# Mathematics 3570: Numerical Analysis
# Spring 2013

**Prerequisite**
Mathematics 2170, 2443, and 2550.

**Instructor**
Dr. Bill Slough
Old Main 3212
581–7529
E-mail: `waslough@eiu.edu`
Office hours: MW: 2:00–3:00, F 2:00–4:00; other times by appointment.

**Text**
Sauer, *Numerical Analysis*, Pearson Education, 2006.

**Overview**
This course has the following objectives:

- provide an introduction to numerical methods
- provide an opportunity to increase your problem-solving skills
- provide an introduction to MATLAB, a language for numerical computation
- instill a healthy amount of skepticism about the accuracy of computed results

Topics include: introduction to MATLAB, computer representation of floating point values, fundamentals of numerical computations and sources of error, non-linear equations, systems of linear equations, interpolating functions, splines, and numerical integration.

**Exercises**
Textbook exercises and assignments will be assigned at regular intervals. Computations will be performed with MATLAB. You will be expected to fully explain your work and present it in a professional manner using LaTeX.

**Evaluation**
In addition to exercises, there will be two exams and a final, as shown below. Exam dates are tentative, but will not be sooner than the dates given here.

| | | |
|---|---|---|
| Exam 1 | Wednesday, February 13 | 20% |
| Exam 2 | Friday, March 29 | 20% |
| Final | Wednesday, May 1, 12:30–2:30 | 30% |
| Exercises | —as assigned— | 30% |

The following scale will be used as a first approximation to your grade:

90–100: A      80–89: B      70–79: C      55–69: D      0–54: F

In borderline cases, factors such as overall trends and the final exam score will be taken into consideration. It is possible that the "cut-off" scores given above will be lowered, but they will not be raised. As a result, an overall score of 80 is guaranteed to receive at least a B, whereas a score of 78 might result in a B.

*To receive a final grade of C or better, you must earn a minimum of a C in each of the graded components of this course.*

**Attendance, Make-up, and Late Work**

The course policy on attendance and make-up work follows the guidelines described in the EIU catalog[1]. To briefly summarize:

- You are expected to attend class meetings as scheduled.

- When an absence occurs, you are responsible for material covered in your absence.

- You are expected to notify me in advance of an anticipated absence on an exam day. If you cannot reach me, call the Mathematics and Computer Science Department (581-2028) and leave a message for me.

- You will have the opportunity to make up work for properly verified absences due to illness, emergency, or participation in official University activities. It is your responsibility to initiate plans for make-up work and complete it promptly.

- Late submissions of homework is permissible only for properly verified absences due to illness, emergency, or participation in an official University activity.

**Student Conduct**

The Office of Student Standards provides guidelines for expectations of all EIU students[2]. You are expected to observe and meet these expectations for this class. Violations of this conduct can have serious consequences, including a failing grade for the course. Violations include cheating on examinations, copying work from others, and conduct which disrupts the academic environment.

**Miscellaneous**

- By pointing your web browser to

    http://www.eiu.edu/~mathcs/mat3570

  you can obtain late-breaking news of interest related to this course, class handouts, descriptions of assignments, and code needed to complete assignments. This web site will evolve over time; check back frequently to stay informed.

- Homework exercises are to be done on your own; they are not intended as group projects.

- Regular attendance and class participation are important components of this class.

- If you have a documented disability and wish to receive academic accommodations, please contact the Coordinator of the Office of Disability Services (581–6583) as soon as possible.

- Feel free to seek me out for help. If my office hours don't fit your schedule, I'm available to meet with you at many other times—just let me know in advance. Also, I will respond promptly to any e-mail you send me.

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[1]See http://catalog.eiu.edu/content.php?catoid=23&navoid=796#clas_atte.
[2]See http://www.eiu.edu/~judicial/studentconductcode.php.