



## Mathematics Northeast College

Math 0106: Basic Mathematics

CRN:78655 –FALL/2015

Northline Campus | 1 –3:pm | Tuesday and Thursday

1 hour lecture course / 16 hours per semester/ 4 weeks

Textbook: None

**(REVISED AUGUST 2014)**

Instructor: Charles Gabi

MyMatTest Code: XL22-S17I-101Y-4EV2

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**Catalog Description:** Topics include fundamental operations fractions and decimals, percents, ratios, and proportions. All students who enroll in this course are expected to complete MATH 0409 in the following consecutive semester before attempting either MATH 0312 or MATH 1332. A comprehensive Departmental Final Exam will be given in this course.

**Credits:** 1 credit hour (1 Lecture).

**Prerequisites:** TSIA ABE Levels 3–4 TSIA Math Score 323 – 335 or TSIA Math Score 336 – 347 with Elementary Algebra Score 0–4.

**Audience:** This course is for students who require state mandated remediation.

### Course Goal

This course provides students with the basic arithmetical skills enabling them to proceed to the next level mathematics course. It is also designed to strengthen many of the skills that an individual must demonstrate or master in order to achieve college readiness. It is also intended for those students who are reasonably adept at performing the simple mathematical operations needed in every day affairs, but become quite confused when confronted with the same operations in the context of a mathematics class.

### Course Student Learning Outcomes (SLO):

1. Correctly choose and apply the four basic arithmetic operations with decimals and fractions to estimate and solve application problems.
2. Apply “Proportional Reasoning” to solve related problems including ratios, rates, proportion, and percent.

### Learning outcomes

Students will:

- 1.1 solve problems by estimating and rounding.
- 1.2 find the least common multiples of two or more whole numbers.
- 1.3 add, subtract, multiply and divide fractions.
- 1.4 add, subtract, multiply and divide with decimals and percent.
- 2.1 solve problems involving ratio and proportion.

**Textbook:** None

**Course Outline:** Instructors may find it preferable to cover the course topics in the order listed below. However, the instructor may choose to organize topics in any order, but all material must be covered.

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<b>CONTENTS</b>	<i>(Approximate Time)</i>
<b>SECTION NUMBERS</b>	<b>TOPICS</b>

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<b>1</b>	<b>FRACTIONAL NOTATION: MULTIPLICATION AND DIVISION</b>	<i>(4 hours)</i>
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This unit addresses multiples of a number, divisibility tests for 2,3,5,6,9,10; factoring an integer; identifying prime numbers from 1 to 100; prime factorization of composite numbers; identification of numerator and denominator; simplifying fractions; problem solving using fractional multiplication; determining whether two fractions are equivalent; working with the reciprocal of a number; addition, subtraction, multiplication and division of fractions and mixed numbers.

- 1.1 Multiples and Divisibility**
- 1.2 Factorizations**
- 1.3 Fractions and Fraction Notation**
- 1.4 Multiplication of Fractions**
- 1.5 Simplifying**
- 1.6 Multiplying, Simplifying, and More with Area**
- 1.7 Reciprocals and Division**

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***QUIZ 1: COVERS SECTION 1***

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<b>2</b>	<b>FRACTIONAL NOTATION: ADDITION AND SUBTRACTION</b>	<i>(2 hours)</i>
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This unit consists of finding the LCM of two or more numbers; converting from mixed numerals to fraction notation; converting from fractional notation to mixed numbers; addition and subtraction of fractions; using fractions in problem solving situations.

- 2.1 Least Common Multiples**
- 2.2 Addition, Order and Applications**
- 2.3 Subtraction, Equations, and Applications**

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***QUIZ 2: COVERS SECTION 2***

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**3 DECIMAL NOTATION** *(4 hours)*

This unit provides coverage of writing word names for decimal notation; converting between fractions and decimals; comparing decimal numbers; rounding and estimating decimals; addition, subtraction, multiplication and division of decimals,. The unit concludes with by problem solving that requires an application of decimals.

- 3.1 Decimal Notation, Order and Rounding**
- 3.2 Addition and Subtraction of Decimals**
- 3.3 Multiplication of Decimals**
- 3.4 Division of Decimals**
- 3.5 Using Fractional Notation with Decimal Notation**
- 3.6 Estimating**
- 3.7 Applications and Problem Solving**

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***QUIZ 3: COVERS SECTION 3***

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**4 PERCENT NOTATION** *(6 hours)*

This unit covers finding fraction notation for ratios; giving the ratio of two different measures as a rate; determining whether two pairs of numbers are proportional; solving proportions; solving application exercises involving ratios; writing three kinds of notation for a percent; converting between percent notation and decimal notation; converting from fraction notation to percent notation; converting from percent notation to fraction notation; translating percent problems to percent equations; solving basic percent problems; translating percent problems to proportions; solving basic percent problems; solving applied problems involving percent; solving applied problems involving percent of increase or decrease.

- 4.1 Ratio and Proportion**
- 4.2 Percent Notation**
- 4.3 Percent and Fraction Notation**
- 4.4 Solving Percent Problems Using Proportions**
- 4.5 Applications of Percent**

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***QUIZ 4: COVERS SECTION 4***

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***REVIEW FOR FINAL EXAMINATION: COVERS SECTIONS 1 – 4*** *(1 to 1.5 hours)*

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***COMPREHENSIVE FINAL EXAMINATION: COVERS SECTIONS 1 – 4*** *(1 to 1.5 hours)*

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**Grade Scale:**

Objectives	20%
Quizzes	30%
<u>Final</u>	<u>50%</u>
	100%

The final exam will be on September 17. You must bring a scantron and extra paper.

**System-Wide Policies:**

1. Each instructor must cover all course topics by the end of the semester. The final exam is comprehensive and questions on it can deal with any of the course objectives.
2. Each student should receive a copy of the instructor's course syllabus during the first week of class.
3. A minimum of three in class quizzes and a comprehensive final departmental examination must be given. All students must take the final examination.
4. The final exam must count for at least 50 percent of the final grade.
5. A System-Wide Final Examination must be passed with a score of at least 60%. No D- grades or IP-grades are allowed.
7. The final course average will be computed using a ten point scale (90-100 "A", 80-89 "B", 70-79 "C", 60-69 or below "F"). Note: The grades of **W** or **IP** are no longer available instructors to assign.
8. Neither an open book nor a take home major test or quiz may be given at the discretion of the instructor.
9. Any review sheet(s) should be comprehensive and the student should not feel that classroom notes, homework, and quizzes might be ignored in favor of the review sheet for any examination.
10. *No calculators are to be used on graded course work and in particular all examinations.*

**Resource Materials:** All course materials are available within the EagleOnline 2.0 Course Management System. Instructors must complete basic training before they are given access to these materials. Students may also choose to purchase a course pack at their local bookstore. Any student enrolled in Math 0306 at HCC has access to the Learning Resource Center (LRC) where they may get additional help in understanding the theory or in improving their skills. The LRC is staffed with mathematics faculty and student assistants, and offers tutorial help, videotapes and computer assisted drills.

**Suggested Methods:** It is helpful to begin each class with questions related to previous material discussed and assigned homework problems. It is recommended that allowing the students to work on examples in class follow lectures and new material. Students should be encouraged to work the review exercises at the end of each chapter and prompted to use the Learning Resource Center at their respective college.

**Final Examination:** The final examination is departmental and consists of 25 multiple-choice problems. The problems cover only the material required in this course.

**Americans with Disabilities Act (ADA):** Persons needing accommodations due to a documented disability should contact the ADA counselor for their college as soon as possible. Identify all documented disabled students and insure them that your class will be structured to comply with their disabilities. It is recommended that you put a clause in you course syllabus that addresses the disabled student.