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 095 *BEGINNING ALGEBRA*

Section: \*\*

Course Credit Hours: 3

Classroom: \*\*\*\*

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

**3. Course Description:** This course covers all basic operations of real numbers, linear and literal equations, graphing lines (using tables, *x* and *y*-intercepts), the arithmetic of polynomial expressions including properties of exponents, solving and graphing linear inequalities, perimeters and areas of basic figures, scientific notation and intra-system metric conversions. 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 better on this exam (or appropriate placement on the placement exam) in order to move on to the next level of math courses.**

**Prerequisite:** MAT 090 with a grade of “C” or better on the MAT 090 departmental final exam *or* by 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: ***Introductory Algebra****,* Martin-Gay, 5th edition, Pearson, © 2016.
* 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 scientific calculator is allowed in this course. However, a graphing calculator is not allowed in this course.**
* 1” 3-ring binder, hole punch, 4 subject dividers

5. Course Topics and Objectives:

|  |  |  |
| --- | --- | --- |
| **Section #** |  | **Course/Topic Objectives** |
| **Chapter 1 Real Numbers and Introduction to Algebra** | | |
| **1.2** |  | Define the meaning of the symbols . Translate sentences into mathematical statements. Identify integers, rational numbers, irrational numbers, and real numbers. Find the absolute value of a real number. |
| **1.3** |  | Define and use exponents and the order of operations. Evaluate algebraic expressions, given replacement values for variables. Determine whether a number is a solution of a given equation. Translate phrases into expressions and sentences into equations. |
| **1.4** |  | Add real numbers. Find the opposite of a number. Evaluate algebraic expressions using real numbers. Solve applications that involve addition of real numbers. |
| **1.5** |  | Subtract real numbers. Evaluate algebraic expressions using real numbers. Determine whether a number is a solution of a given equation. Solve applications that involve subtraction of real numbers. |
| **1.6** |  | Multiply real numbers. Find the reciprocal of a real number. Divide real numbers. Evaluate expressions using real numbers. Determine whether a number is a solution of a given equation. Solve applications that involve multiplication or division of real numbers. |
| **1.7** |  | Learn to use the commutative, associative, identity, inverse, and distributive properties. |
| **1.8** |  | Simplify expressions containing parentheses; identify terms, like and unlike terms; combine like terms. Write word phrases as algebraic expressions. |
| **Chapter 2 Equations, Inequalities, and Problem Solving** | | |
| **2.1** |  | Use the addition property of equality to solve linear equations. Simplify an equation and then use the addition property of equality. Write word phrases as algebraic expressions. |
| **2.2** |  | Use the multiplication property of equality to solve linear equations. Use both the addition and multiplication properties of equality to solve linear equations. Write word phrases as algebraic expressions. |
| **2.3** |  | Apply the general strategy for solving a linear equation. Solve equations containing fractions or decimals. Recognize identities and equations with no solution. |
| **2.5** |  | Use formulas to solve problems. Solve a formula or equation for one of its variables. |
| **2.7** |  | Graph inequalities on a number line. Use the addition and multiplication properties of inequalities to solve and graph inequalities. |
| **Chapter 3 Exponents and Polynomials** | | |
| **3.1** |  | Evaluate exponential expressions. Use the product and power rule for exponents. Use the power rule for products and quotients. Use the quotient rule for exponents, and define a number raised to the 0 power. Decide which rule(s) to use to simplify an expression. |
| **3.2** |  | Simplify expressions containing negative exponents. Use the rules and definitions for exponents to simplify exponential expressions. Write numbers in scientific notation. Convert numbers in scientific notation to standard form. |
| **3.3** |  | Define term and coefficient of a term. Define polynomial, monomial, binomial, trinomial, and degree. Evaluate polynomials for given replacement values. Simplify a polynomial by combining like terms. Simplify a polynomial in several variables. Write a polynomial in descending powers of the variable and with no missing powers of the variable. |
| **3.4** |  | Add and subtract polynomials. Add or subtract polynomials in one variable. Add or subtract polynomials in several variables. |
| **3.5** |  | Multiply monomials. Multiply a monomial by a polynomial. Multiply two polynomials. Multiply polynomials vertically. |
| **3.6** |  | Multiply two polynomials using the FOIL method. Square a binomial. Multiply the sum and difference of two terms. Use special products to multiply binomials. |
| **3.7** |  | Divide a polynomial by a monomial. Use long division to divide a polynomial by a polynomial other than a monomial. |
| **Chapter 6 Graphing Equations & Metrics** | | |
| **6.1** |  | Plot ordered pairs of numbers on the rectangular coordinate system. Graph paired data to create a scatter diagram. Find the missing coordinate of an ordered pair solution, given one coordinate of the pair. |
| **6.2** |  | Graph a linear equation by finding and plotting ordered pair solutions. |
| **6.3** |  | Identify intercepts of a graph. Graph a linear equation by finding and plotting intercept points. Identify and graph vertical and horizontal lines. |
| **Metrics**  ***(handout)*** |  | Be able to convert units within systems and across different systems. |

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:

* Properly evaluate expressions with real numbers
* Graph linear equations and inequalities
* Simplify expressions with exponents and scientific notation
* Perform arithmetic on polynomial expressions
* Convert intra-system values

**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.

|  |  |  |  |
| --- | --- | --- | --- |
| **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 1 (Continued)** | **Exam 1** |
| **4** | **Sept 26** | **Chapter 2** |  |
| **5** | **Oct 3** | **Chapter 2 (Continued)** | **Quiz\*\*\*** |
| **6** | **Oct 10** | **Chapter 2(continued)** | **Quiz\*\*\*** |
| **7** | **Oct 17** | **Chapter 3** | **Exam\*\*** |
| **8** | **Oct 24** | **Chapter 3 (continued)** |  |
| **9** | **Oct 31** | **Chapter 3 (Continued)** |  |
| **10** | **Nov 7** | **Chapter 6** |  |
| **11** | **Nov 14** | **Chapter 6 (continued)** |  |
| **12** | **Nov 21** | **Metrics** |  |
| **13** | **Nov 28** | **Course Review** |  |
| **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 095 BEGINNING ALGEBRA

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. 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.