MAS 109 Introduction to Linear Algebra Fall 2016

Overview. Linear Algebra is one of the basic subjects that is widely used in computer science, engineering, chemistry, biology, economics, actuarial sciences and business. The fundamental question of this subject is how to solve various systems of linear equations. The primary aim of this course is to provide applications that are most likely to have practical values to the students with the modest background rather than theoretical understanding. Among other things, we will cover matrix algebra including the formula for the inverse matrix, the basics of linear transformations, diagonalization and three useful theorems on decomposition of matrices, i.e., the LU-decomposition, the QR-decomposition and the singular value decomposition.

Sec.	Time & Place	Instructor
A	MW 13:00 / E11-410	Prof. Oum, Sang-il (`sangil@kaist.edu`, Ext2728, E6, 3403)
B	MW 14:30 / E11-202	Prof. Schweizer, Andreas (`schweizer@kaist.ac.kr`, Ext2793, E2, 2209)
C	MW 10:30 / E11-309	Prof. Suh, Uhi Rinn (`uhrisu@kaist.ac.kr`, Ext2744, E2, 2207)
D	TTh 10:30 / E11-201	Prof. Shin, Sujin (`sjs@kaist.ac.kr`, Ext2749, E2, 2208)
E	TTh 13:00 / E11-201	Prof. Rooney, Brendan (`brooney@kaist.ac.kr`, Ext2791, E2, 3203)
F	TTh 14:30 / E11-412	Prof. Im, Bo-Hae (`bhim@kaist.ac.kr`, Ext2713, E6, 3406)

Course Coordinator. Prof. Oum, Sang-il

Head TA. Kim, Minki (`kmk90@kaist.ac.kr`)

Matlab TA. Jeon, Soomin (`soominjeon@kaist.ac.kr`)

Textbook. *Contemporary Linear Algebra*, H. Anton and R.C. Busby, John Wiley & Sons, Inc.

Course Site. `http://klms.kaist.ac.kr`.

Weekly Schedule. (Each week starts on Thursday.)

Week	Topics	Remark	Week	Topics	Remark
9/1–9/7	2.1–2, 3.1		10/27–11/2	7.3–5	
9/8–9/14	3.2–3	Chuseok (9/14-16)	11/3–11/9	7.6–7	
9/15–9/21	3.4–6		11/10–11/16	7.8–9	
9/22–9/28	3.7, 4.1-2	No recitation on 9/23	11/17–11/23	7.10-11	No class on 11/23.
9/29–10/5	4.3–4, 6.1	Gaecheonjeol (10/3)	11/24–11/30	8.1–2	No class on 11/24.
10/6–10/12	6.2–4		12/1–12/7	8.3–4	
10/13–10/19	7.1–2		12/8–12/14	8.6–7	
10/20–10/26	Midterm Exam		12/15–12/21	Final Exam	

Exams. There are two exams, midterm and final. Anyone who misses one or both of these exams will fail the course.

Homework. Each week, homework problems will be posted at the course web site usually on Friday. You **have to** hand in your homework at the recitation class on next Friday. Some of the homework problems will be about MATLAB software. (There will be MATLAB problems in the midterm and final exams.)

Not every problem will be graded — we will select a few problems randomly and grade them. No delayed submissions will be accepted.

Due of the first homework: September 9.

Recitation. 1 hour each week. (11AM or 2PM of each Friday.)

First recitation: September 9.

We will discuss homework solutions in the recitation. Students are encouraged to present and share their solutions in the recitation.

Attendance. After the first week (the add-drop period), students may miss classes without penalty up to 4 times. No excuse for absence will be accepted under any circumstance since tolerance limit is generous. Being late for class three times is equivalent to one absence. More than 4 absence will cause one step down on the final grade. Students who miss at least 1/3 of classes are not allowed to take the final exam. Being late for classes 3 times is equivalent to 1 abscence.

Course Grade. The course grades will be based on Midterm Exam (30%), Final Exam (40%), Homework (30%).

You may **get an extra point or a penalty on the homework point (30% out of 100%) based on your attendance and attitude to the recitation class**.

(September 2, 2016)