School of Engineering
University of Guelph

ENGG*1500 Engineering Analysis

Course Description & Outline – Winter 2012

CALENDER DESCRIPTION

This course deals with engineering applications of matrix algebra, vector spaces and computer techniques to solve linear systems. Topics include linear transformations, eigenvalues and eigenvectors, diagonalization and their applications. Additional topics include complex variable algebra, multi-variable functions, partial derivatives, maxima and minima.

PREREQUISITES **MATH*1200** - Calculus

INSTRUCTOR: **Soha Eid Moussa, Ph. D., P. Eng**
Room 1341, Thornborough Building
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Office Hours: Open Door Policy

TEACHING ASSISTANTS (tutorials will start in the second week of classes)

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TEXT BOOK

Daniel Norman and Dan Wolczuk, Introduction to Linear Algebra for Science and Engineering, Second Edition, Pearson Canada Inc., 2012.

COURSE OBJECTIVES

The main goal of this course is to give you a solid foundation in the basic concepts of linear algebra that will be needed throughout your engineering career.

CLASS TIME & LOCATION

Lecture	T-Th	1:00-2:20	WMEM auditorium	
Tutorials	T01	Monday	9:30-10:20	Mack 315
	T02	Monday	10:30-11:20	Mack 315
	T03	Tuesday	10:30-11:20	Mack 315
	T04	Wednesday	9:30-10:20	Mack 315
	T05	Wednesday	10:30-11:20	Mack 315
	T06	Thursday	10:30-11:20	Mack 315
	T07	Friday	9:30-10:20	Mack 315
	T08	Friday	10:30-11:20	Mack 315
	T09	Monday	4:30-5:20	Mack 315
	T10	Tuesday	4:00-4:50	Mack 315
	T11	Friday	2:30-3:20	Mack 315
	T12	Wednesday	4:30-5:20	Mack 315

METHOD OF EVALUATION

2 Mid-term Examinations	25% each
Final Examination	50%

Disclaimer: *The instructor reserves the right to change any or all of the above in the event of appropriate circumstances, subject to University of Guelph Academic Regulations*

MID-TERM and FINAL EXAMINATION

MID-TERMS	Date:	February 7 & March 13
	Time:	in class
	Location:	WMEM auditorium
FINAL	Date:	April 18, 2012
	Time:	19:00-21:00 (7-9) pm
	Location:	TBA

Disclaimer: *The instructor reserves the right to change any of the above mid-term dates in the event of appropriate circumstances, subject to University of Guelph Academic Regulations*

COMMUNICATION

All communication for the course will be done through the Courselink website. This includes the distribution of weekly assignments and lecture notes. Courselink can be found at: http://courselink.uoguelph.ca
All students are expected to consult with the course site regularly and will be responsible for the material posted on this site.

COURSE ORGANIZATION

The proposed schedule of topics is shown below.

- Euclidean Vector Spaces
- Systems of Linear Equations
- Matrices, Linear Mappings, and Inverses
- Vector Spaces
- Determinants
- Eigenvectors and Diagonalization
- Symmetric Matrices and Quadratic Forms
- Eigenvectors in Complex Vector Spaces

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT

Academic misconduct, such as plagiarism, is a serious offence at the University of Guelph. Please consult the current undergraduate calendar and School of Engineering programs guide, for offences, penalties and procedures relating to academic misconduct.
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml