COURSE SYLLABUS
Math 560, Section 01
ALGEBRA: STRUCTURE AND APPLICATIONS
CREDIT HOURS: 3
Fall 2007

Classroom and Schedule: Oak Ridge High School, Room C116
                                    27330 Oak Ridge School Road, Conroe, Texas
                                    Mondays, 5:30-8:20 p.m.

Instructor information:
Dr. Dustin L. Jones
Office: Room 421C Lee Drain Building
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Office hours: 1:00-2:00 p.m. Monday through Thursday
                          Many other times available by appointment, email, or simply dropping by

COURSE DESCRIPTION: This course includes the study of algebraic structures (such as groups, rings, integral domains, and fields) and their properties, and activities and concepts related to the algebra of real numbers that are applicable to middle school teachers. The course is designed for inservice middle school mathematics teachers. Prerequisite: Graduate standing. Credit 3.

COURSE OBJECTIVES: Upon completion of this course, students will be able to:
- Display proficiency in identifying and using general algebraic structures
- Solve equations in different algebraic systems
- Describe patterns algebraically using recursive and explicit rules
- Use and apply algebra and algebraic thinking in middle school mathematics

Required Materials:
We will use the following book beginning in November:
Navigating through Algebra in Grades 6-8, by S. Friel, S. Rachlin, and D. Doyle, published by the National Council of Teachers of Mathematics. ISBN 0-87353-501-4

In addition, I will provide you with a number of handouts. Up-to-date course information will be posted on Blackboard. **Please check Blackboard regularly.**

ATTENDANCE AND PARTICIPATION: Regular and punctual attendance is expected of every student. If absent or tardy, you are still responsible for all material covered in class, and you will need to check with a classmate about what was discussed. Serious health or family problems that are well documented will be handled individually.

ASSIGNMENTS: Throughout the semester, homework will be assigned. Some of these assignments will be collected and assessed for credit.

PROJECT: Each student will design and complete a project based on the content of *Navigating Through Algebra in Grades 6-8* (or *Navigating Through Algebra in Grades 9-12*, if it is more appropriate). Possible projects could include writing a small review of literature, implementing one or more activity with middle-grades students, or modifying a set of activities for students in special populations. Students will discuss the design of the proposed projects with the instructor and submit a written proposal. The finished product will include a written report and a presentation to the rest of the class.

TESTS: There will be one midterm exam and a comprehensive final exam. These tests will contain problems similar to those worked in class and contained in homework assignments. Test items will be in a variety of formats, such as multiple choice, short answer, or more extended items that require explanations.
No make-up tests will be given unless the student has an official University excused absence. Arrangements must be made in advance of the exam.
Tentative test dates: October 15 (midterm) and December 10 (final) during regularly scheduled class time.

COURSE EVALUATION: Each student's grade will be based on the following:

Assignments	15% of final grade
Project	25% of final grade
Midterm Exam	30% of final grade
Comprehensive final exam	30% of final grade

Grading Scale

Percent, p	$90 \leq p \leq 100$	$80 \leq p < 90$	$70 \leq p < 80$	$p < 70$
Course grade	A	B	C	F

ACADEMIC DISHONESTY: All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.

CLASSROOM RULES OF CONDUCT: Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. Cellular telephones and pagers must be turned off before class begins. Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers and magazines, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially   disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.

VISITORS IN THE CLASSROOM Unannounced visitors to class must present a current, official SHSU identification card to be permitted in the classroom. They must not present a disruption to the class by their attendance. If the visitor is not a registered student, it is at the instructor's discretion whether or not the visitor will be allowed to remain in the classroom.
This policy is not intended to discourage the occasional visiting of classes by responsible persons. Obviously, however, the visiting of a particular class should be occasional and not regular, and it should in no way constitute interference with registered members of the class or the educational process.

AMERICANS WITH DISABILITIES ACT: It is the policy of Sam Houston State University that no otherwise qualified disabled individual shall, solely by reason of his/her handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any academic or Student Life program or activity. Disabled students may request assistance with academically related problems stemming from individual disabilities by contacting the Director of the Counseling Center in the Lee Drain Annex or by calling (936) 294-1720.

STUDENT ABSENCES ON RELIGIOUS HOLY DAYS: University policy states that a student who is absent from class for the observance of a religious holy day must be allowed to take the examination or complete an assignment scheduled for that day within a reasonable time after the absence. Students will be excused to travel for observance of a religious holy day. A student who wishes to be excused for a religious holy day must present the instructor with a written statement describing the holy day(s) and the travel involved. The instructor will then provide the student with a written description of the deadline for the completion of missed exams or assignments.

TENTATIVE SCHEDULE

Day	Date	Topic
1	8/20	Sets: representations, common sets used in mathematics, cardinality, subsets
2	8/27	Operations on sets
3	9/10	Properties of operations
4	9/17	Familiar algebraic structures: integers and addition, integers and multiplication, rational numbers and addition, rational numbers and multiplication
5	9/24	**Discuss Project with Dr. Jones**
6	10/1	Modular arithmetic Solving equations in modular algebraic structures
7	10/8	Groups: properties and examples **Project Proposals Due**
8	10/15	**Midterm Exam**
9	10/22	Nonabelian groups and rings: examples, solving equations
10	10/29	Zero divisors, integral domains, and fields
11	11/5	The nature and uses of algebra, the nature and uses of variable
12	11/12	Representing data algebraically
13	11/19	Recursive and explicit formulas for patterns of data
14	11/26	Analyzing change
15	12/3	Relationships between abstract algebra and middle grades mathematics **Presentations of Projects**
16	12/10	**Final Exam**

This is a tentative schedule and is subject to change. You will be advised of changes in class. You may always turn in assignments early. If you know that you will miss a test, see me in advance. I look forward to a great semester!