MTH 310, Section 001: Abstract Algebra I & Number Theory

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Office Hours: M 11:30-12:30, W 2-3, Th 9-10

Course Webpage: www.math.msu.edu/~hendricks/MTH_310.html Most course content can be found both here and on D2L.

Location and Time: MWF 10:20-11:10 in A236 Wells Hall.

Content: This is a rigorous first course in abstract algebra. We will learn about the structure of the integers, congruences, rings, ring homomorphisms, ideals and quotient rings. Time permitting, we may also discuss basic properties of groups.

Textbook: T. W. Hungerford, *Abstract Algebra: An Introduction*. **Third Edition**. There are also some helpful supplementary notes on due to Professor Meierfrankenfeld which you can find on the class website.

Prerequisites: At least one of MTH 299, MTH 317H, or the approval of the department; additionally, completion of the Tier I writing requirement.

Attendance Policy: Attendance is not mandatory. However, you are very strongly encouraged to come to lecture. Lecture will often feature additional examples to complement those in the text, opportunities to briefly discuss the material with your classmates, and other useful things reading the textbook cannot provide.

Homework: Homework will be assigned weekly and due at the beginning of Friday's lecture. There will be fourteen homeworks. **No late homework will be accepted. Homework will not be accepted electronically.** However, your lowest two homework scores will be dropped when computing your grade.

Typically three homework problems will be graded carefully, and some points will be given for completeness of the rest of the assignment. To receive full credit, a solution must be written out in clear prose. (This means that a solution should usually take the form of a paragraph of text.) Solutions that are incompletely or unclearly exposed will not receive full credit even if it appears that the mathematical content is correct.

You are encouraged to work in groups on your homework – this is generally beneficial to your understanding and helps you learn how to communicate clearly about mathematics. However, you must write up all solutions yourself. Moreover, since crediting your collaborators is an important element of academic ethics, you should write down with whom you worked at the top of each assignment. You must also cite any sources you use other than the lecture or the textbook (other textbooks, a useful Wikipedia article, etc.)

Quizzes: There will be two short in class quizzes at the beginning of lecture on **Monday, January 28** and **Monday, March 18**. There will not be any make-up quizzes except in extreme and documented circumstances.

Exams: There will be two in-class midterms on **Monday, February 18** and **Monday, April 8**. There will also be a final exam **Thursday, May 2, 7:45-9:45 a.m.** There will be not be any make-up exams except in extreme and documented circumstances.

Grading: Grades will be computed as follows:

- Homework: 20%
- Quizzes 1 and 2: 2.5% each
- Midterms 1 & 2: 20% each
- Final: 35%

A reasonable curve will be applied to the composite numerical scores. The grades may be higher than the scale below, but they will definitely not be any lower.

Percentage	Grade	Percentage	Grade
90-100	4.0	60-65	2.0
82-89	3.5	55-59	1.5
74-81	3.0	50-54	1.0
66-73	2.5	0-49	0.0

Schedule: We will cover most of Chapters 1-7 of Hungerford, essentially linearly. Precise reading for each week will be provided as the course goes on. You will get the most out of lecture if you do the reading *before* coming to class.