

# ChEn 2450: Numerical Methods Syllabus

## Summer Semester 2013

### Class Meeting Times

- Tuesdays & Thursdays, WEB L126: 10:40am-12:00 pm
- Classes will be screencasted with links on the website
  - <http://www.che.utah.edu/~aabboud/2450/Screencasts.html>
- Help Session in ICC: TBD
- Final Exam: Thursday August 1st, 3:00-5:00 pm WEB L126

### Instructor

- Alex Abboud
- [awabboud.utah@gmail.com](mailto:awabboud.utah@gmail.com)
- Office Location: INSCC 350-15
- Office Hours: I will not hold specific office hours. I have an open door policy, come by with questions if I am not busy, or schedule an appointment.

### Teaching Assistant

- Ben Schroeder
- [benjamin.schroeder@utah.edu](mailto:benjamin.schroeder@utah.edu)
- Office Location: INSCC 350-14

### Course Website

- I will keep a website maintained where homework assignments and solutions will be posted, along with slides and screencasts of lecture, and any supplemental material.
  - [http://www.che.utah.edu/~aabboud/2450/Numerical\\_Methods.html](http://www.che.utah.edu/~aabboud/2450/Numerical_Methods.html)
- In addition to the website I will send some updates to the class through Email, check your university Email address often.
- Professor Sutherland has set up a great wiki site to help out students in this course
  - <http://www.che.utah.edu/~sutherland/wiki>

### Prerequisites

- Algebra & Calculus
- Math 2250 - Ordinary Differential Equations & Linear Algebra
- **This class will use MATLAB extensively.** A recommended prerequisite is ChEn 1703, which gives an introduction to MATLAB.

### Course Objectives & topics

- Solution of linear systems of equations
- Interpolation
- Regression
- Solution of nonlinear equations
- Numerical Differentiation

- Numerical Integration
- Solution of ordinary differential equations (ODEs)
- Solution of elliptic and parabolic partial differential equations (PDEs)

### Text Book

- Highly recommended (but not required)
  - Applied Numerical Methods with MATLAB for Engineers and Scientists, 3rd Edition. Steven C. Chapra. ISBN: 978-0-07-340110-2
- Supplemental
  - Numerical Methods for Engineers and Scientists, 2nd Edition. Joe D. Hoffman. ISBN: 0-8247-0443-6

### Grading Policy (tentative)

- 30% Midterms (2 or 3)
- 50% Homework
- 20% Final
- Grading is based on the standard scale, normalized to the highest grade
  - 93-100: A 90-93: A-
  - 87-90: B+ 83-87: B 80-83: B-
  - 77-80: C+ 73-77: C 70-73: C-
  - 67-70: D+ 63-67: D 60-63: D-
  - below 60: F
- I reserve the right to change this if plans change.

### Homework

- Homework needs to be submitted to the website by the beginning of the class, otherwise it will be considered late. I require the m-files you used along with a write-up that is preferably in pdf format. I feel the homework in this course is very useful to you as engineering students going forward with your careers. It is important to finish all of your assignments, so I will allow for late work up to 24 hours at a 50% penalty.
- All plots must have axes labeled.
- I will post solutions on the website 24 hours after the due date for the assignment.
- You are encouraged to work together and discuss problems, but each student must submit his/her own work. Copying others' work is plagiarism and will not be tolerated. Consequences of cheating and plagiarism include failure in this class and possible dismissal from the university.

### College Guidelines

- Withdrawal, ADA policies, etc: <http://www.coe.utah.edu/SemesterGuidlines>