

## Course Number and Title: ACM 021 Geometry

**Campus Location:**

Georgetown

**Effective Date:**

2021-51

**Prerequisite:**

ACM 012 Algebra II

**Co-Requisites:**

None

**Course Credits and Hours:**

2.25 credits

2.25 lecture hours/week

0.00 lab hours/week

**Course Description:**

This course focuses on an in-depth analysis of plane, solid and coordinate geometry, including postulates and definitions, development of deductive reasoning through direct and indirect proofs, geometric inequalities, perpendicularity, parallelism, congruence, similarity, circles, constructions, polygons and solids.

**Required Text(s):**

Obtain current textbook information by viewing the [campus bookstore - https://www.dtcc.edu/bookstores](https://www.dtcc.edu/bookstores) online or visit a campus bookstore. Check your course schedule for the course number and section.

**Additional Materials:**

Access to a computer, the Internet and TI-83 Graphing Calculator.

**Schedule Type:**

Classroom Course

**Disclaimer:**

None

**Core Course Performance Objectives (CCPOs):**

1. Classify and manipulate lines, angles, and figures in geometric equations. (CCC 2, 6)
2. Use relationships involving circles to solve applications. (CCC 2, 6)
3. Manipulate and solve triangles using properties of congruency and similarity. (CCC 2, 6)
4. Apply geometric formulas to compute measures of two- and three-dimensional figures. (CCC 2, 6)
5. Use direct and indirect proofs to establish geometric relationships. (CCC 2, 6)

See Core Curriculum Competencies and Program Graduate Competencies at the end of the syllabus. CCPOs are linked to every competency they develop.

**Measurable Performance Objectives (MPOs):**

Upon completion of this course, the student will:

1. Classify and manipulate lines, angles, and figures in geometric equations.
  1. Construct angles and calculate midpoints and distance of lines.
  2. Classify angles, triangles, and polygons.
  3. Calculate angle measurements of interior and exterior angles of polygons.
  4. Calculate slopes, and write equations of lines.
  5. Solve angle measures formed by a transversal and two parallel lines.
  6. Construct median, altitude, and angle bisections.
2. Use relationships involving circles to solve applications.
  1. Construct and label parts and properties of circles.
  2. Write and solve an equation of a circle.
  3. Calculate measures of arcs, chords, tangents, and secants to circles.
3. Manipulate and solve triangles using properties of congruency and similarity.
  1. Classify triangles as congruent or similar.
  2. Calculate measures using special properties of right triangles.
  3. Calculate measures using the properties of an isosceles triangle.
4. Apply geometric formulas to compute measures of two- and three-dimensional figures
  1. Classify quadrilaterals and their special properties.
  2. Calculate areas of regular polygons.
  3. Manipulate figures using transformations and scale.
  4. Calculate perimeter, area, and volume of similar figures.
  5. Calculate and manipulate polygons using matrices.
5. Use direct and indirect proofs to establish geometric relationships.
  1. Apply deductive reasoning to make predictions and conjectures.
  2. Complete geometric proofs using postulates and theorems.

**Evaluation Criteria/Policies:**

Students must demonstrate proficiency on all CCPOs at a minimal 75 percent level to successfully complete the course. The grade will be determined using the scale below:

92	-	100	=	A
83	-	91	=	B
75	-	82	=	C
0	-	74	=	F

Students should refer to the [Student Handbook - https://www.dtcc.edu/handbook](https://www.dtcc.edu/handbook) for information on the Academic Standing Policy, the Academic Integrity Policy, Student Rights and Responsibilities, and other policies relevant to their academic progress.

**Core Curriculum Competencies (CCCs are the competencies every graduate will develop):**

1. Apply clear and effective communication skills.
2. Use critical thinking to solve problems.
3. Collaborate to achieve a common goal.
4. Demonstrate professional and ethical conduct.
5. Use information literacy for effective vocational and/or academic research.
6. Apply quantitative reasoning and/or scientific inquiry to solve practical problems.

**Program Graduate Competencies (PGCs are the competencies every graduate will develop specific to his or her major):**

None

**Disabilities Support Statement:**

The College is committed to providing reasonable accommodations for students with disabilities. Students are encouraged to schedule an appointment with the campus Disabilities Support Counselor to request an accommodation needed due to a disability. A listing of campus Disabilities Support Counselors and contact information can be found at the [disabilities services - https://www.dtcc.edu/disabilitysupport](https://www.dtcc.edu/disabilitysupport) web page or visit the campus Advising Center.