

Math. 412. Modern Algebra. Fall 2005/06

Instructor: Igor Dolgachev, 3064 EH, 763-0151

e-mail: idolga@umich.edu, webpage: www.math.lsa.umich.edu/~idolga/teaching.html

Textbook John R. Durbin, Modern Algebra: An Introduction. 5th edition, John Wiley and Sons. 2005.

Office Hours: M 1-2, W 10-11, F 2-3

Outline of the course:

Week	Topic	Sections	HW
1	Sets and mappings	I:1, 1-2	1.3-1.6, 1.24, 1.28, 1.29, 2.1-2.6, 2.23, 2.27
2	Operations	I: 3-4	3.1-3.8, 3.18, 3.22, 3.32, 4.1, 4.5, 4.10, 4.11, 4.13
3	Groups	II: 1-4	5.1-5.12 (even), 6.3, 6.6, 7.1, 7.12, 7.13, 7.9, 8.5, 8.11-8.16
4	Equivalence relations	III:9-11	9.5, 9.7, 9.9, 9.11, 9.20, 10.5-10.8, 10.20, 10.15-10.18,11.3, 11.17
5	Integers	III: 12-13	12.5-12.8, 12.15-12.18, 13.1-13.4, 13.12, 13.15, 13.16, 13.20
6	Groups	IV: 14-15	14.2, 14.7, 14.16, 14.18, 14.19, 14.27, 15.5, 15.12, 15.27
7	Groups	IV: 16-17	16.5, 16.6, 16.14, 16.17, 17.1-17.4, 7.11,17.12, 17.29,
8	Homomorphisms	V: 21	21.5, 21.7, 21.11, 21.17, 21.22, 21.26, 21.35,
		IV:18,19	18.2, 18.8, 18.10, 18.11, 19.1-19.10, 19.30
9	Quotient groups	V:22,23	22.1-22.2, 22.9, 22.10, 22.12, 22.14, 23.6, 23.9, 23.14, 23.19
10	Rings	VI:24-26	24.5, 24.10, 24.13, 24.17, 24.22, 25.4, 25.6, 25.12, 26.12, 26.22, 26.14, 26.24
11	Quotient Rings	IX:38-39	38.1-38.4, 38.19, 38.20, 39.1, 39.11, 39.12
12	Polynomials	VIII:34-37	34.6, 34.8, 34.13, 35.1-35.6, 35.13, 35.18,36.4, 36.23, 37.4, 37.9
		IX:40	40.2, 40.6-40.8, 40.16

Homework: collected weekly on Wednesday.

Exams: Midterm Exam (to be announced) and Final (December 16, 4:00-6:00 pm).

Grades: Homework 35%, Midterm Exam 25%, Final 40%

$A^+ \geq 90\%$, $A \geq 85\%$, $A^- \geq 80\%$, $B^+ \geq 75\%$, $B \geq 70\%$, $B^- \geq 65\%$, $C^+ \geq 60\%$, $C \geq 55\%$, $C^- \geq 50\%$