

Department:

Mathematics.

Course Description:

Technical math focuses on measurement, algebraic operations, formulas, geometry, and basic statistics, scientific notation, number systems, algebra (equations and formulas, factoring, and systems), geometry, and trigonometry. These concepts are supported by practical applications to a variety of career and technical vocations, including manufacturing, automotive, allied health, welding, building trades, and heating, ventilation, air conditioning and plumbing.

Course Competencies:

Upon completion of the course, the student should be able to:

1. Apply percent and proportion concepts and processes to solve technical/occupational problems.
2. Take and use metric and English measurements for solving technical problems.
3. Use basic algebraic concepts to convert technical word problems to expressions and equations.
4. Correctly identify and use formulas to solve problems with multiple variables.
5. Use geometry to solve problems with triangles, polygons, circles, and solid forms.
6. Identify and use trigonometric ratios for problem solving.
7. Graph and solve systems of equations.
8. Solve simple quadratic functions.
9. Graph and chart data sets
10. Determine measures of central tendency.

Course Content:

- A. Occupational applications for proportion and percent calculations
- B. Calculating with units of measure
- C. English and Metric unit conversions
- D. Direct measurements
- E. Signed number operations
- F. Exponents and square roots
- G. Algebraic language and formulas
- H. Adding and subtracting algebraic expressions
- I. Solving equations
- J. Solving word problems related to occupations and trades
- K. Scientific Notation
- L. Angle Measurements
- M. Area and Perimeter of polygons
- N. Triangles, regular hexagons, and irregular polygons
- O. Circles

- P. Prisms, pyramids, cylinders, spheres, and cones
- Q. Angles and triangles
- R. Trigonometric ratios
- S. Solving right triangles
- T. Oblique triangles
- U. Systems of equations
- V. Quadratic equations
- W. Statistics
- X. Reading and constructing graphs
- Y. Measures of central tendency

Learning Assessments:

Student assessment may include homework, class participation, presentations, skills practice, quizzes, unit tests, final exams, and projects as determined by the instructor.

Instructional Materials:

Textbook: Carmen, R. A and Saunders, H.M. (2014). Mathematics for the Trades: A Guided Approach, 10th Ed. Pearson. ISBN-13: 9780133347777

Basic Scientific Calculator

Guidelines for Requesting Accommodations Based on Documented Disability or Medical Condition

It is the intention of Highland Community College to work toward full compliance with the Americans with Disabilities Act, to make instructional programs accessible to all people, and to provide reasonable accommodations according to the law.

Students should understand that it is their responsibility to self-identify their need(s) for accommodation and that they must provide current, comprehensive diagnosis of a specific disability or medical condition from a qualified professional in order to receive services. Documentation must include specific recommendations for accommodation(s). Documentation should be provided in a timely manner prior to or early in the semester so that the requested accommodation can be considered and, if warranted, arranged.

In order to begin the process all students **must** complete the "Disabilities Self-Identification Form" on our [Disability Services website](#).

This form can also be accessed at the Highland Community College homepage under Students Services/Student Resources/Disability Service or by contacting the Disabilities Coordinator.

A Note on Harassment, Discrimination and Sexual Misconduct

Highland Community College seeks to assure all community members learn and work in a welcoming and inclusive environment. Title VII, Title IX, and College policy prohibit harassment, discrimination and sexual misconduct. Highland Community College encourages anyone experiencing harassment, discrimination or sexual misconduct to talk to report to the Vice President for Student Services, the Human Resources Director or complete an [online report](#) about what happened so that they can get the support they need and Highland Community College can respond appropriately.

There are both confidential and non-confidential resources and reporting options available to you. Highland Community College is legally obligated to respond to reports of sexual misconduct, and therefore we cannot guarantee the confidentiality of a report, unless made to a confidential resource. Responses may vary from support services to formal investigations. As a faculty member, I am required to report incidents of sexual misconduct and thus cannot guarantee confidentiality. I must provide our Title IX coordinator with relevant details such as the names of those involved in the incident. For more information about policies and resources or reporting options, please review our [Equity Grievance Policy](#).