**BARTON COMMUNITY COLLEGE**

##### COURSE SYLLABUS

## GENERAL COURSE INFORMATION

Course Number: MSCT 1104

Course Title: Applied Shop Mathematics I  
Credit Hours: 2  
Prerequisite: None  
Division and Discipline: Workforce Training and Community Education/Manufacturing Skills

Course Description: This course provides the study of basic math calculations of whole numbers, fractions, decimals, inch/millimeter conversions, calculating X-R values and calculating percentages.

###### INSTRUCTOR INFORMATION

###### COLLEGE POLICIES

Students and faculty of Barton Community College constitute a special community engaged in the process of education. The College assumes that its students and faculty will demonstrate a code of personal honor that is based upon courtesy, integrity, common sense, and respect for others both within and outside the classroom.

Plagiarism on any academic endeavors at Barton Community College will not be tolerated. The student is responsible for learning the rules of, and avoiding instances of, intentional or unintentional plagiarism. Information about academic integrity is located in the Student Handbook.

The college reserves the right to suspend a student for conduct that is determined to be detrimental to the College educational endeavors as outlined in the College Catalog, Student Handbook, and College Policy & Procedure Manual. (Most up-to-date documents are available on the College webpage.)

Any student seeking an accommodation under the provisions of the Americans with Disability Act (ADA) is to notify Student Support Services via email at [disabilityservices@bartonccc.edu](mailto:disabilityservices@bartonccc.edu).

## COURSE AS VIEWED IN THE TOTAL CURRICULUM

This course is one course that students complete in the pursuit of attaining the Manufacturing Skills Certification (MSC). This certificate curriculum was developed by the Kansas Institute for Technical Excellence (KITE) colleges in Kansas in collaboration with business and industry representatives within the manufacturing sector from the Central/South Central Kansas region.

# This course is not intended for transfer.

## ASSESSMENT OF STUDENT LEARNING

Barton Community College assesses student learning at several levels: institutional, program, degree and classroom. The goal of these assessment activities is to improve student learning. As a student in this course, you will participate in various assessment activities. Results of these activities will be used to improve the content and delivery of Barton’s instructional program.

The student will be able to perform math calculations of addition, subtraction, multiplication and division of whole numbers, fractions and decimals. The student will use practical applications, examples and exercises that are based on application and measurements that employees encounter on the job.

Course Outcomes, Competencies, and Supplemental Competencies:

1. Add, subtract, multiply and divide whole numbers.
   1. Use whole numbers correctly.
   2. Use place values for whole numbers.
   3. Read and write whole numbers up to 999,999,999.
   4. Round whole numbers.
   5. Explain the basic concept of negative numbers.
   6. Add and subtract negative whole numbers.
   7. Add and subtract positive whole numbers.
   8. Add and subtract whole numbers with unlike signs.
   9. Multiply and divide positive whole numbers.
   10. Multiply whole numbers.
   11. Multiply whole numbers with unlike signs.
   12. Solve problems with several operations in the correct order.
2. Add, subtract and multiply fractions.
   1. Explain the concept of fractions and the numerator and denominator.
   2. Recognize proper fractions, improper fractions and mixed numbers.
   3. Convert improper fractions to mixed numbers.
   4. Reduce fractions to their lowest terms.
   5. Read a steel rule that’s graduated in fractional inches.
   6. Add and subtract fractions with the same denominator.
   7. Find the least common denominator of two or more fractions.
   8. Convert fractions to equivalent fractions with a common denominator.
   9. Add and subtract fractions with different denominators.
   10. Add and subtract mixed numbers.
   11. Multiply and divide fractions.
   12. Multiply and divide mixed numbers.
3. Use decimals, change decimals to fractions, add and subtract decimals, work with gauge blocks and decimal tolerances and multiply and divide decimals.
   1. Explain the concept of decimals.
   2. Identify decimal places and correctly read decimal values.
   3. Round decimals to specified decimal places.
   4. Convert a fraction to a decimal.
   5. Convert a decimal to a fraction.
   6. Convert a decimal to a fraction that can be read on a steel rule.
   7. Add decimals.
   8. Subtract decimals.
   9. Explain the concept of a tolerance.
   10. Calculate the high and low limits for the part feature when given a specification.
   11. Recognize a typical application of gage blocks on a production floor.
   12. Select an appropriate combination of gage block sizes to match a desired dimension.
   13. Multiply and divide decimals correctly.
4. Apply measurement conversions.
   1. Explain why units of measurement are important to working with math problems correctly.
   2. Recognize the number of millimeters in one inch, and the number of inches in one millimeter.
   3. Convert inches to millimeters, when given the formula.
   4. Convert millimeters to inches, when given the formula.
5. Calculate X and R values.
   1. Define the terms average and X.
   2. Calculate an average or X value.
   3. Define the term range.
   4. Calculate a range.
6. Solve problems using percentages.
   1. Define the term percentage.
   2. Convert fractions to percentages.

## INSTRUCTOR'S EXPECTATIONS OF STUDENTS IN CLASS

## TEXTBOOKS AND OTHER REQUIRED MATERIALS

### REFERENCES

### METHODS OF INSTRUCTION AND EVALUATION

## ATTENDANCE REQUIREMENTS

## COURSE OUTLINE