Math 254 (Section 2) Spring 2014:
Time: MW 4:00-5:15pm; Classroom: NE-060

Instructor: Professor Sam Shen   Office: GMCS 575   Ph: 619-594-6280
Email: sam.shen@sdsu.edu   Personal website: http://shen.sdsu.edu
Instructor's Office Hours: Monday and Wednesday 2:00-4:00pm or by appointment

TA: Mr. Eric Rodriguez   Office: GMCS 528   Ph: 619-944-7030
Email: eroducsb@hotmail.com
TA Office Hours: Tuesday and Thursday 9:00-11:00am or by appointment

Text: *Elementary Linear Algebra with Applications*, 9rd edition, by Bernard Kolman and David Hill, Pearson Prentice Hall, ISBN0-13-229654-3.

Who should take this course? This is a 3-unit GE course. Mathematics, applied mathematics or statistics majors are required to take this course. Computer science students, engineering majors, and physic majors should take this course. The course is also useful to anyone who needs data analysis and mathematical modeling.

Prerequisites: Math 150.

Topics covered in this course: Matrix algebra, Gaussian elimination, determinants, vector spaces, linear transformations, orthogonality, eigenvalues, and eigenvectors.

<u>**Grading Policy:**</u>   The final grades for this section will be determined as follows:

Assignments (weekly)	50%
Test 1 (50 min in class, date to be determined)	12.5%
Test 2 (50 min in class, date to be determined)	12.5%
Final Exam (May 12, Mon, 3:30-5:30pm)	25%
Total---	100%

<u>**Assignments:**</u>   There will be weekly assignments. Each assignment will have 5 problems. The homework will be collected at the beginning of Wednesday's class. There will be no assignment for the week of in-class test. The worst homework grade will be dropped out.

<u>**Class Attendance:**</u>   The students are required to attend all the classes. The class attendance will be taken randomly in lectures. Those who attend every lecture will receive a 2% bonus.

<u>**Note-taking:**</u>   Each student should have a plan to build a portfolio/folder for this class. Class notes are an important part of the folder. Each student should take class note. A detailed and neat LinAlg folder will earn 1% bonus. The instructor will check your LinAlg folder at the end of the semester.

LEARNING GOALS OF MATH 254 (Section 2) (Introduction to Linear Algebra)

After completing the course, students will be able to do the following:

1) Students will be able to perform basic calculations of matrix algebra by hand, by a computer and by a smart phone. These calculations include matrix addition, scalar multiplication, matrix multiplication, elementary row/column operations, diagonalization, transposition, finding inverses, finding determinants, change of basis, orthogonalization, finding eigenvalues/eigenvectors, and normal forms.

2) Students will be able to solve a system of linear equations by hand, by a computer and by a smart phone.

3) Students will be able to use Gaussian elimination method to solve linear equations by hand.

4) Student can determine the number of solutions (if any) to a system of linear equations, and find all the solutions.

5) Students can visualize vector spaces geometrically. This will include dimension, inner products, orthogonality, norms, projections, rank, and nullity.

6) Students can carefully state all definitions and theorems relevant to the course, including all conditions and exceptions (if any). Students can apply these definitions to objects and determine whether or not the definition applies. This will typically involve a calculation. Students can have ready examples to these definitions, and will be able to justify why these are examples apply.