

**MAT 485, Spring 2012**  
**Differential Equations and Matrix Algebra for Engineers**  
**SYLLABUS**

**Course Supervisor:** Professor Dan Coman, 317D Carnegie, 443-1496, [dcoman@syr.edu](mailto:dcoman@syr.edu)

**Learning Goals:** Solutions of ordinary differential equations, Laplace transforms, vector spaces, matrix algebra, linear systems, eigenvalues and eigenvectors.

**Prerequisites:** MAT 397. Credit cannot be given for both MAT 485 and MAT 514 or for both MAT 485 and MAT 331. MAT 485 does not count towards mathematics major, and students in CIS should not take it.

**Text:** *Differential Equations & Linear Algebra (Second Edition)* by Farlow, Hall, McDill, and West, Prentice Hall, 2007. We expect to cover Chapters 1-8 with some omissions. The sections to be covered and the list of assigned homework problems from every section are given below.

**Exams:** There will be two tests during the semester and a cumulative final examination, as well as graded homework and/or quizzes. The dates for the exams and the due dates for the homework will be announced in class by your instructor. The course grade will be computed as follows: each semester exam is worth 25%, homework, quizzes, and class participation 15%, and the final exam 35% of your grade.

**Make-ups:** No make-up examinations will be given. If you expect to miss an examination for a legitimate reason, discuss this, in advance, with your instructor, who may then substitute the relevant score from your final examination for the missing exam. Late homework will not be accepted.

**Students with Disabilities:** If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS), <http://disabilityservices.syr.edu>, located in Room 309 of 804 University Avenue, or call (315) 443-4498 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible. You are also welcome to contact your instructor privately to discuss your academic needs although she/he cannot arrange for disability-related accommodations. Making arrangements with ODS takes time. Do not wait until just before the first test.

**Academic Integrity:** The Syracuse University Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the Policy and know that it is their responsibility to learn about instructor and general academic expectations with regard to proper citation of sources in written work. The policy also governs the integrity of work submitted in exams and assignments as well as

the veracity of signatures on attendance sheets and other verifications of participation in class activities. Serious sanctions can result from academic dishonesty of any sort. For more information and the complete policy, see <http://academic integrity.syr.edu>

**Religious Observances:** SU's religious observances policy, found at [http://supolicies.syr.edu/emp\\_ben/religious\\_observance.htm](http://supolicies.syr.edu/emp_ben/religious_observance.htm), recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holy days according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice/Student Services/Enrollment/My Religious Observances from the first day of class until the end of the second week of class.

### Assigned Homework

Section	Problems
1.2	3, 5, 7
1.3	11, 13, 18, 21, 23, 25, 57
2.1	1, 3, 5
2.2	3, 5, 7, 11, 15, 17, 19
2.3	1, 2, 7, 11, 13
2.4	3, 5, 7, 15, 21(a)
2.5	14, 23, 27
3.1	1, 3, 7, 11, 12, 23, 34(a,b), 51, 55, 79, 81
3.2	1, 11, 25, 31, 33, 53, 62, 64
3.3	6, 8, 9, 12, 20
3.4	1, 3, 4, 15, 16, 23, 39, 41
3.5	1, 5, 11, 13, 15, 19, 20, 22, 53, 54, 55
3.6	1, 2, 7, 9, 10, 19, 20, 22, 43, 44, 49, 51, 63, 64
4.1	1, 3, 14, 17, 19, 23, 25, 46
4.2	1, 3, 5, 8, 15, 17, 56, 59
4.3	1, 3, 5, 11, 13, 62, 64
4.4	1, 2, 3, 7, 9, 10, 20, 25
4.5	1, 2, 9
4.6	10, 28, 30, 32
5.1	1, 2, 7, 23, 33, 34, 38
5.2	3, 5, 13, 25, 31, 68, 70, 72, 78
5.3	1, 2, 3, 19, 21, 24

6.1	1, 2, 5, 6
6.2	9, 11, 21, 23, 25, 29, 31
6.3	1, 3, 5, 13, 30, 32
6.4	1, 2, 3, 4, 5, 6, 7, 8
7.2	1, 3, 5, 7, 9, 11, 12
8.1	1, 2, 5, 9, 11, 12, 17, 32, 33, 41, 45, 49
8.2	1, 3, 5, 9, 11, 13
8.3	17, 20, 24, 28, 30, 33, 34, 36, 50