

## MTH 202 Section 1

## SYLLABUS

Fall 2008

<b>Times:</b>	MWF 10:20 am - 11:10 am	<b>Phone:</b>	(517) 353-0844
<b>Location:</b>	C-213 Wells Hall	<b>E-mail:</b>	hayrapet@math.msu.edu
<b>Instructor:</b>	Gurgen (Greg) Hayrapetyan	<b>MLC Shifts:</b>	Monday, Wednesday 12:40 pm - 1:40 pm
<b>Office:</b>	A-114 Wells Hall	<b>Office Hours:</b>	Friday 12:40 pm - 1:40 pm, and by appointment

**Math Learning Center:** MTH 202 has a separate room in the Math Learning Center. Starting from August 27, it will be open Mondays and Wednesdays 12:40 pm - 1:40 pm.

**Class Webpage:** [https://mathdata.msu.edu/CP/RW/S202\\_001.html](https://mathdata.msu.edu/CP/RW/S202_001.html)

**Texts:** We will be using a course pack and six actual elementary and middle school books:

- *Elementary Geometry for Teachers (Course Pack)*, by Thomas H. Parker and Scott Baldrige.
- *Primary Mathematics textbooks (U.S. Edition)*: 3B, 4A, 5A, 5B, and 6B. (Note: 4A and 5A books were already used in Math 201). Many problems from these books are assigned as Homework in our main textbook.
- *New Elementary Mathematics*: New Elementary Mathematics I, a textbook for Grade 7.

**Tools:** You will need a compass set for the course. This set should include: (i) a reliable compass, (ii) a setsquare, (iii) a 6" ruler (with both inch and cm markings), and (iv) a 3" protractor.

**Prerequisites:** MTH 201 and a declared major in the Elementary Teaching Certification Program.

**Goals:** MTH 201-202 is a series of mathematics courses focused on the mathematics needed for K-8 teaching. While MTH 201 focused on arithmetic and algebra, MTH 202 focuses mostly on geometry and measurement. Main goals are:

- to acquire a solid knowledge of this material, enabling prospective teachers to quickly solve any related K-8 problem,
- to understand the levels of this content elementary school students need to learn before and after each K-8 grade.

In addition, we will discuss Teacher Knowledge, including:

- how to present the material in the simple, clear ways,
- the appropriate sequential order for developing mathematics skills,
- what the students will find difficult and what errors they are likely to make,
- how each topic helps advance the mathematical level of the students.

**Expectations:** Classes will be primarily lectures, with problem solving individually and in small groups. You are expected to take complete notes, to participate in class activities, and to ask questions about what you do not understand. **YOU ARE REQUIRED TO HAVE TWO SEPARATE NOTEBOOKS**, one for lecture notes, and one for the homework. Attendance will be taken daily and homework will be checked weekly.

**Grades:** There will be three 50-minute Exams each worth 100 points, weekly Homework Evaluations worth a total of 100 points (only the ten highest Evaluations will count), a 200-point uniform comprehensive Final Exam.

**Notice:** There are a total of 600 points for the course: The Final is one-third, and the Exam Total is one-half of the grade.

Your total number of points will be converted into a percentage (dividing the added scores by 6) and your grade will be determined by the following grading scale:

90% – 100%	4.0	75% – 79%	2.5	60% – 64%	1.0
85% – 89%	3.5	70% – 74%	2.0	0% – 59%	0.0
80% – 84%	3.0	65% – 69%	1.5		

*This scale will not be curved.* However, participation, attendance, and performance trends will be considered for grades in the borderlines. Hence, grades are based on knowledge and understanding, not upon comparisons with other students.

**Homework:** There are Homework Sets at the end of each section in the course pack, *Elementary Geometry for Teachers*. You are expected to work on all of the problems in these homework sets, as the sections are covered. Approximately one section will be covered every day, hence you will work on (roughly) 3 homework sets per week. You are expected to write solutions to all of the problems for that section and bring your completed homework to the next class.

You should plan on spending at least **2 hours** on homework for each class meeting. You are encouraged to work in groups for the harder homework problems. However, working in groups does NOT mean copying solutions immediately before class. **START EARLY, FORM STUDY GROUPS**, and explain the solutions to one another when working together.

We will have brief in-class *Homework Evaluations* on the Friday of each week, in the first 5-10 minutes of the lecture. These will consist of selected problems from the homework sets of the past week, exactly as they appear in the book. During the time allowed, you will copy your solutions from your Homework Notebooks, having a chance to correct any mistakes or fill in any gaps that you might notice at the time. Your instructor will also check the amount of work on the related sets in your Homework Notebook. A portion of the Evaluation grade will depend on this *Notebook Check*.

Homework Evaluation grades will be based on both the correctness and the *clarity* of your solutions; you will be graded according to what is expected of teachers, not K-8 students. Skill at giving clear *Teacher's Solutions* takes practice. Do not be discouraged if you lose points for lack of clarity, instead use the feedback to improve this skill for the Exams.

#### Attendance:

- Lectures:* You are expected to attend all class meetings. If you must miss a class, acquire the notes from a classmate.
- Exams:* Missing an Exam without an advance valid excuse presented to the Instructor will result in a score of 0 pts. Commercial or leisurely travel schedules are not valid excuses. **No Make-up Exams will be given.**
- Evaluations:* There will be no make-up or excused Evaluations, since only the ten highest Evaluations will count.
- Final Exam:* Any student having another Final scheduled during the time of MTH 202 Final, or having two other final exams scheduled that same day, may take the Make-up Final Exam, which will be given the next day. If you qualify for the Make-up Final, you must fill out a request in A212 Wells Hall no later than Friday, 12/05, and provide a recent copy of your schedule as documentation. You will not be allowed to take the Make-up Final without registering. Students taking the Make-up Final Exam **MUST** have a pictured ID.

**Calculators:** Calculators are not allowed throughout the course, since the problems are designed to be solved without calculators, and Teacher Knowledge includes the arithmetic skills needed in Elementary School (as seen in MTH 201).

**Miscellaneous:** All students are expected to adhere to the University's policy concerning academic integrity. It is covered in the Spartan Life booklet under General Student Regulations. According to the handbook, no student shall claim or submit the work of another as one's own. For more information about this and other scholarship issues, please consult the handbook or visit the Spartan Life web site at <http://www.vps.msu.edu/SpLife/index.htm>.

#### Important dates:

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|----------|-------|---|
| Monday   | 08/25 | Classes begin. Late enrollment fee begins for first-time enrollers.                           |
| Friday   | 08/29 | Close of online enrollment and the last day to change Credit/No Credit.                       |
| Monday   | 09/01 | Labor Day. Classes cancelled.   |
| Tuesday  | 09/02 | From this day on, students must go to A212 Wells Hall for enrollment changes in math courses. |
| Friday   | 09/05 | Last day to change a section within a course or add a course (at A212 Wells Hall).            |
| Thursday | 09/18 | Last day to drop a course with no record on transcript and receive a full refund.             |
| Tuesday  | 10/14 | MIDDLE OF SEMESTER. Last day to drop a course with no grade reported.                         |
| Thursday | 11/27 | Thanksgiving holiday. University closed.  |
| Friday   | 11/28 | Thanksgiving holiday. University closed.  |
| Friday   | 12/05 | Classes end.  |
| Monday   | 12/08 | Final Exam: 10:00 am - 12:00 noon (Location to be announced during the last week of classes.) |

#### Exam Schedule

- Exam 1: Friday, September 26  
Exam 2: Friday, October 24

- Exam 3: Friday, November 21  
Final: Monday, December 8, 10:00 am - 12:00 noon

Key: EGT stands for Elementary Geometry for Teachers; NEM for New Elementary Math 1 Syllabus D; Primary Math Books 3B, 4A, 5A, 5B, 6B.

Date	Bring to class <i>Always bring a compass, ruler, protractor, and set square.</i>	Section/Topic	Read	Homework Set
August 24	4A & 6B	1.1 Measurement Probs	About and §1.1	HW Set 1
26	3B & 5B	1.2 Learning to Measure	§1.2	Set 2
28	3B, 4A, 5B, 6B	1.3 Weight and Capacity	§1.3	Set 3
31	4A & NEM	1.4 Measuring Angles	§1.4	Set 4
September 2	NEM	2.1 Fund. Geo Ideas	§2.1	Set 5
4	5B & NEM	2.2 Triangles	§2.2	Set 6
7	5B & NEM	2.3 Symmetry and Triangles	§2.3	Set 7
9	5B & 6B	2.4 Quadrilaterals	§2.4	Set 8
11	NEM	2.5 Geo. Constructions	§2.5	Set 9
14	5A, 5B, 6B, NEM	3.1 Unknown Angles	§3.1	Set 10
16	NEM	3.2 Angles & Parallel Lines	§3.2	Set 11
18	NEM	3.3 Angles of a Polygon	§3.3	Set 12
21	Review			
23	Test 1			
25		Intro & 4.1 Angle Proofs	§4.1	Set 13
28		4.2 Congruent Triangles	§4.2	Set 14
30	NEM	4.3 Applying Congruence & 4.4 Quadrilaterals	§4.1 and §4.2	Set 15 and problems 1, 2, 6 of Set 16
October 2	Fall Break			
5	3B & NEM	5.1 Area Units	§5.1	Set 18
7	3B & 4A	5.2 Rectangles and Area	§5.2	Set 19
9	5A & NEM	5.3 Area of Triangles	§5.3	Set 20
12		6.1 Pythagorean Theorem	§6.1	Set 21
14		6.2 Square Roots & Pythag	§6.2	1–15 of Set 22
16	NEM	7.1 Similar Right Triangles	§7.1	Set 24
19	NEM	7.2 Similar Triangles	§7.2 & §7.3	Set 25
21	Review			
23	Test 2			
26	NEM	8.1 Area and Scaling	§8.1	Set 28
28	NEM	8.2 Circles and Pi	§8.2	Set 29
30	NEM	8.3 Area of Circles	§8.3	Set 30
November 2	NEM	8.4 Approximation	§8.4	Set 31
4	4B & 5B	9.1 Volume	§9.1	Set 32
6	6B & NEM	9.2 Metric Volume	§9.2	Set 33
9	6B & NEM	9.3 Prisms and Cylinders	§9.3	Set 34
11	NEM	9.4 Pyramids and Cones	§9.4	Set 35
13		9.5 Spheres	§9.5	Set 36
16	3B, 4A, 5B, 6B	10.1 Data displays	§10.1	Set 37
18	5B	10.2 Center of data sets	§10.2	Set 38
20		10.3 Probability	§10.3	Set 39

23	Review			
25	Test			
27	Thanksgiving			
30		10.4 Inferential Statistics	§10.4	Set 40
December 2	Review			
4	Review			
December 8		Comprehensive Exam		