MTH 310 Abstract Algebra I and Number Theory, Fall 2014 Course Syllabus

Instructor:	Tsvetanka Sendova
Lectures:	MWF 11:30-12:20 p.m. in A234 WH
Instructor's Office:	C-137 WH
Instructor's Office Hours:	Tu noon - 2:00 p.m., Th 10:30 - 11:30 a.m., and by appointment
Instructor's e-mail:	tsendova@math.msu.edu
Course Web Page:	`http://math.msu.edu/~tsendova/MTH310_F14/MTH310_F14.html`

Required Course Materials

- Textbook: Abstract Algebra, 2nd Ed., Thomas Hungerford, Cengage Learning 1996 Chapters 1-7, ISBN13: 978-0030105593.

Topics
Topics include structure of the integers, congruences, rings, ring homomorphisms, ideals, quotient rings. This is a writing course with an emphasis on proofs.

Attendance
Students are expected to attend all class meetings and are responsible for all of the material covered in class and in the homework. Any changes in this syllabus or in the scheduling of exams, quizzes, etc. will be announced during class meetings (usually at the beginning of class so please don't be tardy).

Policy for Missing a Required Assignment

- Excused absences will be given only with documentation and only for valid medical reasons, university business, or appearances in court.

- Any unexcused exams will be counted as a 0, including the final exam.

- Any student with a valid reason to be excused from an exam must contact the instructor prior to the exam and present documentation in the next class session attended. If a student misses an exam due to a medical emergency, then s/he will take the exam the next day s/he is back at school at a time chosen by your instructor; documentation of the emergency must be provided.

Class Expectations

1. You are expected to come to every class.

2. You are expected to own the book.

3. You are expected to check the class website on a regular basis. This is where homework assignments, supplementary reading materials and class announcements will be posted.

4. You are expected to pay attention and participate in class.

5. You are expected to spend at least 90 min between each lecture working on your homework and reading the book and supplementary materials.

Exams and Other Important Dates

Last day to drop the class with tuition refund	Monday, September 22
Midterm Exam I	Friday, October 3
Last day to drop the class	Wednesday, October 15
Midterm Exam II	Friday, November 14
Final Exam	Wednesday, December 10, 10:00 a.m. - noon

Evaluation

There will be two in-class exams (20% each), graded homework (20%), numerous "short" quizzes and more traditional weekly quizzes (15%) and a final exam (25%). The grading scale will be no worse than what is shown below:

Graded Components		Grading Scale (x is your percent score)	
Homework	20%	4.0	$90 \leq x$
Quizzes	15%	3.5	$85 \leq x < 90$
Midterm Exams	$2 \times 20\%$	3.0	$80 \leq x < 85$
Final Exam	25%	2.5	$75 \leq x < 80$
		2.0	$70 \leq x < 75$
Total grade out of	100%	1.5	$65 \leq x < 70$
		1.0	$60 \leq x < 65$
		0.0	$x < 60$

Grading Criteria

All of your work in the course will be graded according to three criteria.

1. Does your work **effectively communicate** your reasoning and methods?

2. Does your work **completely answer** the question posed?

3. Does your work **correctly answer** the question posed?

Solutions which ineffectively communicate your ideas, which omit or incompletely address the questions posed, or which include inaccuracies or errors will be penalized.

Homework

Homework will be assigned daily and collected each Friday class, unless stated otherwise. Late homework is not accepted without an excused absence (e.g. medical emergency, official university business, court appearance, etc., with documentation and advance notification if possible). Each homework assignment is worth 20 points. Not every homework problem will be graded; but using those which are graded a score from 0 to 20 will be determined.

Short and Traditional Quizzes

There will be weekly traditional quizzes, each lasting about 10 minutes. Each 10 minute quiz is worth 15 points. There are no make-up quizzes except in the case of a medical emergency; you must provide documentation.

There will also be numerous short quizzes, each worth 5 points, that will be unannounced. There will be no make-up for these quizzes. The lowest 2 scores for short quizzes will be dropped when calculating the midterm grade and the lowest 4 scores for short quizzes will be dropped when calculating the final grade.

Ungraded Work

You will not be successful in this course if you only complete the graded assignments. You must, in addition, regularly test your understanding by attempting exercises in the textbook and by attempting problems which we work on as a class during lecture and recitation. If you have not mastered the material, then you should not expect to achieve a high exam score. Moreover, if you are unable to solve at least half of the recommended textbook exercises without making multiple or serious errors, then you should not expect to receive a passing grade on exams.

Students with Disabilities:

MSU has a Resource Center For Persons with Disabilities (RCPD): `http://www.rcpd.msu.edu/` Please contact the RCPD if you require special accommodations, and then schedule an appointment to meet with your instructor and accommodations can be provided.

Academic Honesty

Cheating in any form will not be tolerated and will be reported. You will receive a zero on any assignment in which there is a case of cheating. This includes, but is not limited to, plagiarism, failure to give proper citations, and copying another's work.

If you are preparing an assignment and have a question about whether you are adhering to this policy, please ask your instructor. If you work on an assignment with other students, you must give credit to your collaborators.

MSU's policy on academic integrity can be found at the following URL: `https://www.msu.edu/~ombud/academic-integrity/index.html`.

Student Responsibilities

Attend class & arrive prepared. Regular attendance is required. Before attending the lecture, read the current textbook section. At minimum, attempt to work through the first several examples in each current section, and write down any questions you have. Work through the textbook exercises for the current sections and keep a notebook to record your progress.

Read outside of class. You should always have paper and pencil readily available when reading a mathematical text. Work through the examples by writing the steps out yourself until it is clear to you that the solution in the textbook is correct. Once a topic has been introduced in lecture, you should re-read the corresponding sections from the text. You should work on the exercises at the end of these sections until you are proficient. I encourage you to work with other students and to help one another succeed in the course.

Participate in class. Be attentive and stay alert. Work with your classmates, especially those adjacent to your seat. Take careful notes on those topics which are unfamiliar. Ask questions! Don't be shy: we all are here to learn!

Complete the homework assignments. Start homework assignments early and discuss these with your classmates. Write your attempts to solve the homework on scratch paper. You must re-write— carefully and neatly— your solutions according to the requested format. When your homework is returned with a grade, compare your solutions to the posted answers and solutions; you might learn a new technique or another way to understand a concept.

Work through the textbook exercises. Attempt these problems and test your understanding. Ask questions about these exercises. Ask your classmates, your instructor, your roommate, etc. Part of the fun of mathematics is that you can discus mathematical problems with others and together you can discover a solution.

Utilize office hours. Please consider bringing your questions to office hours. Office hours are times set aside specifically as an opportunity for you to get additional help. If your schedule conflicts with the scheduled office hours, please make an appointment by sending a request by e-mail.

Please do not think of this as an inconvenience to your instructor; additional help is available if you seek it out. However, it is your responsibility to come to office hours only after first making a sincere effort to answer questions on your own. Learning is difficult: work hard, try new ideas, and ask questions. If you do this, you will see definite progress.

Send questions via e-mail. When e-mailing your instructor, be sure to state your question clearly. If you are asking about a specific exercise or example in the text, be sure to restate the problem in its entirety.

Final Thoughts

The best way to learn mathematics is to write down solutions to specific mathematical problems. If you are able to solve most of the assigned problems, then I am confident that you will do very well in the course. But don't limit yourself to the assigned problems; the textbook offers a variety of interesting problems. Challenge yourself! Try working out problems that sound interesting to you. If you want more

practice or want more challenging problems, please drop by my office during office hours or make an appointment to meet with me.

If you are falling behind in the course, please seek help ASAP. There is help available during office hours, from your classmates (just ask them!), and in the Math Learning Center.

I want you to succeed in this course, and I'm here to facilitate this goal. But the burden is upon you to work hard, to set aside realistic amounts of time for study, and to seek out help when you need it.

Some final advice: read the textbook. Then work some problems and read the textbook again. I cannot emphasize this enough. Learn to read the textbook. It is the key to being able to learn and apply mathematical techniques to problems you encounter outside of this class and down the road.