King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences
SYLLABUS
Semester I, 2005-2006 (051)
(Prepared by: Dr. Abdulaziz M. Al-Assaf)
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Course #: Math 345
Title: Modern Algebra I
Prerequisite: Math 232
Textbook: Contemporary Abstract Algebra by J. A. Gallian, sixth edition (2006)

Objectives: This course is intended to introduce students to fundamental concepts and techniques in abstract algebra and to provide students with appropriate background for more advanced courses in mathematics.

Week #	Date	Chapter	Topics
1	Sep. 10 – 14	2	Groups
2	Sep. 17 – 21	3	Finite groups; subgroups
3	Sep. 25 - 28	4	Cyclic groups
4	Oct. 01 – 05	5	Permutation groups
5	Oct. 08 – 12	7	Cosets and Lagrange's theorem
6	Oct. 15 – 19	9	Normal subgroups and factor groups
7	Oct. 22 – 26	10	Group Homomorphisms
8	Nov. 12 – 16	6	Isomorphisms
9	Nov. 19 – 23	12	Introduction to rings
10	Nov. 26 – 30	13	Integral domains; fields
11	Dec. 03 – 07	14	Ideals and factor rings
12	Dec. 10 – 14	15	Ring homomorphisms
13	Dec. 17 – 21	16	Polynomial rings
14	Dec. 24 – 28	17	Factorization of polynomials
15	Dec. 31 – Jan. 04	18	Divisibility in integral domains

Grading Policy:

1. TWO major exams (20% each)
   Dates for major exams:
   (i) Major exam I: Thursday Oct. 20th
   (ii) Major exam II: Thursday Dec. 15th
2. Final exam 40% (comprehensive)
3. Homework 20% (It will be given every week and must be submitted every Monday. Late homework will not be accepted.)
4. More than 9 unexcused absences will automatically translate to a DN grade.