Quinsigamond Community College
School of Math and Science

Instructor's Information:
Instructor: <Professor John Smith>
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Course Information:
Course: MAT 090 Basic Mathematics Skills – Section ##
Meets on: <Mondays, Wednesdays, Fridays from 8:00am – 8:50am>
Credits: 3 credit hours

Course Description:
This course is designed for students with little or no background in mathematics. Major topics include the following: whole numbers, fractions, decimals, percents, ratios, proportions, basic statistics (finding mean and reading graphs, charts and tables) and an introduction to algebra. Technology tools are utilized in this course. **Taking the departmental final examination is a requirement of the course. The minimum passing grade for developmental mathematics courses is a "C".**

Please Note: This developmental mathematics course cannot be used to satisfy degree or certificate requirements.

Pre-requisite:
Appropriate placement score

Required Textbook/Materials/Website:
Textbook: *Basic College Mathematics*, by Martin-Gay, Pearson Publishing, 6th edition, © 2019
Materials: the use of calculators is not allowed in this course
Website: Access to www.mymathlab.com

Student Learning Outcomes & Instructional Objectives:
This course is designed to achieve the following student outcomes and objectives:

- Find the place value of a digit in a whole number.
- Write a whole number in words and in standard form.
- Write a whole number in expanded form.
- Read tables.
- Add, subtract, multiply, and divide whole numbers.
- Find the perimeter of a polygon.
- Use the properties of multiplication.
- Multiply by whole numbers ending in zero(s).
- Find the area of a rectangle.

- Perform long division.
- Find the average of a list of numbers.
- Solve problems by adding, subtracting, multiplying, or dividing whole numbers.
- Solve problems that require more than one operation.
- Write repeated factors using exponential notation.
- Evaluate expressions containing exponents.
- Evaluate the square root of a perfect square.
- Use the order of operations.
- Find the area of a square.
- Identify the numerator and the denominator of a fraction and review division properties for 0 and 1.
- Write a fraction to represent parts of figures or real-life data.
- Identify proper fractions, improper fractions, and mixed numbers.
- Write improper fractions as mixed numbers or whole numbers.
- Find the factors of a number.
- Identify prime and composite numbers.
- Find the prime factorization of a number.
- Write a fraction in simplest form or lowest terms.
- Determine whether two fractions are equivalent.
- Solve problems by writing fractions in simplest form.
- Multiply and divide fractions and mixed numbers or whole numbers.
- Solve problems by multiplying or dividing fractions.
- Find the reciprocal of a fraction.
- Add and subtract like fractions.
- Solve problems by adding or subtracting like fractions.
- Find the least common multiple (LCM) using multiples.
- Find the LCM using prime factorization.
- Write equivalent fractions.
- Add and subtract unlike fractions or mixed numbers.
- Solve problems by adding or subtracting unlike fractions or mixed numbers
- Compare fractions and decimals.
- Evaluate fractions raised to powers.
- Solve problems by performing operations on fractions or mixed numbers.
- Know the meaning of place value for a decimal number, and write decimals in words.
- Write decimals in standard form, as fractions, or as decimals.
- Round decimals to a given place value.
- Add, subtract, multiply, and divide decimals.
- Estimate when adding, subtracting, multiplying, or dividing decimals.
- Solve problems that involve adding, subtracting, multiplying, or dividing decimals.
- Multiply and divide by powers of 10.
- Find the circumference of a circle.
- Review order of operations to simplify expressions containing decimals.

- Write fractions as decimals.
- Solve area problems containing fractions and decimals.
- Write rates and ratios as fractions, and in simplest form.
- Find unit rates and unit prices.
- Write sentences as proportions.
- Determine whether proportions are true.
- Find an unknown number in a proportion.
- Solve problems by writing proportions.
- Understand percent and write percents as decimals.
- Write decimals as percents, write percents as fractions, write fractions as percents, and write percent problems as proportions.
- Convert percents, decimals, and fractions.
- Solve percent problems.
- Calculate sales tax and total price, commissions, discount and sale price.
- Read pictographs, line graphs, and circle graphs.
- Read and construct bar graphs and histograms.
- Draw circle graphs.
- Find the mean, median, and mode of a list of numbers.
- Represent real-life situations with signed numbers.
- Graph signed numbers on a number line.
- Compare signed numbers.
- Find the absolute value and the opposite of a number.
- Read bar graphs containing signed numbers.
- Add, subtract, multiply, and divide signed numbers.
- Solve problems by adding, subtracting, multiplying, and dividing signed numbers.
- Simplify expressions by using the order of operations.

Teaching Procedures:

Most classes will be a combination of lecture, group activities, and in-class assignments. You will be given homework assignments to be completed outside of class, with due dates/times. There will occasionally be a quiz or exam given in class.

Course Topics & Required Assignments/Readings:

The Whole Numbers

- Place Value, Names for Numbers, and Reading Tables
- Adding Whole Numbers and Perimeter
- Subtracting Whole Numbers
- Multiplying Whole Numbers and Area
- Dividing Whole Numbers
- An Introduction to Problem Solving
- Exponents, Square Roots, and Order of Operations

Multiplying and Dividing Fractions

- Introduction to Fractions and Mixed Numbers
- Factors and Prime Factorization
- Simplest Form of a Fraction
- Multiplying Fractions and Mixed Numbers
- Dividing Fractions and Mixed Numbers

Adding and Subtracting Fractions

- Adding and Subtracting Like Fractions
- Least Common Multiple
- Adding and Subtracting Unlike Fractions
- Adding and Subtracting Mixed Numbers
- Order, Exponents, and the Order of Operations
- Fractions and Problem Solving

Decimals

- Introduction to Decimals
- Order and Rounding
- Adding and Subtracting Decimals
- Multiplying Decimals and Circumference of a Circle
- Dividing Decimals and Circumference of a Circle
- Fractions and Decimals

Ratio and Proportion

- Ratios
- Rates
- Proportions
- Proportions and Problem Solving

Percent

- Introduction to Percent
- Percents and Fractions
- Solving Percent Problems Using Proportions
- Percent and Problem Solving: Sales Tax, Commission, and Discount

Statistics and Probability

- Reading Pictographs, Bar Graphs, Histograms, and Line Graphs
- Reading Circle Graphs
- Mean, Median, Mode

Signed Numbers

- Signed Numbers
- Adding Signed Numbers
- Subtracting Signed Numbers
- Multiplying and Dividing Signed Numbers
- Order of Operations

Assignment & Test Schedule:

<list all assignments, quizzes, & exam dates>

Grading Breakdown:

<25% Homework >
<15% Quizzes>
<10% Attendance>
<20% Exams>
<30% Final Exam>

A	95 – 100	B –	80 – 82	D +	67 – 69
A –	90 – 94	C +	77 – 79	D	63 – 66
B +	87 – 89	C	73 – 76	D –	60 – 62
B	83 – 86	C –	70 – 72	F	0 – 59

Attendance Policy:
Students are expected to attend all classes, for the entire period. Attendance will be taken during every class, and counts towards your final course grade. If you are absent from class, a doctor's note will excuse your absence.

Disability Statement:
If you have a disability which may require an accommodation, please notify me as soon as possible. You are responsible for forwarding your Accommodation Letter to me and discussing arrangements for this course. Your accommodations for this course begin upon my receipt of your Accommodation Letter; accommodations are not retroactive. You may request accommodations at any time during the semester, but instructors must be provided with reasonable notice prior to exams or deadlines.
Disability Services works to promote access to ensure an accessible college experience for students. If you have further questions, contact Disability Services. All discussions are confidential.

Contact Information for Disability Services & Assistive Technology:
Call: 508-854-4471
Sorenson Video Phone: 508-502-7647
Email: disabilityservices@qcc.mass.edu

Services for Veterans:
If you are a veteran of the armed forces, please visit the Veteran Affairs Office located in 258A (Administration Building) or contact them at veteranaffairs@qcc.mass.edu

Academic Honesty and Plagiarism:
Our purpose in the classroom is to seek the truth; this work requires trust and honesty between teacher and student. If we are not honest about what we know and don't know, our learning will always be impaired. Because our teaching and learning depends on this honest communication, we expect all students to understand what plagiarism is and why it is unacceptable.

Plagiarism means taking someone else's ideas or words and presenting them as one's own. The offense can take many forms including cheating on a test, passing in a paper taken from the Internet or from another student, or failing to properly use and credit sources in an essay. Sometimes the issue is subtle, involving getting too much help on an assignment from someone

else. In every instance, plagiarism means cheating both oneself and the owner of the source. Since the cheating sabotages a student's learning experience, consequences range from no credit for the assignment to failure for the course and possible expulsion from the college.

For further information concerning plagiarism, refer to the QCC Student Handbook.