Honors Algebra II
MATH-UA.0349

Spring 2018

Instructor

Dr. Emilio Zappa
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Teaching assistant

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Office hour: Thursdays, 12-1 pm, room 905

Class Times

Lectures: Mondays, Wednesdays 11:00 am-12:15 pm in CIWW 317
Recitations: Fridays 2:00 - 3:15 pm in CIWW 317

Prerequisites

A grade of C or better in MATH-UA 348 Honors Algebra I, or grade of A in MATH-UA 343 Algebra in conjunction with permission by instructor.

Topics

- **Factoring.** Euclidean domains, principal ideal domains, unique factorization domains. Polynomial factorization in $\mathbb{C}[x]$, $\mathbb{R}[x]$, $\mathbb{Q}[x]$ and $\mathbb{Z}[x]$ (Weeks 1-4).

- **Field theory.** Algebraic and transcendental elements. Field extensions. Ruler and compass constructions. Finite fields (Weeks 5-9).

- **Galois theory.** Splitting field of a polynomial. Fixed fields. Galois extensions. Galois's correspondence theorem. Solvability of polynomial equations (Weeks 10-14).

Textbooks.

The main textbook for the course is *Algebra*, second edition, by Michael Artin, ISBN 9780132413770.

Grading

The final grade will be based on:

1. Homework assignments (10%): due dates will be posted on NYUClasses website. Assignments will be collected in class at the end of lectures/recitations. Late homework will not be accepted. Each student must complete his/her own homework assignment.

2. Two midterm exams (25% each):

   - First midterm: Monday, February 26.
   - Second midterm: Monday, April 9.

3. Final exam (40%): Monday, May 14, 10:00 am - 11:50 am.

Other information

- All policies set forth by the university in regards to student codes of conduct apply to this course. In particular, action will be taken if students are found to be cheating. Please refer to NYUPolicy on Academic Integrity.

- Students participating in University Sponsored events who know in advance that they will miss exams must make arrangements with the instructor ahead of time to schedule make-ups.

- Unscheduled emergencies that cause students to miss exams will be considered on a case by case basis with proper documentation.