

THE UNIVERSITY OF WESTERN ONTARIO
LONDON CANADA
DEPARTMENT OF MATHEMATICS

Mathematics 1229A 650
Methods of Matrix Algebra

Summer 2020

INSTRUCTOR: V. Olds, volds@uwo.ca

TEXTBOOK: (Required) Custom Edition of *Elementary Linear Algebra, First Canadian Edition* by S. Venit, W. Bishop and J. Brown, published by Nelson Education Ltd., ISBN: 0176559299. **Or:** The e-version of this book. (A used copy of the previous printing of this custom text ISBN: 0176630929 is also acceptable.)

FORMAT: This is an online course, with a course web site in OWL (<https://owl.uwo.ca>).

PREREQUISITES: One or more of Ontario Secondary School MCF3M, MCR3U, or equivalent.

ANTIREQUISITES: Applied Mathematics 1411A/B, 2811B, Mathematics 1600A/B, 2120A/B, 2155F/G, 2211A/B, the former Mathematics 2155A/B.

COURSE OUTLINE: Vectors in \mathbb{R}^m ; Equations of lines and planes; Matrix Algebra, including Multiplication and Inverses; Systems of Linear Equations; Gauss-Jordan Elimination; Determinants.

LECTURE SCHEDULE:

The course runs during 12 weeks. The lecture notes are broken up into 12 Units, with several videos to accompany each. One Unit of the notes (with videos) is covered each week. Each Unit corresponds to one text section of material. Only material covered in these notes is considered part of the course material. Some text sections may contain additional material which is not covered in this course.

Note: Some units of material are longer than others. If a particular unit seems to contain less material than usual, start working on the next unit that week, especially if it appears to be a long one.

WHAT IS EXPECTED OF THE STUDENT?

Students should make a serious effort to understand all course material, reading the Lecture Notes and the text, watching the videos, and doing the assigned homework. Students are expected to make use of the supplemental materials posted on the course web site and to be aware of any information posted on the NEWS forum on the web site. Students are encouraged to ask questions, on the web site forums, or via email.

EVALUATION OF STUDENT PERFORMANCE:

There will be 6 online quizzes and 4 online assignments. There will be two 90-minute (online) Term Tests, on **Saturday June 6** and **Saturday July 4**. (Details of the time will be announced.) The 3-hour Final Exam, covering **all** of the course material, will be scheduled by the Registrar's Office during the Distance Studies summer exam period (August 4 - 7).

NOTE: No calculators, notes or other aids are allowed on any test or exam in this course.

DETERMINATION OF FINAL GRADE:

A minimum grade of 40% on the Final Exam is required in order to receive a passing grade in the course.

Quizzes 10%, Assignments 10%, Term Tests each 20%, Final Exam 40%. Further details provided on the next page..

Note: See Extensions and Other Date Changes on the next page.

ABOUT THE QUIZZES: See Quiz Schedule and Quiz Information documents posted in OWL.

There are 6 online quizzes spread through the course. Quizzes are done in OWL. Each quiz consists of 8 multiple choice questions, generated at random from a test bank of relevant questions. Each quiz is available during a 5-day window of time, from 12:05 a.m. EDT on the first day until 11:55 p.m. EDT on the last day. (In OWL, the time the quiz is due will show in EDT no matter what time zone you're in.) There is no time limit, and you get 2 attempts at each quiz. For each student the best 5 of the 6 quizzes will each count for 2% to make up the 10% for quizzes in the final grade.

ABOUT THE ASSIGNMENTS: See Assignment Schedule document posted in OWL.

There are 4 online assignments, done outside of OWL, in AVO: <http://app.avocadocore.com/>. Each assignment consists of 10 multiple choice questions, generated at random from a test bank of relevant questions. Each assignment will be available only on 1 day (time frame tba) and has a **time limit of 1 hour**. You get only 1 attempt at each assignment. The 4 assignments will each count for 2.5% in the 10% for assignments in the final grade.

ABOUT THE TESTS/EXAMS:

The 2 Term Tests and the Final Exam will all be done online. Information about whether these will be in OWL or somewhere else will be announced, and will not necessarily be the same for all tests/exams.

Each Term Test will have 25 multiple choice questions, and the Final Exam will have 50 multiple choice questions. Test 1 covers Units 1 to 4, and Test 2 covers only Units 5 to 8. The Final exam covers ALL of the course material (Units 1 - 12), with approximately half the weight on Units 1 - 8 (previously tested material) and approximately half on Units 9 - 12. The date of the Final Exam will be determined by the Registrar's Office and will be posted in the Summer Evening and Distance Studies Exam Schedule, due out sometime late in June.

Tests and/or examinations in this course may be conducted using the remote proctoring service *Proctortrack*.

Completion of this course will require you to have a device that meets the requirements at

<https://www.proctortrack.com/tech-requirements/>.

By taking this course, you are consenting to the use of this software and to be monitored during tests and examinations. Furthermore, you are declaring that you have a reliable internet connection with sufficient capacity to support video proctoring.

EXTENSIONS AND OTHER DATE CHANGES:

Requests for extensions to quiz or assignment due dates may be made to the instructor. All such requests should include the reason(s) why the date change is requested. Note that self-reporting for the last day of a 5-day quiz window *does not* automatically qualify you for a makeup quiz. You are expected to do the quizzes early enough that a last-minute illness or emergency does not prevent you from getting it done.

See also ABSENCE/MISSED WORK on the last page of this document.

ABOUT THE HOMEWORK:

To aid students in preparing for the assignments, quizzes and examinations, a list of assigned problems from the text is provided. (For some sections, additional exercises not from the text are also provided.) The list is posted on the course web site. These problems are representative of the level of understanding expected of students in this course. Solutions to these assigned problems are posted on the course web site. It is expected that **all** of these problems will be completed, and the solutions reviewed, to ensure sufficient understanding of each unit. These homework exercises are not submitted for grading and do not count in the final grade.

Note that simply reading the solutions **does not** constitute *doing* the homework. Solutions are provided to assist you in determining where you have made mistakes and/or how to approach the problem. But you *cannot learn math without doing the problems for yourself*.

Getting Help:

Students who struggle with any of the material in the course are encouraged to get help as soon as possible. There are forums on the OWL site where students may ask questions. Students may also email the Instructor or the course TAs for help.

Note: Please **do not** post actual questions from a quiz or assignment on the OWL forums.

Course Schedule:

Week of	Material covered	Notes
May 4	Unit 1 is section 1.1	no assignments or quizzes due this week
May 11	Unit 2 is section 1.2	Quiz 1 starts Friday
May 18	Unit 3 is section 1.3 (+ Extra Ch. 1 homework)	Monday is the Victoria Day holiday; Quiz 1 (Units 1 & 2) is due Tuesday
May 25	Unit 4 is section 2.1	Assignment 1 (Units 1, 2 & 3) is on Tuesday Quiz 2 starts Friday
Saturday May 30 to Friday June 5 is a break in the term.		
Test 1 is Saturday June 6 (Units 1 to 4)		
June 8	Unit 5 is section 2.2	Quiz 2 (Units 3 & 4) is due Tuesday
June 15	Unit 6 is section 2.3	Quiz 3 starts Friday
June 22	Unit 7 is section 3.1	Quiz 3 (Units 5 & 6) is due Tuesday; Assignment 2 (Units 4, 5 & 6) is also on Tuesday
June 29	Unit 8 is section 3.2	Wednesday is the Canada Day holiday; Quiz 4 starts Friday Test 2 is Saturday July 4 (Units 5 to 8)
July 6	Unit 9 is section 3.3	Quiz 4 (Units 7 & 8) is due Tuesday;
July 13	Unit 10 is section 4.1	Assignment 3 (Units 7, 8 & 9) is on Tuesday; Quiz 5 starts Friday
July 20	Unit 11 is section 4.2	Quiz 5 (Units 9 & 10) is due Tuesday
July 27	Unit 12 is section 4.3	Quiz 6 starts Friday
August 3	Exam Week	Monday is Civic Holiday in Ontario; Assignment 4 (Units 10, 11 & 12) is on Tuesday; Quiz 6 (Units 11 & 12) is due the later of Tuesday or the day before Exam day; Final Exam (date tba) covers Units 1 - 12

Please contact the course instructor if you require material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x82147 for any specific question regarding an accommodation.

SENATE POLICY ON PREREQUISITES:

Prerequisite checking is the **student's responsibility**. Unless you have either the prerequisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

STATEMENT ON ACADEMIC OFFENCES:

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

ABSENCE / MISSED WORK:

If you are unable to write a test or exam due to illness or other serious circumstances, you must seek approval for the absence as soon as possible. During the COVID-19 pandemic, medical notes are not required. Medical absence can be reported through the *Student Illness Reporting Tool* at https://www.registrar.uwo.ca/academics/academic_considerations/index.html. If this portal is not available (i.e., if the COVID-19 pandemic has lifted before the end of the course), or if you have missed (or will be missing coursework) for a non-medical reason beyond your control, approval can be granted either through a *Self-reported Absence* (if the portal is available) or via the Academic Counselling unit of your Home Faculty. Non-medical reasons must be accompanied by supporting documentation. In all cases, you must contact your instructor as soon as possible, and no later than 24 hours after the period covered. Makeups for Term Tests will be held within one week after the scheduled test. For further information, please consult the University's policy on academic consideration for student absences:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf.

If you miss the Final Exam, please contact your faculty's Academic Counselling Office as soon as you are able to do so. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam).

SUPPORT SERVICES

Office of the Registrar	(UWO) www.registrar.uwo.ca
	Brescia http://brescia.uwo.ca/academics/registrar-services/
	Huron www.huronuc.on.ca/CurrentStudents/StudentLifeandSupportServices/AcademicResources
	King's www.kings.uwo.ca/academics/academic-deans-office/
Student Development Services	www.sdc.uwo.ca
Learning Skills Services	www.sdc.uwo.ca/learning
USC	http://westernusc.ca/your-services/#studentservices
Academic Calendar	www.westerncalendar.uwo.ca
WTS	https://wts.uwo.ca/helpdesk/index.html

Students who are in emotional/mental distress should refer to Mental Health @ Western via the link given below for a complete list of the options about how to obtain help: <http://www.uwo.ca/uwocom/mentalhealth/>