

JACKSON STATE UNIVERSITY  
COLLEGE OF SCIENCE, ENGINEERING, & TECHNOLOGY  
SCHOOL OF SCIENCE AND TECHNOLOGY  
DEPARTMENT OF MATHEMATICS  
JACKSON, MISSISSIPPI

**Instructor: Carmen Wright, Ph.D.**  
**Math 311-01 Abstract Algebra**  
*Spring 2017, CRN: 10355*  
**MWF 11:00-11:50 AM, JSH 106**

**Instructor:** Carmen Wright, Ph.D.

**Office Location:** JSH 238

**Phone:** 601-979-3753

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**Office hours:** Mon. 1-2pm, 4-5pm; Wed. 9-10am, 4-5pm; Fri. 9-10am, and *by appointment*

**Texts:**

1. *Abstract Algebra: Theory and Applications*. Judson, Thomas W.  
<http://abstract.ups.edu/aata/>
2. *A Book of Abstract Algebra, 2nd ed.* Charles Pinter.  
ISBN-13: 978-0486474175.  
ISBN-10: 0486474178

Recommended (not required):

*The 5 Elements of Effective Thinking*. Burger, Edward B. and Michael Starbird.  
ISBN-10: 0691156662  
ISBN-13: 978-0691156668

**Other references:** (*See class website*)

**Course Description:**

This course is prepared to present to the student the fundamentals of abstract algebra. In general, it treats the topics of groups, rings, integral domains, and fields.

**Course Objectives:**

1. Introduce the students to the fundamental concepts of algebra.
2. Learn the importance of mathematical rigor and how to construct mathematically correct and concise proofs.
3. Learn and work with the abstract notion of a group.
4. Introduce the abstract notion of integral domain, ring, and field.

**Topics Covered:**

- Arithmetic, Sets, Relations and Equivalence Relations, Functions and Mappings, Operations and Operators, Combinatorics.
- Elementary Group Theory: Subgroups, Cyclic groups, Homomorphisms.
- Finite Permutation Groups and Cayley's Theorem.
- Lagrange's Theorem, Normal subgroups, and Quotient groups.
- Rings, Integral Domains, and Fields.

### Course Outcomes:

Upon successful completion of the course, students should be able to

1. Explain the notion of equivalence relations, mappings, and operations,
2. Explain the fundamental concepts of finite group theory and finite field theory,
3. Use Lagrange's Theorem to analyze the cyclic subgroups of a group,
4. Explain the significance of the notion of a normal subgroup, and of a simple group,
5. Explain the structure of integral domain, ring, and finite fields.

**Attendance Policy:** Attendance will be taken every time the class meets. Absent students are expected to get the class notes from their peers. Excused absences only: Missed work or quizzes must be made up within one week.

**Test Policy:** There will be 3 tests. Students are expected to take all three tests.

<b>Final Exam:</b> Thursday, April 27, 2:00 PM – 3:50 PM
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### Grading Policy:

Exams	30%
Homework	20%
Activities/Projects	15%
Daily*	15%
Final	20%

\*Note: The daily portion of the grade consists of quizzes, class work, participation, and attendance.

**Grading Scale:** 90-100 A; 80-89 B; 70-79 C; 60-69 D; 0-59 F.

**Homework:** Homework will be regularly given. Help with homework will be provided on demand during office hours. All students are encouraged to work together for class-preparation, after class-discussion, homework, and exam preparation. However, students are expected to turn in their own work. Homework is to be turned in at the beginning of the class period. Late homework will be penalized.

**Make-up Policy:** If there is an exam time conflict, the student must contact the instructor prior to the exam. No make-up will be given to any student who misses an examination, unless he or she immediately notifies the instructor within one day of the exam, **and** presents an excused absence form by the next class period.

**Important Remark:** All cell-phones must be powered off, or put on vibration, or on silence mode during the class meetings.

**Dropping the Course:**

All deadlines for dropping (with or without a grade) are in the Class Schedule Booklet.

**Method of Course Evaluation:**

The course including the instructor will be evaluated by SIRS for the contents of the course and the quality of teaching.

**Special Needs Learners:**

Please notify the instructor if you have a certificate of disability that will require accommodations. In accordance with the Americans with Disabilities Act, students with bona fide disabilities will be afforded reasonable accommodation. The Office of Support Services for Students and Employees with Disabilities will certify a disability and advise faculty of reasonable accommodations. Please contact the office at (601) 979-3760, (601) 979-6919 (TTY) or visit the website at <http://ccaix.jsums.edu/ada>:

**Diversity Statement:**

Jackson State University is committed to creating a community that affirms and welcomes persons from diverse backgrounds and experiences and supports the realization of their potential. We recognize that there are differences among groups of people and individuals based on ethnicity, race, socioeconomic status, gender, exceptionalities, language religion, sexual orientation, and geographical area. All persons are encouraged to respect the individual difference of others.

**Class Attendance Policy:**

Please refer to the Student Handbook.

**Academic Honesty Policy:**

All acts of academic dishonesty (i.e., cheating on exams, plagiarizing-presenting another person's work as one's own, having another person write one's paper, making up research data, presenting excuses which are untrue for failing to meet academic and professional standards) are a violation of the Jackson State University values, ethics, and University policy, which will entail appropriate penalties.

**Student Decorum Policy:**

Please refer to the Student Handbook.

**MATH 311 Online****Top Hat**

We will be using the Top Hat ([www.tophat.com](http://www.tophat.com)) classroom response system in class. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or via text message (SMS).

You can visit <http://tinyurl.com/THStudentRegistration> for the Student Quick Start Guide which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system. An email invitation will also be sent to your email account (if you don't receive this email, you can register (on a desktop) by visiting our direct Top Hat course URL [tophat.com/e/943907](http://tophat.com/e/943907)). It is also available as an app.

Register: <https://app.tophat.com/register/student/>

Login (after registering): <https://app.tophat.com/>

Top Hat will require a subscription, which is available at the campus bookstore. Or you can purchase it from the Top Hat website. There are three options to choose from:

- \$24 for 4 months of unlimited access
- \$36 for 12 months of unlimited access
- \$72 for lifetime access

**Class Website**

<https://sites.google.com/a/jsums.edu/cwrightjsu/>

**YouTube Channel**

cwrightjsu