Midterm Details

The midterm exam will be cumulative (Chapters 0 - 8.2) and similar in format to the midterm from 2006. This means you should expect that you will have to do all problems in Part I and to choose from a selection of problems in Part II.

Part I will test that you have grasped the main definitions, theorems, and proofs in the course. For example, typical questions might look like:

1. drawing lattice diagram of a group or ring
2. finding generators of a group, finding elements of particular order in a group, finding all finite abelian groups of a particular order, finding all groups of small order
3. Sylow Theorems
4. homomorphisms, automorphisms, isomorphisms, sub-objects, Isomorphism theorems
5. group actions, action by conjugation
6. prime and irreducible elements, prime ideals, maximal ideals
7. ED, PIDs, quotient rings, ideals (left, right, and 2-sided), determining if quotient rings are fields – integral domains – have zero divisors,...
8. understanding $\mathbb{Z}$, $\mathbb{Z}[i]$, $\mathbb{Z}[x]$, $F[x]$, $\mathbb{Z}/n\mathbb{Z}$, finite fields, matrix rings

This list is by no means exhaustive (so don't only study its items.)

Part II will be long answer. For this part, you will be asked to write clear and correct proofs. Be sure to write formal proofs here, since clarity of writing will also be taken into consideration. Probably the best way to study for this part of the exam is to reread notes and proofs of important theorems, and to study hard for Part I.

The exam is Friday at 8:15am in our regular classroom. Bring coffee.