King Abdul Aziz University

Faculty of Science / Department of Mathematics

Title: Abstract Algebra - Math 641

Course Category: Master

Fall Semester 2017

Instructor: Dr. Jehan Alawie Al-bar	Lecture: SA - 24347
Office: 3-131	Time: Mon Wed 1-2:30 pm
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Prerequisite: Linear Algebra, mature mathematical mind, some experience with writing proofs, and the desire to work really hard and independent.

About the Course: Abstract Algebra is the study of algebraic structures, such as groups, rings, fields, modules, vector spaces, lattices, and algebras. Concrete problems have played essential roles in the development of abstract algebra. For instance, the attempts to find formulae for solutions of general polynomial equations of higher degree resulted in discovery of groups as abstract act for symmetry.

In this course, the main topics will be covered are finite group theory, homomorphisms and isomorphism theorems, subgroups and quotient groups, direct product, group actions, the Sylow theorems, ring theory, ideals and quotient rings, Euclidean domains, principle ideal domains, unique factorization domains and polynomial rings.

Grading: Your final grade will be calculated according to the table

Term paper	20%
Exam1 &2	40%
Final Exam	40%

Suggested Text Books:

- 1. Abstract Algebra, Thomas W. Hungerford.
- 2. Abstract Algebra, David S. Dummit & Richard M. Foot.
- 3. Abstract Algebra: A First Course, Dan SAracino.
- 4. Abstract Algebra, I. N. Herstein.
- 5. Contemporary Abstract Algebra, J. A. Gallian.
- 6. Algebra, S. Maclane & G. Birkhoff.