MATH 2050 Linear Algebra
Department of Mathematics and Statistics
Section 004   **CRN: 71326**

2009 Winter
Course Outline

Instructor
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Office Hours are posted on the door of EN 3047;
provisionally they are on Mondays 13:15-14:00, Tuesdays 13:10-13:50,
Tuesdays 15:00-16:00 and Fridays 13:15-14:00.

Class Times and Locations
Mondays, Wednesdays and Fridays, 09:00-09:50
in EN 2043 (S.J. Carew building - Engineering)
If you are absent from any classes, then it is your responsibility to obtain notes for that class and to check for any announcements concerning assignments, tests or exams that were presented in that class.   The most important announcements will also be displayed on the home page of this web site for section 4 of MATH 2050.

Prerequisites
MATH 1000 or six credit hours in first year mathematics.   This section is reserved for students in Engineering One, Engineering Transition Term 2 or Pre-Engineering.

Evaluation Scheme

Best seven of eight assignments:	10 %
Two term tests (15% each):	30 %
Final examination:	60 %

Assignments give you some much needed practice in the methods of linear algebra and enhance your chances of success in the test and the final examination, so it is important that *you attempt all assignment questions yourself*.   The questions will be posted on this Web site only.   Your attempt at each assignment should be written neatly on one side of standard paper (8.5"×11"), stapled, with your name, student number and assignment number written clearly on the top right corner of the first page.   Assignments are to be submitted in class.

The solutions for each assignment will be placed on this Web site shortly after the deadline for the submission of that assignment.

Evaluation Scheme (continued)

The dates of the **term tests** are *tentatively* Friday 13 February and Friday 13 March, during regular class time.   In the event of a University closure on a test date, the test will take place in the next available class for this course.   The locations of the tests will be announced later.

No deferred tests will be offered.   If a student presents an acceptable reason within seven days for absence from a test, then the missing score will be replaced by a score based on the other test and/or the final examination.   If a student fails to submit an assignment by the deadline and presents an acceptable reason within seven days of that deadline, then the score for the missing assignment will be based on the average of the other assignments.

Assignments and tests will be returned in class, with the total mark written on an inside page.   The scripts will be in alphabetical order.   You should collect only your own script.   You may not take or look inside the script of any other student.

You will need a **calculator** for the term tests and the examination.   Only a simple scientific calculator is permitted, with **no graphics or programming capabilities**.   **No notes** and no formula sheets are allowed in the tests or the final examination.

The **final examination** will cover the entire course.   Where it is in an individual student's favour, the weighting of the final examination for that student *may* be increased beyond 60%.

It is the student's responsibility to locate the time and place of the final examination. The Department of Mathematics and Statistics does **not** grant deferred examinations to students who claim to have misread (or been confused in any way by) the examination timetable.   A student who is absent from the final examination for an unacceptable reason will receive a mark for that final examination of zero.

The Department of Mathematics and Statistics offers the possibility of a **supplementary examination** to students whose final grade for a course is in the range 45-49 and whose term mark is at least 50%.   See Regulation 3.3 in the Faculty of Science section of the University Calendar for more detail.

Textbook
The textbook for MATH 2050 Linear Algebra is "*Linear Algebra with Applications*", 5th edition, by W. Keith Nicholson, McGraw-Hill Ryerson (2006).

List of Topics

1.   Systems of Linear Equations
2.   Matrix Algebra
3.   Determinants
4.   Vector Geometry
5.   The Vector Space $\mathbb{R}^n$

Detailed Table of Contents:

1.   Systems of Linear Equations

1.1   Solutions and Elementary Operations
1.2   Gaussian Elimination
1.3   Homogeneous Equations

2.   Matrix Algebra
2.1   Matrix Addition, Scalar Multiplication, and Transposition
2.2   Matrix Multiplication
2.3   Matrix Inverses
2.8[*]   An Application to Markov Chains ([*]covered only if time permits)

3.   Determinants
3.1   The Cofactor Expansion
3.2   Determinants and Matrix Inverses
3.3   Eigenvalues and Eigenvectors
3.4   Diagonalization Algorithm, Similarity

4.   Vector Geometry
4.1   Vectors and Lines
4.2   Projections and Planes
4.3   The Cross Product

5.   The Vector Space $\mathbb{R}^n$ (cases $n = 2$ and $n = 3$ only)
5.1   Subspaces and Spanning
5.2   Independence and Dimension

Various resources are available on the Web site for this section, at
`"http://www.engr.mun.ca/~ggeorge/2050/"`.

Visit the web site often! It is organized into six main sections:
outline.html (web version of this page) - course outline and detailed syllabus;
assigns/ - assignment, test and examination questions;
solution/ - assignment, test and examination solutions;
demos/ - demonstration programs;
handout/ - Word and pdf files for any handouts;
grades.html - grades earned by students to date, (ordered by the last four or five digits of the student number).

Important Dates during the Semester

Lectures begin:	2009 January 8 Thursday
Last day to add courses (or to drop with 100% refund):	2009 January 22 Thursday
Term Test 1:	2009 February 13 Friday
Mid semester break:	2009 February 23-25 (Mon.-Wed.)
Last day to drop courses without academic prejudice:	2009 February 26 Thursday
Term Test 2:	2009 March 13 Friday
Last day of lectures:	2009 April 8 Wednesday
Good Friday holiday:	2009 April 10 Friday
Examination period:	2009 April 13-22 (Mon.-Wed.)