MATH 130-Spring 2019-Online

I. Instructor Information

Course: MATH 130 Elementary Math I Number Systems (CRN 33947)
Instructor: Professor Fouche
Office: MP 243
Phone: 240-567-3994 (Recommended to only use during scheduled office hours.)
Email: Kimberly.fouche@montgomerycollege.edu

Office Hours:

II General Course Information:

Course Description: An examination of mathematical reasoning, problem solving, and sets. Topics include concepts and processes involving numeration systems, whole numbers, number theory, integers, and rational numbers. Intended for elementary education majors, this course is also suitable for parents of school-age children.

This course will be conducted entirely online, except for exams. Active participation in the online assignments is required in order to pass this course.

Prerequisite: A grade of C better in MATH 050, appropriate score on mathematics assessment test, or consent of department. Credit: 4 Semester Hours

Gen Ed: MA 130 fulfills a General Education Program Mathematics Foundation requirement. Montgomery College's General Education Program is designed to ensure that students have the skills, knowledge and attitudes to carry them successfully through their work and personal lives. This course provides multiple opportunities to develop two or more of the following competencies: written and oral communication, scientific and quantitative reasoning, critical analysis and reasoning, technological competency, and information literacy. For more information, please see www.montgomerycollege.edu/gened. While 130 satisfies MC's Gen Ed requirement if a student transfers to another school without a degree it may or may not count as the Gen Ed requirement being met.

Detailed information about teacher education at Montgomery College, and the process of transferring for a four year degree, may be found at http://cms.montgomerycollege.edu/edu/department.aspx?id=10505

For questions, email TeacherEdAdvising@montgomerycollege.edu

III Common Course Student Learning Outcomes:

By the end of the course, students should be able to:

- Apply two distinct methods to find the LCM and GCF of two whole numbers.
- Classify and solve application problems involving the four arithmetic operations.
- Communicate mathematical ideas effectively using appropriate vocabulary and grammar.
- Construct and interpret Venn diagrams.
- Explain how and when to employ procedures for estimation and mental computation of operations on whole, integer, rational, and decimal numbers.
- Explain how to apply alternate algorithms for arithmetic operations.
- Explain how to apply different strategies (working backwards, tables, etc.) to solve non-routine problems.
- Find and describe patterns including finding the nth term of a sequence.
- Identify and apply properties and classifications of whole, integer, and rational number operations.
- Interpret set notation and apply set operations.
- Prove or disprove conjectures about factors and multiples.

IV. COURSE MATERIALS:

- Text: Math for Elementary Teachers w/Activities (LoosePages w/MyMathLab) Edition 5th. Beckmann ISBN 9780134800196 -The print textbook and a MyMathLab access code are both required for this course. They may be purchased at the book store. The book store has a bundle that includes both the loose pages version of the book and the MyMathLab code for under $160. This book is used for MATH130, 131 and 132.
- COMPUTER & INTERNET ACCESS: In addition to using the internet for online homework via MyMathLab, students need access to the course Blackboard page to obtain class announcements.
- CALCULATOR: The Texas Instrument model TI-83 Plus, 84, or 84 Plus is required. Models TI-89 and TI-92 are not permitted. Calculators will be integrated throughout the course as a tool for investigations and problem solving. Students will complete certain tasks without a calculator.
- COLORED PENCILS/PENS: Colored pencils/pens may help students with problem solutions.
- RULER/STRAIGHT EDGE: Any simple straight edge can be used to help with some problems.

V. Course Requirements:

Grading:

Your grade will be determined by the following categories.

Homework (MML)	5 %
Online Group Work/Homework	5 %
Quizzes	10 %
Tests	40 %
Final Exam	30 %
Course Reflection/Discussions	10 %

Letter Grade Assignments:
Grades will be given using the scale 90%-100% A, 80%-89% B, 70%-79% C, etc.

Homework(MML): The online skills review homework in MyMathLab (MML) is designed to give you practice reviewing the necessary prerequisite skills. This homework should be completed with out a calculator. In general, each section of the textbook has one skills review homework assignment. There are also videos, e-manipulatives and the electronic textbook. You may gain temporary access to MML for two weeks for free. For information regarding MyMathLab, please see the additional handout in the "Start Here" Module in Blackboard.

The problems in MML can be attempted as many times as needed until you obtain the correct answer. After the due date you may continue to work on these problems, but you will receive a penalty on any questions answered after the due date. After each test, you may no longer work on these assignments. It is important to remember that these problems are meant to be a review.

Online Group Work/Homework: In an in person class, this course would include a substantial amount of time working with other students in groups, whole class discussions, and opportunities for students to explain their thinking. In an effort to recreate these experiences online, students will be assigned a group in Piazza. Each week, you will be expected to complete a series of **class activities** with your group members and post your solutions in **Piazza**-an online question and answer platform. Additionally, you will complete textbook homework questions on Piazza. These experiences are designed both to maximize opportunities to reflect on the content more deeply and to provide experience giving explanations—an important skill for future teachers to develop. Participating in these discussions is very important to gain the most from the course. There will be numerous opportunities for you to participate in Piazza. You will be asked to work collaboratively and present your work online. Each week a participation

grade will be recorded. If don't contribute to the group, you will not receive credit for the week.

Each week you will either have a quiz or a reflection assignment.

Quizzes The quizzes will be will be administered in either Blackboard or MML. (The list of assignments for each week will make it clear where you can find the quiz.) The quiz questions will be similar to exam questions. You will be expected to write about the mathematics you are learning. Some problems may require you to explain a diagram. You must use precise mathematical language to receive full credit. Spelling will matter. These assignments are to be done individually without any notes, calculators or books. You may not discuss the content of the quiz with your classmates. Using unauthorized materials is considered to be a violation of the student code of conduct.

Course Reflection/Discussions During weeks when there is not a quiz, there will be a discussion topic or reflection assignment due in Blackboard. These assignments may incorporate articles and/or research papers. Each assignment will include a grading rubric. Please make sure that you read the rubric before you begin the assignment. You will be asked to post answers to a series of questions, and respond to your classmates.

Tests There will be a total of three tests: two midterms and a final exam. All tests must be taken at one of the testing centers during the scheduled dates. Please check the testing centers schedule for each campus. Additionally, before you can take the test, you must schedule the exam through the Smart Proctoring System in Blackboard. (More detailed instructions will be posted in Blackboard before the first exam.) You are not allowed to discuss the content of the exam with any students until after the grades for the exam are posted. Violating this policy is considered to be a violation of the student code of conduct.

Make-up Policy
All quizzes and tests must be taken during the scheduled dates. You will be given ample time to complete the quizzes and tests. As such, there will be no makeup quizzes or tests. Quizzes will be on the readings and on previous content. Chapter and sections that are on each quiz will be clearly identified. In general, the quiz will cover the previous weeks material. You are required to read the sections of the textbook each week. That way you are familiar with the definitions/terminology. You should be taking notes on key definitions and terminology from the textbook.

VI College Wide Policies:

Important dates:
01/28/2019: Last date to drop the course and receive a refund.
02/11/2019: Last date to drop a course without a grade being recorded or to change to audit or credit.
04/15/2019: Last day to drop a course with a "W". To withdraw from a class, you must go to the Registrar's Office and complete the necessary withdrawal forms.

Disability Support Services
Any student who may need an accommodation due to a disability, please make an appointment to see me during my office hours. If you are unable to come to campus, we can set up a time to talk on the phone. A letter from Disability Support Services authorizing your accommodations will be needed. Any student who may need assistance in the event of an emergency evacuation must identify to the Disability Support Services Office; guidelines for emergency evacuations for individuals with disabilities are found at: www.montgomerycollege.edu/dss/evacprocedures.htm

Important Links for Students
In addition to course requirements and objectives that are in this syllabus, Montgomery College has information on its web site (see the link below) to assist you in having a successful experience both inside and outside of the classroom. It is important that you read and understand this information. The link below provides information and resources that pertain to the following:

- Academic Calendar
- ADA information and Compliance
- Alert Montgomery System
- Code of Conduct (for all MC Students)
- Combat to College
- Counseling & Advising
- Forms (for graduation, involuntary withdrawal, change of major)
- Learning Centers and Academic Support Centers
- Safety, Security & Emergency Operations Plan
- Sexual Harassment or Discrimination

http://cms.montgomerycollege.edu/mcsyllabus/
If you have any questions please bring them to your professor. As rules and regulations change they will be updated and you will be able to access them through the link. If any student would like a written copy of these policies and procedures, the professor would be happy to provide them.

Last Updated: 1/13/2019

By registering for this class and staying in this class, you are indicating that you acknowledge and accept these policies

VII Philosophy Of This Course:

Many people think of math as a collection of meaningless procedures and rules that "magically" give the right answer when numbers from a problem are inserted correctly. Your experiences in this course will be very different from this! Throughout this course, you will be asked to "explain why or why not" or to "justify your answer." In other words, you will be expected to understand why the procedure you are using works or why the answer you give is correct. You will be most successful this semester if you continually ask "why?" as you read, listen, and solve problems. Seeking connections and meaning can be a very rewarding way to learn—and someday teach—these math ideas.

This class is intended to work toward increasing the depth of your understanding of the mathematics taught in grades K – 8. At the start of this course you know many algorithms for arithmetic, such as how to subtract any two three-digit whole numbers or how to divide two fractions. By the end of this course you will be expected to explain these algorithms, determine when which algorithm is most appropriate, demonstrate how to picture or describe an algorithm in another way, relate various concepts and algorithms to each other, and solve and make up problems set in realistic contexts, including “story problems”. This is a mathematics content course, not a methods course. You are learning mathematics, not how to teach mathematics. However, you will gain some ideas about how to teach mathematics in grades K - 8.

VIII Course Objectives:

Thinking Critically

- Recognize and use inductive and deductive reasoning.
- Find and generalize patterns, specifically, but not limited to arithmetic sequences.
- Use different strategies, specifically, but not limited to Guess and Check, Making a Table or List,
- Drawing a Picture, Working Backward, Eliminating Possibilities, and Solve a Simpler Problem to solve problems.
- Explain how to apply different strategies (working backwards, tables, etc.) to solve non-routine problems.
- Find and describe patterns including finding the nth term of a sequence.

Sets & Whole Numbers

- Interpret set notation: element of, subset, proper subset, and complement.
- Apply set operations: intersection and union.
- Identify a pair of sets as equal, equivalent, or neither.
- Construct and interpret Venn diagrams.
- Classify applications of each operation.
- Identify and apply properties of whole number operations.

Numeration and Computation

- Explain how to use pictorial models for arithmetic algorithms.
- Use alternate algorithms for each arithmetic operation.
- Employ procedures for estimation and mental computation.

Number Theory

- Prove or disprove conjectures about factors and multiples.
- Apply divisibility tests.
- Apply different methods to find prime factorizations, GCD (GCF), and LCM.

Integers

- Employ pictorial models to represent integers and integer addition and subtraction.
- Write and solve application problems that illustrate all four operations.
- Develop and explain rules for integer arithmetic.
- Identify and apply properties of integer operations.

Fractions and Rational Numbers

- State common meanings of fractions.
- Employ pictorial models to represent fractions, equivalent fractions, and arithmetic with fractions.
- Develop and explain procedures for arithmetic with fractions.
- Identify and apply properties of rational operations.
- Employ procedures for mental computation and estimation.

Decimals, Real Numbers, and Proportional Reasoning

- Employ pictorial models to represent decimals and decimal arithmetic.
- Develop and explain procedures for decimal arithmetic.
- Employ procedures for mental computation and estimation.

IX Additional Information for an Online Class:

- **Getting Started:** In order to make sure that you are prepared to take an online class, you will need to start by completing the online learning pre-assessment at: http://cms.montgomerycollege.edu/distance/before/preassessment/, printing the syllabus, and completing the orientation/Start Here module. This will ensure that you understand the expectations of the course. Also, see:

See Prepare Yourself http://cms.montgomerycollege.edu/distance/prepare/

- **Technical Requirements**

  You will need the following to participate online:

  1. Regular use of a computer with Internet access. Expect to spend at least 12-16 hours online each week.
  2. A web browser such as Firefox, Chrome, or Internet Explorer. See Prepare Yourself http://cms.montgomerycollege.edu/distance/prepare/
  3. It is highly recommend that you have internet access at home, however, there also are computer labs on each campus. See http://cms.montgomerycollege.edu/oit/InTech.aspx?id=60795

- **Technical Support**

-For technical assistance with college supported resources, call the Montgomery College IT Service Desk at 240-567-7222

-Blackboard Help Desk The HELP link on the left-hand course menu links to the MC Blackboard Online Support Center. Students can

1. Call the Support Center at 240-567-7222, or
2. Chat with a service representative, or
3. Submit a ticket.

Note: Click the My Support link at the top of the Blackboard Online Support Center screen to view a history of your correspondence with the Blackboard Support Center.

- **Piazza-**We will also be using Piazza which is an online discussion platform for class activities and homework discussions. Piazza is very user friendly, but also has its own support help. Piazza is embedded into blackboard, but you can also download the app to your phone and/or tablet, as well as access it from any web browser.

- **MyMathLab-**In addition, we will be use MyMathLab for online homework, some videos, and other activities. You will need to create your own account. (More specific information about Piazza and MML can be found in the "Start Here module"
- **Use of email:** The best way to contact me is through Piazza. I will be checking Piazza regularly and will respond as quickly as possible. However, I am not typically available during the weekends. This means that if you post on a Friday afternoon, I may not be able to respond until Monday. If you have a general question about the course, it is best to post that question to Piazza, so that the anyone in the course can respond…but also so that the entire class can benefit from the answer. If you have a question that is personal in nature, then you can still to post the question to Piazza, but post it as a private message. While you can email me your questions, it may take two business days for me to respond.
- **Privacy:** Electronic communications do not guarantee privacy. In addition to the instructor, technical staff or administrative personnel may also access the course. To respect students' privacy, sharing personal information or posting photographs is voluntary, not required.
- **Accessibility:** Blackboard strives to meet accessibility at the bottom of each course home page. Look for the link to http://access.blackboard.com
- **Submitting Assignments:** In this course you will submit many of your assignments electronically. Because technology can be unreliable when you least expect it, submitting your work on time may require some persistence. Here are some alternate means to submit your assignments. Use ONLY if Blackboard is unavailable.
    - Email your assignment directly to the instructor at Kimberly.fouche@montgomerycollege.edu
    - If your email program isn't working properly and you can't access the course site, deliver the assignment to the instructor's office before the deadline, or, drop a hard copy in the mail before the deadline so the postdate shows that you completed the work before the due date. Notify the instructor by telephone.
    - Call the instructor or department and arrange to send your work by fax.
    - There is always a means to submit your assignments on time. Be creative, be persistent, and keep your instructor informed!
    - You will be submitting assignments in a variety of ways: through MML, through Blackboard, and at the testing center. MML assignments will have fixed due dates. You are responsible for monitoring these due dates. Blackboard will be used for class discussions as well as reflection assignments and some quizzes. Each week a list of due dates will be posted so that you can keep track of what is due each week. All exams must be taken at the testing center.

- **Discussion Participation-** Each week you will be expected to complete class activities and homework questions by participating in online discussions. An online discussion is similar to an email conversation with some important differences.
    - An online discussion can involve a number of participants, such as a group or the entire class.
    - All messages stay posted in the discussion area for participants to read and re-read at any time throughout the course.
    - An online discussion can last for a week or longer. If you are new to online discussions, you will find them as rigorous as any on-campus classroom discussion. The purpose of a discussion is dialogue as a means of learning. In this course, you will spend a good deal of time in online discussions.
    - **Guidelines for Participating in Online Discussion**
        - You are expected to read all posted messages. If you find a mistake explain the mistake, but update the response.
        - Respond to each other promptly.
        - Use a person's name when you reply to a message, and add your name at the bottom of your message. It helps us to know who is speaking and who is being spoken to. As we begin to associate names with tone and ideas, we come to know each other better.
        - When you introduce a new topic add a new post. (Do not start a new discussion in a previous post.)
        - Avoid angry or rude comments. Use of objectionable, sexist, or racist language is not acceptable.
        - Use emoticons to communicate humor, e.g. :-) ;-) :-0 :-/ :-(and so on... ·
        - Oh, and have fun!
        - Note: I strongly encourage you to compose your messages in a word processor then copy and paste the text into the discussion message. Expect to spend time editing and revising your messages until they are clear. Composing your messages in a word processor first, will save you from losing your hard work if your browser crashes before you click the submit button.
        - As a general rule, messages should be no more than a screen in length. If your message is longer, revise it to be more concise or separate your message into points and post each point as a separate message.

- Solutions will be submitted on Piazza. I will be monitoring your work and keeping track of your participation, and endorsing correct answers.. You should be posting your work, editing and/or posting corrections of your classmates. I may also ask for clarification and/or further detail. You are expected to work together, just as you would do in group in a regular class. You will be graded on how frequently you participate as well as the quality of your posts.

X. Teacher Expectations:

1. Patience: This is the first time MATH 130 is being offered fully online at MC. (In all honesty, I think that this is the first time the course is offered fully online in the state of Maryland, if not the east coast.) I'm committed to having a successful semester and course with all of you. There may be technical issues, unexpected delays, and/or improvements needed. You may find errors/typos in the materials. Please be patient. Ask for clarification if needed. Let me know if you find errors so that I can fix them.
2. Active online participation: It is important that you regularly participate in the online discussions. Writing about mathematics takes practice. By posting regularly, you will receive valuable feedback.
3. Homework is to be done every week in MyMathLab and Piazza. The assignments are listed there and include due dates. There will be an assignment for each section of the textbook. You will also be assigned problems from the textbook and/or worksheets. These problems are to be completed and posted in Piazza. The textbook problems are very similar to the test questions. If you are having difficulty completing these assignments, I recommend that you seek help as soon as possible.
4. Reading a math textbook is not like reading a novel. You may need to read and reread a paragraph before you understand it. As you encounter a problem in the reading, attempt to answer it yourself before reading the solution. Actively take notes on terminology and definitions as you read the text. Use the reading guide to make sure you understand the key ideas.
5. Productive participation in any group or class activities is essential. You will be expected to be prepared to learn from each other and to teach each other. This is what you are preparing yourself to do in your career. Attempting problems on your own, is a critical step to learning and understanding mathematics. Reading someone else's solution will not prepare you for the exams.
6. Study consistently throughout the week. Studying a little each day is more effective than studying one day on the weekend.
   - STUDY TIPS: Learning mathematics is (inter)active! Typically students need to spend roughly two to three hours in study time for each hour inside class. With an online class, you are expected to spend an additional 4 hours a week

reading and completing assignments. This amounts to 12 to 16 hours per week during the entire semester. This will, of course, vary according to your understanding of and previous practice with the various topics being discussed.

- While doing your work, make notes about things you are having trouble with or have need for additional explanations. For example, one effective study technique is: write out your practice exercises. [Then you can ask questions on Piazza.] Get tutorial help. Work with a (new) friend or two. Talk (out loud) and listen as well as write when you study. Don't forget to "guesstimate" and to check your logic your numerical/algebraic/graphical results.

- Even if some the exercises seem familiar, deal with the "I've seen this before" feeling by writing out at least five exercises, skipping from simple to more complex. This should establish that you not only recognize the work but also that you are skillful with it. Remember: Learning mathematics is (inter)active!

7. Even though this is an online class, you may need to seek extra help whenever problems surface--not just before tests. If you need help you can:
   - See your professor--after all, they write and grade the tests.
   - Form study groups
   - Visit the tutors in the math learning centers
8. Mathematics is a language. You need to read it, write it, talk about it and practice it regularly and frequently in order to become fluent in it. This means that you need to
   - Review vocabulary listed for each lesson.
   - Read your text and work through the examples.
   - Work the homework exercises. Then review what you have learned from the homework. Think of practice test questions that might be based on the concepts covered in the homework. Just doing the homework is not enough.
   - Ask questions. If you are experiencing difficulties with the class, please make sure that you set aside time to come into office hours as soon as possible. Don't wait until the end of the semester to tell me you have a problem with how you are doing. Let's take care of any problems as they arise and when they are fixable

XI Basic Needs Statement-

Any student who has difficulty accessing sufficient food to eat every day, or who lacks a safe and stable place to live, is urged to contact the Dean of Students Affairs on your campus. Furthermore, please notify the professor if you are comfortable in doing so.

This will enable the professor to provide any resources that they may possess. We know this can affect performance in the course and Montgomery College is committed to your success.

The Deans of Student Affairs, by Campus

Germantown:

Dr. Jamin Bartolomeo, jamin.bartolomeo@montgomerycollege.edu

Rockville:

Dr. Tonya R. Mason, tonya.mason@montgomerycollege.edu

Takoma Park/ Silver Spring:

Dr. Clemmie Solomon, clemmie.solomon@montgomerycollege.edu

STUDENT HEALTH AND WELLNESS/ FUEL FOR SUCCESS WEBSITE

This website offers information about resources for food on our campuses and in the community and has links for community resources. The site offers the schedule for the mobile markets, locations of the food pantries as well as a link for those who wish to contribute their time or money to support our students.

http://cms.montgomerycollege.edu/student-health-and-wellness/fuel-for-success/

CAMPUS FOOD PANTRIES

Each of the main campuses has a pantry stocked with snacks and food. Students are welcome to come pick up a snack to carry you through your next class, and to take a few items home.

MOBILE MARKETS

The College has a partnership with the Capital Area Food Bank. They distribute a variety of foods at Mobile Markets, at each of the three main campuses. Food is available on a first-come basis for MC students, faculty/staff, and the community.
No proof of eligibility is required.

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Campus	Mobile Market Location	Time	Dates
Germantown	Outside SA (In inclement weather - High Tech Building (HT), Second Floor Upper Lobby)	10:00 a.m.- 12:00 p.m.	February 13, 2019 March 20, 2019 April 10, 2019 May 8, 2019
Rockville	Outside of the North Garage (NG)	10:00 a.m. - 12:00 p.m.	February 20, 2019 March 27 , 2019 April 17, 2019 May 15, 2019
Takoma Park/Silver Spring	Outdoor space between the Student Center and North Pavilion (In inclement weather - ST atrium)	2:00 p.m. - 4:00 p.m.	February 6, 2019 March 6, 2019 April 3, 2019 May 1, 2019