

# MAT 1302 A - OUTLINE

Winter 2009

PROFESSOR: CATALIN RADA      catalin.rada@alumni.uottawa.ca

Office Hours: TUE 10:05-12:05, Location: Room B07-B in KED at 585 King Edward Ave.

Lectures: Tuesday, 08:30 - 10:00 in MNT 202 and Friday, 10:00 - 11:30 in MNT 202.

DGDs: DGD 1 Monday, 16:00 - 17:30 STE C0136; DGD 2 Monday, 16:00 - 17:30 MRT 252; DGD 3 Tuesday, 14:30 - 16:00 ART 257; DGD 4 Tuesday, 14:30 - 16:00 MRT 250.

DGD = Problem Sessions: The DGD is a part of the course and participation is mandatory. During the DGDs, the TA will work through examples supplementing the material covered in the lectures and present solutions to some of the suggested exercises. These problems will be similar to the problems on the midterm and final exams. DGDs will begin the week of January 12.

**Official Course Description:** Solution of systems of linear equations. Matrix algebra. Determinants. Complex numbers, fundamental theorem of algebra. Eigenvalues and eigenvectors of real matrices. Introduction to vector spaces, linear independence, bases. Applications.

**Prerequisites:** One of Ontario grade 12 Geometry and Discrete Mathematics (university preparation), Ontario grade 12 Mathematics of Data Management (university preparation), MAT1340, MAT0341, OAC Algebra and Geometry or OAC Finite Mathematics.

**Course Text:** David C. Lay, Linear Algebra and its Applications, Third Edition, Pearson/Addison-Wesley, 2006. Note that there are several packages for this text – with study manual, without (hard copy of the) study manual, etc. In class and in the DGDs, we will only explicitly refer to the textbook itself. The choice of whether or not the study manual is desired is up to each student. It contains extra explanations and detailed solutions of many of the exercises in the text. Therefore it could be a useful companion to the text. The CD that comes with the text contains an electronic version of the study guide. So a student need only decide whether or not (s)he wants a hard copy.

**Syllabus:** 1.1, 1.2, 1.3, 1.4, 1.6, 1.5, 1.7, 2.1, 2.2, 2.3, 2.6, 2.8, 2.9, 3.1, 3.2, Appendix B, 5.1, 5.2, 5.3, 1.10, 4.9.

Suggested Exercises: Sec 1.1: 1, 3, 11, 13, 15, 19; Sec 1.2: 1, Sec 1.2: 3, 5, 7, 9, 11, 13, Sec 1.2: 1721, 2326, Sec 1.3: 1, 5, 9, 11, 13, 17, 19; Sec 1.4: 1, 3, 5, 7, 9, 11, 13; Sec 1.6: 11; Sec 1.5: 7, 9, 11, 15, 17, 19, 21, 23, 25; Sec 1.7: 9, 11, 13, 15, 17, 19, 21, 22, 27, 33, 35, 37; Sec 2.1: 1, 3, 7, 9, 11, 13, 17; Sec 2.1: 15, 23, 27; Sec 2.2: 1, 5, 9, 13, 17; Sec 2.2: 19, 20, 23, 29, 31, 32, 35; Sec 2.3: 1, 3, 5, 7; Sec 2.6: 1, 3, 5, 7, 9; Sec 2.8: 7, 9, 11, 15, 17, 19, 21, 22; Sec 4.1: 1, 1318; Sec 2.9: 9, 11, 13, 15, 17, 19, 21, 23; Sec 4.2: 5, 9, 11, 12, 15, 19; Sec 3.1: 1, 9, 11, 13, 19, 21, 23, 37; Sec 3.2: 7, 9, 11, 13, 15, 17, 19, 21, 39; Sec 5.1: 1, 3, 5, 7, 9, 11, 13, 19, 21, 26; Sec 5.2: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19; Sec 5.3: 1, 3, 4, 7, 9, 11, 13, 15, 17, 19; Sec 4.9: 1, 3, 5, 7, 9, 11, 13.

**Important Dates:**

Jan 6 First class; Jan 12 DGDs begin this week; Jan 23 First assignment due; Feb 6 First midterm exam Feb 16 20 Study break – no class; Feb 27 Second assignment due; Mar 2 Last day for withdrawal from a course Mar 13 Third assignment due; Mar 20 Second midterm exam; Apr 3 Fourth assignment due; Apr 7 Last class.

**Computation of Grades:** You must obtain a grade of at least 50% on the final exam in order to pass the course. If your grade on the final exam is at least 50%, then your final course grade will be calculated as follows:

Assignments: 10% Midterms: 40% (2 midterms worth 20% each) Final Exam: 50% If you do not miss an assignment, your lowest assignment grade will be replaced by your score on the final exam if this is to your advantage. Similarly, if you did not miss a midterm, your lowest midterm exam score will be replaced by your score on the final exam if this is to your advantage.

**Help Centre in Mathematics and Statistics:** Marion Hall, room 021.

**Assignments:** There will be four assignments to be handed in during the term. These assignments will be posted on this webpage. They will be due at the beginning of class on the following dates:

Assignment 1: January 23

Assignment 2: February 27

Assignment 3: March 13

Assignment 4: April 3

Exams: There will be two midterm exams, scheduled (during the usual class time) on the following dates:

Midterm Exam 1: Friday, February 6

Midterm Exam 2: Friday, March 20

Missed midterm exams cannot be rescheduled. If you miss a midterm exam for a legitimate (properly documented) reason, its weight will be added to the weight of the final exam in the computation of your course grade. All (midterm and final) exams are closed-book exams. Calculators are not allowed, nor are they needed. You may not enter a test after, or leave before, the first 20 minutes have elapsed. You may also not leave an exam during the final 10 minutes. You must present your student card during the exam.

Unless otherwise announced, marked exams will be returned in the DGDs. Unclaimed tests will be kept by the instructor and can be claimed later during the term. Six months after the end of term, unclaimed exams will be shredded.