

University of Delaware  
Department of Mathematical Sciences

M845-Group Theory with Applications

Fall 2009

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**Instructor:** Dr. Qing Xiang

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**Office hours:** W, F (1:40–2:40)

**Text:** I. M. Isaacs, Algebra, A graduate course.

**Reference books:** Group theory notes by James S. Milne, available at: <http://www.jmilne.org/math/>  
J. P. Serre, Linear representations of finite groups, Springer-Verlag, New York, 1977.

**Syllabus:**

Chapters 4,5,6,7 of Issacs' book.

Classical groups (will use notes by Peter Cameron or by Jurgen Bierbrauer)

Introduction to group representations.

**Homework:** I will assign and collect 5 sets of homework problems. Each set is worth 20 points.

**Grading:** There will be one take-home midterm (100 points) and one take-home final (100 points). Your final course grade will be based on the total number of points accumulated out of the 300 points.

**Notes:** We assume that you know the basics of group theory, including definition of a group, cyclic groups, subgroups, Lagrange's theorem, normal subgroups, fundamental theorems on group homomorphisms. If you do not have the background, either you read on your own to build up the background, or you should reconsider whether you want to stay in the class. We will also move pretty quickly since we have a lot of material to cover.