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JINAN UNIVERSITY
Linear Algebra

Lecturer: Mohammad Ganjizadeh
Time: Monday through Friday (June 18, 2018-July 20, 2018)
Office hours: 2 hours (according to the teaching schedule)
Contact Hours: 60 (50 minutes each)
Credits: 4
Location: Huiquan Building
Office: Huiquan Building 518
E-mail: mganjizadeh@gmail.com

Course Content:
Systems of linear equations, vector spaces and subspaces, bases, linear transformations, determinants, eigenvalues and eigenvectors, diagonalization of symmetric matrices, Orthogonally, inner product spaces and quadratic forms, and application.

Required Textbook:
Linear Algebra and Its Applications, 5th edition, by Lay. Textbook is required. Course contents will be over most of chapters 1 through 6.

Course Hours:
The course has 25 sessions in total. Class will meet for 2 hours every day Monday through Friday for a total of 50 hours over the five-week period.

Homework: There will be regular homework assignments posted on the course website. It is totally fine and, indeed, encouraged, to help each other solve homework problems, but it is not okay to turn in essentially identical solutions; once you have discussed the problems you should *write the solutions up on your own*. Not all homework problems will be graded.

Attendance and in-class work: Attendance is mandatory and students are expected to be in class every day for the full class period. We will be covering a lot of material very quickly, so if you get behind it will be very difficult to catch up. We will spend some time in class working on problems in groups. Some of this work may be presented or turned in. We will also have quizzes and "pop" quizzes which count toward classroom attendance and participations.

Grading Policy:

Daily homework- Will be collected and graded.	15%
Quizzes 06/22 and 07/06 /2018	15%
Midterm exams 06/29 and 07/13/2018	40%
Classroom attendance and "pop" quizzes	5%
Final Exam	25%
Total	100%

Make-Ups:
This class will go by very quickly. I strongly recommend that you never miss class, since it will be very hard to make up the material you missed and, since mathematics is cumulative, you will run the risk of getting hopelessly behind. However, I understand that life happens, so up to two missed classes will not count against you. If you miss a midterm with an excellent documented reason and the dean's approval, you have only the following weekday to make up (Test maybe different from the actual test).

Grading Scale:

The instructor will use the grading system as applied by JNU:

Definition	Letter Grade	Score
Excellent	A	90-100
Good	B	80-89
Satisfactory	C	70-79
Poor	D	60-69
Failed	E	Below 60

Homework:
Specific homework exercises will be assigned from the provided list daily. It is expected that you will read the sections and complete the assignments by the following class period. It is totally fine and, indeed, encouraged, to help each other solve homework problems, but it is not okay to turn in essentially identical solutions; once you have discussed the problems you should write the solutions using your own comprehension. Not all homework problems will be graded.

Quizzes:
Quizzes will be given regularly in class (unannounced). The lowest three quiz scores will be dropped and therefore there will be no make-up quizzes.

Attendance:
Students are expected to be in class every day for the full class period. New learning objectives will be cover daily, so if you get behind it will be very difficult to catch up. We will spend some time in class working on problems in groups. Some of this work may be presented or turned in as quiz grade.

Exams:
There will be three exams, midterm 1 (06/30/2017), midterm 2 (07/14/2017), and a comprehensive final exam (07/20/2017).

Make-Ups:
This class will go by very quickly, therefore, I strongly recommend that you never miss any classes. It will be very hard to make up the material you missed and, since mathematics is cumulative, you will run the risk of getting behind. However, I understand the unforeseen circumstances in life happens, so up to two missed classes will not count against you. If you miss a midterm you must have an excellent documented reason and the standard procedure will be to replace the final exam for only one of the midterms.

Note from Lecturer:
I am committed to seeing that you succeed in this course. I put significant effort into my teaching. Your part is to put comparable effort into your learning. My goal is to do whatever I can to insure your success in this course. Y0ur goal should be the same. We are in this together! Together with hard work we can create a learning enjoinment that will lead you to great achievement of mathematical skills.

Tentative Course Schedule:

WEEK 1	**OBJECTIVES**	**SECTIONS**
Monday	Systems of linear equations	1.1
Tuesday	Row Reduction and Echelon Forms and Vector Equations	1.2 & 1.3
Wednesday	The matrix equation of $Ax = b$ and Solutions sets of the Linear Systems	1.4 & 1.5
Thursday	Linear Independence and Introduction to Linear Transformations	1.7 & 1.8
Friday	Review and answering questions- Quiz 1	
WEEK 2		**SECTIONS**
Monday	The matrix of a linear transformation	1.9
Tuesday	Matrix Operations	2.1
Wednesday	Inverse Matrix and the characteristic of invertible	2.2

	matrices	
Thursday	The Leontief input-output model, Subspaces of R^n, and dimension and rank	2.6, 2.8, & 2.9
Friday	Mid-Term 1- Week 1 and Week 2 Objectives	
WEEK 3		**SECTIONS**
Monday	Introduction to determinants and properties of determinants	3.1 & 3.2
Tuesday	Cramer's rule, volume and linear transformations, and vector spaces and subspaces	3.3 & 4.1
Wednesday	Null spaces, column spaces, linear transformations, and linearly independent sets and bases	4.2 & 4.3
Thursday	The dimension of a vector space and Rank	4.5 & 4.6
Friday	Review week's objectives- Quiz 2	
WEEK 4		**SECTIONS**
Monday	Change of basis, Eigenvalues, and eigenvectors	4.7 & 5.1
Tuesday	The characteristic equation	5.2
Wednesday	Diagonalization	5.3
Thursday	Eigenvectors and linear transformations, and complex eigenvalues	5.4 & 5.5
Friday	Mid-Term 2 (Week 3 and 4 objectives)	
WEEK 5		**SECTIONS**
Monday	Inner product and orthogonality	6.1
Tuesday	Orthogonality sets and Orthogonality Projects	6.2 & 6.3
Wednesday	Gram Schmidt Process	6.4
Thursday	Review for Final	
Friday	Final Exam- Comprehensive	

Caveat: The instructor reserve the right to modify this syllabus at any time as deemed necessary. Any modification will be announced as soon as possible.

Academic Honesty:

Jinan University defines academic misconduct as any act by a student that misrepresents the students' own academic work or that compromises the academic work of another scholastic misconduct includes (but is not limited to) cheating on assignments or examinations; plagiarizing (i.e. misrepresenting as one's own work any work done by another); submitting the same paper, or substantially similar papers, to meet the requirements of more than one course without the approval and consent of the instructors concerned; sabotaging another's work within these general definitions, however, Instructors determine what constitutes academic misconduct in the courses they teach. Students found guilty of academic misconduct in any portion of the academic work face penalties ranging from lowering of their course grade to awarding a grade of E for the entire course.

HW Assignments- summer 2018 M3: Multiples of three E00: every other odds

Section #	Paper and pencil Problems
1.1	1- 29 EOO
1.2	1, 2, 3, 7, 11, 13, 15, 18, 19, 21, 22
1.3	1-027 ODDS
1.4	1-21 ODDS
1.5	1- 23 ODDS
1.6	1- 7 ALL, 12, 15
1.7	1- 31 ODDS
1.8	1- 29 ODDS
1.9	1- 23 ODDS
1.10	1- 11 ODDS
2.1	1- 25 ODDS
2.2	3- 39 M3
2.3	1- 43 EOO
2.4	1- 21 ODDS
2.5	1-21 EOO
2.6	3- 11 ODDS
2.7	1- 17 ODDS
2.8	1- 19 ODDS
2.9	3- 24 M3
3.1	3- 42 M3
3.2	3- 42 M3
3.3	3- 30 M3
4.1	3- 33 M3
4.2	3- 30 M3
4.3	3- 33 M3
4.4	3- 30 M3
4.5	3- 30 M3
4.6	3- 24 M3
4.7	3- 18 M3
4.8	1- 29 EOO
5.1	3- 33 M3
5.2	3- 27 M3
5.3	1- 29 ODDS
5.4	1- 21 ODDS
6.1	1- 27 ODDS
6.2	1- 29 ODDS
6.3	1- 21 ODDS