Math 546, Projects for graduate students.

According to Graduate School policies, graduate students are expected to do approximately 30% more work than undergraduates. Graduate students in this course will, in addition to the above work, complete a long-term Project. These projects will constitute writing a paper on one of the topics below. Feel free to use any books, search on the web, talk to others.

The projects will be due on the last day of class, and they should be designed in consultation with the instructor. An agreement between student and instructor about what the Project will be should be in place by the end of Week 5.

Possible project topics:

1. Is there a subfield $K \subset \mathbb{C}$ such that $[\mathbb{C} : K] = 3$?
2. Finite fields and cryptography.
3. Algorithms for Galois group computations.
4. Abelian extensions: Kronecker-Weber theorem, class field theory.
5. Profinite groups and Galois groups.
6. Galois groups of $p-$adic fields.
7. Galois cohomology, e.g. Hilbert theorem 90.
8. Talk to me if you have your own idea for the project!