MATH 623 – Algebraic Reasoning and Mathematical Structures — Fall 2022

Instructor: Neil Sigmon
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Homepage: http://www.radford.edu/npsigmon
Course Homepage: http://www.radford.edu/npsigmon/courses/Math623/math623.html
Zoom Link: https://radford.zoom.us/j/8709794059
Desire2Learn (D2L) Link: https://learn.radford.edu/d2l/home/207989
Office Hrs: On campus: 2:00 p.m. – 3:00 p.m. Tuesday, Thursday
Online office hours will be announced.

Textbook: Course Notes (no textbook will be required)
Supplemental Textbooks (not required for purchase):
1. Abstract Algebra An Introduction, Thomas W. Hungerford.
2. Applied Abstract Algebra with Maple and MATLAB, 3rd Edition, Klima, Sigmon, and Stitzinger.

Class Meeting Times: Tuesday 5-8 p.m. in ZOOM Class website meeting room.

Grading Policy: 33 % Midterm (Take home)
33 % Final Exam (Take Home)
34 % Homework and Maplet Computer Assignments

Grade Scale:

90-100	A
87-89	B+
80-86	B
77-79	C+
70-76	C
67-69	D+
60-66	D
< 60	F

A "**-**" grade will be awarded at the discretion of the instructor

Prerequisite: Math 423 (Abstract Algebra). Some background in number theory and linear algebra is helpful.

Course Coverage: Rings, polynomial rings, basic number theory, finite fields, error-correcting codes, cryptography, and other applications as time permits.

Catalog Course Description: Abstract algebra with a focus on topics directly related number theory, rings of integers and polynomials, elementary group theory, and fields. Special emphasis will be given to the applications of these topics. Examples of these applications will include topics such as performing digital communications and how they are conducted in a reliable and secure fashion. A computer algebra system will be employed to generate math models and simulations of these concepts in examples and assignments.

Student Goals and Objectives of the Course: Students are expected to gain knowledge of, and skills with, the basic abstract algebra concepts and their applications.

Disability Policy: Students seeking academic accommodations under the Americans with Disabilities Act must register with the Center for Accessibility Services (CAS) to determine eligibility. Students qualified for academic accommodations will receive accommodation letters and should meet with each course professor during office hours, to review and discuss accommodations. To begin the registration process, complete a Student Registration Form and submit documentation to PO Box 6902, Radford, Virginia 24142, or deliver to the Russell Hall, Room 325, by fax to 540-831-6525, or by email to cas@radford.edu (See documentation guidelines). For more information, visit the Center for Accessibility Services (CAS) website or call 540-831-6350.

Honor Code: By accepting admission to Radford University, each student makes a commitment to understand, support, and abide by the University Honor Code without compromise or exception. Violations of the University Honor Code include (but are not limited to): lying, stealing and unauthorized possession of property, cheating, multiple submission, and plagiarism. This class will be conducted in strict observation of the honor code. Refer to your Student Handbook for a complete copy of the University Honor Code.