QUINSIGAMOND COMMUNITY COLLEGE

School of Math and Science

1. Instructor Information:

Instructor: \*\*\*\*\*\*

Instructor’s E-Mail: \*\*\*\*\*\*\*\*

Office Room: \*\*\*\*\*\*

Office Phone: (508) 854‒\*\*\*\*

2. Course Information:

Course Name: MAT 090 *BASIC MATHEMATICS SKILLS*

Section: \*\*

Course Credit Hours: 3

Classroom: \*\*\*\*

Semester: \*\*\*\*, 20\*\*

3. 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. All students are required to participate in a unified comprehensive final exam to be administered during final exam week and achieve a "C" or higher on this exam (or appropriate placement on the placement exam) in order to move on to the next level of math courses.

**Prerequisite:** Appropriate placement by the computerized placement test.

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

4. Required Textbook and Supplies:

* Textbook: ***Basic College Mathematics****,* Martin-Gay, 5th edition, Pearson, © 2015.
* MyMathLab Access Code: Access kit/code to MyMathLab (online resource), which can be purchased separately from the textbook in the QCC bookstore.
* **The use of calculator is not allowed in this course(Only Multiplication Table if Needed)**
* 1” 3-ring binder, hole punch, 8 subject dividers

5. Course Topics and Objectives:

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| **Section #** |  | **Course Topics and Objectives** |
| **Chapter 1 - The Whole Numbers** |
| **1.2** |  | 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. |
| **1.3** |  | Add whole numbers. Find the perimeter of a polygon. Solve problems by adding whole numbers. |
| **1.4** |  | Subtract whole numbers. Solve problems with whole numbers. |
| **1.6** |  | Use the properties of multiplication. Multiply whole numbers. Multiply by whole numbers ending in zero(s). Find the area of a rectangle. Solve problems by multiplying whole numbers. |
| **1.7** |  | Divide whole numbers. Perform long division. Solve problems that require dividing by whole numbers. Find the average of a list of numbers. |
| **1.8** |  | Solve problems by adding, subtracting, multiplying, or dividing whole numbers. Solve problems that require more than one operation. |
| **1.9** |  | 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. |
| **Chapter 2 – Multiplying and Dividing Fractions** |
| **2.1** |  | 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. |
| **2.2** |  | Find the factors of a number. Identify prime and composite numbers. Find the prime factorization of a number. |
| **2.3** |  | Write a fraction in simplest form or lowest terms. Determine whether two fractions are equivalent. Solve problems by writing fractions in simplest form. |
| **2.4** |  | Multiply fractions. Multiply fractions and mixed numbers or whole numbers. Solve problems by multiplying fractions. |
| **2.5** |  | Find the reciprocal of a fraction. Divide fractions. Divide fractions and mixed numbers or whole numbers. Solve problems by dividing fractions. |
| **Chapter 3 – Adding and Subtracting Fractions** |
| **3.1** |  | Add like fractions. Subtract like fractions. Solve problems by adding or subtracting like fractions. |
| **3.2** |  | Find the least common multiple (LCM) using multiples. Find the LCM using prime factorization. Write equivalent fractions. |
| **3.3** |  | Add unlike fractions. Subtract unlike fractions. Solve problems by adding or subtracting unlike fractions. |
| **3.4** |  | Add mixed numbers. Subtract mixed numbers. Solve problems by adding or subtracting mixed numbers. |
| **3.5** |  | Compare fractions. Evaluate fractions raised to powers. Review operations on fractions. Use the order of operations. |
| **3.6** |  | Solve problems by performing operations on fractions or mixed numbers. |
| **Chapter 4 - Decimals** |
| **4.1** |  | Know the meaning of place value for a decimal number, and write decimals in words. Write decimals in standard form. Write decimals as fractions. Write fractions as decimals. |
| **4.2** |  | Compare decimals. Round decimals to a given place value. |
| **4.3** |  | Add decimals. Subtract decimals. Estimate when adding or subtracting decimals. Solve problems that involve adding or subtracting decimals. |
| **4.4** |  | Multiply decimals. Estimate when multiplying decimals. Multiply by powers of 10. Find the circumference of a circle. Solve problems by multiplying decimals. |
| **4.5** |  | Divide decimals. Estimate when dividing decimals. Divide decimals by powers of 10. Solve problems by dividing decimals. Review order of operations to simplify expressions containing decimals. |
| **4.6** |  | Write fractions as decimals. Compare fractions and decimals. Solve area problems containing fractions and decimals. |
| **Chapter 5 – Ratio and Proportion** |
| **5.1** |  | Write ratios as fractions. Write ratios in simplest form. |
| **5.2** |  | Write rates as fractions. Find unit rates. Find unit prices. |
| **5.3** |  | Write sentences as proportions. Determine whether proportions are true. Find an unknown number in a proportion. |
| **5.4** |  | Solve problems by writing proportions. |
| **Chapter 6 - Percent** |
| **6.1** |  | Understand percent. Write percents as decimals. Write decimals as percents. |
| **6.2** |  | Write percents as fractions. Write fractions as percents. Convert percents, decimals, and fractions. |
| **6.4** |  | Write percent problems as proportions. Solve percent problems. |
| **6.6** |  | Calculate sales tax and total price. Calculate commissions. Calculate discount and sale price. |
| **Chapter 9 – Statistics and Probability** |
| **9.1** |  | Read pictographs. Read and construct bar graphs. Read and construct histograms. Read line graphs. |
| **9.2** |  | Read circle graphs. Draw circle graphs. |
| **9.3** |  | Find the mean of a list of numbers. Find the median of a list of numbers. Find the mode of a list of numbers. |
| **Chapter 10 – Signed Numbers** |
| **10.1** |  | Represent real-life situations with signed numbers. Graph signed numbers on a number line. Compare signed numbers. Find the absolute value of a number. Find the opposite of a number. Read bar graphs containing signed numbers. |
| **10.2** |  | Add signed numbers. Solve problems by adding signed numbers. |
| **10.3** |  | Subtract signed numbers. Add and subtract signed numbers. Solve problems by subtracting signed numbers. |
| **10.4** |  | Multiply signed numbers. Divide signed numbers. Solve problems by multiplying and dividing signed numbers. |
| **10.5** |  | Simplify expressions by using the order of operations. Find the average of a list of numbers. |

6. Teaching Procedures: Most classes will be a combination of mini-lectures, discussion, in-class activities, group work, and worksheets. A typical class will include interactive mini-lectures, during which students are expected to take notes and ask questions. Periodically, pre-announced quizzes and tests will be given in class. A major component of this course utilizes an online resource called MyMathLab (MML). It will be used for completing homework assignments, exam reviews, and grading.

7. Instructional and General Course Objectives/Student Learning Outcomes: To prepare the student with the skills required to enter the next level of mathematical studies at QCC. Upon successful completion of this course, students will be able to:

* Read and write whole numbers, fractions, and decimals.
* Perform arithmetic operations on whole numbers, fractions, decimals and integers.
* Apply whole numbers, fractions, decimals, and integers to real-life problems.
* Demonstrate satisfactory skills with ratio, proportion, and percents.
* Utilize basic statistics to find mean of data and to interpret graphs and charts.

**8. Course Grading Policy:** Students will be assessed in various ways, including homework assignments (on MML), quizzes, exams, and a cumulative final exam. Remember, your written work is a reflection of your effort in this course. Therefore, all work is to be written legibly, with scratch work done on separate paper.

20% Homework

 5% Attendance

10% Quizzes

25% Exams

40% Final Exam (Cumulative Departmental Final Exam must be passed with at least 73%)

*\*\*\*Instructors: The above is a sample grading policy. Insert your own grading policy.*

*It is strongly suggested that you heavily weigh the Final Exam, as this indicates the true level of understanding a student has on the objectives of the course, and will have more impact on a student’s final course grade. \*\*\*\**

9. Student Performance Criteria: Late work may be accepted, but at a reduced rate, at the discretion of the instructor. Student grades will be kept and updated on MyMathLab. The following percentage breakdown will be used to determine each student’s overall course grade:

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 59 – 0

10. (Tentative) Semester Assignment Schedule: The following assignment schedule will be used this semester, and may change due to snow days, emergencies, etc. If changes are made to this schedule, students will be notified in a timely manner by the instructor.

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| --- | --- | --- | --- |
| **Week** | **Week beginning** | **Sections of Reading/****Homework Assignments** | **Quizzes/****Exams** |
| **1** | **Sept 7** | **Introduction, Chapter 1** |  |
| **2** | **Sept 12** | **Chapter 1 (continued)** | **Quiz 1** |
| **3** | **Sept 19** | **Chapter 2** | **Exam 1** |
| **4** | **Sept 26** | **Chapter 2 (continued)** |  |
| **5** | **Oct 3** | **Chapter 3** | **Quiz\*\*\*** |
| **6** | **Oct 10** | **Chapter 3 (continued)** | **Exam\*\*\*** |
| **7** | **Oct 17** | **Chapter 4** |  |
| **8** | **Oct 24** | **Chapter 4 (continued)** |  |
| **9** | **Oct 31** | **Chapter 5** |  |
| **10** | **Nov 7** | **Chapter 6** |  |
| **11** | **Nov 14** | **Chapter 6 (continued)** |  |
| **12** | **Nov 21** | **Chapter 9** |  |
| **13** | **Nov 28** | **Chapter 10** |  |
| **14** | **Dec 5** | **Course Review** |  |
| **15** | **Cumulative Final Exam, *(\*\*\*Insert the Day, Date, and Time of the final exam, see the registrar’s office final week schedule\*\*\*)***  |

**11. Attendance Policy:** Most students find it difficult to learn Mathematics on their own and, since this is a rigorous course, it is expected that you will attend all classes for the full period in order to be successful in this course.

* If you miss a class: you will be responsible for making up that day’s work and getting notes from another student or feel free to contact your instructor.
* If you miss an exam: \*\*\*\*
* If you miss a quiz: \*\*\*\*
* Attendance policy: \*\*\*\*

**QCC Math Center:** The Math Center provides free, drop-in tutorial assistance for students in any QCC mathematics course. Located on the second floor of The Learning Center, the Math Center is a welcoming place where students have the opportunity to work intensively to improve their mathematical skills or simply drop by to ask a few questions. The Center’s hours for this semester are concurrent with The Learning Center’s hours; call 508-854-7487 for more information. In addition to providing tutoring, the Center houses student math resources such as the students’ and instructor’s solutions manuals to your text, computers for MyMathLab access and use, and additional textbooks. There are several math tutorial software titles on the Center’s computers that are very useful if you need to review a topic or need alternative explanations for material presented in class. Check the QCC Math Center website, <http://www.qcc.edu/services/tutoring-services/math-center>.

**Institutional Disabilities 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

**Academic Dishonesty Policy:**

According to the QCC Student Handbook, acts of academic dishonesty include, but are not limited to, use of unauthorized assistance in taking quizzes, tests or exams; dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; the acquisition, without permission, of tests or other academic material belonging to a member of the College faculty or staff; copying or purchasing other’s work or arranging for others to do work under a false name. Since 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.

MAT 090 BASIC MATHEMATICS SKILLS

CLASSROOM BEHAVIOR EXPECTATIONS

# IT IS EXPECTED

* All students **WILL** attend all scheduled classes, arrive in class on time, and stay for the duration of the scheduled class.
* All students **WILL** bring all required materials to class.
* All students **WILL** complete the assigned homework to the best of their ability.
* During class, all students **WILL** refrain from talking out loud.
* During class, all students **WILL** refrain from making any unnecessary noises.
* During class, all students **WILL** refrain from texting, using cell phones, smart devices, etc.
* During class, all students **WILL** raise their hand to contribute to the discussion or to ask appropriate questions.
* All students **WILL** be respectful of their fellow students.
* Homework **WILL** be a reflection of the student’s own efforts.
* Exams **WILL** be accomplished by the student without any form of outside assistance or calculators (MAT 090). Students should review the QCC Student Handbook for a full definition of plagiarism and all resulting consequences.
* All students **WILL** maintain an atmosphere of mathematical education for the entire assigned class time.