

## 1 Contact Information

Professor: Stephen Robinson

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## 2 Office Hours

I hope that you will make a habit of visiting me during office hours, which are listed below. No appointment is needed. Just stop by. This time with students is one of the most pleasant parts of my job. I certainly hope that you find it helpful, and I know that I find it helpful. If you need help at another time, then it is usually best to check with me ahead of time.

Tuesday and Thursday, 9-11, or by appointment

## 3 Text

*Advanced Engineering Mathematics*, by Erwin Kreysig

Note: I will be teaching out of volume 9, but volume 8 will certainly suffice.

## 4 Course Content and Goals

Our primary goal is to cover topics in chapters 11 and 12. However, we will not do it in strict textbook order and we may need to skip some sections. Here is a more detailed breakdown of what I would like to accomplish:

ODE for PDE: Quick review of helpful ODE methods. Some examples and problems from sections 1.3,2.2,2.5,5.1,5.3,5.5 will be helpful, but these sections are not required reading.

Fourier Series and Applications: Sections 11.1-11.3,12.1-12.3,12.5

Alternative Coordinate Systems and Higher Dimensions: Sections 12.7-12.10

Fourier Transform and Applications: Sections 11.7-11.10, 12.6

## 5 Homework

Homework is very important. During each class meeting I will point out which problems you should be working on. Every Friday I will collect two things:

1. Two solutions of your choosing. These should represent your best work.
2. A list of two **specific** questions about current or past material. Note: It is not always easy to formulate a good question. However, it is worth your time to take this seriously. It encourages you to really think about what you do know and what you do not know.

My primary goal in doing this is to promote communication. I need to know how well you are understanding the material, and I need to know what your questions are. Grading is based primarily on effort. This is worth 10% of your grade.

## 6 Exams

There will be two equally weighted exams, each worth 45% of your grade. One exam based upon Fourier Series methods, and the other exam on what remains. Each exam comes in two parts:

Part A: Contains *standard* problems and must be done in a two hour period with no help from the text, notes, or other aids.

Part B: Contains problems that require more time and thought and must be completed in a three day period. You are allowed to use the text-book and your notes. This part is guaranteed to contain at least one homework problem.

## 7 Grading Policy

If you consistently demonstrate an ability to perform standard computations and solve standard problems, then you have a good chance of earning a C or better. If you can also solve some more difficult problems and provide some insight as to why the methods work, then you have a good chance of earning a B or better. If you become adept at solving standard and nonstandard problems, and if you can clearly justify all of the methods that you use, then you have a good chance of earning an A. Hard work is a prerequisite for earning a good grade (A, B, or C), but no amount of work will guarantee you a particular grade. Just do the best that you can, and then be proud of the grade that you have earned. If you are ever unsure about a grading policy, or if you are not sure where you stand, then you are welcome to ask.

Here is the grading scale that I will use at the end of the semester. I reserve the right to make adjustments to this scale, but I will not adjust the boundaries to anything higher than those listed below. Pluses and minuses are assigned to grades that are near a cutoff point.

A: Total  $\geq 90\%$

B:  $75\% \leq \text{Total} < 90\%$

C:  $60\% \leq \text{Total} < 75\%$

D:  $45\% \leq \text{Total} < 60\%$ .