

## Course Number and Title: MAT 112 Aviation Mathematics

**Campus Location:**

Georgetown

**Effective Date:**

2021-52

**Prerequisite:**

SSC 100 or concurrent

**Co-Requisites:**

None

**Course Credits and Hours:**

4.00 credits

4.00 lecture hours/week

0.00 lab hours/week

**Course Description:**

This course provides students with math skills that are essential to Aviation Maintenance. Topics include on-the-job applications of whole numbers, fractions, decimals, percentages, measurement, and operations with signed numbers. This course meets FAA certification standards.

**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:**

Any scientific calculator

**Schedule Type:**

Classroom Course

Online Course

**Disclaimer:**

None

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

1. Solve on-the-job applications involving whole numbers, fractions, decimals, and percentages. (CCC 2, 6)
2. Calculate ratios and proportions, and use these to solve applied problems. (CCC 2, 6)
3. Calculate conversions within and between the English and metric systems of measurement. (CCC 6)
4. Perform basic operations using signed numbers. (CCC 6)
5. Find areas and volumes of geometric figures. (CCC 6)
6. Solve right triangles using trigonometric functions. (CCC 2, 6)
7. Solve advanced algebraic equations. (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. Solve on-the-job applications involving whole numbers, fractions, decimals, and percentages.
  1. Perform all operations with whole numbers, fractions, and decimals.
  2. Use percentages to solve problems of tolerances, discounts, simple interest, commission, and efficiency of a process.
  3. Simplify expressions using order of operations.
  4. Round measurements to the appropriate number of significant digits.
  5. Perform basic arithmetic operations using a calculator.
2. Calculate ratios and proportions, and use these to solve applied problems.
  1. Recognize the different forms of writing ratios.
  2. Express ratios and rates as reduced fractions.
  3. Solve proportions for unknown terms.
  4. Solve applied word problems using proportions.
  5. Calculate lengths of sides of similar triangles using proportions.
3. Calculate conversions within and between the English and metric systems of measurement.
  1. Perform calculations in both the metric and English systems.
  2. Use common technical measuring instruments.
  3. Convert from one unit of measure to another.
4. Perform basic operations using signed numbers.
  1. Add, subtract, multiply, and divide signed numbers.
  2. Illustrate the use of signed numbers and exponents.
  3. Solve practical problems involving signed numbers, exponents, roots, and the order of operations.
5. Find areas and volumes of geometric figures.
  1. Identify geometric figures.
  2. Find the area, perimeter, and volume.
6. Solve right triangles using trigonometric functions.
  1. Solve right triangles using the Pythagorean Theorem.
  2. Recognize and perform calculations with the trigonometric functions.
7. Solve advanced algebraic equations.
  1. Perform calculations using advanced algebraic methods; substitution, elimination, and multiplication.
  2. Solve quadratic equations using the quadratic formula.

**Evaluation Criteria/Policies:**

The grade will be determined using the Delaware Tech grading system:

90	-	100	=	A
80	-	89	=	B
70	-	79	=	C
0	-	69	=	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.

**Final Course Grade:**

Calculated using the following weighted average

Evaluation Measure	Percentage of final grade
10 Exams (Summative) (Equally Weighted)	50%
11 General Practical Project Worksheets (Formative)	50%
TOTAL	100%

**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):****AVIAASAVI (Aviation Maintenance Technology)**

1. Demonstrate professionalism and adherence to safety and environmental procedures and regulation in the workplace.
2. Adhere to and apply appropriate FAA regulation and industry publications.
3. Explain and apply the principles of aircraft inspection, repair, and maintenance.
4. Explain and apply the principle of powerplant.

**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.