18.703 Spring 2018, Syllabus

Basic information.

- Teacher: Cris Negron
  - Email: negronc@mit.edu
  - Office: 2-246A.
  - Office hours: TBD (or by appointment)
- Text: Fraleigh, A first course in abstract algebra
- Time and Location: MWF 11, Room 2-139.

Homework. Homework will be (generally) due on Mondays, on a weekly basis. Homework will consist of a number of questions out of Fraleigh’s text. The homework list and due dates can be found at math.mit.edu/~negronc/HW.pdf.

We will use Stellar.

Lowest HW score will be dropped.

There will be three (3) in class exams. There will be no “final” during finals week.

General rules. There are no make ups, and no late homework will be accepted. Please don’t do ridiculous things in relation to the class. *Do not leave in the middle of class. If you come to class, stay for the allotted time.* Of course, there are many legitimate reasons to have to leave a class before it is over (e.g. you have some appointment). In that case, all is well, please just let me know before hand.

Tentative schedule. 12 Mondays, 14 Wednesdays, 13 Fridays = 39 classes

**The following material is based on a MW schedule, and will be distributed among the 39 classes, in the same order, when this document is updated.**

- (Lecture 1) Binary operations, groups, group tables
- (L 2+3) Cyclic groups
- (L 4+5) Permutation groups, braid groups, dihedral groups
- (L 6) Lagrange’s theorem, applications
- (L 7) Homomorphisms and isomorphisms
- (L 8) Normal subgroups, conjugacy classes, quotient groups
- (L 9) Mini Test
- (L 10) Classification of fin gen’d abelian groups
- (L 11) Group actions, Burnside’s formula
- (L 12) Sylow’s theorem and applications
- (L 13) Test 1
- (L 14) Rings and fields
- (L 15) Integral domains, applications
- (L 16) Fundamental theorem, ideals, quotient rings, quaternions
- (L 17) Polynomial rings, Eisenstein criterion
- (L 18) PIDs, applications
- (L 19) Euclidean domains
- (L 20) UFDs and Gauss lemma
- (L 21) Galois theory
- (L 22)