

Department of Mathematics

Syllabus

MA 435 – 3B, Algebra II-Modern
(also MA 535-3B)

Spring 2022

Instructor: Dr. John Mayer e-mail: jcmayer@uab.edu phone: 934-2154
Assistant: Mr. Thomas Sirna e-mail: tsirna@uab.edu phone: 934-2154

Offices:

Dr. Mayer (UH 4022): Hours: TBA Zoom Contact: 939 460 2319
Mr. Sirna (MLL, HHB 202): Hours: TBA Zoom Contact: 810 460 5149

Preferred Methods of Contact: Email is the preferred method of contact if you have questions. Please expect a response within 24 hours on weekdays and a slower response on weekends. We will expect the same of you. Include MA 435-3B in the subject line of your email for a faster response. We are available to meet with you, virtually via Zoom or in person, during our office hours or by appointment.

Class meeting Time/Location: Monday/Wednesday, 5:30 – 6:45 PM / HHB 221

Course Structure: This course is a “guided inquiry” course. That is, your textbook will be a set of Notes consisting of statements of definitions, axioms, problems, and theorems, and occasional brief explanations. The first chapter is posted to Canvas; check it out before the first class. There will be very little lecture. You will be expected to solve the problems and prove the theorems yourself individually, and in small groups. Please adhere to the “Group Work Rules” below in working with others. Daily small group assignment is at the instructor’s discretion and may be random, student-determined, or instructor-determined. Individual and group work will be “processed” by the class as a whole. Processing involves a whole class discussion of the problem, usually based upon one or more student presentations to the class. You will keep a complete record of your achievements, as well as notes taken in class, in your permanent class notebook. Competence in oral and written communication of mathematics is a major goal of the course.

In a guided inquiry course, when you are working, individually or in a group, you are expected NOT to consult outside sources such as other algebra textbooks, internet websites, smarter friends, or the like. You may work with other students in the class, but if you present the work, you must give credit to all who contributed to it, particularly if you DID consult an outside source. (For example, you would say “Ann and I worked together on this.” Or “I got this argument from Wikipedia.”) This will not diminish your credit, but is required by academic honesty. Moreover, your collaborators are not required to bail you out of difficulty, but may elect to do so.

Materials: The Notes for this course will be available on Canvas or by email (PDF file) from the instructor. You will need to bring to class every day the following items.

1. A 3-ring binder containing labeled sections:
 - a. your printed Notes, complete to date,
 - b. sections titled “Work in Progress” “Lecture Notes,” and “Finished Work,” with all entries up-to-date, and
 - c. your graded written Quizzes.
2. Sharp pencils or pens and paper.

Attendance policy: Attendance at every class meeting is required. Roll will be taken by signing in. ACTIVE participation counts toward your final grade. The following rules apply:

1. Students may not sign the roll for other students. To do so is academic dishonesty.
2. If you come late to the class meeting (more than 10 minutes), do not ask to sign the roll; do not sign the roll if you intend to leave the class early.
3. In case of emergency, students may leave the class without the instructor's permission. Just get the instructor's attention and leave quietly with minimal disruption to the rest of the class.
4. If you will be absent on official university business or scheduled medical appointments, arrangements must be made in advance of the absence.

Cell Phones. Student cell phones must be **on silent/vibrate or off** during all class meetings.

Course Grades: Students earn their grade in the course as determined in the tables below. How each grade component is determined is described in the paragraphs that follow. Recall that a grade of **D** cannot count toward the mathematics major or minor.

Grade Element	Points	Percentage Points Earned	Grade
Class Quizzes	100	87.5% or more (350 points)	A
Canvas e-Quizzes	60	At least 75% but below 87.5% (300 pts)	B
Participation	100	At least 62.5% but below 75% (250 pts)	C
Notebook	40	At least 50% but below 62.5% (200 pts)	D
Final Exam	100		
Total	400	Below 50%	F

Participation. You are expected to participate actively, particularly in small group work and class processing discussions. Mere presence does not constitute ACTIVE participation. Participation points are awarded as in the following table. Note that it is possible to earn MORE than 100 points total for the semester since we will have about 29 class meetings. If so, this will be extra credit. Priority in presenting goes to those students with the fewest points.

Level of Participation	Points
(Merely) Be present in class	1
Contribute meaningfully to class/group discussion	2
Make presentation (partially correct) or contribute substantially to class processing discussion	3
Make good presentation (substantially correct)	4
Make excellent presentation (completely correct)	5

Notebook: Both work done in class, in small groups and individually, and any notes you take based upon whole group discussion or lecture, will be kept in your permanent class Notebook (loose leaf 3-ring binder). Nothing should be erased – just mark it through ~~thru~~ (you should still be able to read what you strikethrough). Your Notebook will be collected periodically and the extent to which you are keeping up with the work required will be evaluated for the Notebook portion of your grade. Expect your Notebook to be evaluated about every third week (4 times total), 10 points maximum each time. You will be amazed at how your work will improve over the semester. Your Notebook should contain the following labeled sections:

- Finished Work (work already processed by the class)
- Work in Progress (such as homework)
- Class discussion/lecture notes
- Notes (as distributed)
- Quizzes

Class Quizzes. Quizzes will be given in class or as take-home without prior announcement, and based primarily upon work done within the current and one or two prior class meetings. Quizzes will be of a similar nature to the types of problems, examples, exercises, and theorems encountered in class and in working through the Notes. You should expect a quiz most weeks. Each quiz counts 10 points unless otherwise specified at the time. (There are no tests that take a full class period.)

Canvas e-Quizzes. Canvas e-Quizzes will be given prior to each class meeting, to be completed before the class meeting. Typically, a quiz will be three short answer or multiple choice questions; each correct earns 1 point. The purpose of this quiz is so that you will have done some work on new material prior to class. Take the Canvas e-Quiz on the syllabus before the first class.

Final Exam. The final exam will consist of a number of problems similar to the major problems and theorems of the course, but not repeating problems in the course. You will be able to select a small number of problems to work on from a longer list for the final exam. The final exam counts 25% of your final grade.

Grading Rubrics. Problems on the Quizzes and Final Exam problems will be graded according to the Problem-Scoring Rubric. Notebooks will be graded according to the Notebook Rubric. Rubrics are on page 4 of this syllabus.

Make-up policy: There are no make-up quizzes or make-ups for absence resulting in decreased participation credit. If you miss a class for a verifiable emergency, necessary medical appointment, or on UAB official business, the instructor will work with you to find an accommodation. Since participation, particularly in small group work and class processing discussion, is a very important part of the course, repeated unexcused absences (or late arrivals) beyond 20% of the class meetings cannot be tolerated for any reason, and will result in a grade of F for the course.

MA 535 Students Only. MA 535 is scheduled with MA 435; MA 535 students participate in all class activities described above without distinction being made between MA 435 students and MA 535 students. However, MA 535 students have an additional requirement: a 5-10 page mathematical expository paper on some aspect of advanced (beyond course topics) ring, field, or group theory or other topic in abstract algebra. The paper counts 20% of your grade, except that the report cannot raise your grade otherwise based on points earned. Recall that the graduate grading scale is A, B, C, F.

Group Work Rules

1. Each member takes responsibility for his/her own learning.
2. Each member of the group is willing to help every other group member who asks for help.
3. Groups may ask the teacher for help only when all group members have the same question.
4. There is always a further challenge.

These rules apply during all small group discussions. Whole group discussions require adherence to the standard rule of classroom engagement: speak and listen respectfully.

UAB Policies and Resources.

Add/Drop and Course Withdrawal

Drop/Add: Deadlines for adding, dropping, or withdrawing from a course and for paying tuition are published in the [Academic Calendar](#) available online. Review the [Institutional Refund Policy](#) for information on refunds for dropped courses.

Withdrawal: To avoid academic penalty, a student must withdraw from a course by the withdrawal deadline shown in the academic calendar and receive a grade of W (withdrawn). Failure to attend class does not constitute a formal drop or withdrawal.

UAB United: Safe Entry to Campus

Please go to the [UAB United website](#) for guidance and resources related to our safe entry to campus in Spring 2022.

Mandatory Masks and Social Distancing Requirements: In accordance with CDC guidelines and for the health and well-being of all faculty, staff and students. Students, faculty and staff are currently required to wear cloth face coverings or face masks at all times indoors and maintain social distancing (per UAB and CDC guidelines) while on the UAB campus. These requirements may be updated from time to time.

Non-compliance with the required items will result in students not being able to remain on campus or participate in any in-person classes, meetings, jobs, extracurricular activities, and events.

We urge you strongly to be fully vaccinated. [Here is information on the safety of vaccines.](#) There are also [incentives for getting vaccinated.](#)

Misconduct: The University of Alabama at Birmingham expects all members of its academic community to function according to the highest ethical and professional standards. Students, faculty, and the administration of the institution must be involved to ensure this quality of academic conduct. Review the Academic Honor Code and Non-Academic Student Code of Conduct linked below.

[Academic Integrity Code](#)

[Non-Academic Student Code of Conduct](#)

DSS Accessibility Statement: UAB is committed to providing an accessible learning experience for all students. If you are a student with a disability that qualifies under Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act, and you require accommodations, please contact Disability Support Services for information on accommodations, registration and procedures. UAB Disability Support Services (DSS) has established a process for UAB students to request temporary adjustments based on the impact of COVID-19. Requests for reasonable accommodations involve an interactive process and consist of a collaborative effort among the student, DSS, faculty and staff. If you are registered with Disability Support Services, please contact DSS to discuss accommodations that may be necessary in this course. If you have a disability but have not contacted Disability Support Services, please call (205) 934-4205, visit [their website](#), or their office located in Hill Student Center Suite 409.

Title IX Statement: The University of Alabama at Birmingham is committed to providing an environment that is free from sexual misconduct, which includes gender-based assault, harassment, exploitation, dating and domestic violence, stalking, as well as discrimination based on sex, sexual orientation, gender identity, and gender expression. If you have experienced any of the aforementioned conduct we encourage you to report the incident. UAB provides several avenues for reporting. For more information about Title IX, policy, reporting, protections, resources and supports, please visit [UAB Title IX webpage](#) for UAB's Title IX, UAB's Equal Opportunity, Anti-Harassment, Duty to Report, and Non-Retaliation policies.

UAB – Algebra II-Modern, Problem-Scoring Rubric

	Conceptual Understanding: <i>Interpreting the concepts of the task and translating them into mathematics</i> <i>(Identifying the “core” of the problem)</i>	Evidence Of Problem Solving: <i>The use of task-appropriate tools and problem solving strategies.</i>	Explanation: <i>Using verbal reasoning and appropriate constructions to best convey the solution.</i> <i>(The explanation flows smoothly.)</i>	Accuracy: <i>Providing a wholly justified solution for the task at hand.</i>
3			Explanation is coherent, and the ideas involved follow logically from previously stated ones.	The solution is completely justified, with no gaps in the argument.
2	Student’s work has demonstrated that he/she has fully identified the major concepts of the task.	The student’s work has demonstrated the strategic use of all task-appropriate tools and problem solving methods.	Explanation is not sufficiently rigorous or something may not immediately follow from what is written.	The solution has one or two minor gaps in justification.
1	Some, but not all, of the major concepts needed were evident.	Not all tools needed for the task are used or the tools are not used in a manner appropriate for solving the problem.	Explanation has multiple gaps or multiple steps need to be inferred.	The solution has major gaps in the justification.
0	Does not achieve minimal requirements for 1 point	Does not achieve minimal requirements for 1 point	Does not achieve minimal requirements for 1 point	Does not achieve minimal requirements for 1 point

Note that it is possible to be lacking in one or more categories (for example, explanation), but receive credit in all other categories.

UAB – Algebra II-Modern, Notebook Rubric

Points	Item	Description
6	Completeness and Organization	0-6 points will be earned each time your Notebook is graded based upon the extent to which all problems, theorems, etc. (up to the point where processing has not yet passed the problem number) is complete and correct. This is based mainly upon the “Finished Work” part of your Notebook. However, points can be lost for lack of organization of your Notebook, incomplete copy of Notes, and other omissions and flaws in Notebook maintenance.
2	Specific Problem	0-2 points will be earned each time your Notebook is graded based upon one problem (previously processed in class) which will be graded carefully for accuracy and quality of explanation.
2	Work in Progress	0-2 points will be earned each time your Notebook is graded based upon your current homework effort (Work in Progress), which will be evaluated for completeness.