Montgomery College - Rockville Campus
Fall 2018

MATH 131 XXXXX Elements of Mathematics II: Geometry and Algebra

INSTRUCTOR AND RESOURCE INFORMATION

Professor Deb Poese
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Office: Computer Science (CS) 118
Phone: 240-567-7269
Office Hours: _____, or by appointment

NOTE: MC student email is the official means of communication for Montgomery College. It is expected that students check their student email regularly, and when emailing their instructors that they use their MC student e-mail account, accessible through the MyMC interface.

Course Description: This course covers proportions, percent, and real numbers; basic geometry that includes congruence, similarity, symmetry, and transformations; measurement and coordinate geometry; and algebra emphasizing multiple representations. Intended for elementary education majors, the course is also suitable for parents of school-age children. PREREQUISITE: A grade of C or better in MATH 130 or consent of department. Credit: 4 semester hours.

Important Dates: To view specific drop deadlines for each of your classes, log into your MyMC account, click on 'My Class Schedule' under Student Quick Links, select the current term, and click on 'View Drop Deadline Dates' at the bottom of the page.

Getting More Help with Math:

The Ackerman STEM Learning Center is located on the ground floor of Science Center West (SW) (240-567-5200). This is an open space to work and/or seek specialized help from faculty and student tutors. Graphing calculators may also be borrowed from the Center. Hours are M - R 8am to 8pm, F 8am - 4pm, Sat. 10am – 3pm.

COURSE MATERIALS

Textbook and MyMathLab: ***Math for Elementary Teachers w/Activities*** *(LoosePages w/MyMathLab) 5th Edition, Beckmann ISBN 9780134800196.*
The textbook and a MyMathLab access code are **both required** for this course. They may be purchased at the bookstore. The loose pages version of the book is recommended since the included activity manual will be used in class regularly; if you do not have a print version of the text you MUST have access to the e-book in class via laptop or tablet each day of class.

Note: If you have previously purchased the book and access code, you do NOT need to purchase a code again. The one-time purchase of the MyMathLab code will be good for as long as you use the current textbook.

A 3-ring binder is ***strongly recommended*** to collect and organize materials distributed during class, to take notes during class and to complete all work for the online homework assignments. You need to be able to systematically show your work even though only portions of the answer will be entered in MyMathLab®. Bring your notebook to each class and to any appointments with the instructor.

Colored pens or pencils are also useful for many students. For the geometry components of the class, a drawing compass, protractor, and 12-inch ruler are **required.**

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, download materials and submit reflection assignments.

Calculator: A graphing calculator is **permitted** for this course but any kind of scientific calculator will be acceptable. Students will be asked to complete certain tasks without a calculator throughout the course.

COURSE REQUIREMENTS

Class Attendance: Attendance is extremely important in the successful completion of any course, and in this course your participation will be key to learning the "why" behind the math content we will study. Students are expected to be **on time** and to attend all class sessions, and to contact the instructor as soon as possible when classes are missed. It is the student's responsibility to obtain missed information either from a classmate or from the instructor. In the case of excessive absences (defined as three or more sessions for this course) per Montgomery College policy, you may be dropped from the class.

Homework: You are required to use the online software, MyMathLab®, *to* complete homework assignments. To be valuable for learning, homework **should be completed**

as soon as possible after the topic is discussed in class (and then redone as needed for review); you will see the due date for homework as being the day of the next class period. However, the **deadline** for earning homework **credit** is **midnight** on the day of the final exam. Homework assignments will also be made from the textbook as appropriate; these assignments are generally not collected.

Quizzes: Four quizzes will be given during the course of the semester, as a mid-unit assessment between the tests. These quizzes will be provided through MyMathLab® for you to complete outside of class during the time limitation listed for that quiz. Each quiz counts 25 points in your grade, and may be taken **twice** before the due date.

Reflections and Projects: Four reflections will be completed during the semester, with the reflection prompts provided on the Blackboard site for the course. Some prompts will be content related, some will be about study skills or test strategies, and some will be more general. Your response should be at least 100 words in length; the final reflection will be required to be 250 to 500 words. Projects will be described in more detail as assigned and will generally involve a partner or group to complete.

Tests: Three unit tests will be given in written form in class, as noted on the outline. The final examination will also be given in written form. Students who have completed at least 80% of the online homework will have the option to replace ONE of their previous exam grades with their score on the final exam.

Makeup Policy: Each student receives three NQA ("no questions asked") coupons to use to extend the deadline for a reflection OR may use all three coupons to extend the deadline for one quiz. No other makeup arrangements will be available for these items.

Make-up tests will only be arranged for well-documented excused absences and students should contact the instructor BEFORE the next class to make arrangements.

Evaluation Components		**Grading Scale**		
MyMathLab® HW	75 points	**A**	90 - 100 %	675 - 750 points
Online Quizzes (4)	100 points	**B**	80 - 89 %	600 - 674 points
Reflections and Projects	75 points	**C**	70 - 79 %	525 - 599 points
In-Class Unit Tests	300 points	**D**	60 - 69 %	450 - 524 points
Final Exam	200 points	**F**	0 - 59 %	0 - 449 points
Total	750 points			

GENERAL INFORMATION

Disability Support Services
If you need an accommodation due to a disability, you should make an appointment to see the instructor to discuss these arrangements. A letter from Disability Support Services (240-567-5058) authorizing your accommodations will be needed.

Other Important Student Information
In addition to course requirements and objectives that are in this syllabus, Montgomery College has information on its web site 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. (http://cms.montgomerycollege.edu/mcsyllabus/)

The link above provides information and other resources to areas that pertain to the following: student behavior (student code of conduct), student e-mail, the tobacco free policy, withdraw and refund dates, disability support services, veteran services, how to access information on delayed openings and closings, how to register for the Montgomery College Alert System, and finally, how closings and delays can impact your classes. 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. By registering for this class and staying in this class, you are indicating that you acknowledge and accept these policies.

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. (http://cms.montgomerycollege.edu/edu/secondary5.aspx?urlid=55). Furthermore, please notify the professor if you are comfortable in doing so. This will enable her to provide any resources that she may possess.

Course Objectives for MA 131 *Elements of Mathematics II: Geometry and Algebra*

After completing this second course of a three-course sequence, students will be able to…

Proportions and Percents

- Use pictorial models to represent proportions and percents.
- Employ different methods for solving problems involving proportions and percents.
- Employ procedures for mental computation and estimation of percents.

Introductory Geometry

- Describe, compare, and classify plane figures.
- Use technology to study plane figures.
- Describe, compare, classify and draw space figures.
- Prove or disprove conjectures about geometric shapes.

Congruence, Symmetry and Similarity

- Perform rigid motions and relate them to congruence, symmetry, tessellations, and similarity.
- Perform basic compass constructions and explain why they work.
- Perform size changes and relate them to similarity.

Measurement

- Know common metric reference measures and make conversions within the metric system.
- Develop basic area formulas and the Pythagorean Theorem in a deductive sequence.
- Know how to find the volume of prisms, cylinders, pyramids and cones.
- Know how to find the surface area of prisms and cylinders.

Algebra and Coordinate Geometry

- Translate among multiple representations of a function.
- Solve problems involving linear equations and systems of equations.
- Recognize various representations and change patterns of linear and non-linear functions.
- Solve problems with tables, graphs, and equations.
- Solve geometry problems using coordinate methods.

Pearson | MyLab | Math

Student Registration Instructions

To register for Fall 2018 MATH 131 Poese :

1. Go to www.pearson.com/mylab .
2. Under Register, select **Student** .
3. Confirm you have the information needed, then select **OK! Register now** .
4. Enter your instructor's course ID: , and **Continue** .
5. Enter your existing Pearson account **username** and **password** to **Sign In** .

   You have an account if you have ever used a MyLab or Mastering product.

   - » If you don't have an account, select **Create** and complete the required fields.
6. Select an access option.
   - » Enter the access code that came with your textbook or that you purchased separately from the bookstore.
   - » If available for your course,
     - Buy access using a credit card or PayPal.
     - Get temporary access.
7. From the You're Done! page, select **Go To My Courses** .
8. On the My Courses page, select the course name to start your work.

To sign in later:

1. Go to www.pearson.com/mylab .
2. Select **Sign In** .
3. Enter your Pearson account **username** and **password,** and **Sign In** .
4. Select the course name to start your work.

To upgrade temporary access to full access:

1. Go to www.pearson.com/mylab .
2. Select **Sign In** .
3. Enter your Pearson account **username** and **password,** and **Sign In** .
4. Select **Upgrade access** for
5. Enter an access code or buy access with a credit card or PayPal.

Proposed Schedule of Content and Assessments

The instructor reserves the right to amend this schedule as appropriate throughout the semester.

Date	Section(s)	Topic(s)	Quiz/Test
8/28	 2.5	Introduction and Ground Rules Reasoning about Percent	
8/30	7.1 7.2	Motivating and Defining Ratio and Proportional Relationships Solving Proportion Problems by Reasoning with Multiplication and Division	
9/4	7.3 7.4	The values of a Ratio: Unit Rates and Multipliers Proportional Relationships	
9/6	7.5	Proportional Relationships Versus Inversely Proportional Relationships	**OL Quiz 1**
9/11	9.3 9.4	Equations Solving Algebra Word Problems with Strip Diagrams and with Algebra	
9/13	9.5 9.7	Sequences Linear and other Relationships	
9/18	10.1 Review for Test 1	Lines and Angles	
9/20	**Test 1** 10.3	 Circles and Spheres	**In Class Test 1**
9/25	10.4	Triangles, Quadrilaterals, and Other Polygons	
9/27	11.1 11.2	Concepts of Measurement Length, Area, Volume and Dimension	
10/2	12.1 12.2	Areas of Rectangles Revisited Moving and Additivity Principles	**OL Quiz 2**
10/4		**NO CLASS MEETING**	
10/9	12.3 12.4	Areas of Triangles Areas of Parallelograms and Other Polygons	
10/11	12.5 Review for Test 2	Shearing: Changing Shapes Without Changing Area	
10/16	**Test 2**		**In Class Test 2**
10/17	***Special Event***	***Education Transfer Fair*** ***11 to 3 Theatre Arts Arena***	

10/18	12.6	Area and Circumference of Circles and the Number Pi	
10/23	12.7 12.8	Approximating Area of Irregular Shapes Contrasting and Relating the Perimeter and Area of Shapes	
10/25	12.9 13.1	Using the Moving and Additivity Principles to Prove the Pythagorean Theorem Polyhedra and Other Solid Shapes (start)	
10/30	13.1 13.2	Polyhedra and Other Solid Shapes (cont'd) Patterns and Surface Area	**OL Quiz 3**
11/1		**NO CLASS MEETING**	
11/6	13.3	Volumes of Solid Shapes	
11/8	Review for Test 3		
11/13	**Test 3**		**In Class Test 3**
11/15	14.1	Reflections, Translations and Rotations	
11/20	14.2 14.3	Symmetry Congruence	
11/27	14.4	Construction with Straightedge and Compass	
11/29	14.5	Similarity	**OL Quiz 4**
12/4	14.6 14.7	Dilations and Similarity Areas, Volumes, and Similarity	
12/6	Review for Final		
12/13	**Final Exam**	**8:00 am to 10:00 am !!**	**In Class Final Exam**