Math 464A, Numerical Analysis

Lecture:	MWF 2:30, THO 119
Instructor:	Jim Morrow
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E-mail:	`morrow@math.washington.edu`
Web address:	`http://www.math.washington.edu/~morrow/464_19/464.html`
Office Hours:	MW 9:30-10:20 C439 Padelford
Text	*Numerical Analysis* I will email a link to scanned parts of the book you will need.
Authors	L. W. Johnson & R. D. Riess

Math 464 is an introduction to numerical analysis. The topics for Math 464 are:

1. Numerical solutions of systems of linear equations
2. Numerical Solution of non-linear equations
3. Polynomial interpolation and splines
4. Interpolatory Quadrature
5. Singular Value Decomposition (possibly)

The homework will count 30% of the course grade. There will be one 50 minute midterm test which will count 30% of the course grade. The midterm test will be closed book but you will be allowed to bring notes on one side of a notebook size sheet of paper. There will be a two-hour closed book final exam which will count 40% of the course grade. For the final you will be allowed to bring notes on both sides of a notebook-size sheet of paper. Electronic devices will not be allowed on either test.

The following books have been placed on reserve in the Mathematics Research Library:

1. *Numerical Analysis* by Johnson and Riess (QA297 .J63)
2. *Elementary Numerical Analysis : An Algorithmic Approach* by Conte and de Boor (QA297 .C65 1980)
3. *Numerical Analysis* by Kincaid and Cheney (QA297 .K563)
4. *Handbook for Matrix Computations* by Coleman and Van Loan (QA188 .C64)
5. *Numerical Computing with IEEE Floating Point Arithmetic*, by Michael Overton (QA 76.9 .M35)
6. *Numerical Analysis* by Scott

Classroom participation is encouraged. If you feel the urge to interrupt me with a question, please do so. I may not give you an instant answer but I do encourage your questions. I would like for you to understand that mathematics does not consist of brief answers to questions. You should not feel that every problem has a short solution (or even any solution). Math is not simply arithmetic. After many days, months, years of thought you may find an elegant simple explanation to some problem. It might also happen that by luck you leap to the right explanation. In any case do not be discouraged if you have difficulties. The best tactic is to keep thinking. Patience and persistence pays off. Faulty ideas are much better than no ideas.

I will make modifications to this schedule as needed. Extra problems may be added. Here are the homework assignments:

DATE	ASSIGNMENT (from Johnson & Riess)
Sep. 30	§2.1: 4, 6, 9, 10, 12; §2.2.4: 9, 19
Oct. 7	§2.3: 2, 3, 4, 6, 7, 8; §2.4: 5, 7, 9, 10, 11
Oct. 14	§2.5: 1, 3, 4, 5a, 6a, 8; §4.3.1: 3, 4, 6, 9, 12
Oct 21	§4.3.2: 5; §4.3.3: 2, 6, 7, 9, 11, 12
Oct 23	**MIDTERM**
Nov 4	§4.4.1: 2, 3, 4; §5.1: 3, 4
Nov. 13	§5.2.2: 1, 2, 5, 8, 10; §5.2.1: 1a, 3a, 4a, 11
Nov. 27	§5.2.4: 3abd, 5, 6, 8, 10, 13; §5.2.6: 1, 3
Dec 6	§6.2.2: 2, 4, 8, 9, 14; there is a misprint in 2§6.5.3: 1, 6
Dec. 10	2:30-4:20 p.m., **FINAL EXAM**

These assignments are due at the *beginning* of class on the due date. Please write neatly and staple your sheets together. November 11 is a holiday. November 28 and 29 are holidays. Also see the UW religious accommodation policy:

`https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/`.

The midterm will be on Wednesday, October 23, and the final is at 2:30 p.m. on Tuesday, December 10.