

1. **Instructor:** [your instructor], Room - XS, Phone x8-37-, e-mail -@lehigh.edu.

2. **Text:** Peterson-Sochacki, Linear Algebra and Differential Equations. Selected portions of Chapters 1-6 will be covered, with additional material on Section 5.5 (Jordan Canonical Form) and Section 6.3 (Systems of Homogeneous Differential Equations with Nondiagonalizable Coefficients).

3. **Attendance:** Attendance is required in class. Homework will be assigned in each period from the list below; additional problems may be assigned.

4. **Homework:** There will be 100 points for material assigned specifically for your lecture. This may consist of graded homework, in-class quizzes or some combination. Late work will not be accepted, but three grades will be dropped to allow for unavoidable absences: the two lowest homework scores and the (one) lowest in-class quiz score will be dropped; or the three lowest homework scores if in-class quizzes are not given.

Daily homework problems are given by textbook section, and are not collected. Weekly homework is taken from the daily homework, and is to be turned in at the beginning of class on the date indicated. Daily and weekly homework are common between the Lectures, and are intended as a guide to topics that should be prepared for quizzes and exams. A portion of each weekly assignment, usually 3-4 problems, will be selected and graded in your Lecture. These selections may reflect the emphasis of topics in your lecture. You should be sure to correct any errors on your homeworks on the topics on the graded problems, as well as preparing all topics on the daily homework; except if a specific section is removed from the exam syllabus, when announced. Daily homework problems not listed on the weekly assignments are NOT collected.

5. **Exams:** There will be two 4:00 exams, which count for 100 points each. The dates of these exams are Tuesday, February 17 and Tuesday, March 31. The final exam will count for 200 points. There will not be a make-up for the final exam given during the final exam period, so you should not set travel plans before knowing the date of the Final. The date and the location of the final will be set by the Registrar, and may be found from the page

<http://www.lehigh.edu/inrgs/schedule.shtml>

6. **Grades:** Grades are based on your score out of the above 500 points. A total score of  $\geq 450$  is at least an A-, a total score of  $\geq 400$  is at least a B-, a total score of  $\geq 350$  is at least a C-, and a total score of  $\geq 300$  is at least a D-. Exams and quizzes will be based on homework.

7. **Academic Integrity:** The Lehigh University Undergraduate Student Senate has approved the following statement: *We, the Lehigh University Student Senate, as the standing representative body of all undergraduates, reaffirm the duty*

*and obligation of students to meet and uphold the highest principles and values of personal, moral and ethical conduct. As partners in our educational community, both students and faculty share the responsibility for promoting and helping to ensure an environment of academic integrity. As such, each student is expected to complete all academic course work in accordance to the standards set forth by the faculty and in compliance with the University's Code of Conduct.* (<http://www.lehigh.edu/in-dost/conduct/aistatements.shtml>) Students are encouraged to discuss Text and Lecture material, including examples and calculations. But sharing or copying homework material, whether in written, printed or electronic form, to be handed in will be considered to be plagiarism, and is not allowed. Cases of cheating and/or plagiarism will be referred to the university disciplinary committee.

8. **Blackboard:** Course information and updates will be available on a course information page. Open your favorite web browser (“ie” or foxfire) and type in

<http://ci.lehigh.edu>

which will open Blackboard. Click on “login” and enter your network Id and password (the ones used for email).

9. **Accommodations for Students with Disabilities:** If you have a disability for which you are or may be requesting accomodations, please contact both your instructor and the Office of Academic Support Services, University Center C212 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accomodations can be granted.

### **From the University Calendar:**

March 2-6 (Monday-Friday) - Pacing Break

April 3 (Friday) - Last day to withdraw with a “W”

Math 205                    **HOMEWORK ASSIGNMENTS:**                    Spring, 2009

1.1 Linear Equations (1st half) - 1, 3, 4, 5, 11, 16

1.2 Matrices (intro) - 20, 22

**Hw1, Friday, January 16:** 1.1 - 3, 4, 11, 16; 1.2 - 20.

1.1 (2nd half) - 20, 22, 23, 30, 31

1.2 (main) - 2, 5, 7, 11, 17

1.3 Inverses - 1, 2, 3, 4, 5, 9, 23

1.4 Matrix Properties - 2, 3, 4

**Hw2, Friday, January 23:** 1.1 - 20, 23, 30; 1.2 - 11, 17; 1.3 - 2, 4, 9; 1.4 - 3.

1.5 Determinants - 1, 4, 5, 8, 11, 12  
 1.6 Properties of Determinants - 2, 3, 5, 7, 9  
 2.1 Vector Spaces - 1, 2, 10

**Hw3, Friday, January 30:**

1.5 - 4, 8, 12; 1.6 - 3, 5, 9; 2.1 - 2.

2.2 Subspaces/Spanning - 1, 2, 3ab, 4abd, 5, 9, 10, 11, 15, 16  
 2.3 Independence/Bases - 1, 2, 3, 4, 6, 11, 13, 14, 19, 23, 24  
 2.4 Nullspaces - 1bc, 2ab, parts abd of 6, 7, 9, 10 and 12

**Hw4, Friday, February 6:** 2.2 - 2ab, 4abd, 10, 11, 16; 2.3 - 6, 11, 14, 23;  
 2.4 - 2ab, parts abd of 6, 10, 12.

**Hour Exam 1, Tuesday, February 17, 4pm.** Covers Ch. 1 and Ch. 2

2.5 Wronskians - 1, 4, 5, 7  
 3.1 Intro DE - 5, 8, 9, 12, 22, 25  
 3.2 Separable Equations - 2, 3, 5, 6, 7, 13, 14  
 3.4 Linear Equations - 1, 2, 5, 6, 13, 14, 16, 17

**Hw5, Friday, February 20:** 2.5 - 4, 3.1- 9, 25; 3.2 - 6, 14  
 and 3.4 - 2, 6, 14.

3.6 Cooling/Mixing - 7, 8, 13, 21, 22  
 3.9 Numerical Methods - 2, 3, 20, 21

4.1 Higher Order DE - 1, 2, 9, 10, 13, 14

**Hw6, Friday, February 27:** 3.6 - 8, 13, 22; 3.9 - 2, 21 and 4.1 - 2, 10, 14.

4.2 Linear/Homogeneous - 2, 3, 5, 6, 7, 9, 10, 11, 12, 13, 15, 18, 27, 28  
 4.3 Non-Homogeneous/Const. Coef. - 1, 4, 6, 8, 9, 11, 18, 19  
 4.5 Springs/Homog - 1, 2, 4, 5, 7

**Hw7, Friday, March 13:** 4.2 - 2, 5, 7, 12, 18, 27; 4.3 - 4, 8, 9, 11, 19  
 and 4.5 - 2, 5.

Week 8: 4.5 Springs/Circuits - 9, 11, 13, 15, 17. This 2nd assignment will  
 be daily homework only (not collected).

6.1 1st order systems (intro) - 1, 5, 7 (briefly!)  
 5.4 Eigenvectors - 1, 2, 3, 4, 8, 9, 10, 17  
 5.5 Diagonalization (1st half) - 1, 2, 3, 4, 8, 9, 10, 19, 21

**Hw8, Friday, March 20:** 6.1 - 5; 5.4 - 1, 2, 4, 8, 10; 5.5 - 1, 4, 8, 10.

Note: 5.5 (and 6.2 as well) use the same matrices as in 5.4; you don't need to  
 re-do the calculations.

**Hour Exam 2, Tuesday, March 31, 4pm.**

week 9: 5.5 Diagonalization (2nd half) - 22, 23, 24, 26, 27, 30  
 5.5 Jordan Forms (Supplement Part A, main) - double assignment - 3, 4, 5, 7, 10,  
 11, 13, 14, 15

**Hw9, Friday, April 3:** 5.5 - 22, 23, 27, 30; Suppl. A - 4, 7, 10, 14. (See Note from Hw8: for 5.5 - 27, 30 you may use your results from 5.4, without re-doing the calculations.)

week 10: 5.5 (Supplement, Part A, continued) - 6, 12, 16, 17, 19

April 3 (Friday) - Last day to withdraw with a "W"

6.1 (main) - 3, 13, 14, 15

6.2 Diagonalizable Homogeneous Systems - 1, 2, 5, 6

**Hw10, Friday, April 10:** Suppl. A - 6, 12, 16; 6.1 - 14, 6.2 - 2, 6.

6.3 Non-Diagonalizable Homogeneous Systems - replace by Supplement, Part B - 3, 4, 5, 7, 10, 11, 13, 14, 15

**Hw11, Friday, April 17:** Suppl. B - 4, 7, 10, 14 (Note: you may use your matrix calculations from the matrices in Part A.)

6.4 Non-Homogeneous Systems - 1, 5. Also apply the instructions for Problems 1-10 for Exercise 2 of Section 6.2, with  $G(x) = \begin{pmatrix} e^x \\ 0 \end{pmatrix}$ .

**Hw12, Wednesday, April 22:** 6.4 - 1, 5 and Exercise 2 of Section 6.2, with  $G(x) = \begin{pmatrix} e^x \\ 0 \end{pmatrix}$ .

**Final Exam, TBA**