

**Math 313 Elementary Linear Algebra  
Winter Semester 2010**

**Professor: Vianey Villamizar**  
**Office: 342 TMCB**

**Class: 10:00 - 10:50 a.m. MWF 136 TMCB**  
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**Lab Hours: Tuesday and Thursday 10:00-10:50 a.m. 150 TMCB**  
**Office Hours: Th 6:00-7:30 p.m. (XXX TMCB), Fr 2:00-3:00 p.m. (Office) or by appointment.**

**TAs: Bradley Whitaker [bradmw88@yahoo.com](mailto:bradmw88@yahoo.com) and Jeff Blodgett [bubb\\_@hotmail.com](mailto:bubb_@hotmail.com)**  
**Text: Elementary Linear Algebra, Tenth Edition, H. Anton, Wiley 2010.**

Week #	Date	Sections	Comments
1	Jan 3 – Jan 7	1.1, 1.2	<b>Work hard, learn much and enjoy life!</b> Lab 1: Matlab Introduction
2	Jan 10 – Jan 14	1.2, 1.3, 1.4	Lab 2: Spatial and Temporal Complexity
3	Jan 17 – Jan 21	1.5, 1.6	Monday Jan 17 Holiday Tuesday Jan 18: Last day to drop the class w/o W Lab 3: Row Reduction
4	Jan 24 – Jan 28	1.7, 2.1, 2.2	<b>Midterm 1 Testing Center Jan 28,29,31 (Fr-Mon)</b> Review Session Thursday Jan 27 6:00-7:30 p.m. Lab 4: Elementary Matrices
5	Jan 31- Feb 4	2.3, 3.1, 3.2	Lab 5: The LU Decomposition
6	Feb 7 – Feb 11	3.3, 3.4, 3.5	Lab 6: Sparse Matrices
7	Feb 14 – Feb 18	4.1, 4.2, 4.3	Lab 11: The QR Decomposition
8	Feb 21 – Feb 25	4.4, 4.5, 4.6 Lab 7: Integration by parts	<b>Midterm 2 Testing Center Feb 25,26,28 (Fr-Sat)</b> Review Session Thursday Feb 24 6:00-7:30 p.m. Mon Feb 21 Holiday, Tue Feb 22 Monday instruction
9	Feb 28 – Mar 4	4.7, 4.8, 4.9	Lab 13 Markov Chains
10	Mar 7 - Mar 11	4.9, 4.10, 5.1	Lab 8: Statistic
11	Mar 14 – Mar 18	5.2, 5.3, 6.1	Lab 12: Eigenvalues
12	Mar 21 – Mar 25	6.2, 6.3, 6.4	<b>Midterm 3 Testing Center Mar 25, 26, 28 (Fr-Sat)</b> Review Session Thursday Mar 24 6:00-7:30 p.m. Lab 9: Statistic II
13	Mar 28 – Apr 1	7.1, 7.2, 9.5	Lab 10: Statistic III
14	Apr 4 – Apr 8	8.1, 8.3, 8.4	Lab 14: Application of the SVD
15	Apr 11 - Apr 15	8.5, Review	<b>Review Session</b>
16	Apr 18 – Apr 22	Final Exams	<b>Final Exam Wednesday April 20 2:00-5:00 p.m. at 136 TMCB</b>

**Objectives:** This is a rigorous course in mathematics. It is expected that students master computations with the objects of linear algebra. At the same time, the students are expected to develop critical thinking and logical inference and be able to construct proofs for some of the theorems covered in class. I recommend that you study at least two hours per every class hour and read the material to be covered in class beforehand. Not all material can be presented in class in which case students are responsible to learn it on their own. Solving homework problems for every class period is a key to understanding the subject. I support the statement that

“Linear Algebra is only learned by doing.” I also believe that my role as your instructor is to help and to assist you in the process of learning mathematics. I will do my best to fulfill this role. Linear Algebra plays an important role in many disciplines today. I know that we will enjoy this class as we go along by making a consistent effort throughout the semester.

**Homework:** Homework will be collected **each week on Friday by 6 p.m.** Place completed homework in the manila folder corresponding to your Math 313 Section by my office door. Exams will be based in all homework problems. You are strongly encouraged to work on homework problems everyday. You should be willing to put in at least two or three hours outside the classroom for each hour of class. A lower time commitment is likely to lead to an average grade B-/C+ or lower. To achieve excellence, students may need to invest even more hours. **I expect that you do not work on your homework during the class period.** Late homework will not be accepted. To make up for this, one week of homework (the one with the lowest grade) will be dropped. Discussion of homework assignments is allowed, but you should keep in mind that homework is an individual work. If you can reach the point where you can do fresh problems without help in all sections, I can anticipate that you will be able to successfully solve all problems on the midterms and final exam.

**Homework Format (PLEASE ADHERE TO THE FOLLOWING HOMEWORK FORMAT):** Use one side only of standard letter-sized paper. Put your name at the top of each sheet. Keep problems in order, and label each problem with its number and page. Place only one problem in any horizontal space; visually separate consecutive problems by drawing a line between them entirely across the page. If the problem has a numerical answer, highlight it in some way. If the answer to a problem involves an explanation, use correct grammar and complete sentences.

To submit homework, stack the sheets in order and fold the stack lengthwise to form a “book” with the back of the last sheet on the outside. On the front of the “book,” write your name, your Math 313 section, and the section of the text from which these problems are taken. Homework sets should contain problems from only one section of the text. Homework problems to be graded will be chosen among the whole set of problems. Incomplete homework will receive partial credit according to the amount of problems worked out.

**Exams:** The Midterm exams will be based on the material (theory and homework problems) covered until the previous Monday and not covered by the previous exam. The final exam will be comprehensive. The Midterm exams (three in total) will be given in the testing center Friday Saturday and Monday. They will have a limit of two and a half hours. The final will be in our regular classroom with a limit of three hours. Make up exams cannot be arranged except in case of an emergency or absence due to official university business. **Exam dates will be strictly enforced.** The University Final Exam Policy states: “**Scheduled final examinations are to be administered in accord with the published Final Examination Schedule as to date, time, and place. They are not to be given or taken early.**” Only basic scientific calculators (no graphic or symbolic ones) will be allowed in all exams and quizzes. No books and no other notes will be allowed.

The questions will be similar to those discussed in class, or those assigned as homework, but some of them will require a good understanding of the concepts and techniques. The best way to prepare for the exams is to go over the homework problems and the examples worked in class (they constitute your best study guide) and then try to solve related problems that you haven’t seen before.

**Lab:** The lab meets each Tuesday and Thursday at 10:00 a.m. in 150 TMCB.

**Grading:** Grades will be based on cumulative points earned as follows: **Homework 15%, Lab 10%, Midterms 15/15/20%, and Final 25%.**

At the end of the semester, I will make an average of each one of the above forms of evaluations with their corresponding weights. . **Then, a Gaussian curve will help me to determine your final grade.** In any event, the Gaussian curve will not hurt your grade. I will guarantee the following letter grades:

	B+ = 89-87%,	C+ = 79-77%,	D+ = 69-67%,	
A = 100-93%,	B = 86-83%,	C = 76-73%,	D = 66-63%,	E = 59-0%
A- = 92-90%,	B- = 82-80%,	C- = 72-70%,	D- = 62-60%,	

Keep in mind that a good grade is the end result of a good learning process. All of you can get a good grade by successfully experiencing this learning process.

**Honor Code:** The honor code states that "inappropriately providing or receiving information ... so as to gain unfair advantage over others" is academic misconduct. It is inappropriate for any student to provide any information he have acquired by taking the exam to anyone who will be taking the exam in the future, and he should agree that it is inappropriate for him to receive any information that someone else acquired by taking the exam, if he have yet to take the exam.

**Preventing Sexual harassment:** Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. The act is intended to eliminate sex discrimination in education and pertains to admissions, academic and athletic programs, and university-sponsored activities. Title IX also prohibits sexual harassment of students by university employees, other students, and visitors to campus. If you encounter sexual harassment or gender-based discrimination, please talk to your professor; contact the Equal Employment Office at 801-422-5895 or 1-888-238-1062 (24-hours), or <http://www.ethicspoint.com>; or contact the Honor Code Office at 801-422-2847.

**Students with disabilities:** BYU is committed to providing reasonable accommodation to qualified persons with disabilities. If you have any disability that may adversely affect your success in this course, please contact the Services for Students with Disabilities Office at 378-2767. Services deemed appropriate will be coordinated with the student and instructor by that office

**HOMEWORK ASSIGNMENTS**  
**Math 313 Elementary Linear Algebra – Winter 2010**  
**Instructor: Vianey Villamizar**

Due Date	Sections	Problems	Due Date	Sections	Problems
Jan 7	1.1	1, 6, 10b, 11bc, 13c, 15, 17			
Jan 14	1.2 1.3	1e, 4c, 5, 9, 13, 25, TFbfi 7, 10, 16, 20,21, 22, 26, 29, TFadegkn	Mar 4	4.6 4.7 4.8	
Jan 21	1.4 1.5	4, 10, 12, 13, 22, 24, 30, 34, 37, 55, TFachk 7, 14, 24, 26b, 38, 40, 42, 43, TFabdg	Mar 11	4.9 4.10	
Jan 28	1.6 1.7 2.1	10, 16, 18, 21, 23, TFabcdg 6, 10, 17, 18, 24, 26, 31, 33, 42, TFbgjl 1, 16, 20, 30, 39, 41, TFbdhj	Mar 18	5.1 5.2 5.3	
Feb 4	2.2 2.3 3.1	15, 28, 29, 31, 36, TFacde 6, 9, 17, 22, 25, 31, TFacjkl 12, 15 24, 31, 34, TFCgik	Mar 25	6.1 6.2 6.3	
Feb 11	3.2 3.3 3.4		Apr 1	6.4 7.1 7.2	
Feb 18	3.5 4.1 4.2		Apr 8	9.5 8.1 8.3	
Feb 25	4.3 4.4 4.5		Apr 15	8.4 8.5	