

Section: M003  
MAT 485, Spring 2013  
Differential Equations and Matrix Algebra for Engineers

## SYLLABUS

**Course Supervisor:** Professor Dan Coman, 317D Carnegie, 443-1496,  
coman@syr.edu

**Instructor:** Dr Tuyen Truong, 205 Carnegie, 443-1585, tutruong@syr.edu

**Time:**

Class meets 12:30-1:50 Tuesdays and Thursdays,  
Office hours: 3:30-6:10, Tuesdays and Thursdays

**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 course grade will be computed as follows: each semester exam is worth 25%, homework, quizzes 15%, and the final exam 35% of your grade.

**Exam dates and places:** Exam 1: will be announced in class.

**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 me, and I may then substitute the relevant score from your final examination for the missing exam.

**Missing classes:** Students are responsible for everything covered in each class, including homework problems due for that week. You should ask your classmates for information should you miss any class.

**Homework:** I will start to collect HW starting the second week. Homework will be collected at the end of class every Tuesday, your assignments are the problems in the sections learned the week before. (See the end of the syllabus for specific problems in

each section). Homework will be returned at the end of Thursday the next week. 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:** Syracuse University sets high standards for academic integrity. Those standards are supported and enforced by students, including those who serve as academic integrity hearing panel members and hearing officers. The presumptive sanction for a first offense is course failure, accompanied by the transcript notation "Violation of the Academic Integrity Policy". The standard sanction for a first offense by graduate students is suspension or expulsion. Students should review the Office of Academic Integrity online resource "Twenty Questions and Answers About the Syracuse University Academic Integrity Policy" and confer with instructors about course-specific citation methods, permitted collaboration (if any), and rules for examinations. The Policy also governs the veracity of signatures on attendance sheets and other verification of participation in class activities. Additional guidance for students can be found in the Office of Academic Integrity resource: "What does academic integrity mean?" For more information and the complete policy, see <http://academicintegrity.syr.edu>.

**Religious Observances:** SUs 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

4.6: 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