

Home

Research

MAS 4105 (17885)  
– Linear Algebra 1  
– Spring 2025

MAS 4302 (19258)  
– Abstract Algebra  
2 – Spring 2025

Homological  
Algebra Seminar  
(Summer 2021)

## Related Links

CLAS IT

College of Liberal Arts  
and Sciences

Mathematics  
Department

University of Florida

# MAS 4302 (19258) – Abstract Algebra 2 – Spring 2025

Instructor: Dr. Richard Crew

Place and time: LIT 221, MWF 4

Office Hours: LIT 404, time TBD

## Course Description

This is a course on the theory of rings, fields and Galois theory. The sole prerequisite is MAS 4301, Abstract Algebra 2. The text is Ian Stewart's *Galois Theory*, 4th edition but the 3rd edition may be used (with appropriate care). We may make some use of Gallian's *Contemporary Abstract Algebra* which was the text for MAS 4301, but this will be limited mainly to some basic ring theory. After a historical introduction and review of some ring theory, we will take up the theory of field extensions, ruler-and-compass constructions and the basic results of Galois theory, culminating in Galois' theorem on the solvability of equations by radicals. If time permits we will study the Galois theory of finite fields and Gauss's construction of the regular 17-gon.

It will be assumed that students have a basic competence in reading and writing proofs, which has been developed in the previous courses. Lectures will mostly be devoted to discussion of the proofs in the text.

## Software

There will be no officially assigned computer work in this course but some computer work is often enlightening and fun. Perhaps the best software suite for this is *SageMath*, which is an open source software system for all kinds of mathematical computation. It runs on Windows and most varieties of Unix (Linux, Mac) and has a scripting language based on Python. It is available at <https://www.sagemath.org/>.

## Quizzes, Exams and Homework

The course grade will be based on 4 exams (each worth 1/6 of the final grade), a number of quizzes and assigned homework (in total, the remaining 1/3 of the grade). Dates for all homework, quizzes and exams will appear on the CANVAS pages for this course. Late Homework will *not* be accepted. Makeups for quizzes and exams will be given for documented emergencies, curricular requirements of other University

units, military service or mandatory Court appearances. In all other situations, a makeup must be arranged *at least one week ahead of time*. Dates of exams and quizzes may be changed due to extreme weather or other natural disasters.

## Grading Scale

Grades: A=90-100, A-=87-89, B+=83-86, B=78-82, B-=75-77, C+=70-74, C=65-69, C-=60-64, D=50-59, E=0-49. The UF regulations on grades are [here](#). The UF policy on minus grades is [here](#).

## Course Policies

Attendance is mandatory, except for absences allowed by UF policies. The UF policy on attendance is [here](#).

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

The [Honor Code](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor of this class.

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available [here](#). Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or else [here](#). Summaries of course evaluation results are available to students [here](#).

## Disabilities

Students with disabilities requesting accommodations should first register with the [Disability Resource Center](#), (352-392-8565) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

## Health and Wellness

U Matter, We Care: If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or 352-392-1575 so that a team member can reach out to the student. Other resources:

[Counseling and Wellness Center](#), 352-392-1575.

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 352-392-1161

[University Police Department](#), 392-1111 (or 9-1-1 for emergencies).

## Metadata

This page is the official syllabus for this course, and will be modified as needed. Last modified 12/17/2024.

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