

MAT 581 (Introduction to Scientific Computing) Course Info – Spring 2019

1. **Lecture Time and Place:** 11:00am–12:20 pm, TH, *Carnegie Hall, Room 114*

2. **Instructor:** Lixin Shen. Office: Carnegie Hall, Room 206D

3. **Office Hours:** 10:00am–10:50am, TH, or by appointment

4. **Contact Information:**

(a) **Office Telephone Number:** (315)443-2889

(b) **E-mail Address:** lshen03@syr.edu

5. **Textbook:** *Introduction to Scientific Computing* by Charles F. Van Loan

6. **Prerequisites:** MAT 397 or Graduate Standing in Mathematical Sciences.

7. **Material to be covered**

- Floating point numbers and roundoff errors (§1.4)
- Polynomial interpolation (§2.1, §2.2, §2.3, and part of §2.4)
- Piecewise polynomial interpolation (§3.1, §3.2, and part of §3.3)
- Numerical integration (§4.1, §4.3, and §4.4)
- Linear systems (§6.1, §6.2, §6.3, and part of §6.4)
- Nonlinear equations and optimization (§8.1)
- The initial value problem (§9.1 and part of §9.2)

Students are responsible for all material in the text and all material presented in class. This includes any material not in the text and all material in the text that was not presented in class.

8. **Homework and Quiz:** Homework will be assigned after each Thursday class. There will be a quiz at the beginning of most lectures. It will cover the previous lecture and may have a programming component (i.e., you may be asked to write a MATLAB program on paper).

9. **Exams:** There will be two in-class examinations and one final examination during the semester. There will be absolutely no make-ups for any reason. If you miss a test for a valid reason, the final exam grade will count correspondingly more. The examinations are tentatively scheduled as follows:

Date	Exam/Final Exam
02/21	Midterm Exam
04/04	Midterm Exam
05/03	Final Exam

Each exam counts for 25% of your course grade, with the remaining 25% coming from your quizzes and homework assignments. Your letter grade for the term then comes from the following table.

range	grade	range	grade
93-100	A	77-79	C+
90-92	A-	73-76	C
87-89	B+	70-72	C-
83-86	B	60-69	D
80-82	B-	0-59	F

10. **Students with Disabilities:** If you believe that you need academic adjustments (accommodations) for a disability, please contact the Office of Disability Services (ODS), visit the ODS website - <http://disabilityservices.syr.edu>, located in Room 309 of 804 University Avenue, or call (315) 443-4498 or TDD: (315) 443-1371 for an appointment to discuss your needs and the process for requesting academic adjustments. ODS is responsible for coordinating disability-related academic adjustments and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since academic adjustments may require early planning and generally are not provided retroactively, please contact ODS as soon as possible.
11. **Academic Integrity:** Syracuse University's Academic Integrity Policy reflects the high value that we, as a university community, place on honesty in academic work. The policy defines our expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course-specific expectations, as well as about university-wide academic integrity expectations. The policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same work in more than one class without receiving written authorization in advance from both instructors. Under the policy, students found in violation are subject to grade sanctions determined by the course instructor and non-grade sanctions determined by the School or College where the course is offered as described in the Violation and Sanction Classification Rubric. SU students are required to read an online summary of the University's academic integrity expectations and provide an electronic signature agreeing to abide by them twice a year during pre-term check-in on MySlice.
12. **Religious observances policy:** SU 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 holidays 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.

Any suggestions and comments from you are **highly appreciated**.