MA 226 C Differential Equations

Course Information: This is a “first” course in Differential Equations, but a fourth course in Calculus. We focus on applications of the ideas of Calculus to solve problems that model “real” situations. We will need to develop some techniques for dealing with specific types of equations, but always to solve a type of problem.

The distinction between “pure” and “applied” mathematics is artificial. All mathematics is applied since all mathematics is developed to answer questions. Sadly, there are so many useful ideas in mathematics that your courses so far have had to focus on techniques almost exclusively just to fit everything in. In this class, we cover many new ideas and techniques, but there is a better mix between those techniques and the problems that motivate their development.

Nuts and Bolts-Grades: Your grade in this class will be based on your scores on the two midterms, the final and on homework, quizzes, and any other assigned work. You will collect points during the semester with the percentage of possible points as follows:

- Midterm 1: 24%
- Midterm 2: 26%
- Final: 30%
- Homework/Quizzes/Other: 20%

The midterms will be in class and will be announced two weeks in advance (so keep up to date with the material). The final will be Thursday 5 May, 9-11 AM and will not be given early for any reason—make your travel plans accordingly. Make-up exams will be given only in exceptional circumstances and only for approved absences.

The Homework and other assignments will be made in class. You are responsible for knowing what was assigned and what went on in class—make sure you check with a classmate if for some reason you can not attend. (Note: Homework will only be announced in class, I will not post or email individuals the homework under any circumstances. Make sure you make contacts in the class with fellow students with whom you can check for class information.)

Quizzes MAY be given without warning in lecture or discussion section.

No late homework or other assignments will be accepted for any reason. Instead, the lowest two homework scores will be dropped.

No make-up quizzes will be given for any reason (If you have a religious work-restricted holiday during the semester, please let me know as soon as possible.) The lowest of any quiz scores will be dropped.

Text: The text for the class is Differential Equations, by Blanchard, et. al. published by Cengage 4th Edition. Used books are fine. There is software available with the text called
“DETools” but that can be downloaded from Cengage (google DE Tools). You may use any software package you like or you may write your own, but access to software for numerically solving differential equations will be necessary.

We will cover most of chapters 1-4 and some sections from chapters 5 and 6 depending on time.

Contact: I will use the email address on the course list (so the email address that BU has for you) for information pertaining to the class. Please be sure you check your email regularly. The best way to contact me is via email rockford@bu.edu

Office hours will be posted at
math.bu.edu/people/rockford

Since my schedule does change, make sure you check this page before making a long trip. My office is
Room 267, MCS 111 Cummington Mall

Sources of help: There are numerous places to get extra help in this class and I strongly encourage you to take full advantage of these– don’t let yourself get behind. Seeking help when you need it is smart. Help can be found at

• My office hours (see math.bu.edu/people/rockford )

• Our TF’s office hours To-Be-Announced

• Math Tutoring room MCS B24: This room is open most hours 10-4 (10-2 Friday) from the 2nd to the last week of classes. It is “walk in” tutoring and excellent for specific questions. The tutor changes every hour so “shop” for a tutor that you can work well with.

• Math Help Night: Professors Meuser and Wayne run Math Help Night in the Rich Hall Cinema Room on Tuesday nights. It is an excellent place to get help, meet classmates to work on homework. You do not have to live in Rich Hall or west campus to go–open to all.

• University Resource Center: Contact them at www.bu.edu/erc

Comments: The goal of this class (and every math class–maybe every class) is to change the way you think. Specifically, the goal of this class is to use the ideas of Calculus to view the world differently and allow you to model and make predictions about how certain types of systems work. That means you will need to remember your Calculus and be ready to use those ideas whenever you need to–practice is the best way to get rid of the rust. It also
means that you should look for connections to your other classes and to the world around you.

To be successful in this class, your brain will have to change. You should be happy that I do not have access to your brain, but this means that any changes that happen will be the result of your own hard work. The material is difficult, but worth it. Good luck.