**ESSEX COUNTY COLLEGE**

**Division of Mathematics, Engineering Technologies and Computer Sciences**

**MTH 093S – Basic Skills for Modern Mathematics**

**Course Outline**

**Course Number & Name:**  MTH 093S – Basic Skills for Modern Mathematics

**Credit Hours:**  1 .5 **Contact Hours:**  1.5 **Lecture:** 1.5 **Lab:**  N/A **Other:**  N/A

**Prerequisites**:  Grade of “C” or better in MTH 086 or placement

**\*An M is NOT a valid prerequisite grade.**

**Co-requisites:** MTH 103 **Concurrent Courses:** None

**Course Outline Revision Date:**  Fall 2021 **Note**: Calculators cannot be used in this course.

**Course Description**: In this course, the algebraic concepts that are introduced in MTH 086 are developed further. The topics include evaluating square roots, simplifying algebraic expressions, translating English phrases into algebraic expressions, solving linear equations and their applications, as well as graphing linear equations in the rectangular coordinate system.

**Course Goals:** Upon successful completion of this course, students should be able to do the following:

1. demonstrate knowledge of the fundamental concepts and theories from algebra and geometry;

2.    utilize various problem-solving and critical-thinking techniques to set up and solve real-world applications; and

3.    communicate accurate mathematical terminology and notation in written and/or oral form in order to explain strategies to solve problems as well as to interpret found solutions.

**Measurable Course Performance Objectives (MPOs)**: Upon successful completion of this course, students should specifically be able to do the following:

1. Demonstrate knowledge of the fundamental concepts and theories from algebra and geometry:

* 1. *simplify and evaluate variable expressions*;
  2. *translate verbal expressions into variable expressions*;
  3. *solve linear equations*;
  4. *graph a line in the Rectangular Coordinate System*; and
  5. *identify and find the slope and intercepts of a line*;

**Measurable Course Performance Objectives (MPOs)** (continued):

2. Utilize problem-solving and critical-thinking techniques to set up and solve real-world applications:

2.1 *apply algebraic methods to solve varied real-world applications (such as perimeter and area problems) that can be modeled by a linear equation*

3. Communicate accurate mathematical terminology and notation in written and/or oral form in order to explain strategies to solve problems as well as to interpret found solutions:

3.1   w*rite and explain solutions to application problems related to the course material using appropriate mathematical terminology and notation*

**Methods of Instruction**: Instruction will consist of a combination of lectures, class discussions, group work, board work, individual study, and use of computer software provided by the publisher (i.e., MyMathLab).

**Outcomes Assessment:** Quiz and exam questions are blueprinted to course objectives.  Data is collected and analyzed to determine the level of student performance on these assessment instruments in regards to meeting course objectives.  The results of this data analysis are used to guide necessary pedagogical and/or curricular revisions.

**Course Requirements:** All students are required to:

1. Maintain regular attendance; excessive absences will negatively affect student understanding and performance.

2. Complete assigned reading and homework in a timely manner and contribute to class discussions. Mathematics cannot be understood without doing a significant amount of outside study.

3. Take part in class discussions and do problems on the board when required.

4. Take all exams and quizzes as scheduled. **Make-ups are permitted at the discretion of the instructor**. Both exams are required and cannot be rescheduled unless some **extraordinary** event occurs and prior arrangement is made with the instructor.

**Methods of Evaluation:** Final course grades will be computed as follows:

**% of**

**Grading Components final course grade**

* Homework  **20%**

A perusal of homework problems will determine the extent to which students master course objectives.

* Quizzes (5 – 10 quizzes)  **25%**

Quizzes will show evidence of the extent to which students meet course objectives, including, but not limited to, identifying and applying concepts, analyzing and solving problems, estimating and interpreting results, and stating appropriate conclusions using correct terminology.

* Departmental Midterm Exam 25%

This exam will show evidence of the extent to which students meet course objectives.

* **Departmental Final Exam** **30%**

The **comprehensive** final exam will examine the extent to which students have understood and synthesized all course content and achieved all course objectives.

Note: **CALCULATORS OR FORMULA SHEETS ARE *NOT* ALLOWED TO BE USED BY STUDENTS DURING *ANY* IN-CLASS QUIZ OR EXAM.**

**Academic Integrity:** Dishonesty disrupts the search for truth that is inherent in the learning process and so devalues the purpose and the mission of the College. Academic dishonesty includes, but is not limited to, the following:

* plagiarism – the failure to acknowledge another writer’s words or ideas or to give proper credit to sources of information;
* cheating – knowingly obtaining or giving unauthorized information on any test/exam or any other academic assignment;
* interference – any interruption of the academic process that prevents others from the proper engagement in learning or teaching; and
* fraud – any act or instance of willful deceit or trickery.

Violations of academic integrity will be dealt with by imposing appropriate sanctions. Sanctions for acts of academic dishonesty could include the resubmission of an assignment, failure of the test/exam, failure in the course, probation, suspension from the College, and even expulsion from the College.

**Student Code of Conduct:** All students are expected to conduct themselves as responsible and considerate adults who respect the rights of others. Disruptive behavior will not be tolerated. All students are also expected to attend and be on time for all class meetings. No cell phones or similar electronic devices are permitted in class. Please refer to the Essex County College student handbook, Lifeline, for more specific information about the College’s Code of Conduct and attendance requirements.

**Students with Special Needs**: Essex County College welcomes students with disabilities into all of the college’s educational programs. It is the policy and practice of Essex County College to promote inclusive learning environments.  If you have a documented disability, you may be eligible for reasonable accommodations in compliance with college policy, the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and/or the New Jersey Law Against Discrimination.  Please note, students are not permitted to negotiate accommodations directly with Professors, Academic Chairpersons, and Deans.  To request accommodations or assistance, please self-identify with the Office of Differently-abled Support Services.  The office is located in the Student Development and Counseling Department at the Main Campus in Room 4122-I, and on Tuesdays at the West Essex Campus, Advisement Center.  Contact us by telephone at 973-877-3071 or by email at [disability@essex.edu](mailto:disability@essex.edu).

**Course Content Outline:** based on the text **Beginning Algebra**, 9th edition by Tobey, Slater, Blair and Crawford; published by Pearson

This schedule is subject to change. The instructor may announce changes at any time.

**Class Meeting**

**(80 mins) Module/Section**

**Chapter 9 Radicals**

1 Introduction to course and 9.1 Square Roots (no approximation)

**Chapter 1 Real Numbers And Variables**

2 1.6 Using the Distributive Property to Simplify Algebraic Expressions

1.7 Combining Like Terms

3 1.8 Using Substitution to Evaluate Algebraic Expressions and

Formulas

**Chapter 2 Equations And Inequalities**

42.1 The Addition Principle of Equality

2.2 The Multiplication Principle of Equality

5 2.3 Using the Addition and Multiplication Principles Together

6 2.4 Solving Equations with Fractions

7 **Review for Midterm Exam**

8 **Midterm Exam**

### Chapter 3 Solving Applied Problems

9 3.1 Translating English Phrases into Algebraic Expressions

10 3.2 Using Equations to Solve Word Problems

**Chapter 7 Graphing and Functions**

11 7.1 The Rectangular Coordinate System

12 7.2 Graphing Linear Equations

13 7.3 The Slope of a Line

14 **Review for Final Exam**

15 **Final Exam**

Please note:

* **NO FORMULA SHEETS WHATSOEVER** (i.e., none provided by the instructor, nor by the student her/himself) – **ARE ALLOWED TO BE USED BY STUDENTS DURING ANY IN-CLASS QUIZZES OR EXAMS IN MTH 093S**.
* **NO CALCULATORS OF ANY KIND** (i.e., no scientific calculators, no graphing calculators, no cell phone calculators, etc.) **ARE PERMITTED TO BE USED ON ANY IN-CLASS QUIZZES OR EXAMS IN MTH 093S**.