

## MA 591: INDEPENDENT STUDY ABSTRACT ALGEBRA, SPRING 2019

**Instructor:** Tye Lidman

**E-mail:** tlid@math.ncsu.edu

**Course Location:** SAS 3246

**Course Time:** By appointment

**Office:** SAS 3246

**Office Hours:** By appointment

**Website:** [www4.ncsu.edu/~tlidman](http://www4.ncsu.edu/~tlidman)

**Course description:** Groups, normal subgroups, quotient groups, Cayley's theorem, Sylow theorems. Rings, ideals and quotient rings, polynomial rings. Elements of field theory.

### Major course objectives:

- Develop expertise with groups, rings, and fields
- Analyze algebraic objects using homomorphisms, sub and quotient objects
- Study groups, rings, and fields as part of a unified categorical framework

**Prerequisites:** Undergraduate linear algebra and abstract algebra equivalent to MA 405 and 407.

**Textbook:** *Algebra*, Hungerford (Graduate Texts in Mathematics).

### Grading:

Final Exam: 100%

**Assignments:** Homework assignments will be suggested for extra practice.

**Academic integrity:** All students are required to comply with the university policies on academic integrity in the code of student conduct policy (NCSU POL 11.35.1). While I strongly recommend forming study groups and checking your answers with your classmates on homework or worksheets, all work submitted must be your own. This includes copying others' work or answers on homework and exams. The purpose of the homework is to learn the material. Any violation will be considered cheating.

**Non-discrimination policy:** NC State affirms its commitment to maintain an academic environment for all students that is free from all forms of discrimination. Discrimination based on race, color, religion, creed, sex, national origin, age, disability, veteran status, gender identity, or sexual orientation is a violation of state and/or federal law and/or NC State University policy and will not be tolerated. Harassment of any person (either in the form of quid pro quo or creation of a hostile environment) based on race, color, religion, creed, sex, national origin, age, disability, veteran status, gender identity, or sexual orientation also is a violation of state and/or federal law and/or NC State University policy and will not be tolerated. Retaliation against any person who complains about discrimination is also prohibited. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at <http://policies.ncsu.edu/policy/pol-04-25-05> or [http://www.ncsu.edu/equal\\_op](http://www.ncsu.edu/equal_op). Any person who feels they have been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 919-515-3148.

In addition, if class activities conflict with religious events, please let me know so that we can make arrangements.

**Electronic privacy:** Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course.

**Students with disabilities:** Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with the Disability Services Office at Suite 2221, Student Health Center, Campus Box 7509, 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (REG 02.20.01). Your experience in this class is important to me. Please communicate your approved accommodations to me as soon as possible so we can discuss your needs in this course.

**Mental Health:** The Counseling Center at NC State is an important resource. They have a diverse staff trained to address academic, emotional and social concerns. They are available 24/7 at (919) 515-2423.

**Disclaimer:** This document, and consequently the terms of the course, may be modified as needed throughout the course. Any changes will be announced with reasonable notice.