

Syllabus

Professor

John R. Hubbard
Office: 201 Jepson Hall.
Hours: 3:00-4:00 on Mondays, 2:30-4:30 on Tuesdays and Thursdays; other times by appointment.
Email: jhubbard@richmond.edu
Vox: 289-8086 (office), 379-0510 (home). Please do not call after 9:00 p.m.

Textbook

Numerical Analysis, Seventh Ed. by Richard L. Burden and J. D. Faires, Brooks/Cole, 2001, 0-534-38216-9.

Schedule

7 Ch. 1: Mathematical Preliminaries.	9 Ch. 2: Bisection Method.
14 Ch. 2: Newton's Method; A. 1 due.	16 Programming with Mathematica.
21 Project 1 Description; A. 2 due.	23 Ch. 3: Lagrange Interpolation.
28 Ch. 3: Cubic Spline Interpolation; P. 1 due.	30 Ch. 4: Numerical Integration.
4 Ch. 4: Romberg Integration; A. 3 due.	6 Ch. 4: Gaussian Quadrature.
11 Project 2 Description; A. 4 due.	13 Ch. 5: Euler's Method.
18 Ch. 5: Runge-Kutta Methods; P. 2 due.	20 Review.
25 Midterm Test: Ch. 1-4.	27 Linear Algebra Review.
4	6
11 Ch. 6: Gaussian Elimination; A. 5 due.	13 Ch. 6: Matrix Factorization.
18 Project 3 Description; A. 6 due.	20 Eigenstuff Review.
25 Ch. 7: Iterative Methods; P. 3 due.	27 Ch. 7: Conjugate Gradient Method.
1 Ch. 8: Least Squares Approximation; A. 7 due.	3 Ch. 8: Chebyshev Polynomials.
8 Project 4 Description; A. 8 due.	10 Ch. 8: The Fast Fourier Transform.
15 Ch. 9: The QR Algorithm; P. 4 due.	17 Review.
26 (2:00 p.m.) Final Examination on Ch. 1-8.	

Homework

- Use ordinary 8.5"×11" paper (not torn from a notebook).
- Leave plenty of whitespace for comments.
- Staple your pages together.
- Submit only one homework set for the group of contributors.

Programming Projects

See the separate handout for details.

Final Grades

Final grade will be computed by the formula:

8 homeworks	10 %
5 projects	25 %
1 midterm test	25 %
1 final examination	40 %

Attendance Policy

You are expected to attend and to participate in every class meeting. If you miss a class, you should consult with your professor about how to recover from your absence.

Academic Integrity

The Richmond Honor Council has the following written policy:

All academic work, written or otherwise, submitted by a student to fulfill a course requirement is expected to be the result of the student's own thought, research, or self-expression. A student will have committed plagiarism if the student has reproduced someone else's work without acknowledging its source. Plagiarism is no more and no less a violation of the Honor Code than lying, cheating, or academic theft.

This professor regards this Honor Code as essential to the academic integrity of the university.