

MAT 442: Abstract Algebra

Mathematics Department
Siena Heights University
Syllabus Fall 2017

Instructor: Dr. Andrew-David Bjork

Phone: 264-7645 (office)

Office: Science 33

Office Hours: TBD

Course Objectives:

- **To learn to carefully read and understand definitions and statements of theorems.**
- **To learn to develop original (to you) solutions to problems you have not seen before.**
- **To learn to understand and write up correct solutions to problems.**
- **To learn to be critical of proofs.**
- **To gain an understanding of how mathematicians work.**
- **To understand group theory up through the first isomorphism theorem**

Method of Evaluation

The course comprises a sequence of problems that will be solved and presented by the students to the students. Students grades will be earned in the following way:

- Presentation and participation on a letter scale.
- A portfolio will be kept of all correct solutions to problems in the course up to that point.
- Some problems will be turned in in writing (weekly)
- A midterm and a final exam will complete the grades.

Topics Covered:

A rigorous treatment of group theory, including subgroups, cosets, and the isomorphism theorems.

Academic Accommodations

If a student is in need of an accommodation based on the impact of your disability, you should contact me to arrange an appointment. At the appointment we can discuss the course format, anticipate your needs and explore potential accommodations. I rely on the Office for Students with Disabilities for assistance in verifying the need for accommodations and developing accommodation strategies. If you have not previously registered with the Office for Students with Disabilities, I encourage you to do so. Just a reminder, requests for accommodations are not retroactive.

Learning Outcomes

The **Mathematics Department** has identified the following five learning outcomes to be achieved by majors and minors in its program.

1. Students will read and understand mathematics, differentiating between correct and incorrect mathematical reasoning.
Reading the textbook is an essential part of this course. I will assign chapters to be read during class.
2. Students will effectively communicate mathematics to others, both in writing and speaking.

You will be expected to present full solutions to the class. Most of the other work in the course is written. This is where the meat of Real Analysis lies.

- Students will demonstrate abilities to work independently and in-groups to develop mathematical models using appropriate technologies.

We will not address this in this course

- Students will demonstrate a mathematical maturity leading to independent investigations, increased responsibility for learning, and participation in the professional mathematics community.

By the end of this course, you will have an excellent idea of what graduate studies in mathematics require.

Increased responsibility for learning: You will earn your grade in this course.

- Students will demonstrate mastery of the content of the courses required for the major including the calculus, foundations, algebra, and analysis.

This can be measured using homework and exam grades.

General Education Learning Outcomes

The General Education Learning Outcomes can be found on page 10 of the 2008-2010 Undergraduate Catalog. Those outcomes that will be addressed and assessed in this course can be identified in the following table.

Addressed (A) and Assessed (AAD)

General Education Learning Outcomes	A1	A2	A3	B1a	B1b	B2	B3	C1
MAT 462: Real Analysis		A	AAD		AAD	AAD		AA

Academic Honesty:

The search for truth and dissemination of knowledge are the central missions of a university. Siena Heights University pursues these missions in an environment guided by our Roman Catholic tradition and our Dominican heritage. Integrity and honesty are therefore expected of all members of the University community, including students, faculty members, administration, and staff. Actions such as cheating, plagiarism, collusion, fabrication, forgery, falsification, destruction, multiple submission, solicitation, and misrepresentation, are violations of these expectations and constitute unacceptable behavior in the University community. The penalties for such actions range from verbal warning, all the way to expulsion from the University.

Students are responsible for their own work and accomplishments. You are encouraged to discuss problems with others, but the actual written work submitted should be your own. The first occurrence of cheating on any assignment will result in a grade of zero on that assignment. The second time the same student is observed cheating will result in that student being given an E for the course. All cases of academic dishonesty will be documented and reported to the appropriate authorities on campus. for a complete explanation of the Academic Dishonesty Policy, refer to page 169 of the SHU Undergraduate Catalog 2016-2018.

Students With Disabilities

In accordance with University policy and the equal access laws, I am available to discuss appropriate academic accommodations that you may be eligible for as a student with a disability. Please contact me for an appointment to discuss possible accommodations. Students must register with the Office for Students with Disabilities for disability verification and determination of reasonable accommodations. Requests for accommodations must be done in a timely manner and are not retroactive. The OSD is located in Sacred Heart Hall in Sacred Heart Hall, Room 03.

