

MAT 599, Senior Seminar in Mathematics, Spring 2012

Instructor: Professor Claudia Miller

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Office Hours: tba

Text: *Linear Representations of Finite Groups* (English edition), by Jean-Pierre Serre

Prerequisite: Permission of instructor

Course Description:

This course is on a topic in mathematics, for students who are advanced and interested in mathematics. Obtaining a grade of A or A- in the course serves as partial fulfillment for Distinction in Mathematics. This semester we will investigate representations of finite groups into the general linear group (invertible matrices). The text was written for non-mathematicians, especially chemists and physicists, but with a substantial background in math, including basic abstract algebra. It is quite advanced, but beautifully and clearly written. If time remains at the end, we may read some about algebra applied to topology, for a change of topic.

The course will be run with substantial input from you. Most class days will be seminar-style, with each student speaking in turn and the others participating actively with questions. To prepare, you will read portions of the text, *working out fuller explanations of each paragraph*, as the text is quite concise. We will go as slowly as necessary to understand each part fully. On some days we will pause lecturing and work out examples in groups instead.

There may be some homework assigned, maybe to complete examples, but the main work will be reading the text and preparing your own notes to lecture from.

Grading:

The final grades will be computed from your lecture preparations, your lecturing, your participation in everything, and possible homework.

Final Exam:

The final exam is scheduled for Thursday May 3, 12:45 – 2:45 pm.

You should inform me **in the first two weeks of class** if

- (1) you have any disabilities for which special considerations are necessary, or
 - (2) you have any religious or sports commitments which may affect your attendance on any days of the semester.
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Students with disabilities: If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS), <http://disabilityservices.syr.edu>, located in Room 309 of 804 University Avenue, or call (315) 443-4498 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible. You are also welcome to contact me privately to discuss your academic needs although I cannot arrange for disability-related accommodations. Making arrangements with ODS takes time. Do not wait until just before the first test.

Academic integrity: The Syracuse University Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the Policy and know that it is their responsibility to learn about instructor and general academic expectations with regard to proper citation of sources in written work. The policy also governs the integrity of work submitted in exams and assignments as well as the veracity of signatures on attendance sheets and other verifications of participation in class activities. Serious sanctions can result from academic dishonesty of any sort. For more information and the complete policy, see <http://academicintegrity.syr.edu>

Complete academic honesty is expected of all students. Any incidence of academic dishonesty, as defined by the SU Academic Integrity Policy, will result in both course sanctions and formal notification of the College of Arts & Sciences.

Religious Observances Policy: Syracuse University's religious observances policy, found at http://supolicies.syr.edu/emp_ben/religious_observance.htm, recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holy days according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice/Student Services/Enrollment/My Religious Observances from the first day of class until the end of the second week of class.