

All members of the Dalhousie community are expected to comply with their obligations under Canadian copyright law. Dalhousie copyright policies and guidelines, including our Fair Dealing Guidelines, are available at <http://www.dal.ca/dept/copyrightoffice.html>. Copyright questions should be directed to the Copyright Office at copyright.office@dal.ca.

SERVICES AVAILABLE TO STUDENTS

The following campus services are available to help students develop skills in library research, scientific writing, and effective study habits. The services are available to all Dalhousie students and, unless noted otherwise, are free.

Service	Support Provided	Location	Contact
General Academic Advising	Help with <ul style="list-style-type: none"> - understanding degree requirements and academic regulations - choosing your major - achieving your educational or career goals - dealing with academic or other difficulties 	Killam Library Ground floor Rm G28 Bissett Centre for Academic Success	In person: Killam Library Rm G28 By appointment: <ul style="list-style-type: none"> - e-mail: advising@dal.ca - Phone: (902) 494-3077 - Book online through MyDal
Dalhousie Libraries	Help to find books and articles for assignments Help with citing sources in the text of your paper and preparation of bibliography	Killam Library Ground floor Librarian offices	In person: Service Point (Ground floor) By appointment: Identify your subject librarian (URL below) and contact by email or phone to arrange a time: http://dal.beta.libguides.com/sb.php?subject_id=34328
Studying for Success (SFS)	Help to develop essential study skills through small group workshops or one-on-one coaching sessions Match to a tutor for help in course-specific content (for a reasonable fee)	Killam Library 3rd floor Coordinator Rm 3104 Study Coaches Rm 3103	To make an appointment: <ul style="list-style-type: none"> - Visit main office (Killam Library main floor, Rm G28) - Call (902) 494-3077 - email Coordinator at: sfs@dal.ca or - Simply drop in to see us during posted office hours All information can be found on our website: www.dal.ca/sfs
Writing Centre	Meet with coach/tutor to discuss writing assignments (e.g., lab report, research paper, thesis, poster) <ul style="list-style-type: none"> - Learn to integrate source material into your own work appropriately - Learn about disciplinary writing from a peer or staff member in your field 	Killam Library Ground floor Learning Commons & Rm G25	To make an appointment: <ul style="list-style-type: none"> - Visit the Centre (Rm G25) and book an appointment - Call (902) 494-1963 - email writingcentre@dal.ca - Book online through MyDal We are open six days a week See our website: writingcentre.dal.ca