



## Course Number and Title: MAT 129 Math for Health Sciences

**Campus Location:**

Georgetown, Dover, Stanton, Wilmington

**Effective Date:**

2018-51

**Prerequisite:**

MAT 010, SSC 100 or concurrent

**Co-Requisites:**

None

**Course Credits and Hours:**

3.00 credits

3.00 lecture hours/week

0.00 lab hours/week

**Course Description:**

This course focuses on health-related mathematical applications using algebraic and arithmetic operations. Topics include basic arithmetic operations on real numbers, conversions, dimensional analysis, algebraic expressions, algebraic equations, exponents, scientific notation, and graphs.

**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:**

Four-function calculator

**Schedule Type:**

Classroom Course

**Disclaimer:**

None

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

1. Perform arithmetic operations without a calculator. (CCC 2, 6)
2. Perform conversions using appropriate mathematical methods. (CCC 2, 6)
3. Use exponent rules and scientific notation to simplify expressions. (CCC 2, 6)
4. Use algebra to solve equations. (CCC 2, 6)
5. Solve health science-related application problems. (CCC 2,6)
6. Graph and interpret linear and exponential 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. Perform arithmetic operations without a calculator.
  1. Add, subtract, multiply, and divide integers, fractions, and decimals.
  2. Use order of operations to evaluate expressions involving integers, fractions, and decimals.
  3. Round and write numbers using health science standards.
  4. Convert between fractions, decimals, and percentages.
2. Perform conversions using appropriate mathematical methods.
  1. Convert between and within the metric and household systems.
  2. Use a multi-step process to convert between and within the metric and household systems.
  3. Convert between Fahrenheit and Celsius temperatures.
  4. Convert between and within military and standard time systems.
3. Use exponent rules and scientific notation to simplify expressions.
  1. Simplify expressions with exponents, including negative and zero exponents.
  2. Translate decimal numbers to and from scientific notation.
  3. Perform multiplication and division using scientific notation.
4. Use algebra to solve equations.
  1. Simplify algebraic expressions using order of operations.
  2. Evaluate algebraic expressions using real numbers.
  3. Solve linear equations and proportions.
  4. Solve literal equations.
5. Solve health science-related application problems.
  1. Solve health sciences-related application problems involving fractions, decimals, and percentages.
  2. Translate application problems into algebraic expressions, inequalities, and equations.
  3. Calculate concentrations using dimensional analysis, proportions, and formulas.
  4. Calculate dosages using dimensional analysis, proportions, and formulas.
  5. Solve application problems using medication labels.
  6. Calculate flow rate using dimensional analysis and formulas.
  7. Use algebraic equations and inequalities to solve application problems.
  8. Solve mixture problems.
6. Graph and interpret linear and exponential equations.
  1. Determine the slope/rate of change of a line.
  2. Graph linear equations.
  3. Determine the x- and y-intercepts of a graph.
  4. Determine the equation of a line from a graph.
  5. Interpret graphs.
  6. Graph and interpret a half-life application problem.

**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 Delaware Tech grading system:

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.