

COURSE SYLLABUS
MTH 5386: SEMINAR IN ALGEBRA FOR TEACHERS
Fall 2017

Instructor: Dr. Mark Klespis Office: LDB 421A
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Course Description

From the catalog: This course consists of a survey of algebraic structures including groups, rings, integral domains, and fields.

This means is we will investigate the mathematical structure that arises when we are given a set and one or more rules (operations) for combining members of that set. This will involve investigating structures in patterns, sorting and then classifying the structures as they arise. Certification in secondary mathematics is required as a prerequisite for this course.

Course Objectives

- Become familiar with the following algebraic structures: groups, rings, fields.
- Critically evaluate these structures via examples and, through proofs, make generalizations about them.
- Develop a broader understanding and appreciation of algebraic structures and how “algebra” (as most people think of it) is a specific type of algebraic structure.

Course Outline

Modular arithmetic and algebra
Mappings and Operations
Introduction to Groups
Equivalence, Congruence, Divisibility
Groups
Introduction to Rings
The Familiar Number Systems

Textbook: *Modern Algebra: An Introduction* (6th Ed) by John R. Durbin.
John Wiley and Sons, Inc.

I would recommend buying a used edition or renting a copy for the semester.

Virtual Office Hours: Office hours will be held through Blackboard Collaborate (a link will be provided on the course Blackboard page). Collaborate is a type of Face Time or Skype environment. You will need to have access to a webcam and microphone.

Course Assessment

Homework	20%
Discussion board participation	15%
Algebraist biography	5%
Major Exams (2)	60%

Weekly plan, starting August 28

- Monday: I will assign readings from the textbook or other documents (which will be uploaded to Blackboard).
- Tuesday: Virtual Office Hours.
- Wednesday: Respond to reading material prompts posted on the discussion board. There will also be space to add questions or concerns about the new material.
- Thursday: My response to discussion board prompts or reading question – either in written form or video. Homework also assigned, to be turned in Monday.

Homework

Problems will be assigned based on the assigned readings. They will be posted once everyone has completed the reading assignment from the textbook (or other materials) and responded to some reading prompts posted on the discussion board (see Discussion Board Participation below). Homework will be submitted as pdf files and placed in a shared folder on Dropbox. If you are not familiar with Dropbox, it is a file hosting service that offers, among other things, allows for cloud storage and file synchronization. You will receive an e-mail with an invitation to access the shared folder.

It is possible to use your smartphone as a scanner. Two apps I use with my iPhone are iScanner (free) and Scanner for Me (\$4.99). Both use your phone's camera to create pdf files.

I will not accept homework that has been photographed because the pictures are sometimes difficult to read, and if printed out, are of poor quality.

Discussion Board Participation

When I teach a face-to-face class, especially at the graduate level, I expect my students to be actively engaged in discussions of the reading material. For this class, the discussion board needs to serve this purpose.

Exams

There will be two major examinations in this course – a mid-term and a final exam.

Algebraist Biography

Each student writes a brief biographical sketch of a well-known algebraist. Names and further information will be given at a later date.

Grading Plan

The letter grade will be determined as follows:

90 – 100	A
80 – 89	B
70 – 79	C
< 70	F

Blackboard outages: While rare, Blackboard sometimes goes down. Should that happen, I will communicate with you via e-mail using your Sam e-mail address.

Syllabus Revision

The instructor reserves the right to revise any part of this syllabus as deemed necessary throughout the semester. Revision, if necessary, will be announced during class.

Stuff SHSU says I have to post in my syllabus:

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, 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.

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 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 problem stemming from individual disabilities by contacting the Director of the Counseling Center in the Lee Drain Annex or by calling 936-294-1720.

Religious Holidays

A student who is absent from class for the observance of a religious holy day will be allowed to take an 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. Upon receiving the statement the instructor will provide the student with a written description of the deadline for the completion of missed exams or assignments.