MTH 299 Transitions, Spring 2014 Course Syllabus

Instructor:	Tsvetanka Sendova
Lectures:	MWF 12:40-1:30 p.m. in A-104 WH
Instructor's Office:	C-137 WH
Instructor's Office Hours:	M, W, Th 2:30 - 3:30 p.m. and by appointment
Instructor's e-mail:	tsendova@math.msu.edu
Recitation:	Th 12:40 - 2:00 p.m. in 255 Baker Hall
Learning Assistant (LA)	Ethan Davis
LA's e-mail:	daviset1@msu.edu
Course Web Page:	`http://math.msu.edu/~tsendova/MTH299_S14/MTH299_S14.html`

Required Course Materials

- Textbook: Chartrand, Polimeni, and Zhang. *Mathematical Proofs: A Transition to Advanced Mathematics*, Third Edition (2012).

Topics

MTH 299 Transitions is an introduction to writing mathematical proofs. Topics include sets, logic, proof techniques, mathematical induction, divisibility and limits.

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.

Graded Components		**Grading Scale**	
		(x is your percent score)	
Homework (38)	175 pts	4.0	$90 \leq x$
Quizzes (13)	175 pts	3.5	$85 \leq x < 90$
Midterms Exams (2)	200 pts	3.0	$80 \leq x < 85$
Final Exam	200 pts	2.5	$75 \leq x < 80$
		2.0	$70 \leq x < 75$
Total grade out of	750 pts	1.5	$65 \leq x < 70$
		1.0	$60 \leq x < 65$
		0.0	$x < 60$

Exams

Midterm Exam I	Thursday, February 13, during recitation
Midterm Exam II	Thursday, April 3, during recitation
Final Exam	Tuesday, April 29, 5:45 - 7:45 p.m.

You must take the exams at the specified time and on the specified date. If you miss the exam due to a medical emergency, then you will take the exam the next day at a time chosen by your instructor; you must provide documentation of your emergency.

Homework

Homework will be assigned daily and collected in class after the next. 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 5 points. Not every homework problem will be graded; but using those which are graded a score from 0 to 5 will be determined using the following criteria:

completeness	(whether the problem was attempted in its entirety)	20%
correctness	(accuracy of the solution)	40%
communication	(clarity of writing and presentation)	40%

Your submitted work must include a clear and complete statement of each problem that you attempt to solve. Often the most difficult step in solving a mathematical problem is correctly recognizing the nature of the problem and choosing methods which are likely to be applicable. If you do not know how to solve a particular problem, try to write a partial solution or try to express which aspect of the problem you are struggling with.

Solutions to some problems will be posted, while others may be discussed in class. The maximum total homework score is 175 points, although more than 175 points are available. There will 38 assignments in all.

Quizzes

There will be 13 quizzes, each lasting about 20 minutes. Quizzes are given in recitation on days in which there is not an exam. Each quiz is worth 15 points. There are no make-up quizzes except in the case of a medical emergency; you must provide documentation. The maximum total quiz score is 175 points, although more than 175 points are available.

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 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.

Calculator Policy

The use of calculators is not be permitted on any of the exams or quizzes. Moreover, approximate answers will be penalized when an exact answer can be obtained. However, you are welcome to use your calculator or a computer to test your understanding while studying outside of class or working on homework assignments. If you use such devices to solve written homework assignments, be certain to write your solution in such a way that a calculator is not needed to read your solution.

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 (and eraser!) readily available when reading 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 LA, your instructor, your roommate, your lab parter, etc. Part of the fun of mathematics is that you can discus mathematical problems with others and together you can discover a solution.

Attend recitation. You are required to attend the recitation. Prepare for recitation by making a list of specific problems or concepts with which you would like additional help. Please keep in mind that if time runs out before your question is answered that you can send questions via e-mail to either your instructor or your LA.

What is recitation? Recitation is a problem solving session lead by your Learning Assistant (LA). The recitation will typically consist of a question and answer session followed by an opportunity to solve problems suggested by the LA. Additionally, there will usually be a quiz administered at the end of each recitation.

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.