

E4901: Seminar in Applied Mathematics
Tuesdays 4:10pm-5:00pm Room 310 Fayerweather
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the seminar in applied mathematics is a required course for all juniors and seniors majoring in applied mathematics.

the junior seminar meets for one hour each week. We will have a variety of speakers, including faculty, alumni, senior applied mathematics majors. Lectures will be focused on the research and the varieties of experiences and skills known as applied mathematics, rather than on learning individual techniques in applied mathematics.

To give you a better idea of the goals of the class, here are a few quotes from last year's juniors

The seminar was a good way to see how seniors were able to do creative research in various topics. It also encouraged me to find a research topic and get a broader and better understanding of my future options in the world of Applied Mathematics.

This seminar has helped me to better understand why I am majoring in applied math at Columbia as well as expose me to the nature of the challenges and problems that I will face. . I take away from this course various pieces of knowledge, useful and general information about the applied mathematics field, and a better understanding of the work that some professionals are doing in the field. Yet, I feel that the most valuable information that I have taken away from this course lies in the overall knowledge I have gained about the undergraduate experience in applied mathematics [and] how the department is actually interested in me and my studies.

And hopefully you will find

These examples changed my previous notion of Applied Math as a derivative of Math limited to computing and programming, and made me realize that how artistic and imaginative our work can be by weaving math models into any other disciplines.

or even

In sum, this seminar helped reassure me that I did in fact pick the right major for myself.

To help you learn about the varied tools of applied mathematics and the varied areas of application, we will be having a number of external lectures from alumni, graduate students, post-doctoral researchers, and faculty. This will help you learn about the different research in applied mathematics at Columbia, exposing you to some of the ways that the mathematics you are learning in your other classes can be applied, and help you develop a sense for what areas of the field are of most interest

to you. Do not hesitate to ask questions of technical or non-technical nature, either during class or at your own convenience.

I will try to close each lecture with some final thoughts, both to summarize and to make connections with the other lectures and with the material you are learning in your other classes.

The senior applied mathematics majors will also attend the lectures, and you should feel free to ask them questions about the major and benefit from their experience. Both Juniors and Seniors can use these lectures to formulate possible research topics and postgraduate plans.

1 Grading policy

juniors: assignments to be sent to apma4901@gmail.com. grade will be a function of 3 things:

1. attendance: If you find that this hour is not valuable, your job is to tell me why. My job is to change things so that it is valuable. **I am happy to hear suggestions or requests for particular external speakers or subjects covered.**
2. posting *at least once* to the courseworks site
3. To get credit for the class I want your personal answer, in writing, to the following question: What did you learn during these lectures this semester? The answer should be between 1 double-spaced page and 5 single-spaced pages. There should be **no** external research necessary: I just want your honest answer.

Please do be honest in this and all other feedback you give the applied mathematics faculty. To quote one of last years juniors

Interaction between myself and my professors/department is up to me. While it seems obvious that the department is interested in bettering itself, I often feel like my criticisms are possibly skewed or incorrect and that my input might not necessarily be welcomed. It is reaffirming and to learn that the professors in the department truly want to hear from the students how they could improve the program.

This document should be emailed to me before 5 pm on the last day of classes (December 12, 2005).

You may email it, with subject line: FINAL REPORT 4901, to apma4901@gmail.com. Microsoft Word and PDF are acceptable. Mathematica notebooks and Microsoft Works are unacceptable. PLEASE SEND FROM YOUR COLUMBIA ADRESS, not your gmail, yahoo, hotmail address, etc.