

# MATH 4233-5233: College Geometry

## Spring Semester, 2020

**Instructor:** Dr. Abdollah Khodkar  
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**Office Hours:** Monday, Wednesday and Friday 10am-12noon.  
If you would like to see me but cannot come during one of these times, please call first or make an appointment.

**Prerequisites:** Math 3003 or consent of department

**Hours Credit:** 3 hours

**Class Time and Place:** Monday and Wednesday 3:30pm-4:45pm, Boyd 306

**Textbook:** College Geometry: A discovery approach by David C. Kay

**Courses Description:** An introduction to Euclidean and non-Euclidean geometries developed with the study of constructions, transformations, applications and the rigorous proving of theorems.

**Learning Outcomes:** The student will have an understanding of:

1. Axiomatic and Proof
2. Incidence Axioms for Geometry
3. Triangles, Congruent Relations and Side-Angle-Side Hypothesis
4. Quadrilaterals and Circles
5. Side-Angle-Side, Angle-Side-Angle, Side-Side-Side Congruence and Perpendicular Bisectors
6. Euclidean Geometry, Euclidean Parallelism, Existence of Rectangles
7. Transformation in Geometry, Euclid's Superposition Proof and Plane Transformation
8. Reflection, Translation, Rotation, and Other Isometries

## Topics include:

<u>Sections</u>	<u>Title</u>
2.1	An Introduction to Axiomatic and Proof
2.2	The Role of Examples and Models
2.3	Incidence Axioms for Geometry
2.4	Distance, Ruler Postulate, Segments, Rays, and Angles
2.5	Angle Measure and the Protractor Postulate
3.1	Triangles, Congruence Relations, SAS Hypothesis
3.2	Taxicab Geometry: Geometry without SAS Congruence
3.3	SAS, ASA, SSS Congruence, and Perpendicular Bisectors
3.4	Exterior Angle Inequality
3.5	The Inequality Theorems
3.6	Additional Congruence Criteria
3.7	Quadrilaterals
3.8	Circles
4.1	Euclidean Parallelism, Existence of Rectangles
4.2	Parallelograms and Trapezoids: Parallel Projection
4.3	Similar Triangles, Pythagorean Theorem, Trigonometry
4.4	Regular Polygons and Tiling
4.5	The Circle Theorems
5.1	Euclid's Superposition Proof and Plane Transformations
5.2	Reflections: Building Blocks for Isometries
5.3	Translations, Rotations, and Other Isometries
5.4	Other Linear Transformations
5.5	Coordinate Characterizations

**Calculators:** You are not allowed to use “**advanced**” calculators such as TI-84 Plus or better in your tests or final exam.

**Attendance Policy:** If you miss a class, you are responsible for obtaining any information that you missed. If you miss four classes or more without a *university-approved excuse*, you may get an F in this course.

**Rescheduling tests/Final:** If you have a *university-approved excuse* for missing a test or final, you may be allowed to reschedule, but you must make arrangements with me in advance.

**Homework:** I will assign homework problems that are not to be turned in and graded but that are meant to reflect the sort of questions you can expect on tests and exams. I encourage you to use my office hours if you have any questions about them.

**Tests:** There will be three tests. Each will be worth 25%.

Test 1: Wednesday January 29, 2020

Test 2: Wednesday February 26, 2020

Test 3: Wednesday March 25, 2020

**The dates for tests are subject to change.**

**Final exam:** Friday, May 1, 2:00-4:00 pm

The final exam is worth 25%.

**Grading Scale:**

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

**Grading:** Your final grade will be determined as follows:

Test one: 25%, Test two: 25%, Test three: 25%, final exam 25%.

Students, please carefully review the following information at this link

<https://www.westga.edu/administration/vpaa/common-language-course-syllabi.php>

It contains important material pertaining to your rights and responsibilities in this class. Because these statements are updated as federal, state, university, and accreditation standards change, you should review the information each semester.