

MATH 2R03: Linear Algebra II

Summer 2018

Course Outline

Time and Place

Dates	June 19 2018 - August 2 2018.
Meeting Times	Every Tuesday and Thursday, 19:00-22:00.
Meeting Location	Hamilton Hall 305.

Instructor

Instructor	Margaret E. M. Thomas.
Office	Hamilton Hall 409.
Email Address	thomam17@mcmaster.ca <i>Emails <u>must</u> include 2R03 in the subject line.</i>
Office Hours	Every Tuesday and Thursday 17:30-18:30 or by appointment (subject to change).

Organizational Information

Website	All course information, materials and announcements will be posted either on Avenue to Learn or on the course website: https://ms.mcmaster.ca/~thomam17/courses/2r03/2r03index.html Check regularly.
Textbook	H. Anton & C. Rorres, Elementary Linear Algebra: Applications Version , 11th edition, Wiley. (See 'Materials' next for further information.)
Materials	WileyPLUS (run through Avenue to Learn) will be used for all assignments (see 'Assessment Methods' below). This requires a WileyPLUS access code for the course textbook which is available from the Campus Store (look for it listed on its own as an e-text, or as part of a bundle with a new hard copy of the textbook). The access code comes with an online version of the textbook and the option to purchase an e-version of the textbook for a reduced price. Where calculators are permitted, only the Standard McMaster calculator, Casio FX-991 (MS or MS Plus) may be used (see Exam Requirements).

Course Content

Prerequisites	One of MATH 1AA3, 1LT3, 1NN3, 1XX3, 1ZB3, ARTSSCI 1D06 A/B, ISCI 1A24 A/B; and one of MATH 1B03, 1ZC3, 1ZZ5.
Summary of Topics	Abstract vector spaces. Linear transformations. Inner product spaces. Spectral theorems. Orthogonal Bases. Other topics.

Topics (subject to change)	Review of complex numbers. Review of vector spaces. Review of eigenvalues, eigenvectors and diagonalization. Inner product spaces, orthogonality, Gram-Schmidt Process. QR-Decomposition, best approximation, least squares. Fourier Series. General Linear Transformations (GLTs) – definition, compositions, inverses, isomorphisms. Matrices associated with GLTs. Change of basis and similarity. Diagonalization: orthogonal, Hermitian, unitary, normal. Quadratic Forms and optimization. Applications. Review.
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Assessment Methods

Assignments	Five assignments, posted approximately once a week during the course on the WileyPLUS system, accessible through the course website at Avenue to Learn using an individual WileyPLUS access code (see ‘Materials’ above). All assignments are tentatively due by July 31 2018, 11:59pm.
Midterm Tests	Two written closed-book tests of 1 hour duration each. Tentative midterm test dates: July 5 2018 and July 19 2018.
Final Examination	One cumulative written closed-book final examination of 2.5 hours duration. Tentative final examination date: August 2 2018.

You must bring your McMaster student ID to each test and to the final examination. Locations of the tests and the final examination, as well as any further details (e.g. material covered, permitted aids), will be announced in lecture and posted on the course website roughly one week in advance.

Course Evaluation

Final grades will be calculated (using the [grade equivalence chart](#) published in the General Academic Regulations) according to whichever of the following methods is more favourable in each individual case:

	Option 1	Option 2
Final Examination	40%	40%
Midterm Test 1	25%	30%
Midterm Test 2	25%	30%
Assignments	10%	0%

The instructor reserves the right to adjust grades at the end of the course; this adjustment will be applied uniformly and in a manner which only increases individual grades.

Relief for Missed Academic Term Work (MSAF)

In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar “[Requests for Relief for Missed Academic Term Work](#)”. Please note these regulations have changed beginning Fall 2015. In the event of absence from midterm tests, no make-up test will be given; your course grade will be determined by increasing the weight of the final examination to compensate for the missed test(s).

Academic Integrity

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at www.mcmaster.ca/academicintegrity.

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

Online Element

In this course we will be using Avenue to Learn and WileyPLUS. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

Academic Accommodation of Students with Disabilities

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University’s Policy for [Academic Accommodation of Students with Disabilities](#).

Possible Changes to Course Outline

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.