

**MATH 5190 SYLLABUS**  
**ALGEBRA AND GEOMETRY FOR TEACHERS**  
**Dept. of Mathematics & Comp. Science, College of Arts & Sciences, Valdosta State Univ.**  
**Fall 2008**

**Instructor** : Dr. Greg Harrell  
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**Office Hours** : Tues. and Thur. 3:30pm - 4:20pm  
OR any other time BY APPOINTMENT

### **PREREQUISITE**

Grade of "C" or higher in Math2261, Math3180, or Math5180

### **REQUIRED MATERIALS**

**Textbook** : *A Problem Solving Approach to Mathematics for Elementary Teachers*; 9<sup>th</sup> edition; Billstein, Libeskind, and Lott; 2007.

**Calculator**: TI-83 or TI-84 graphing calculator  
NOTE: Some models of graphing calculators, such as the TI-89, will not be allowed during exams.

**Geometry**: Ruler (12 inches and 30cm), protractor, compass

### **COURSE DESCRIPTION**

This 3-hour-credit course includes an in-depth study of the concepts and processes underlying the middle and secondary school mathematics curriculum with special emphasis placed upon the integrated development of algebra, geometry, and analytical geometry. Problem solving and historical context serve as unifying strands.

### **STUDENT LEARNING OUTCOMES**

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

- 1) solve a variety of routine and non-routine problems and describe all aspects of the problem-solving process;
- 2) use algebra in deductive reasoning proofs;
- 3) solve algebraic equations using multiple representations and describe when equations have solutions;

- 4) demonstrate an understanding of the properties of linear equations and the relationships between lines;
- 5) recognize patterns, extend patterns, and develop algebraic formulas for given patterns;
- 6) describe relationships between, describe properties of, and classify both plane and solid geometric figures;
- 7) develop area and volume formulas;
- 8) obtain accurate length, area, volume, and capacity measurements in both metric and customary units;
- 9) apply the concepts involved with surface area and volume to solve real world problems;
- 10) use compass-and-straightedge construction techniques;
- 11) demonstrate an understanding of transformations and apply concepts involved with transformations to solve real-world problems;
- 12) understand and apply the concepts of similarity and congruence;

## GRADES

Grades will be computed according to the following distribution and scale:

Unit Exam Average	60%	A 90 and above
Assignments	10%	B 80-89.99
Comprehensive Final	30%	C 70-79.99
		D 60-69.99
		F Below 60

## TENTATIVE SCHEDULE

Labor Day	Mon., Sept 1	No classes meet
Unit Exam 1	Thur., Sept. 11	Session Handouts, 1-2, 1-3, 10-6, 5-4, 2-5, 1-1
Unit Exam 2	Thur., Oct. 2	Session Handouts, 6-1, 6-3, 6-4, 5-3, 6-6
Mid-semester	Thur., Oct. 9	Last day to withdraw with a "W" – after this date, a failing grade is assigned
Fall Break	Mon., Oct. 13 – Tue., Oct. 14	No classes meet
Unit Exam 3	Thur., Nov. 6	Session Handouts, 9-1, 9-2, 9-3, 10-1, 10-2, 10-3, 10-4, 11-1, 11-2, 11-3
Thanksgiving Holidays	Wed., Nov. 26 – Fri., Nov 28	No classes meet
Last Class Day	Thur., Dec. 4	
<b>Final Exam</b>	<b>Fri., Dec. 12 at 10:15am-12:15pm</b>	<b>All material on units 1-3 above plus the material on unit 4. Unit 4: Session handouts, 9-4, 11-4, 11-5, 12-1, 12-2, 12-3, 12-4</b>

## **EXAMS AND MAKEUP POLICY**

NO MAKEUP EXAMS WILL BE GIVEN after the test has been administered to the class. If you know in advance that you must miss an exam day, let the instructor know in advance so arrangements can be made to take the exam early. It is not your right to take an exam early. This is done at the discretion of the professor.

Your lowest exam score of the three unit exams will be replaced by your final exam score (if it helps). If you miss one unit exam, the missed exam will be your low score and your final exam score will be used for that exam. Subsequent missed exams will result in a zero score. All exams should be taken with a strong effort made on each exam.

The final exam is a mandatory comprehensive exam. It includes all of the material from the first 3 unit exams as well as the material covered after the third unit exam. The material covered after the third unit exam will constitute approximately 50% of the final exam.

## **ATTENDANCE**

It is very important that you attend and are prepared for every class session. Roll will be taken each day at the start of class using a seating chart. If you are late to class, let the instructor know at the end of the same class period so that you are not counted absent. Low (zero to one) absences will help your course grade in the case of borderline grades. Our class meets 30 times this semester. As stated in the VSU catalog, if you miss more than 20% of our class meetings (6 days), then you will receive an F in the course.

If you are absent, be certain to get the class notes, handouts, and homework assignment from another student in the class. It is your responsibility to get class materials for a session that you missed from another student. I cannot furnish class notes to you, nor can I do the class lecture again for you.

## **ASSIGNMENTS**

The assignment portion of your course grade will not come from daily homework. It will come from announced projects that you are given. You must meet the due dates that are given when the project is assigned. The graduate student assignment will be described in detail during the semester. In general, you will research NCTM and Georgia standards in middle grades mathematics, write a report, and present your findings to the class.

## **SUCCESSFUL STUDY**

At each class meeting, we will study new material. One key to success is attending class and taking good notes. Another key to success is learning all of the material in your notes. You will receive homework at each class meeting so that you can practice the ideas covered in class and in the text. While I do not collect this “daily” homework, you must master it do be successful in the class. Be certain that you can work all problems done in class as well as all problems that are

assigned to you. Lastly, be certain to constantly review. Don't try to cram at the end! If you come to class today without having learned your notes from last time, then you will be behind! This will make it very difficult for you to do well.

If you need help, get it! Form a study group with your classmates. Also, I am available during office hours or you can schedule an appointment with me. If you see me for homework help, be certain to bring your class notes and attempted problems so that I can see what you have done so far.

## **PROFESSIONALISM and CLASSROOM BEHAVIOR**

During the semester, you need to exhibit professional behavior by focusing on the job at hand – learning mathematics. If you will come to class with the mindset of putting learning first, then the following aspects of professionalism will naturally fall into place:

- Come to class every time it is scheduled, be on time, and don't leave early.
- Turn in requested materials on time.
- Stay on task – learning mathematics.
- Don't pack up your books early. The most important part of class is typically at the end.
- Be prepared. Learn today's class notes and do today's homework before coming to the next class session.
- Through your actions and words, display that the work you are doing is important.
- Don't cheat. *Procedures for academic dishonesty will be followed if work presented as your own is not actually your own work.*
- *Be courteous to and respectful of those in authority over you (your professor, principal, superintendent, etc.)*
- *Be courteous to and respectful of other students. All students have the right to hear the class lectures, so do not converse privately during class lectures. Turn off cell phones, pagers, and other noise-making devices.*

Unprofessional behavior can result in a reduction in your grade.

## **CLASSROOM ACCOMMODATIONS**

Students requesting classroom accommodations or modifications due to a documented disability must contact the Access Office for Students with Disabilities located in Nevins Hall room 1115. Phone 245-2498 (voice) or 219-1348 (tty).