
Math 270: Scientific Programming

Spring Semester 2008
(4 credits)

Instructor: **Prof. Jorge Alberto Calvo** **office:** Academic Bldg 3054
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Meeting Times: Lecture: MWF 11:00 – 12:00 Academic Bldg 1023
Office Hours: MWF 8:30 – 10:30 or by appointment

Textbooks: **An Introduction to Symbolic and Graphical Computation**
by E. Fiume (ISBN: 1-56881-051-2)

Prerequisites: Math 250: Calculus 2, or permission of the instructor.

Course Description: An introduction to programming via the solution of various problems in mathematics and the sciences. Problem description, development of a model, creation and implementation of a computational method of solution, and assessment of results.

Course Objectives: Today, mathematical models can be interactively prototyped and explored using symbolic and graphical techniques and, once understood, can be transformed into efficient computational solutions. In this course, we shall examine a broad array of techniques in mathematical computation from scientific to symbolic to graphical.

Assessment and Evaluation: The attached schedule gives a list of lecture topics and reading assignments from the textbook. It is imperative that you do not fall behind in your reading. In addition, you must actually work through all of the examples on a computer. It is not enough to just "think about working out the examples." You must also be willing to experiment.

Your understanding of the course material will be evaluated in weekly problem sets, a midterm exam and a cumulative final exam.

All exercises in the problem sets and exams will be graded based on the following five-point rubric:

- 5** Excellent work; no errors (~A+)
- 4** Good work with minor errors (~A)
- 3** Good work with more serious errors (~B)
- 2** Work reflects large gaps in understanding (~C)
- 1** Incomplete work with large gaps (~D)
- 0** No work, or unrelated work, or illegible

Note that scores of 0 or 1 are **not** considered acceptable.

Grades in the course will be based roughly on the following scheme:

Problem Sets	40%
Midterm Exam	30%
Final Exam	30%

**Academic Honesty
and Cooperative
Work:**

All work in this course must be completed in an ethical and honest manner consistent with the Catholic values of Ave Maria University. In particular, you are allowed to discuss the homework assignments with your classmates and even share hints on what to do, but you will still be responsible for completing the work yourself. This is of special importance since you will be evaluated on the basis of your individual understanding of the material, and will not be allowed to collaborate during exams.

Special Needs:

Any students with disabilities who need special accommodations in this course are invited to share their concerns or requests with the instructor as soon as possible.

Disclaimer:

The instructor reserves the right to change or modify this course and the syllabus for justifiable reasons, subject to appropriate and timely notice to the students enrolled in this class.