Math 546/701I: Algebraic Structures I
Section 001/001   Spring 2022

Instructor: Shaoyun Yi

Office: COL 1005D

Office Hours: MW 1:30-3:30 pm, and by appointment

Meeting Times: MW 3:55-5:10 pm @ Swearingen Engr Ctr Room 2A19

MS Team Code: See Blackboard/Course content

Email: shaoyun@mailbox.sc.edu

Web: Visit course website for a tentative course calendar and other information.

Textbook and Materials: *Abstract Algebra* by J. Bleachy and W. Blair, 4th edition.

The course covers all of Chapter 3 and Sections 1.3, 1.4, 2.3.

Topics: Definition and examples of groups, subgroups, group homomorphisms and isomorphisms, normal subgroups and factor groups. Notable examples that will be discussed in detail are cyclic groups and groups of permutations.

Calculators will not be needed or allowed.

Prerequisite: Qualification through a grade of C or better in Math 544, or consent of the Undergraduate Director.

Learning Outcomes: Upon successful completion of this course, students should be able to:

- Become familiar with basic examples, properties and constructions of groups, subgroups, homomorphisms, rings and ideals, as well as fundamental theorems in group theory (Lagrange's theorem, Cayley's theorem).

- Verify whether the group axioms hold in concrete examples, decide when two groups are isomorphic, and list subgroups of certain groups.

- Read a mathematical argument and write a mathematical proof.

Expectations:

- Students are expected to attend class, arrive on time, and stay for the entire class. Attendance will be recorded daily. The instructor may excuse absences with appropriate documentation of illness, emergency, or official university travel. It is the student's responsibility to provide such documentation in a timely manner. In accordance with university policy, a letter grade may be deducted for students who miss more than 10% of classes for unexcused reasons. Students are responsible for missed classes and announcements.

- Students are expected to read assigned sections in the textbook and complete periodic homework, two tests, and a final exam. Students should check email, Blackboard and course website frequently for announcements and course documents such as homework and lecture slides; see the tentative course calendar on the course website.

Covid-19 Safety:

- **Don't come to class if you have Covid-19** (confirmed or suspected).

- **Masks are required in university buildings.**

- Classes will be livestreamed over Microsoft Teams for the initial surge, and later as needed. If you wake up with Covid symptoms let me know, stay home, and participate online.

If you suspect Covid-19, the university requests that you go through official channels: contact the COVID-19 Student Health Services (SHS) nurse line (803-576-8511), complete the COVID-19 Student Report Form and select the option allowing the Student Ombuds to contact your professors.

When talking with the SHS nurse, be sure to ask for documentation of the consult as you will need this to document why you missed class. You will also use the COVID-19 Student Report Form if you have tested positive for COVID-19 or if you have been ordered to quarantine because of close contact with a person who was COVID-19 positive. In each of these situations you will be provided appropriate documentation that can be shared through the Student Report Form.

Make-up work Policy: Make-up work will not be assigned, except in cases of excused absences. In the event of emergency or illness, arrangements for make-up work must be made within **24 hours** of the student's absence. For example, if you have Covid-19 (confirmed or suspected), see related details above. In the case of official university travel, students should contact the instructor at least one week **before** traveling to make arrangements to complete assignments.

Disruptions: Disruptive behavior of any kind will not be tolerated. **Cell phones** should remain **off** during class. No laptops or any other electronic devices are allowed in class.

Withdrawal:
The last day to change/drop a course without a grade of "W" being recorded is **Jan 18 (T)**.
The last date to withdraw without a grade of "WF" being assigned is **Mar 28 (M)**.

Testing Policy: There will be two tests and a comprehensive final exam. I will **not** drop the lowest test grade. In general, **no** make-up tests will be given. Exceptions may be made for documented illness or emergency; see related details above. Tests are *tentatively* scheduled as follows:

Test 1	Wednesday	Feb 16
Test 2	Wednesday	Mar 23
Final Exam	Wednesday	Apr 27, 4:00 pm

All of your tests and final exam will be held at Swearingen Engr Ctr Room 2A19 (our regular classroom). In-person tests are generally expected; see related details above for excused reasons.

Note that the instructor does not set the final exam date. **No** accommodations will be made for travel plans, except in cases of documented official university travel; see related details above.

Homework Policy: All homework must be done before the due date (please find the due date on the course website). All homework are expected to be turned in class on the due date. Under **no** circumstances will late homework be accepted unless for excused reasons; see related details above.

There might be one bonus problem on some homework. You are required to do the bonus problem if you want **graduate credit**. The **lowest one** homework grade will be dropped.

You are allowed, even encouraged, to discuss homework assignments with other students. However, each student must turn in his or her own homework. **Copying homework will not be tolerated.**

Grade Distribution:		Grading Scale:				
Homework	40%	A	88%-100%	C	60%-67%
Test 1	15%	B+	82%-87%	D+	55%-59%
Test 2	15%	B	74%-81%	D	50%-54%
Final Exam	30%	C+	68%-73%	F	below 50%

Actual cutoffs might be more generous. Note that the grading scale is more generous than the usual 10-point scale – not because I am a softie, but because the material will be difficult.

Getting Help: Students are encouraged to attend office hours or schedule appointments if particular difficulties arise. In this course, the subject matter builds upon itself, so it is important to catch problems with understanding early.

Disability Services: Any student with a documented disability should contact the Office of Student Disability Services at 777-6142 to make arrangements for appropriate accommodations.

Honor Code: The Honor Code applies to all work for this course. Students should review the Honor Code at http://www.sc.edu/academicintegrity. Students found violating the Honor Code will be subject to discipline.