Syllabus

MATH 446 / OR 481 Syllabus

Instructor: Tim Sauer
Office: 4209 Exploratory Hall
Hours: TR 1:30 - 3 pm
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Prerequisites: MATH 203 and CS 112

Text: *Numerical Analysis*, by T. Sauer, THIRD EDITION, Pearson 2018

Text Website: Useful Matlab files are available at
https://media.pearsoncmg.com/aw/aw_sauer_num_analysis_3/main.html

Grading: Two exams and a final exam will account for 60% of the final grade; the remainder will depend on homework projects to be submitted to Blackboard.

Grades in the course will be based on your INDIVIDUAL effort on the exams and projects. Discussion of course topics with others is helpful and encouraged; however, all work toward the solution of homework projects submitted for credit, including computer code and written summaries, must be done SOLELY by you.

Course Goals: Design and implementation of algorithms for the solution of scientific and engineering problems. Emphasis will be placed on the written and graphical presentation of solutions.

Course Content: The course will cover the following topics

- Floating point arithmetic
- The solution of nonlinear equations in one variable
- The solution of systems of linear equations
- The solution of nonlinear systems
- Interpolation and polynomial approximation
- Curve-fitting; cubic and Bezier splines
- Least squares problems

Test Dates (tentative):

- Exam 1 : Thurs., Sept. 27
- Exam 2 : Tues., Nov. 13
- Final Exam: Thurs., Dec. 13, 1:30 - 4:15

Computers: The software package Matlab will be used for analysis and presentation of data. Matlab is a computing environment with programming capability, good graphics, and powerful library functions. It is available on campus in the computer labs. Alternatively, a PC version can be purchased. Matlab tutorials can be found readily on the internet. There is a pretty good one at Mathworks, and another one in the textbook's appendix.

There are computer Labs in Innovation Hall and the Johnson Center. For hours of operation of these labs and other locations see Computing Labs Page. You may also access Matlab through the GMU Virtual Computing Lab .

Honor Code: The University Honor Code is to be followed. Sharing information of any kind about exams or Matlab assignments will result in a grade of zero. Any violations will be submitted to the University Honor Committee.

Office of Disability Services: If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Services(ODS) at 993-2474. All academic accommodations must be arranged through the ODS.