

Massasoit Community College

Instructor:

Office:

Email:

Phone:

Office Hours:

Course: Mathematics for Elementary Teachers II

Course Number: MATH128-XX

Semester:

Classroom:

Day and Time:

Course Description: This course provides a conceptually based, comprehensive study of the mathematical content of numbers & their operations at the deep level required for successful elementary school teaching. Topics will be examined in ways that are meaningful to elementary teachers. Topics discussed will include: place value & arithmetic models, mental math, algorithms, pre-algebra factors & prime numbers, fractions & decimals, ratios, percentage & rates, integers, and elementary number theory.

Prerequisite: D- or higher in Intermediate Algebra (MATH012) or waiver by placement testing results or Departmental Approval.

Required Text and Materials:

1. Mathematics for Elementary Teachers, Bennett, Burton, & Nelson, 10th edition. ISBN 978-0-07-351957-9 With Manipulative Kit. McGraw-Hill publisher.

Course Topics:

- Chapter 10
 - Systems of Measurement
 - English System
 - Metric System
 - Area and Perimeter
 - Volume and Surface Area
- Chapter 1
 - Problem Solving
 - Introduction to Problem Solving
 - Pattern and Problem Solving
 - Problem Solving With Algebra
- Chapter 9
 - Mathematical Systems

- Plane Figures
- Polygons
- Space Figures
- Chapter 7
 - Measures of Central Tendency
 - Charts and Graphs
 - Measures of Relative Standing
- Chapter 8
 - Probability
 - Events
 - Permutations and Combinations

Teaching Procedures: Each class will begin with a discussion of previously assigned homework problems. New material will be introduced using a variety of methods: lecture, discussion, activities, and use of the Manipulative Kit.

Instructional Objectives:

COURSE OUTCOMES	OUTCOMES ACTIVITIES
At the end of this course, students will be able to	
Understanding and applying concepts of measurement:	<ol style="list-style-type: none"> 1. Estimating and calculating measurements using customary, metric, and nonstandard units of measurement. (CT, QS, R, TS) 2. Using unit conversions and dimensional analysis to solve measurement problems. (CT, QS, R, TS) 3. Deriving and use formulas for calculating the lengths, perimeters, areas, volumes, and surface areas of geometric shapes and figures. (CT, QS, R, TS) 4. Determining how the characteristics (e.g., area, volume) of geometric figures and shapes are affected by changes in their dimensions. (CT, QS, R, TS) 5. Solving a variety of measurement problems (e.g., time, temperature, rates, average rates of change) in real-world situations. (CT, QS, R, TS)
Understanding and applying concepts of geometry:	<ol style="list-style-type: none"> 1. Classifying and analyzing polygons using attributes of sides and angles, including real-world applications. (CT, QS, R, TS) 2. Classifying and analyzing three-dimensional figures using attributes of faces, edges, and vertices. (CT, QS, R, TS) 3. Analyzing and applying geometric transformations (e.g., translations, rotations, reflections, dilations); relate them to concepts of symmetry, similarity, and

	<p>congruence; and using these concepts to solve problems. (CT, QS, R, TS)</p> <p>4. Matching three-dimensional figures and their two-dimensional representations (e.g., nets, projections, perspective drawings). (CT, QS, R, TS)</p> <p>5. Recognizing and applying connections between algebra and geometry (e.g., the use of coordinate systems, the Pythagorean theorem). (CT, QS, R, TS)</p>
Understanding descriptive statistics:	<p>1. Using measures of central tendency (e.g., mean, median, mode) and range to describe and interpret real-world data. (CT, QS, R, TS)</p> <p>2. Selecting appropriate ways to present data and communicate statistical information (e.g., tables, graphs, line plots, Venn Diagrams). (CT, QS, R, TS)</p> <p>3. Analyzing and interpret various graphic and nongraphic data representations (e.g., frequency distributions, percentiles). (CT, QS, R, TS)</p> <p>4. Comparing different data sets. (CT, QS, R, TS)</p>
Understanding and applying basic concepts of probability:	<p>1. Calculating the probabilities of simple and compound events and of independent and dependent events. (CT, QS, R, TS)</p> <p>2. Recognizing and apply the concept of conditional probability. (CT, QS, R, TS)</p> <p>3. Recognizing the difference between experimentally and theoretically determined probabilities in real-world situations. (CT, QS, R, TS)</p> <p>4. Applying knowledge of combinations and permutations to the computation of probabilities. (CT, QS, R, TS)</p>
COURSE OUTCOMES	OUTCOMES ACTIVITIES
At the end of this course, students will be able to	
Understanding and applying concepts of measurement:	<p>6. Estimating and calculating measurements using customary, metric, and nonstandard units of measurement. (CT, QS, R, TS)</p> <p>7. Using unit conversions and dimensional analysis to solve measurement problems. (CT, QS, R, TS)</p> <p>8. Deriving and use formulas for calculating the lengths, perimeters, areas, volumes, and surface areas of geometric shapes and figures. (CT, QS, R, TS)</p> <p>9. Determining how the characteristics (e.g., area, volume) of geometric figures and shapes are affected by changes in their dimensions. (CT, QS, R, TS)</p> <p>10. Solving a variety of measurement problems (e.g., time, temperature, rates, average rates of change) in real-world situations. (CT, QS, R, TS)</p>

<p>Understanding and applying concepts of geometry:</p>	<ol style="list-style-type: none"> 6. Classifying and analyzing polygons using attributes of sides and angles, including real-world applications. (CT, QS, R, TS) 7. Classifying and analyzing three-dimensional figures using attributes of faces, edges, and vertices. (CT, QS, R, TS) 8. Analyzing and applying geometric transformations (e.g., translations, rotations, reflections, dilations); relate them to concepts of symmetry, similarity, and congruence; and using these concepts to solve problems. (CT, QS, R, TS) 9. Matching three-dimensional figures and their two-dimensional representations (e.g., nets, projections, perspective drawings). (CT, QS, R, TS) 10. Recognizing and applying connections between algebra and geometry (e.g., the use of coordinate systems, the Pythagorean theorem). (CT, QS, R, TS)
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**Indicate the Core Competencies that apply to the outcomes activities and assessment tools: Critical Thinking (CT); technology skills (TS); oral communications (OC); quantitative skills (QS); reading (R); writing (W).

Basis for Student Grading: Grades for this course will be assigned as follows:

Grade	Average
A	93%-100%
A-	90%-92%
B+	87%-89%
B	83%-86%
B-	80%-82%
C+	77%-79%

Grade	Average
C	73%-76%
C-	70%-72%
D+	67%-69%
D	63%-66%
D-	60%-62%
F	0-59%

The grade you earn is the grade you will receive in this course. Grades are not negotiable. You will not be allowed to make up work, substitute alternative assignments, or submit extra assignments in order to improve your grade during the semester or after the semester ends.

Grades of incomplete are given only in situations when extenuating circumstances prevent a student from taking the final exam or fulfilling a specific requirement in the course. The grade of "I" cannot be used to give students additional time to complete course assignments in order to raise their grade.

Basis for Evaluating Student Performance: The grade for this course will be weighted based on the following categories:

- *Exams (70%):* There will be four exams given during the semester, each worth 17.5% of your final grade.
- *Final Exam (20%):* There will be a cumulative final exam given worth 20% of your final grade.
- *Class Participation and Discussion (10%):* There is a related Math Activity with each section of chapters involving manipulative and/or discussion. A record of your participation will be recorded with attendance.

There is no extra credit available in this course.

Tentative Test Schedule/Assignment(s) Schedule:

Assignment:	Tentative Date:
Test 1	
Test 2	
Test 3	
Test 4	
Final Exam	

Attendance: Attendance will be taken each class. The student is expected to attend all classes. If the student misses a class, it is the student's responsibility to complete missed assignments.

Accommodations Statement: Massasoit’s Disability Services office provides accommodations to students who qualify for services based on a documented disability. Students interested in accessing classroom or testing accommodations must contact Disability Services directly. In an effort to avoid any lapse in services, new and returning students are encouraged to contact Disability Services at the beginning of each semester to receive an Accommodation Letter for the current semester. Students on all campuses can contact Disability Services at 508-588-9100 X 2132 or by e-mail at DisabilityServices@massasoit.edu for further information or questions.

Title IX Statement: Massasoit Community College is committed to providing a safe learning and work environment for all. If you believe you have experienced discrimination, sexual harassment, sexual assault, domestic/dating violence, stalking, or retaliation, we encourage you to report it to *Yolanda Dennis, Chief Diversity Officer and Title IX Coordinator, Office of Diversity and Inclusion, at 508-588-9100, x1309 or ODI@massasoit.edu*. While you may talk to a faculty member, understand that as a “responsible employee” of the College, the faculty member must report what you share to the College’s Title IX Coordinator. On and off campus resources and interim measures are available to assist you. Information about both of these policies can be found at www.massasoit.edu/title-ix and www.massasoit.edu/eoo. We are here to support you.

Academic Integrity: Academic dishonesty will not be tolerated. Please see the following URL for more information on the college's policies on academic integrity:

<http://www.massasoit.edu/academics/policies/academic-honesty/index>