

MAT 514 – Introduction to Ordinary Differential equations, Fall 2011 Section M001

Course Description: First order differential equations. Second order linear differential equations. Laplace transforms. Systems of first order differential equations. Applications. Credit will not be given for both MAT 514 and MAT 485. **Prerequisites:** 12 credits of calculus (through MAT 397).

Textbook: *A First Course in Differential Equations*, 2nd ed. by David J. Logan, Springer. ISBN 9781441975911. We will cover most of Chapters 1-5.

Class Time and Location: MWF 10:35–11:30, Carnegie 306.

Instructor: Leonid Kovalev, lvkovale@syr.edu, 315.443.1487.

Office Hours: held in **Carnegie 213C**

- ❖ Monday 3:30–4:30
- ❖ Tuesday 11–12 and 3:30–4:30
- ❖ Wednesday 3:30–4:30
- ❖ Thursday 11–12 and 3:30–4:30
- ❖ Sunday 3:30–4:30

Class webpage lvkovale.mysite.syr.edu/514 contains the detailed schedule of lectures, exams, homework, etc.

Calculators: You are allowed to use a graphing calculator (such as TI-83) on all assignments and exams. Symbolic calculators (such as TI-89) may not be used on exams.

Grading: The grades will be based on homework (10%), computational projects (5%), four midterm exams (15% each), and final exam (25%). The grading curve will be no stricter than

A 93-100	A- 90-92	B+ 87-89	B 83-86	B- 80-82
C+ 77-79	C 73-76	C- 70-72	D 60-69	F 00-59

Homework will be done online via WebWork. Detailed homework information will be sent by email. Two lowest homework scores will be dropped.

Computational projects will be assigned and collected online through Blackboard blackboard.syr.edu. They can be done using any mathematical software, for example

- *matlab* or *maple* – available in some computer clusters, e.g., at Schine
- *scilab* – free alternative to *matlab*, can be downloaded from www.scilab.org
- *sage* – also free, can be either downloaded from www.sagemath.org or used through a browser (Firefox recommended) at www.sagenb.org

Regardless of what software is used for a project, the output must be submitted as a file that does not require specialized software to be read, e.g., PDF. The lowest project score will be dropped.

Midterm Exams will be given in class on **Sep. 21, Oct. 19, Nov. 9 and Dec. 7**. The cumulative **Final Exam** is scheduled for **Monday, Dec. 12, 3:00-5:00 PM**. Unexcused absence from an exam counts as zero. If the absence is excused, in most cases the final exam will be counted extra. Make-up exams will be given only in very exceptional circumstances.

Attendance and Participation: You are expected to attend and participate in class. If you miss a class, you are responsible for obtaining notes for that class from a student who attended. It is also your responsibility to find out about any announcements made in class. SU's religious observances policy 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 a religious observance provided they notify their instructor 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.

http://supolicies.syr.edu/emp_ben/religious_observance.htm

Learning Goals:

- ✓ Ability to use and understand the usage of mathematical notation
- ✓ Ability to select an appropriate mathematical model for a given real world problem
- ✓ Ability to do hand calculations accurately and appropriately
- ✓ Ability to do calculations with the aid of appropriate hardware and/or software
- ✓ Ability to apprehend and enunciate the limitations of conclusions drawn from mathematical models

Tips for success in this course:

- It is absolutely essential that you understand how to solve all the assigned problems. Once you understand how to solve a problem, write your solution down neatly and in full detail with explanations that make your reasoning clear.
- Don't fall behind. If you are having difficulties keeping up with the material, see me immediately to discuss the problem.
- Take advantage of office hours (or of instant messaging for quick questions).
- Discussing problems with a classmate is very useful.
- Questions in class are strongly encouraged.
- Expect to work hard. Don't get discouraged if you find some of the material difficult. Be persistent and patient.

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 me privately to discuss your academic needs although I 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://academicintegrity.syr.edu>