

MATH 2130 - 006 (Linear Algebra for non-mathematics majors)Fall 2019

Instructor: Srimathy Srinivasan

Venue: MWF 2-2:50, KCEN N100

Office: MATH 165

Hours: F 3-4, outside class.

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Grader Information: Howie Jordan (Office: MATH 340, Email: howie.jordan@colorado.edu). Howie is available on Thursdays 11am -12pm in his office to answer any grading related questions.

The best way to contact me for course related help and discussions is to reach me after the class in the same building (KCEN). I will be happy to stay around to help you with the subject. Please do not hesitate to reach out and ask questions. The only way to learn this course is by asking questions and solving as many problems as you can.

Textbook:

Linear Algebra and its applications by David C. Lay, Steven R. Lay, and Judi J. McDonald (fifth edition)

Prerequisites:

MATH 2300 or APPM 1360. Credit not granted for this course and MATH 2135 or APPM 3310. Formerly MATH 3130.

Course Contents:

Basic properties of systems of linear equations, matrices and matrix algebra, determinants, vector spaces, subspaces, linear independence of vectors, basis and dimension of subspaces, linear transformations, eigenvalues and eigenvectors of a matrix, orthogonality of vectors, inner product and length of vectors.

Grading:

Your grade will be computed from:

- Homework: 20% of final grade
- Two Midterms: 20% of final grade each;
- Final Exam: 35% of final grade;
- Class conduct: 5% of final grade.

Students will obtain the full 5% for class conduct by default. Points may be deducted for cheating in HWs, exams and for unacceptable behaviors.

Tentative Class Schedule:

08/26 - Introduction

08/28 - 1.1, 1.2

08/30 - 1.3

09/04 - 1.4 (HW1 due)

09/06 - 1.5

09/09 - 1.7

09/11 - 1.7 (HW2 due)

09/13 - 1.8

09/16 - 1.9

09/18 - 2.1 (HW3 due)

09/20 - 2.2

09/23 - 2.8
09/25 - 2.8(HW4 due)
09/27 - 2.9
09/30 - Midterm 1 review
10/02 - Midterm 1
10/04 - 3.1
10/07 - 3.2
10/09 - 3.3 (HW5 due)
10/11 - 4.1
10/14 - 4.2
10/16 - 4.2 (HW6 due)
10/18 - 4.3
10/21 - 4.3
10/23 - 4.4 (HW7 due)
10/25 - 4.4
10/28 - 4.5
10/30 - 4.6 (HW8 due)
11/01 - 4.7
11/04 - 4.7
11/06 - 5.1 (HW9 due)
11/08 - 5.2
11/11 - Midterm 2 review
11/13 - Midterm 2
11/15 - 5.3
11/18 - 5.4
11/20 - 5.4 (HW10 due)
11/22 - 6.1
12/02 - 6.2
12/04 - 6.3,6.4 (HW11 due)
12/06 - 6.4,6.5
12/09 - Final review 1
12/11 - Final Review 2 (HW12 due)

12/13 - Final Review 3

12/16 - Final exam, Venue: KCEN N100 (usual classroom), Time :1:30 - 4 pm

HW Problems:

HW1: (1.1) - 4,9,10,12,13, 23, 28, 29, 32; (1.2) - 1, 2, 11, 12, 25, 26, 27

HW2: (1.3) - 11, 12, 17, 18, 25, 26; (1.4) - 11, 12, 25, 26, 33, 35; (1.5) - 5, 6, 17, 18, 29, 30, 35, 36

HW3: (1.7) - 5, 12, 19, 20, 28, 33, 36; (1.8) - 9, 10, 19, 20, 23, 24, 31

HW4: (1.9) - 5, 6, 18, 19, 29, 30; (2.1) - 3, 5, 7, 11, 17, 27; (2.2) - 3, 7, 15, 21, 31

HW5: (2.8) - 1, 3, 5, 7, 9, 11, 13, 15, 17, 21, 23, 25; (2.9) - 9, 11, 13, 15, 19, 20, 21; (3.1) - 9, 11, 13, 15, 17

HW6 : (3.2) - 1, 3, 5, 7, 15, 17, 19, 29, 31, 34; (3.3) - 1, 3, 5, 7, 11, 13, 19, 23; (4.1) - 1, 3, 5, 7, 11, 13, 15, 21, 23

HW7: (4.2) - 1, 3, 5, 7, 9, 15, 17, 23, 25; (4.3) - 3, 5, 9, 13, 15, 19, 21, 23, 25

HW8: (4.4) - 1, 3, 5, 7, 10, 13, 15, 17, 19, 27; (4.5) - 1, 5, 9, 11, 13, 19, 29

HW9: (4.6) - 1, 3, 5, 7, 9, 11, 15, 17; (4.7) - 1, 3, 5, 7, 11, 13

HW10: (5.1) - 3, 5, 9, 13, 15, 17, 18, 19, 21, 25, 29; (5.2) - 1, 3, 5, 7, 13, 15, 16; (5.3) - 1, 3, 5, 7, 9, 11, 13, 21

HW11: (5.4) - 11, 13, 15, 17, 23, 31; (6.1) - 5, 10, 13, 15, 17, 20, 25, (6.2) - 1, 2, 9, 11, 14, 20, 26, 27;

HW12: (6.3) - 1, 5, 9, 12, 13, 17, 21, 22, (6.4) - 3, 7, 9; (6.5) - 1, 4, 5, 9, 11 13, 17, 18, 25

Homework Policies:

1. Homework is due at the beginning of class on the listed date.
Some, but not all of the problems will be graded. **No late**

homework will be accepted.

2. You should read the material in the textbook as well as attending lecture. Some homework problems may depend on material in the book which is not covered in class.
3. I encourage you to work in groups to solve the problems; your write-ups, however, should be completed individually. Please do not cheat or copy from someone.
4. I will assign homework on a weekly basis; I expect clearly organized and worded solutions.

Bring your CU student ID to all of your tests.

Students With Disabilities:

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner (at least one week before the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the Disability Services website www.colorado.edu/disabilityservices/students. Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition or injury, see Temporary Medical Conditions under the Students tab on the Disability Services website and discuss your needs with your professor.

Missed Exams:

If you know that you are going to miss an exam or cannot take the final

exam at the scheduled time, please notify your instructor at least two weeks in advance. If you miss a midterm exam for any acceptable reason (e.g. religious obligation, documented illness), that midterm exam score will be replaced by an estimated score based on your performance on the other midterm. If you miss both exams for acceptable reasons, your midterm scores will be replaced by estimated scores based on your performance on the final. If you miss the final exam and have not rescheduled it in advance, you will score zero on the final or receive an incomplete in the course, depending on the circumstances.

Religious Obligations:

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, you should inform your professor of any conflict as soon as possible, and at least a week in advance.

Student Classroom and Course-Related Behavior:

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the policies on classroom behavior and the

Student Code of Conduct.

If you are having a problem with some aspect of the course, you should discuss it with me in a civil manner. **Outbursts directed at the instructor or grader for this course will not be tolerated.**

Statement on Discrimination and Harassment:

The University of Colorado Boulder (CU Boulder) is committed to maintaining a positive learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct, discrimination, harassment or related retaliation against or by any employee or student. CU's Sexual Misconduct Policy prohibits sexual assault, sexual exploitation, sexual harassment, intimate partner abuse (dating or domestic violence), stalking or related retaliation. CU Boulder's Discrimination and Harassment Policy prohibits discrimination, harassment or related retaliation based on race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Individuals who believe they have been subject to misconduct under either policy should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127. Information about the OIEC, the above referenced policies, and the campus resources available to assist individuals regarding sexual misconduct, discrimination, harassment or related retaliation can be found at the OIEC website.

Honor Code:

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the academic integrity policy. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, resubmission, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code Council

(honor@colorado.edu; 303-735-2273). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code Council as well as academic sanctions from the faculty member. Additional information regarding the academic integrity policy can be found at the Honor Code Office website.