Math 351 Syllabus | Spring 2018 | Laurel Langford
Abstract Algebra | laurel.langford@uwrf.edu
Section 1; Credits: 3 | http://langfordmath.com/

Office hours (getting help): I will be available in my office to answer questions (206E NH; office phone 715-425-4360) MTWF 10:00-10:45, MWF 2:00-2:45. I am around a lot during the day when I am not in class, and I am (almost) always happy to see you (it is a good idea to make an appointment if you are able to plan ahead).

Schedule: We will meet in NH 16 at 1:00 Mon., Wed. and Fri.

Final Exam: Monday May 7, 2018 1:00-3:00 PM

Text: you should have the textbook Abstract Algebra: An Introduction by Hungerford (3 ed.)

Announcements, schedules, assignments and review sheets are posted on my web site: http://langfordmath.com/. I will be posting your scores on D2L. Sometimes there are problems (both human and machine errors). Please save your graded work until after you have checked your grades in D2L to make sure I have scores recorded correctly.

Grading: Your grade will be based primarily on the weighted average of your assessments. I will occasionally raise a grade for someone who shows a greater understanding of the content (eg. in class discussions) than is reflected in the test scores, but I never lower a grade below what is indicated by the weighted average).
indicated by the weighted averages below:

A: 94-100%	A-: 90-93%	B+: 87-89%	B: 84-86%	B-: 80-83%
C+: 77-79%	C: 74-76%	C-: 70-73%	D: 60-69%	

Weighted averages: tests and quizzes: 80%, homework: 10%, attendance and class participation 10%

Tests and Quizes: 80%. There will be quizzes every 2-3 weeks, and a comprehensive final exam. (Variable points, but with the final exam being scaled to be approximately 3x the point value of an average quiz.

Homework: 10%. Abstract algebra is all about learning how to find and prove properties of generalized algebraic structures. In order to learn how to write a proof, you have to write proofs and get feedback. Homework will be accepted for full credit until I grade the assignment, and I will accept homework for partial credit for 1 week after the due date.

Attendance and class participation: 10%. I plan to take attendance regularly, and update the participation grade in the grade book about every 2 weeks. Approximately half of your score is based on attendance, and half is based on your contributions to class discussions, and presenting content to the class as assigned. Participation grades may be raised or lowered based on the quality of assigned presentations.

Approximate schedule:
Weeks 1-2: Properties of integers (Quiz)
Weeks 3-4: Modular numbers (Quiz)
Weeks 5-7: Basic properties of rings and fields (Quiz)
Weeks 8-9: Functions, polynomials and ideals (Quiz)
Weeks 10-12: Basic properties of groups (Quiz)
Weeks 13-14: Functions on groups (Final exam)

Individual concerns: If you are concerned about any aspect of the course requirements (test taking, homework, participation), please make an appointment to talk to me about your concerns.

Additional information

Teacher Content Standards: The College of Arts and Sciences has a webpage that links you to the teacher content standards by course number. " DPI CONTENT STANDARDS: The State of Wisconsin has established content standards that education programs are required to have in their courses. These standards are the basis of the Praxis II Content exams that all licensure candidates are required to pass prior to receiving a license to teach in Wisconsin." Linked by course number from this page: https://www.uwrf.edu/MATH/WisconsinContentTeacherStandardsMathematicsCourses.cfm.

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Course Objectives

At the end of this course students will be able to:

--Identify algebraic properties of familiar mathematical objects including integers, real numbers and polynomials and will be able to identify examples of algebraic structures such as rings, fields and groups.

--Prove conjectures using algebraic properties.

Required Course Content

I. Integers A. Divisibility B. Greatest common divisors C. Prime factorization II. Modular Arithmetic A. Properties of congruence and equivalence classes B. Structure of numbers with a prime modulus: units and zero-divisors	III. Rings and Fields A. Definitions B. Examples, including modular arithmetic and matrices C. Proving basic properties of rings and fields D. Homomorphisms and Isomorphisms E. Polynomials over a field F. Ideals and quotient rings IV. Groups A. Definitions B. Examples, including symmetries and permutations C. Proving basic properties of groups D. Homomorphisms and Isomorphisms on groups.

Mode of Instruction: Face to Face **Prerequisites:**. Math 236 and 256.