

# Algebra II

**Course:** MTH 620

**Semester:** Spring 2015

**Instructor:** Yorck Sommerhäuser

**Office:** Math 208

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**Class meetings:** Monday, Wednesday, Friday 2:00 pm–2:50 pm, Math 150

**Office hours:** Monday, Wednesday, Friday 3:00 pm–4:00 pm and by appointment.

**Textbook:** E. Artin: Galois theory, Dover, New York, 1997 (freely available online at [projecteuclid.org](http://projecteuclid.org))

**Course description:** In the first half of the semester, we will discuss free groups, ring theory, and module theory, in particular modules over principal ideal domains and their application to the Jordan canonical form. In the second half of the semester, we will discuss the main topic of the course, namely Galois theory. Time permitting, we will discuss the basic concepts of category theory.

**Objectives:** The objective of the course is to provide an introduction to abstract algebra based on rigorous proofs and deductive reasoning. Together with its precursor Algebra I, it prepares the student for second qualifying exam in algebra.

**Coverage:** The topics of the first half of the semester will be taught with the help of handouts consisting of copies from various textbooks. In the second half of the semester, we will cover Chapter 2 and Chapter 3 from the textbook.

**Exams:** There will be two midterm exams and a comprehensive final exam. The midterm exams take place on Friday, March 13 as well as Friday, April 10. The final exam takes place Monday, May 11, 3:30 pm–6:30 pm, in Math 150..

**Homework:** Beginning Monday of the second week, a weekly exercise sheet will be handed out, containing three to four problems. This has to be completed until the next Monday. While it is allowed to collaborate on the problems, every student is required to write up his solution in his own words. There will be no exercise sheets during exam weeks.

**Attendance:** Attendance is required.

**Grading weights:**

Homework:	30 %
Midterm exams:	20 % each
Final exam:	30 %

**Grading scale:**

A:	90%	A-:	88%	
B+:	86%	B:	80%	B-: 78%
C+:	76%	C:	70%	C-: 68%
D+:	66%	D:	60%	

**Disabled students:** If you have a diagnosed physical, learning, or psychological disability which will make it difficult for you to carry out the course work as outlined, or requires accommodations such as recruiting note takers, readers or extended time on exams or assignments, please advise me during the first two weeks of the course so that we may review arrangements for accommodations.