

Fall 2017: Math 464/564- Representation Theory and Combinatorics

- Instructor:** David Hemmer
- Office:** 211 Mathematics Building (sometimes in 226 chair's office)
- Contact:** Email: dhemmer@math.buffalo.edu,
Phone: 716-645-8775
- Class Meetings:** Tuesday, Thursday 11:00-12:20 in 122 MATH
- Office Hours:** Monday 10-11, Wednesday 2-3, and always by appointment.
- Text:** [The Symmetric Group: Representations, Combinatorial Algorithms, and Symmetric Functions 2nd ed.](#) by Bruce Sagan.
- Contacting Dave:** Email is probably the easiest way to contact me. If you are unable to make my office hours please feel free to schedule an appointment.
- Prerequisites:** Representation Theory is a mixture of linear algebra and abstract algebra. The prerequisite for the course is a course in linear algebra. Strongly recommended is either Math 353 (taken from me) or Math 419. Prerequisite material, which we will review quickly in class includes:
- Groups, cosets, Lagrange's Theorem
 - Conjugacy Classes and group homomorphisms
 - Vector spaces and subspaces
 - Linear transformations, matrix of a linear transformation
 - Matrix multiplication
 - Complex numbers
 - Trace and inner product
- Course Description:** This is going to be a fast-paced and fun course, and everyone should learn a lot of interesting mathematics. My goal is to cover chapters 1-3 at a minimum, and hopefully parts of chapter 4. It is going to be essential to keep up with the reading, including learning the definitions.
- Class Website:** All course material will be posted on the class website:
- <http://www.math.buffalo.edu/~dhemmer/464564F17.html>
- There is also a form on the website to leave anonymous feedback about the class.
- Homework:** The homework assignments in this class will be vitally important, and are worth a substantial portion of your final grade. I do not in general accept late homework unless prior arrangements have been made. I encourage students to work together on solving the problems, however you must write up your final solutions individually and *be sure you personally understand all the work you turn in*. Homework will be assigned on average every week. There will also be daily reading assignments.

Resigning/Dropping: The final day to drop a course (no record on your transcript) is Tuesday September 5.
The final day to resign from a course (R on your transcript) is Friday November 10.

Attendance: I expect regular class attendance. If you know ahead of time you will be unable to attend an examination for a valid reason, please let me know well in advance so we can make arrangements.

Electronic Devices: Please be respectful and keep phones and other devices silenced and stowed away!

Disabilities: Reasonable accommodations for equal access to this course because of disability should be requested through:

Accessibility Resources
60 Capen Hall
716-645-2608

Please inform me as soon as possible about your needs so that we can coordinate your accommodations.

Academic Honesty: The student conduct rules at <http://academicintegrity.buffalo.edu/policies/index.php> will be enforced.

Quizzes: There will be short, unannounced quizzes based on the assigned reading.

Exams: There will be a midterm exam, tentatively scheduled for Tuesday October 17.

Final Exam: The final exam will be 11:45-2:45 on Tuesday 12/12/17. It will be cumulative with extra emphasis on the second half of the course.

Grading: I will determine your final grade out of 600 points as follows:

Quizzes:	100 points
Midterm:	150 points
Final Exam:	150 points
Homework:	200 points

No one will receive a final grade lower than the usual grades (i.e. 90-100% A range, 80-89% B range, etc...), although I reserve the right to “curve” grades up. The lowest two homework grades and lowest two quiz grades will be dropped. Undergraduates and graduate students will be graded separately and may have slightly different assignments and/or exams.