

# MATH 211 L04.

T. Th. 9:30-10:45

Winter 2010

**Instructor:** Jędrzej Śniatycki, MS 320. Office hours (**by appointment**): Tuesday 14:00 - 15:00 and Thursday 15:00 - 16:00.

**Text:** Keith Nicholson, Elementary Linear Algebra, McGraw-Hill, Second Edition.

**Assignments:** 10 webwork homework assignments. Taken together, the best 10 will count for 10% of the final grade.

**Quizzes:** Three 30 min. quizzes written in the labs. Each quiz counts for 8% of the final grade. Dates of quizzes to be determined.

**Midterm test:** One 75-minute term tests written during the lecture time. It will count for 16% of the final grade.

**Final Exam (3 hours)** scheduled by the Registrar. Credit: 50%

## Detailed Lecture Schedule

### January

Day	Date	Section	Topics
Tuesday	Jan. 12	Sec. <b>1.2</b>	System of linear equations
Thursday	Jan. 14	Sec. <b>1.2..</b>	Gaussian elimination, Rank
Tuesday	Jan. 19	Sec. <b>1.3</b>	Homogeneous systems
Thursday	Jan. 21	Sec. <b>1.1 &amp; 1.4.1-2</b>	Matrices
Tuesday	Jan. 26	Sec. <b>1.4.3-1.4.4</b>	Matrices and linear equations
Thursday	Jan. 28	Sec. <b>1.5.1 - 1.5.2</b>	Matrix Inverses

## February - April

<b>Day</b>	<b>Date</b>	<b>Section</b>	<b>Topics</b>
Tuesday	Feb. 2	Sec. <b>1.5.4 - 1.5.5</b>	Matrix inversion
Thursday	Feb. 4	Sec. <b>2.1 &amp; 2.2.1</b>	Determinants
Tuesday	Feb. 9	Sec. <b>2.2.2 - 2.2.3</b>	Adjoint of a matrix - Cramer's rule
Thursday	Feb. 11	Sec. <b>1.6.1 - 1.6.2</b>	Elementary matrices
Tuesday	Feb. 16	<b>Reading Week</b>	No lectures
Thursday	Feb. 18	<b>Reading Week</b>	No lectures
Tuesday	Feb. 23	Sec. <b>2.3.1</b>	Population dynamics
Thursday	Feb. 25	<b>Midterm</b>	<b>All material covered till Reading Week</b>
Tuesday	March 2	Sec. <b>2.3.1 - 2.3.2</b>	Eigenvalues and eigenvectors
Thursday	March 4	Sec. <b>2.3.3</b>	Diagonalization
Tuesday	March 9	Sec. <b>2.5.1 - 2.5.3</b>	Complex numbers
Thursday	March 11	Sec. <b>2.5.4 - 2.5.5</b>	Complex algebra
Tuesday	March 16	Sec. <b>2.5.6</b>	Polar Form
Thursday	March 18	<b>Sec. 3.1</b>	Geometric vectors
Tuesday	March 23	Sec. <b>3.2</b>	Dot product - Projections
Thursday	March 25	Sec. <b>3.3.1 - 3.3.2</b>	Lines
Tuesday	March 30	Sec. <b>3.3.3</b>	Planes
Thursday	April 1	Sec. <b>3.3.4 - 3.5</b>	Cross product
Tuesday	April 6	Sec. <b>3.4.1 - 3.4.2</b>	Transformations
Thursday	April 8	Sec. <b>3.4.3</b>	Effect on the unit square
Tuesday	April 13	Sec. <b>3.4.4 - 3.4.5</b>	Composition and inverse
Thursday	April 15		Review

### Webwork Assignments

#	Assignment Name	Open	Due
1			
2	Matrix Multiplication	Wed. Jan. 20	Sun. Jan. 31
3	Matrix Inversion	Wed. Jan. 27	Sun. Feb. 7
4	Determinants	Wed. Feb. 3	Sun. Feb. 14
5	Elementary Matrices	Wed. Feb. 10	Sun. Feb. 21
6	Eigenvalues	Mon. Feb. 21	Sun. March 14
7	Complex Numbers	Wed. March 10	Sun. March 21
8	Vectors and Lines	Wed. March 17	Sun. March 28
9	Lines and Planes	Wed. March 24	Sun. April 4
10	Transformations	Wed. April 7	Sun. April 18

### Detailed Lab Schedule:

Dates	Webwork Problems	Quizzes
Jan. 18-19	Assignment 1	
Jan. 25-26	Assignment 2	
Feb. 1-2	Assignment 3	
Feb. 8-9	Assignment 4	<b>Quiz 1: Matrices and Linear Equations</b>
Feb. 15-16	Reading days / no classes	
Feb. 22-23	Assignment 5 / Review	
March 1-2	Assignment 6 (Eigenvalues)	
March 8-9	Assignment 6 (Diagonalization)	
March 15-16	Assignment 7	
March 22-23	Assignment 8	<b>Quiz 2: Eigenvalues and Diagonalization</b>
March 29-30	Assignment 9	
April 5-6		<b>Quiz 3: Complex Numbers</b>
April 12-13	Assignment 10	