Course Information

Course Number:	Math 3360
Course Name:	Introduction to Fields and Rings
CRN:	20367
Location:	MCS 212
Class Hours:	3pm-3:50pm (Monday, Wednesday, Friday)
Textbook:	No textbook is required. However I will often use "A First Course in Abstract Algebra by Anderson and Feil" to prepare lectures and content.
Prerequisites:	Math 2335

Instructor Information

Name:	Dr. Jeffrey Beyerl
Office Location:	MCS 237
E-mail:	jbeyerl@uca.edu
Phone:	501-450-5652

Course Description

A required course for majors in pure mathematics, UCA STEMteach Pure Mathematics, and UCA STEMteach Mathematics Education tracks. This course is designed to introduce students to abstract mathematics. Topics include binary operations, the integers, modular number systems, rings, and fields

Office Hours

My availability changes every day. Go to the website below for up to date availability. When you schedule an appointment, please specify what you're coming for.

Walk-ins are also welcome: if my office door is open, I'm available. However, if somebody with an appointment comes, they will receive priority.

Office Hours Website: https://ucamath.youcanbook.me/

Course Objectives and Requirements

The primary objective in this course is to develop the theory of fields and rings.

Student Learning Objectives

Upon completion of the course, student will be able to:

- Be able to describe the minimal information on a set to guarantee the ability to solve equations in that set.
- Be able to extend a number system to a larger one so as to solve an equation previously unsolvable in the original system.
- Be able to explain in a general setting the standard rules of arithmetic.
- Run the Euclidean algorithm in the polynomial ring setting.

Grading Policy

- **Coursework**
  Coursework consists of everything that does not fall into other categories. This includes, but is not limited to:
    - Homework
    - In class activities
    - Projects (if we have any?)
    - Mini projects (if we have any?)
    - Quizzes (if we have any?)
    - Any extra credit given for one reason or another
- **Tests**
  All tests are written full-class-length non-calculator in-person tests. Each one is cumulative.
- **Video Problem Presentations**
  There will be five video presentations. You will illustrate the solution, concept, or skill involved in a couple problems and provide peer review on other students' presentations.
- **Borderline Grades**
  Borderline grades will be determined based on the final exam.
- **Calculation of Grades**

Test 1	15%
Test 2	15%
Test 3	15%
Video Problem Presentations	15%
Final Exam	20%
Coursework	20%

Important Dates

Last day to Drop Drop means the course is not on your record	August 25th
Video Problem Presentation 1 due	Sunday September 5th
Test 1	Friday September 17th
Video Problem Presentation 2 due	Sunday October 3rd
Video Problem Presentation 3 due	Sunday October 10th
Test 2	Friday October 15th
Video Problem Presentation 4 due	Sunday October 31st
Last day to Withdraw Withdraw means the course is on your record with a "W" but does not factor into your GPA	November 5th
Test 3	Friday November 12th
Video Problem Presentation 5 due	Sunday November 21st
Project Day (no synchronous meeting)	Monday November 22rd
Final Exam	Friday, December 10th, 1pm-3pm

Outside of class resources

- Any textbook on abstract algebra (The library has quite a few)
  - Description of material
  - Example problems
  - Exercise problems
- Blackboard
  - Course Information
  - Notes from class
- Office Hours
  - Individual help
  - Availability changes every day. See https://ucamath.youcanbook.me/ for up to date availability
- Previous course materials
  - http://faculty.uca.edu/jbeyerl/courses.html
- The Math Resource Lab
  - Study Area
  - Tutors available throughout the day

Late Work
Any late work will be accepted no questions asked for a penalty: 20% if it is only late by a couple days, 50% if it is very late. Note that late assignments may not be graded in a timely manner.

Excused Absences
If you are part of an organization that includes official university trips, you will be excused from each day that you are on travel as long as you contact me each time to make arrangements for any missed work. It is your responsibility to make arrangements to make up any missed work before you leave for the trip. If you are going to miss a test or quiz, you must contact me approximately one week beforehand to make arrangements for the make-up, preferably by email.
For personal emergencies, you should contact me when it is safe and reasonable to do so, include documentation of the emergency. At his discretion, the instructor may choose to administer a make-up, issue a zero, or use the final exam to replace the missing test or quiz.

Attendance Policy
Your active participation in this course is expected and required for you to learn the material and earn a passing grade. If you miss more than two weeks of class meetings throughout the term, you may be administratively dropped from the course.

Academic Integrity Statement
The University of Central Arkansas affirms its commitment to academic integrity and expects all members of the university community to accept shared responsibility for maintaining academic integrity. Students in this course are subject to the provisions of the university's Academic Integrity Policy, approved by the Board of Trustees as Board Policy No. 709 on February 10, 2010, and published in the Student Handbook. Penalties for academic misconduct in this course may include a failing grade on an assignment, a failing grade in the course, or any other course-related sanction the instructor determines to be appropriate. Continued enrollment in this course affirms a student's acceptance of this university policy.
Academic integrity is taken seriously: cheating on a test will result in a failing grade in the course; helping another student cheat will result in a one-letter-grade penalty.

Americans with Disabilities Act Statement
The University of Central Arkansas adheres to the requirements of the Americans with Disabilities Act. If you need an accommodation under this Act due to a disability, please contact the UCA Office of Disability Services, 450-3613.

Title IX disclosure:
If a student discloses an act of sexual harassment, discrimination, assault, or other sexual misconduct to a faculty member (as it relates to "student-on-student" or "employee-on-student"), the faculty member cannot maintain complete confidentiality and is required to report the act and may be required to reveal the names of the parties involved. Any allegations made by a student may or may not trigger an investigation. Each situation differs and the obligation to conduct an investigation will depend on those specific set of circumstances. The determination to conduct an investigation will be made by the Title IX Coordinator. For further information, please visit: https://uca.edu/titleix. *Disclosure of sexual

misconduct by a third party who is not a student and/or employee is also required if the misconduct occurs when the third party is a participant in a university-sponsored program, event, or activity.

Sexual Harassment and Academic Policies Statement
All students are required to familiarize themselves with the University of Central Arkansas policy on sexual harassment and on academic policies. These policies are printed in the Student Handbook.

Building Emergency Plan Statement
An Emergency Procedures Summary (EPS) for the building in which this class is held will be discussed during the first week of this course. EPS documents for most buildings on campus are available at http://uca.edu/mysafety/bep/. Every student should be familiar with emergency procedures for any campus building in which he/she spends time for classes or other purposes.

Pandemic Information
- You need to follow all university policies including those on masks. At the time of this writing, the university requires masks in nearly all indoor areas specifically including classrooms.
- I've been vaccinated. You are encouraged to get vaccinated if you haven't yet. If I had access to information that everyone in our course has been vaccinated for COVID, that would be stated here so that we could all be more comfortable with our classmates. As of the time of this writing, I cannot say that everyone in our class has been vaccinated and so you are encouraged to keep your distance from your classmates.
- If you are sick, do not come to class. E-mail me and I will made individual accommodations based on the information you provide.
- If we are directed to pivot online and cease in person meetings, we will meet synchronously on Zoom.
- If we are directed to limit in-person seating below the enrollment of the course, we will cease in person meetings and meet synchronously on Zoom.