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 etc. Homework will be due on a weekly basis. Homework will consist of a number of questions out of Fraleigh’s text, as well as some additional questions. The homework list and due dates can be found at math.mit.edu/~negronc/HW.pdf.

We will use Stellar to record grades. Homework is to be turned into the 703 HW box, by the math administrative offices. If some extenuating circumstances arise please speak with me, at which point I will probably point you to Student Support Services (S3) studentlife.mit.edu/s3

Lowest HW score will be dropped.

There will be three (3) in class exams (1 Quiz, 2 Tests). There will be no “final” during finals week.

Grade breakdown. 60% HW, 5% Quiz, 15% Test 1, 20% Test 2.

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

- (L 1) groups
- (L 2) group tables & cyclic groups
- (L 3) cyclic groups
- (L 4) permutation groups, braid groups, dihedral groups
- (L 5) \( \mathfrak{S}_n, B_n, D_n \)
- (L 6) \( \mathfrak{S}_n, B_n, D_n \)
- (L 7) Lagrange’s theorem
- (L 8) morphisms
- (L 9) morphisms
- (L 10) normal subgroups & conjugacy classes
- (L 11) quotient groups
- (L 12) Quiz
- (L 13) classification of fin gen’d abelian groups
- (L 14) classification of fin gen’d abelian groups
- (L 15) group actions
- (L 16) Burnside’s formula
- (L 17) Sylow’s theorem
• (L 18) Sylow’s theorem
• (L 19) review
• (L 20) Test 1
• (L 21) rings and fields
• (L 23) rings and fields
• (L 23) integral domains
• (L 24) fund theorem, ideals, quotients
• (L 25) quaternions
• (L 26) polynomial rings
• (L 27) Eisenstein’s criterion
• (L 28) PIDs
• (L 29) PIDs
• (L 30) Euclidean domains
• (L 31) UFDs
• (L 32) Gauss’ lemma
• (L 33) Galois theory
• (L 34) Galois theory
• (L 35) Cyclotomic fields
• (L 36) TBD
• (L 37) TBD
• (L 38) TBD
• (L 39) Test 2

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