Math for Early Childhood II - MATH 3162

Course Description

The purpose of this course is to introduce you to a variety of mathematical ideas through mathematical inquiry and problem solving. In this course we will explore the following topics in mathematics: Number and Operations, Algebra, Geometry, Measurement, and Data Analysis and Probability. More Specifically, Chapter 08-13 form the text will be addressed in this course.

Catalog Description of course Math 3162:

Prerequisite: Grade of "C" or higher in Math 3161. An in-depth study of concepts and processes underlying the P-5 school mathematics curriculum, with special emphasis on measurement, geometry, and the fundamentals of probability and statistics. Problem solving and historical context serve as unifying strands.

Learning Outcomes

By the time student finish this course, they should be able to do the following:

1. solve problems and build new mathematical knowledge through problem solving;
2. investigate, develop, and evaluate mathematical arguments;
3. understand and apply the properties of parallel and perpendicular lines;
4. further develop their understanding of plane and solid figures;
5. demonstrate understanding of transformations and apply the concepts involved with transformations to solve real world problems;
6. determine the area and the perimeter plane figures and apply the concepts involved with area and perimeter to solve real world problems;
7. determine the surface area and the volume of solid figures and apply the concepts involved with surface area and volume to solve real world problems;
8. use geometric patterns (e.g., tessellations) and solve problems involving geometric patterns;

9. use ideas pertaining to coordinate geometry to solve problems.

Required Textbook

Modern Mathematics for Elementary Educators by Rurick E. Wheeler, & Ed R. Wheeler, Edition: 14th, Publisher: Kendall/Hunt

ADA Statement

Students requiring classroom accommodations or modifications because of a documented disability should discuss this need with me at the beginning of the semester.

Regarding Withdrawal

Beginning in Fall 2010, undergraduate students are limited to 5 withdrawals over the course of their undergraduate
academic career.

Attendance

You are expected to attend class and participate in the class activities; thus a lack of engagement during class will count as an absence. If you miss class, **you** are responsible for keeping up with the material and assignments covered.

VSU Policy: A student who misses more than 20% of the scheduled classes of a course will be subject to receiving a failing grade in the course.

Exams, Grades and the Philosophy of the Course
Your grade on the course will be based on four exams, a final, and quizzes.

The exams will be comprised of mostly open-ended questions. In this course we will work extensively on non- routine word problems. Problem solving will be a major theme of this course. We may read a few journal articles (depending on our need). The exams and the final will be used to assess your ability to solve non-routine word problems. **About 30% of the exam questions will be unseen problems from the topics covered in class**. In order to prepare for these unseen problems you should work on the non-routine word problems assigned in class on your own or with a partner. Moreover, you should have a deep understanding of the underlying concepts of the problems and the ideas introduced in the class. **Understanding ideas superficially, or learning to follow a sequence of steps without really understanding why those steps unfold the way they do, will quite likely affect your overall performance in this class negatively**. Take responsibility for your own learning and be an active learner. Don't wait for that illusive "clear explanation." It might never happen because clear explanation depends greatly on the listener. That is, a relatively clear explanation may seem vague to a certain listener because he or she may not have the prior knowledge to appreciate and understand what has been said. When I explain things in class, I often expect you to know certain things, especially materials from the courses that are the prerequisites to this course; I don't assume that your mind is a *blank slate*. Moreover, it is beyond the scope of this course to address the materials from the courses that are the prerequisites to this course. If you feel like you have gaps in your prior knowledge, please go to the tutoring lab or come and see me during my office hours. I will be happy to help you.

I try to assess what you are capable of doing on your own! My exams will not assess your ability to *regurgitate* what you have already seen in the class! The exams will assess how you can use and apply these ideas in slightly different scenarios. It is important because if you cannot transfer what you have learned in this class to slightly different scenarios, then your knowledge is essentially useless for all practical purposes. I put a lot of emphasis on *understanding*, and I try to put less emphasis on memorization. **No additional time will be given to complete the exams and the final. If you don't turn in your exams and the final when the time is up, I will not grade your exams, or the final.**

I also expect my students to be *critical thinkers*. The role of critical thinking cannot be overemphasized in a mathematics class. To be successful in this class you have to do a lot of quality work, not just hours spent. That is, you need to *understand* the materials and topics addressed in class. A cursory knowledge of the materials and topics addressed in class will not help you. It is a good idea to form a study group with your peers from this class, and meet with them regularly to work on topics and problems addressed/assigned in the class. **You are expected to do a lot of work outside the class.**

No make-up exams will be given. If for some reason you miss an exam, your final exam grade will replace the grade on your missed exam. However, I will encourage you not to miss any of the exams because the final will be more challenging than any of the exams you will be taking for this course. If you miss more than one exam, the final exam grade will replace only the grade of one of the missed exams; your grade on the remaining missed exam or exams will be a zero. If you do not miss any of the exams, and if your lowest exam grade is lower than the final exam grade, then the final exam grade will replace your lowest exam grade. Also note no make-up final exam will be given. **All exams will take place according to the schedule unless the university cancels classes on that day. The exams end when the class ends officially. That is, the duration of each exam is same as the length of the class. For the final you will be given two hours. No additional time will be given for the exams or the final. Late exams or the final will not be graded. No assignments will be accepted after the due date. Hard copies of the assignments must be turned in. Emailed assignments will not be accepted.**

There will be **surprise quizzes** throughout the semester. I will try to give about ten quizzes. The quiz dates will not be announced in advance. I expect you to come to class prepared and follow the class discussion carefully so that you can do well on the quizzes. No make-up quizzes will be given. Quizzes won't be

given in advance either. Your quiz score cannot replace any of your exam score or your final score, nor can your exam scores or final score replace your quiz score. You will get about five minutes for the each quiz. No extra time will be given for the quizzes. **No late quizzes will be accepted.**

Unprofessional behavior will not be tolerated. The following are some examples of unprofessional behaviors: coming to class late, leaving class before the class is dismissed, being disruptive in class in any shape or form, allowing your cell phone to ring, beep or make any kind of noise during class or exams. Please note unprofessional behavior is not limited to the above examples. Since unprofessional behavior depends on the context of the situation, and the history of the individual involved, each case will be addressed separately.

Handheld electronic devises (e.g. cell phones, palm pilot devises, etc.) should be stowed away and they should not be out or used any time during the class. You can only use standard or graphing calculators in the class. Cell phone calculators are not allowed in the class or during the exams. Please use standard or graphing calculators during the exam. Students are also not allowed to share calculators during the exam. If you are caught using the cell phone during class you will asked to leave. If you are caught using the cell phone or other handheld electronic devices during an exam or the final you will receive a zero on that exam or the final. Any form of cheating on an exam or the final will earn you a zero on that exam or the final. Any form of plagiarism on any assignment will earn you a zero on that assignment as well. **If you are found using the cell phone in any shape or form during the exam or the final, you will receive a zero on that exam or final.**

Please note the classroom door will be locked, once the class starts at the scheduled time. Please do not send me email stating that you will be late on a certain day, I will not be able to keep the door open for you. No exceptions will be made. However, I will not lock the door on the days the exams and the final are given. You can walk in whenever you please. However, if you are late on the day of the exams or the final, no additional time will be given. It is a requirement that you come to class on time. No exams or the final will be accepted after the time is up. You are not allowed to leave the classroom during the exams or the final. If you leave the classroom before you are finished with your exam or the final, your exam or the final will be collected as if it is turned in. Please don't wear baseball caps or anything that hides your face while you are taking the exams or the final. I will assign your seats on the days the exams and final will be given. . **Coming late to class or leaving the class early disrupts class. Every time you are late to class or you leave the class early, you will lose 2% from your final letter grade for this course grade. Don't use cell phones in class. Each time you are caught using cell phone in class, you will 2% from your final letter grade for this course grade**

Group Work Protocol
Work in your group quietly. Keep your voice down because others are
working too! Make sure the group size small (at most 2-3 persons/group).
If your group is finished with the work early, please don't socialize in class.
Do not carry on with your group work when "whole class discussion" is taking place.

The weight of the exams, the final and the quizzes are shown on the table below.

Score Distribution	
Exam 1	13%
Exam 2	13%
Exam 3	13%
Exam 4	13%
Final	30%
Quiz	18%

Grading Scale	
A	[90%, 100%]
B	[80%, 90%)
C	[70%, 80%)
D	[60%, 70%)
F	[00%, 60%)

Course average is not rounded up!