

ENGG*1500: ENGINEERING ANALYSIS COURSE OUTLINE – WINTER 2011

DESCRIPTION

This is an introductory course in linear algebra. Linear algebra is one of the most important subjects that you will study in Engineering, as it is used in many courses and design projects. Topics to be covered include linear systems, matrix algebra, determinants, vector spaces, eigenvalues and eigenvectors, orthogonality, and least squares. The main goal of the course is to give you a solid foundation in the elementary concepts of linear algebra and to give you exposure to real problems that you will use throughout your engineering career.

INSTRUCTOR

Anthony Vannelli, Ph.D., P.Eng.

Professor and Dean, College of Physical and Engineering Science

vannelli@uoguelph.ca

Science Complex Room 1314

519-824-4120 ext. 53125

Esther Codner (assistant to Dean) ecodner@uoguelph.ca or ext. 56430

TEACHING ASSISTANTS

Muhammad Amin

mamin@uoguelph.ca

Ahmed Al-Watter

aalwatta@uoguelph.ca

Asmaa Ali

asmaa@uoguelph.ca

Michael Fadock

mfadock@uoguelph.ca

Sean Fraser

frasers@uoguelph.ca

Farshid Sabouri

fsabouri@uoguelph.ca

Sepideh Shariati

sshariat@uoguelph.ca

COURSE SCHEDULE

Lectures		Tuesday	1:00-2:20pm	ROZH 101
		Thursday	1:00-2:20pm	ROZH 101
Tutorials	S01	Monday	9:30-10:20am	CRSC 403
	S02	Monday	10:30-11:20am	CRSC 403
	S03	Tuesday	10:00-10:50am	CRSC 403
	S04	Wednesday	9:30-10:20am	CRSC 403
	S05	Wednesday	10:30-11:20am	CRSC 403
	S06	Thursday	10:00-10:50am	CRSC 403
	S07	Friday	9:30-10:20am	CRSC 403
	S08	Friday	10:30-11:20am	CRSC 403
	S09	Monday	4:30-5:20pm	MACK 233
	S10	Tuesday	4:30-5:20pm	CRSC 403
	S11	Thursday	4:30-5:20pm	CRSC 403
Midterm Exam		TBA (late February midterm)	1:30 min length	TBA
Final Exam		Thursday, April 21	2:30-4:30pm	TBA
4 Quizzes		To be held in class.	20 min-30 min	ROZN 101
		Announced in class/Courselink	duration	

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>

TEXT

Linear Algebra and Its Applications, 3rd Edition Update, by David C. Lay

SEQUENCE OF MATERIAL COVERED FROM TEXT

- (1) Chapter 1 – 1.1-1.6;1.10
- (2) Chapter 2 – 2.1,2.2,2.5,2.6,2.8,2.9
- (3) Chapter 3 – 3.1,3.2
- (4) Chapter 4 – 4.1,4.3,4.6,4.8,4.9
- (5) Chapter 5 – 5.1-5.3;5.5-5.8
- (6) Chapter 7 – 7.1-7.3;7.5

LECTURE NOTES

In general, the lectures will follow the text. Example problems will be different and some additional material will be presented in class that you will need to know. Lecturing will be done by writing on overhead transparencies that will be made available after each lecture (on Courselink). Note, however, that **the lecture notes do not serve as a substitute for reading the text!** Students are responsible for reading and understanding the relevant sections of the text also.

ASSIGNMENTS

Ten weekly assignments, will be critical for developing a solid understanding of the course material. Although there is no way to ensure that you work independently on the assignments, there will be virtually no benefit unless you do them yourself. This will pay off when it comes to quizzes, midterm and final exam. **All quizzes, midterm, and Final will have many DIRECT questions from assignments. DO YOUR ASSIGNMENTS EACH WEEK AND MAKE SURE YOU CAN DO THEM BY YOURSELF!**

GRADING SCHEMES

Scheme 1

4 Quizzes (Best 3 out of 4), 15%

Midterm Exam, 35%

Final Exam, 50%

Scheme 2

4 Quizzes (you do well in all 4), 20%

Midterm Exam, 30% (if you did worse in Midterm than Final); Final 50%

OR

Midterm Exam, 35%; Final 45% (if you did worse in Final than Midterm)

GETTING HELP

The tutorial sessions, held for each section once per week and run by the TAs, will serve as a first line of help and should be used to go over the course material from the previous week as needed. Weekly office hours will be set by Dr. Vannelli and announced at the start of term, and should be used if a particular problem cannot be

sorted out in the tutorial sessions. This way, despite the class being very big, each student should have adequate resources for help.

IMPORTANT NOTES

- **No calculators or aids of any kind will be permitted for the quizzes, midterm and final exam.** All problems will be easy enough to solve by hand without the need for a calculator.
- Any act of academic misconduct will be reported and dealt with accordingly. Please see the following website for University of Guelph policies on academic misconduct:
<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>