MATH 2243, Summer 2015, Linear Algebra and Differential Equations, Lec 001

Class Times: M through F, 09:05 am - 11:00 pm, Lind Hall 303

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Office Hours: M through F, 11:00 am - 12:00 pm, in LindH 303 or VinH 370.

COURSE WEBSITE: You can find all the course material and your grades in moodle side of the course. I will also keep the course website updated.


Caution: If you plan to use an older edition of the textbook, make sure that any collection of problem sets you use is based on the 3rd edition.

COURSE OVERVIEW: This is part of the standard 2nd-year calculus course for students outside of CSE. The course is divided into two somewhat related parts. Linear algebra: matrices and matrix operations, Gaussian elimination, matrix inverses, determinants, vector spaces and subspaces, dependence, Wronskian, dimension, eigenvalues, eigenvectors, diagonalization. ODE: Separable and first-order linear equations with applications, 2nd order linear equations with constant coefficients, method of undetermined coefficients, simple harmonic motion, 2x2 and 3x3 systems of linear ODE’s with constant coefficients, solution by eigenvalue/eigenvectors, nonhomogenous linear systems, phase plane analysis of 2x2 nonlinear systems near equilibria.

PREREQUISITES: 1272 or 1372 with grade of at least C-

GRADING POLICY: Grades will be based on quizzes, homework, three midterm exams, and a comprehensive final exam. Your total score will be computed as follows:

3 Exams (15% each) 45% + Homework 10% + Quizzes 15% + Final Exam 30%

HOMEWORK: Each homework assignment will be assigned from the text and will be due each Tuesday and Thursday at the beginning of class. Each homework assignment will be out of 10 points. Assignments will be graded for completion (25% = 4 points) and randomly chosen three problems will be graded for accuracy and understanding (75% = 6 points, each 2 points). You must show your work to get credit on the homework.

Late assignments will NOT be accepted. Rather the worst three homework grades will be dropped. Collaboration on homework is acceptable but the work you turn in must be your own.

Any misconduct on HWs, quizzes and exams will in at minimum lead to zero score on them.

QUIZZES: You will be given quizzes every Monday, Wednesday and Fridays (except on exam days) and will cover material taught up to the previous day. Problems will be very similar to homework and exercise problems. No makeup quiz will be given. Rather the worst couple quiz grades will be dropped.

MOODLE: A calendar will be available on moodle soon with detailed lecture and quiz schedules. Please make sure you have access to moodle. For information on how to access moodle see http://it.umn.edu/course-management-system-moodle-related.

EXAMS: The final exam is a common exam for all sections of Math 2243; it will be given on Friday, August 7 in your usual classroom Lind Hall 303. You will NOT be allowed to take the final exam at any other time. Your grade for the class will depend on how your score in the final exam compares with the scores of the students from ALL sections. The exams will be based on problems similar to the problems assigned as homework, asked in the quizzes and also the ones listed as exercises. If you don’t do your homework on a regular basis you should expect to do poorly in the course.
**Tentative Exam Schedule:** The midterm exams will be given in your usual classroom Lind Hall 303 in the first hour of class, according to the following schedule (subject to change):

- **Exam 1** Friday, June 26
- **Exam 2** Friday, July 10
- **Exam 3** Friday, July 24
- **FINAL** Friday, August 07

**MISSED EXAM POLICY:** Missing an exam is permitted only for very serious and unavoidable extenuating circumstances, and only if you notify your instructor in advance. In all cases of absence from exams a written excuse is required and arrangements have to be made in advance. Otherwise you will get a score of 0 on the exam. Even if you are excused from taking a midterm exam, you will not be given a make-up. Instead, the following procedure will apply: at the end of the semester, two grades will be computed for a student who missed a midterm, and the highest of the two grades will be the one awarded for the class; the first grade will be determined by giving appropriate extra weights to the other two midterms, while the second grade will be determined by giving extra weight to the final exam. Except in truly exceptional situations, a student who misses the final exam will fail the course. There will be no make ups for missed quizzes.

**ATTENDANCE:** Attendance will not be taken into account towards the final grade for this class, however it is very highly recommended. You are responsible for all material covered in class, for all announcements and all assignments delivered in the class. Experience shows that poor attendance most often results in a poor grade.

**USE OF CALCULATORS:** Graphing calculators, computers or cell phones are NOT allowed on exams or quizzes. Only scientific calculators, which can calculate the values of the standard algebraic and transcendental functions, but cannot display graphs of functions or do symbolic manipulation, may be used in the midterms. No calculator, computers or cell phones are allowed in the final.

**OFFICIAL UNIVERSITY GRADING STANDARDS:**

A – Achievement that is outstanding relative to the level necessary to meet course requirements.
B – Achievement that is significantly above the level necessary to meet course requirements.
C – Achievement that meets the course requirements in every respect.
D – Achievement that is worthy of credit even though it fails to meet fully the course requirements.
S – Achievement that is satisfactory, which is equivalent to a C- or better (achievement required for an S is at the discretion of the instructor but may be no lower than a C-).
I – (Incomplete) Assigned at the discretion of the instructor when, due to extraordinary circumstances, e.g., hospitalization, a student is prevented from completing the work of the course on time. Requires a written agreement between instructor and student.
F (or N) – Represents failure (or no credit) and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit or (2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an I.

**Incompletes:** These will be given only in extraordinary circumstances. A grade "I" will be given for failure to complete all course requirements for reasons beyond the student’s control. More precisely, an incomplete "I" will be considered giving you if you have successfully completed all but a small portion of the work of the course and some severe, unexpected event prevents you from completing the course. This means that you must have taken at least 2 midterms and must be doing work at the level C- or better. You will have to sign a contract detailing what you have to do to complete the course. The form can be obtained in VinHl 115. After 1 year, an "I" turns into 'F' if the course work is not completed. Any arrangement for an incomplete grade MUST be made before the final exam.

You will be given an incomplete simply because you are behind in your work; in the latter case you should try to drop the course.

**S/N grade:** If you are registered S/N, I will submit a grade of S if your letter grade is C or above, and otherwise a grade of N.
TO DROP THE COURSE: For the various rules and deadlines for dropping this course, visit One-Stop: http://onestop.umn.edu/calendars/cancel_add_refund_deadlines/summer_2015.html

ACADEMIC DISHONESTY: Academic dishonesty in any portion of the academic work for a course shall be grounds for awarding a grade of F or N for the entire course. For more information about the official policy of UMN concerning scholastic conduct, see http://www.oscai.umn.edu/conduct/faculty/dishonesty.html

COMMUNICATION AND ELECTRONIC DEVICES USAGE IN CLASS: The use of mobile communication devices and music players disrupts the class. Please be considerate of both your fellow students and your instructor and either turn-off or silence your cell phones, pagers, PDAs, or similar communication devices and turn-off and put away your music players during scheduled classes. Given the fact that these same communication devices are an integral part of the University’s emergency notification system, an exception to this policy would occur when numerous devices activate simultaneously. When this occurs, students may consult their devices to determine if a university emergency exists. If that is not the case, the devices should be immediately returned to silent mode and put away.

GETTING HELP: If you have any questions about the material or need help on the homework assignments, please do not hesitate to contact me and use our office hours.

There is free tutoring available through the SMART Learning Commons in the Walter and Wilson Libraries. For more information, visit http://www.tc.umn.edu/~smartlc/plc-schedule/subject/MATH/2243/ The other option is to hire a private tutor. You can obtain a list of the private tutors from the Undergraduate Math Office by emailing ugrad@math.umn.edu

DISABILITY SERVICES: The University of Minnesota is committed to providing all students equal access to learning opportunities. Disability Services (DS) is the campus office that works with students who have disabilities to provide and/or arrange reasonable accommodations. Students who have, or think they may have, a disability (e.g. mental health, attentional, learning, vision, hearing, physical or systemic), are invited to contact DS to arrange a confidential discussion at 612-626-1333 (V/TTY) or ds@umn.edu. Students registered with DS, who have a letter requesting accommodations, are encouraged to contact the instructor early in the semester to discuss accommodations outlined in their letter. Students registered with DS need to schedule their exams by them with DS Testing Center via the online scheduling site at least 7 days before each exam. More information is available at http://ds.umn.edu/student-services.html

LIBERAL EDUCATION: This course fulfills the Mathematical Thinking component of the Liberal Education requirements at the University of Minnesota. An important part of any liberal education is learning to use abstract thinking and symbolic language to solve practical problems.