

Khazar University, School of Architecture, Engineering and Applied Science

Spring 2010, **Math 231: Applied Linear Algebra** Course Syllabus,

Room 203 Thursdays 10:30-1:20 PM

Instructor: Yaghoob Ebrahimi, Ph.D, U.S. Fulbright Scholar in Baku, Azerbaijan

Office Hours: By Appointment, Room 413, Phone (994) 554899368 email: yaghoobse@yahoo.com

TEXT: Introduction to Linear Algebra, Johnson, Riess and Arnold, Fifth Edition

CALCULATOR: A Graphing calculator not required, but **will be helpful** for this class (Texas Inst TI-83Plus)

COURSE DESCRIPTION: Operation on matrices. Inverse matrix. System of linear equations. Eigenvalue problems(characteristic value). Positive definite matrices. Linear differential and difference equations. Some application to optimizations and linear programming.

EVALUATION AND GRADING:

- **Attendance:** Attendance is very important for success in this class. If you are in class everyday and listen to the lectures, take notes, ask questions, and do the homework, you will be successful. The attendance will count 100 points toward the semester grade.
- **Homework:** To succeed in this class you are expected to study **at least two hours** each day outside the regular class time and do your homework. Homework are due every week. There will be 10 sets of HW, each 25 pts. Of that, 8 of the best grade will be counted toward course grade. **No grade for late HW.**
- There will be 9 short **quizzes (date and day will be announced in class)** with 25 pts each. Of that 8 of the best will counted toward course grade. No make up on missed quizzes
- There will be 2 tests, 100 points each (day and date TBA in class). **No** make up test will be allowed.
- There will be final exam with 300 points.

Taking the **final exam** is **required** to pass the class. The day TBD.

Your **Grade** will be based on the following:

GRADES:	Quizzes	200
	Midterm Exam	200
	HW	200
	Attendance	100
	Final	300
	Total	1000

The grading scale is as follows:

%	Grade	%	Grade
95 -100	A	77 – 79	C+
90 – 94	A-	74 – 76	C
87 – 89	B+	70 – 73	C-
84 – 86	B	66 – 69	D+
80 – 83	B-	60 – 65	D
		0 – 59	F

Classroom Etiquette:

- Cell phones and pagers must be turned off
- Students are expected to work quietly and to be respectful of the instructor and other students in the class.
- Please come to class on time and bring your own erasable pen/pencil, book, and calculator.
- The science Division's **Policy on Cheating** will be applied to this class.

You, the student, are expected to conduct yourself with integrity. When you cheat, or aid someone else in cheating, you violate a trust. If you cheat, the following actions will be taken:

- a) You will receive a grade of 0 on the work(exam, quiz, assignment etc) where the cheating occurred. This grade cannot be dropped.
- b) A report of the incident will be sent to the Dean of student. The Dean may file the report in your permanent record or take further disciplinary action such as suspension or expulsion for college.

Extra Help:

- Make an appointment to meet me.

IMPORTANT DATES:

- February,10 - Classes begin
- March,8 - International Women Day
 - March 20-24 – Novruz Bayram
 - May,9 – Victory day
 - May,27 – Last day of Classes
 - June – Final Exams

Math 231, Spring 2010, tentative schedule of class lectures from the textbook

Weeks	Section of Chapter 1	Subjects
One	Sec 1.1, Pages 1-12	Introduction to matrices and systems of linear equations.
Two	Sec 1.2, Pages 14-26	Echelon form and Gauss-Jordan elimination method - QUIZ 1
Three	Sec 1.3, Pages 28-38	Consistent Systems of Linear Equations
Four	Sec 1.5-6, Pages 46-69	Matrix operations and algebraic properties of matrix operations – Quiz 2
Five	Sec 1.9 Pages 92-105	Matrix Inverse and their properties, practice for Mid Term Exam Quiz 3
Six	Mid Term Exam 1	Review and Exam
Seven	Holiday	
Sections of Chapter 4		
Eight	Secs 4.2-3, Pages 275-89	The Eigenvalues and Determinant problems- Quiz 4
Nine	Sec 4.4-6 Pages 298-324	Characteristics polynomial, real and complex roots
Ten	Sec 4.7 Pages 325-337	Similarity transformations and diagonalizations – Quiz 5
Sections of Chapter 6		
Eleven	Secs 6.1-2 Page 448-455	Introductions and cofactor expansions of determinants - Quiz 6
Twelve	Secs 6.3-6.4	Elementary operations and determinants, and Cramer's Rule – Quiz 7
Thirteen	Mid Term Exam 2 Sec 6.5	Applications of Determinants: Inverse and Wronskians-
Sections of Chapter 7		
Fourteen	Sec 7.1-2	Quadratics forms and system of differential equations Quiz 8
Fifteen	Reviews	Reviews for final exam – Quiz 9
FINAL EXAM		
	TBD	

The lecture material may be altered at teacher's discretion or strength of the class