

George Mason University
MATH-271-001 – Mathematics for the Elementary School I (3 credits)
Fall 2017

Instructor: Joanna Jauchen

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Instructor Policies:

1. Please do work in pencil.
2. Because of the nature of the course, I don't accept late work.
3. Unless we're using them in class, please turn off computers and phones upon entering class. Please also be sure to put away anything not related to this course.

Class Meeting Time and Location: Robinson B106
MW 10:30 – 11:45

Office Hours: Mon/Wed 1:30 – 3 pm (please email me and let me know you're coming)
Also office hours by appointment

Required Materials:

1. Mathematics for Elementary Teachers, A Conceptual Approach. 9th Edition. Bennett, Burton and Nelson.
2. Large Ziploc bag of manipulatives – including blue base 10 blocks and a geoboard (at the GMU bookstore)
3. A Pencil bag containing the following: colored pencils or pens, graph paper, glue stick and/or tape, ruler with cm and in, internet access, a *small stapler*** and scissors. Also four dry erase markers in different colors, and something to use as an eraser for the whiteboards (old sock, washcloth, etc). Oh – don't forget creativity and patience.

Course Description: Concepts and theories underlying elementary school mathematics, including sets, logic, systems of numeration, whole numbers, integers, fractions, decimals, measurement, operations with real numbers, equations, and inequalities. Intended for school educators; does not count toward a major in mathematics.

Blackboard: I will use Blackboard extensively in this course to post assignments, videos, announcements and to facilitate class discussion. Please plan to check Blackboard daily for updates about the course.

**Preparedness /
Collaboration:**

In this course, we will spend almost all of our time exploring mathematical ideas in groups of 3-9 people, engaged in active learning assignments. In order to get the most out of class, and also be a contributing member of your group, you need to come prepared for class each day. I will also ask you to be intentional and think carefully about how to make your group a great place to work and learn. Your Collaboration grade will be based on our observations of how you are working with each other. Some of the things I will be looking for are:

Being prepared means:

- Doing all assigned readings and work before class
- Asking questions about homework and concepts before coming to class
- Bringing all necessary materials to class, as instructed

Collaborating in class means:

- Making thoughtful contributions to the group discussions and activities
- Encouraging a positive group atmosphere where all participant views are valued equally
- Ensuring all group members have an opportunity to voice their views
- Staying on task (no cell phones, texting or off topic conversations)
- Being on time and staying engaged for the entire class

Significant deductions are taken for using cell phones during class. Your collaboration grade is 15 points. The first time you are using a cell phone, I take off 5 points. The second time is another 5 points. After that, I ask you to leave class.

Reading

Reading your conceptual textbook will be vital in this course. I will discuss some strategies for making the most of this during class, but some tips include:

- Reading should be active – read with a pencil, make notes, and answer the questions asked in the text
- Mark anything you have questions about with a sticky note and then come ask one of us about them. Be sure to write yourself notes about what I find together.
- Consider keeping a notebook of notes from your reading – you need to restate important concepts in your own words.

In Class Work:

As noted above, we will be actively collaborating on mathematical tasks and activities during class. Many of these activities and tasks will have a final product that will be collected at the end of the class period. If you miss class, you miss the opportunity to turn these assignments in. Missed In-Class assignments radically affect your collaboration grade.

Out of Class Work:

Homework is assigned every day in this course – out of the book, online and in handouts. You will turn in all homework that is posted and I grade a random sample of the assigned problems.

Assignments are listed at the end of this syllabus with some links in our Blackboard shell. See assignment list for specific due dates and formatting requirements. No late work is accepted. No assignments are accepted via email.

**Tests & Final
Exam:**

There are 3 exams in this course, and one comprehensive final exam. There are no make-up exams.

Exams are scheduled to be taken on the dates indicated in the schedule on the last page. I reserve the right to change exam dates as the semester progresses.

The final exam date is also given on the last page. There are no make-ups for the Final Exam, and the Final Exam will not be given early.

**Requirements and
Grading:**

3 Unit Tests	45%
Out of Class Work	15%
Collaboration (including In-Class work)	15%
Comprehensive Final Exam	25%

Scale:	100-90	A
	89-80	B
	79-70	C
	69-60	D
	59-0	F

+/- will be based on instructor discretion

Withdraw & Audit See the GMU website for important add/drop deadlines: <http://registrar.gmu.edu/calendars/fall-2014/>

Academic dishonesty and the GMU Honor Code: You are expected to follow the GMU Honor Code <http://academicintegrity.gmu.edu/honorcode/>

No collaboration is allowed on quizzes or tests. Any indication that you have worked together, used someone else's ideas, copied, or allowed fellow student to copy your work is a violation of the GMU Honor Code. Copying homework or classwork is also not allowed. Copying solutions out of the back of the book is also not allowed. You are expected to be a full contributing member of your group.

Some of the behaviors that will be considered cheating are:

- Communicating with another person during an assessment
- Copying material from another person from any assignment being graded
- Allowing another person to copy from any assignment being graded
- Use of unauthorized assistance on any assignment being graded
- Use of unauthorized notes or books during an assessment
- Providing or receiving a copy of a quiz or exam used in the course
- Use of a cell phone during an assessment

Learning Differences & Special Needs If you have a learning or physical difference that may affect your academic work, please see me and contact the Office of Disability Services (ODS) at 993-2474, <http://ods.gmu.edu> . All academic accommodations must be arranged through the ODS.

Counseling and Psychological Services Counseling and Psychological Services are available for GMU students. <http://caps.gmu.edu>
703-993-2380

University Policies The University Catalog, <http://catalog.gmu.edu>, is the central resource for university policies affecting students, faculty and staff conduct in university academic affairs. Other policies are available at <http://universitypolicy.gmu.edu/>. All members of the university community are responsible for knowing and following established policies.

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Schedule is tentative and subject to change.

Class	Topic	Lesson
8/28	Class Introduction 1.1 Problem Solving	Lesson 1
8/30	1.2 Patterns and Sequences	Lesson 2
9/4	NO CLASS – Labor Day	
9/6	2.1 Sets, the Real Number System and Properties of Operations	Lesson 3
9/11	2.3 Logic	Lesson 4
9/13	3.1 Numeration systems and Place value	Lesson 5
9/18	Counting Quiz 3.2 Addition of Natural Numbers	Lesson 6
9/20	3.2 Subtraction of Natural Numbers	Lesson 7
9/25	3.2, 5.1 Addition and Subtraction of Integers	Lesson 8
9/27	Solving Problems from Unit 1	Lesson 9
10/2	Exam 1	
10/4	3.3, 5.1 Multiplication of Natural Numbers and Integers	Lesson 10
10/9	No class – Columbus Day	Lesson 11
10/10	TUESDAY! COME TO CLASS 3.4, 5.1 Division of Natural Numbers and Integers	Lesson 12
10/11	4.1 Factors and Multiples 4.2 Greatest Common Factor and Least Common Multiple	Lesson 13
10/16	5.2 Rational Numbers	Lesson 14
10/18	5.3 Multiplication and Division of Rational Numbers	Lesson 15
10/23	5.3 Addition and Subtraction of Rational Numbers	Lesson 16
10/25	Linear Units of Measure and Conversions	Lesson 17
10/30	Problem solving Unit 2	Lesson 18
11/1	Exam 2	
11/6	6.1 Decimals and Rational Numbers	Lesson 19
11/8	6.2 Addition and Subtraction of Decimals	Lesson 20
11/13	6.2 Multiplication and Division of Decimals	Lesson 21
11/15	6.3 Percents with Decimal Squares	Lesson 22
11/20	6.4 Irrational and Real Numbers	Lesson 23
11/21 – 11/26	No class. Thanksgiving	
11/27	Problem Solving Unit 3	Lesson 24
11/29	Exam 3	
12/4	6.4 Irrational and Real Numbers	Lesson 25
12/6	Final Exam Review	Lesson 26
12/13	Cumulative Final Exam From 10:30 – 1:15 pm	

MATH-271-001 – Mathematics for the Elementary School I (3 credits)**Fall 2017****Homework**

Due Dates for Homework are listed below. Occasionally, additional assignments may be given in class, at instructor discretion. Otherwise, items listed below are due at the beginning of class, on the date listed. No late work is accepted, which means if you are late to class, your assignments will not be accepted.

Each assignment needs to have your full name on it (First and Last name), your table number and the title of the assignment in the upper left corner. Each separate bulleted assignment should be stapled separately. No assignments will be graded without adhering to these formatting requirements.

TQ means Teaching Questions

CC means Classroom Connections

Due Date	Title	Assignment
9/6	Lesson 1: Section 1.1	Problems 1, 3, 5, 6, 9, 12, 13, 17, 23 and pick one more from page 17
	Lesson 2: Section 1.2	Problems 2, 4, 22, 29, 30, 40, 44 (try using real coins on this problem), 46 and "Teaching Questions" Problem 2
9/11	Lesson 3: Section 2.1	Problems 5 - 10, 21, 22, 24, 26, 28 and TQ2
	Lesson 3: Section 6.4	Problem 2, 14
9/18	Lesson 4: Real Number System	Page 159, Problem 16 Page 181, Problem 16 Page 204, Problem 24 Page 277, Problem 26 Page 331, Problem 22 Page 428, Problem 16
	Lesson 5: Section 3.1	Problems 5, 6, 13, 14ab, 16, 20 22ab, 24, 26, 38, 42, CC 2, CC3, CC4
9/25	Lesson 6: Section 3.2	Problems 3a, 4ab, 8ad, 14ab, 20a, 24ac, 32a, 43, 45
	Lesson 6: Scratch algorithm	See Blackboard for link to file
	Lesson 7: Section 3.2	Problems 8bce, 21, 28, 32c
	Lesson 7: Base 5 Addition Table	See Blackboard for link
	Lesson 7: Station Check	See Blackboard for link
9/27 (Wed)	Lesson 8: Section 5.1	Problems 6, 8, 10, 12, 18, 25a, 26b
	Lesson 8: Station Reflection	See Blackboard for details
10/10	Lesson 10: Section 3.3	Problems 8, 10, 13, 14, 15, 16, 22, 32, 45
	Lesson 10: Section 5.1	Problems 16, 20ab, 23ab, 24, 25b, 35, TQ2
	Lesson 10: Base 5 Multiplication Table	See Blackboard for link
	Lesson 10: Negative times Negative	See Blackboard for information and assignment
10/16	Lesson 12: Section 3.4	1, 3, 5, 7, 15, 16, 17b, 19, 23, 25ab (do using long division and Magic 7 for both), 27, 29ab, 31, 33ab, 35acd Choose one more from 50, 51, 57
	Lesson 12: Section 5.1	Problems 13e, 20cd, 29d, 33a, 35b
	Lesson 13: Section 4.1	Problems 3, 4, 5, 6, 8a, 8b (use base 10 grid paper to show array), 11, 12, 17, 18
	Lesson 13: Section 4.2	Problems 1- 11 all, 14, 15
	Lesson 13: Adding the opposite	See Blackboard for assignment
10/23	Lesson 14: Section 5.2	Problems 11, 12, 13, 14, 21ab, 22ac, 25, 26, 39
	Lesson 15: Section 5.3	Problems 6cef, 13dgh, 14bcfgi, 16, 19b, 20ab, 21b, 22a, 32 (Draw the area model showing partial products and show related algebraic work), 38, 40, 50, and TQ4

10/30	Lesson 16: Section 5.3	Problems 5ab, 6ad, 13abefi, 17ab, 19ac, 21a, 22b, 23ab, 27ab, 30
	Lesson 16: Fraction Word Problems	See Blackboard for assignment
	Lesson 17: Section 10.1	Problems 2, 5, 8, 10, 13, 20, 26, 28, 33, TQ1
11/13	Lesson 19: Section 6.1	Problems 6, 18, 19, 21, 35, 38, 39, 44, 45, TQ2 (Use decimal squares as needed in your homework. You can cut them out and paste/tape them in at the appropriate place. See Blackboard for these printouts)
	Lesson 20: Base Block Decimal Homework	See Blackboard for assignment
	Lesson 20: Section 6.2	Problems 17ab, 30bc, 42, 46
11/20	Lesson 21: Section 6.2 Reading	Read Section 6.2 and take notes. After your notes, answer the question: Did we do anything different in class?
	Lesson 21: Section 6.2	Problems 11, 13, 15, 17cd, 19, 27, 30ad, 31
	Lesson 22: Section 6.3	Problems 8, 10, 14, 16, 18, 30, 31
11/27	Lesson 23: Section 6.4	Problems 2, 6, 10, 14, 15, 16, 17, 20, 21, 24, 34
12/7	Lesson 25: Self-Reporting on Final Exam Review	See blackboard for instructions.