Syllabus for Ma 361 - Elementary Modern Algebra I
(Spring 2018)

Time and Place: MWF 10:00 - 10:50, CB 337.

Instructor: Uwe Nagel, POT 763, 257-6793, uwe.nagel@uky.edu.

Office Hours: 11:00 - 11:50 am MWF, or by appointment. You may also consult me by e-mail.

Course Description: Algebra is the study of mathematical structures. These are sets of elements endowed with certain operations. A familiar example is the set of integers with addition and multiplication as the operations. The goal of the course is to become very familiar with fundamental concepts such as groups, rings, fields, polynomials and some of their applications, e.g., in Cryptography. This includes methods for digital signatures.

Algebra is used in almost every branch of mathematics. It is often instrumental in finding connections between seemingly unrelated topics. Moreover, algebraic methods have found numerous applications in many fields outside of mathematics.

The course will cover most of Chapters 0 - 4 of the textbook.

Further Goals:
- Enhance reasoning skills and practice critical thinking.
- Train ability to effectively communicate mathematics in oral and written form.
- Learn to ask new questions and to tackle new problems.

Text: *A first course in abstract algebra* (7th edition) by John B. Fraleigh, ISBN 0-201-76390-7.

Homework and Quizzes: A short quizz will be given during the last 10 minutes of each Friday lecture beginning January 19. Make-up quizzes will not be given without an excused absence.

Homework will be collected regularly. The assignments will be posted on Canvas at https://www.uky.edu/canvas/. In order to receive credit, homework solutions must be written out neatly and handed in at the beginning of the class on the due date. Late homework will not be accepted unless the delay is due to an excused absence.

You are encouraged to discuss homework problems and the course material with each other. However, when it comes time for you to write up the solutions, I expect you to do this completely on your own. It would be the best for your understanding if you put aside your notes from the discussions with your classmates and wrote up the solutions entirely from scratch. Working together on the exams, of course, is expressly forbidden.

Class Participation: You are expected to attend every class and be engaged during class. In class you should ask questions, volunteer to answer questions, and/or do anything else that will keep you wide awake and engaged in the material. You will be allowed 2 unexcused absences with no penalty. Further unexcused absences will cost 10% of your Participation and Homework grade for each additional unexcused absence.

Excused absences will be governed by University Senate Rule 5.2.4.2. Per University Senate Rules, students who are absent for more than one fifth of the scheduled classes are expected to withdraw.

Exams: There will be two midterm and one final exam.

> Exam 1 (CB 337, Feb 16, 10:00-10:50 am)
> Exam 2 (CB 337, Mar 30, 10:00-10:50 am)
> Final exam (CB 337, May 3, 8:00-10:00 am).

All exams are cumulative in the sense that students are expected to know also the material that has been on previous exams.

Grading:

Attendance	25 points
Homework	50 points
Quizzes	50 points
First Midterm	100 points
Second Midterm	100 points
Final Exam	125 points

Letter grades will be assigned to percentages in the following manner: an A requires at least 90%, a B at least 80%, a C at least 70%, a D at least 60%. Less than 60% corresponds to an E.

Further Policies and Expectations:

- Study Groups and Academic Integrity: You are encouraged to work together to understand a problem and to develop a solution. However, the solution you submit for credit must be your own work. Cheating or plagiarism is a serious offense and will not be tolerated. You are responsible for knowing the University policy on cheating (University Senate rules (Section 6.3)).
- Expectations on Work Load: The general rule of thumb for college studying says that students should spend approximately 2-3 hours of extra study time for each hour they spend in class.
- Seeking Help: It is very hard to catch up in a Math course after falling behind. If you need help with the course seek help as soon as possible. Please see me during my office hours or make an appointment.
- Accommodations due to Disability: If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (DRC). The DRC coordinates campus disability services available to students with disabilities. It is located on the corner of Rose Street and Huguelet Drive in the Multidisciplinary Science Building, Suite 407. You can reach them via phone at (859) 257-2754 and via email at drc@uky.edu. Their web address is http://www.uky.edu/DisabilityResourceCenter.