

Welcome to Physics 618: Applied Group Theory.

Before we get started on the material for the course, let's take care of introductions.

I am

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I read my email several times during the day, but don't expect me to give instantaneous responses — if you need that, use the phone or drop by.

I have asked you to fill out a sheet with information about yourselves. Copies are at <http://www.physics.rutgers.edu/grad/618/infoonyou.pdf> and on paper in class.

Classes are scheduled for Tuesdays and Fridays, 12:00–1:20 in ARC 203. Please be prompt.

There are extensive web pages for the course at

<http://www.physics.rutgers.edu/grad/618/>

including a Syllabus and very complete Lecture Notes. There are also introductions to each lecture available by clicking on the date on the syllabus page if it has a green background.

You ought to own one textbook that deals with finite groups, but it doesn't have to be Jones, though I will try to use his notation. (There is a list of relevant books on the web pages.) Finite groups will only be the first few weeks of the course. Most of the course will be on Lie (or continuous) groups, and I will be following Georgi pretty closely, so you should probably get a copy of that, although my lecture notes will have all the material needed. Finally we will have a brief introduction to more modern ways groups enter physics, including gauge fields, spontaneous symmetry breaking, and supersymmetry, for which I don't currently have a textbook.

There will probably be one midterm exam. There may be a final exam or there may be projects — I want to see how things go before deciding. There

will be roughly one homework assignment per week. These will be graded and will count as a substantial part of your grade. I will not accept late homeworks unless you have gotten prior permission.

We need to discuss when homeworks should be due.

I encourage you to ask questions in class, and also of me at other times. I am usually around weekdays from 8:30 — 5:30, though of course not always. Don't be afraid to come to my office — if I am too busy, I will tell you so, but usually we can talk. I also encourage you to talk about the material to each other. Discussing how to do the homeworks is encouraged, though I expect each of you to write up your solutions individually.

Any questions about how the course will run?

Then let us begin with the material...