

MATH 6737.A – Numerical Differential Equations Spring 2025

Class website:	http://tlakoba.w3.uvm.edu/math6737
Textbook:	None. Use class notes posted on the class website.
Class Meets:	Waterman 456, MWF 3:30 – 4:20 p.m.
Instructor:	Dr. Taras I. Lakoba, Innovation Hall, Room E436 (802) 656-2610, tlakoba@uvm.edu , https://tlakoba.w3.uvm.edu
Office Hours:	M: 4:40 - 5:40; W: 12:30–1:30; F: 1:40–2:40; and by appointment. See this link at the above website for more information.
Important deadlines:	Add/Drop & Pass/no Pass: Jan. 27 (M); Last day to withdraw: Mar. 28 (F); Last class: May 2 (F); Recesses: Feb. 17 (M), Mar. 10–14 (M–F).

Class format: Notes for the current material will be posted online. You are expected to read them before each class. The class time will be structured as follows:

- (i) You ask questions about the assigned material, and I answer them;
- (ii) I ask you pre-assigned questions about the material you have read;
- (iii) We discuss your progress in doing the homework (see next paragraph for more detail);
- (iv) I preview the material to be assigned for the next class.

Homework — General: It is natural that from time to time, you will be unable to do a homework problem on your own. You are still expected to present, during a class discussion, what you have been able to do on that particular problem. Then you will receive hints, either from me or from other students, on how to continue with the problem.

As always, you are encouraged to ask me for help outside of class. You may also work with other students on homework problems. That is, you may figure out the solution to a problem, or a way to program a command into a code, together¹. However, the solution or a code you submit must be written **entirely on your own** without consulting **any** outside source. Violations of this rule will be considered academic cheating and dealt with accordingly.

If you decide to use materials found online (which you will never really need and hence are *discouraged from using*), you **are required to conspicuously reference the URL where the material is found**. Failure or neglect to do so will be considered an academic violation and handled as described in the last rubric of this syllabus.

Homework — Computer work: Most homework problems will require programming in Matlab. For those who have not used this software before, Matlab tutorials are posted on the class website. Rules regarding your submission of Matlab codes and my grading of them are also posted there.

Tests: There will be two take-home tests during the semester. Tentatively, they will be given after we cover Lectures 5 and 9. Their exact dates will be announced in class at least a week before each test. You are **not allowed** to discuss your solutions of the test problems with anyone or anything else. Make-up exams will be given only if you have documented excused absence.

The official date for the final exam will be selected by us as a group soon after the second midterm test. At the final exam, you will do a presentation on a topic closely related to this course. The topic can be chosen by you or suggested by the instructor; this also will be discussed in detail after the second midterm. Both the content and style of your presentation will be graded. A written report of this presentation will need to be submitted.

Grading Policy: Homework = 39%, Each of the midterm tests = 24%, Final project = 13%. Homework grades will be biased towards later assignments according to the following formula. Suppose there are N assignments that are worth X_1, X_2, \dots, X_N points each. Then the total homework grade will be:

$$\frac{x_1 \cdot 100 + x_2 \cdot 101 + \dots + x_N \cdot (100 + N - 1)}{X_1 \cdot 100 + X_2 \cdot 101 + \dots + X_N \cdot (100 + N - 1)} = \frac{\sum_{i=1}^N x_i \cdot (100 + i - 1)}{\sum_{i=1}^N X_i \cdot (100 + i - 1)},$$

where x_n is the number of points that the student earned for HW # n .

Note: I do **NOT** drop your lowest grade. Thus, **ALL** the grades that you earn during the semester will contribute to your final grade, as detailed above.

Academic integrity: You are expected to read and understand the UVM Academic Integrity policy, found at <https://www.uvm.edu/policies/code-academic-integrity>.

Please see rubrics “Class format” and “Tests” above regarding rules about collaboration on homework and tests (in brief: very limited collaboration on homework is allowed, while **no** collaboration at all is allowed on tests).

Violations of academic integrity on *any assignment* will be dealt with as described in the link **‘Sanctions for academic integrity violations’**, found below this Syllabus.

¹Sometimes, I may find collaboration excessive. (This is left solely to my discretion.) In such a case, I will speak with the parties involved and will ask them to increase their individual contribution to the submitted work. Any further instances of excessive collaboration by the same people will be considered academic cheating.