



**CENTRAL COLLEGE  
DEPARTMENT OF MATHEMATICS  
COURSE SYLLABUS**

**MATH 0306: FUNDAMENTALS OF MATHEMATICS I**

**Instructor:** Henry Ibekwe BS, MS

**Class:** MATH 0306 Saturday 1:00 pm – 4:00 pm

**CRN#:** 80688

**Mymathlab Course ID:** **ibekwe57839**

**Catalog Description:** Credit: 3 (3 lecture). Topics include fundamental operations in whole numbers, fractions and decimals, percents, ratios, proportions, descriptive statistics, and an introduction to the real numbers. All students who enroll in this course are expected to complete MATH 0308 and MATH 0312 in the following consecutive semesters before attempting their first college-level mathematics course (usually MATH 1314 College Algebra). A comprehensive Departmental Final Exam will be given in this course.

**Prerequisites:**

SAT:	450–499
ASSET:	Scaled Score: 41 - 55
COMPASS:	Scaled Score: 49 - 100
ACCUPLACER:	Scaled Score: 49 - 100

**Textbook:** Bittinger, Marvin L. & Ellenbogen, David J. Prealgebra and Introductory Algebra. Pearson/Addison–Wesley: Boston, 2008.

**Course Demographics:**

Credit Hours	Semester Year	Class Days	Meeting Time	Room Number	Instructor	Office Phone
3	Spring 2011	Saturday	1:00 pm – 4:00 pm	JDB 301	Henry Ibekwe	713-718-6441
Office Location		Office Days	Office Hours	E-mail Address		
JDB 310 Central Campus		Appt	Appt	henry.ibekwe@hccs.edu		

**Course Intent:** 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 attain 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 confused when confronted with the same operations in the context of a mathematics class.

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

**Course Objectives:** A student should be able to perform the following mathematical skills upon completion of this course.

1. Add, subtract, multiply and divide whole numbers, understand the order of operations, and solve problems involving exponential notations.
2. Solve problems by estimating and rounding.
3. Add, subtract, multiply and divide integers.
4. Find the least common multiples of two or more integers.
5. Add, subtract, multiply and divide fractions.
6. Add, subtract, multiply and divide with decimals and percent.
7. Simplify algebraic expressions.
8. Solve problems involving ratio and proportion.
9. Read and interpret data from tables, pictographs, bar graphs, line graphs, and circle graphs.
10. Find the mean, median and mode of a data set.

**Math Lab Attendance:** All students are expected to attend three hours of class with their instructor each week. In addition, it is also required that you spend one hour per week (minimum of 10 hours per semester) in the Mathematics Laboratory or on the Web at your convenience working on MyMathLab or some other computer supplement.

**Mandatory Classroom Attendance & Withdrawal Policy:** You are expected to be prepared for and attend classes regularly. Your classroom attendance is checked periodically. If you do not answer the roll when it is called, then you are considered absent during that period. After you have accumulated 12.5% (equivalent to 6 hours) unexcused absences, the instructor is obligated by law to drop you from the class. Any non-compliant TASP student may be dropped from all courses if withdrawn from a developmental course. You are also responsible for any materials covered during your absences. It is your responsibility to drop this course for non-attendance. Do not call the campus receptionist if you are going to be absent or late for a class. Wait until you return to class to discuss any reason why you missed with your instructor.

**Determination of Your Final Grade:** There will be 3 or 4 major examinations given in this class plus one comprehensive final examination. Your final course grade is awarded based on the following standard HCCS ten point scale. The grade of in progress (IP) is awarded only if this is the first time that you have taken the course.

1. **3 – 4 Tests = 40%**
2. **Homework/Mymathlab = 25%**
3. **Class participation = 5%;**
4. **Final Exam = 30%**

Final Average	$90 \leq \text{Final Avg} \leq 100\%$	$80 \leq \text{Final Avg} < 90\%$	$70 \leq \text{Final Avg} < 80\%$	$0 \leq \text{Final Avg} < 69\%$
Final Course Grade	<b>A</b>	<b>B</b>	<b>C</b>	<b>IP, D or F</b>

**Testing and Make-up policy:**

Tests date will be announced at least 1 week prior to testing. Any test makeup will be at the discretion of the instructor and the student must provide sufficient reasons why they were unable to take the test at the regular scheduled time.

**Attendance policy:**

Attendance is checked during every class. When you have accumulated 12.5 % or 6 hours of absences, the instructor will drop you from the class.

**Tardiness policy:**

Students must make sure they come to class on time. You are responsible for any material or discussion missed as a result of their tardiness

**Withdrawal policy:**

If your name is on the roll at the end of the term, you WILL receive a grade. If you wish to drop the class, then it is your responsibility to do that before the final drop date. Neither you nor your instructor will be able to perform the drop after the final drop date. Please refer to the following notice before dropping the class.

NOTICE: Students who take a course three or more times will face significant tuition or fee increases at HCC and other Texas public colleges and universities. In addition, state law dictates that students are allowed a maximum of 6 course withdrawals during their entire college career. Starting in the fall of 2007, students with more than 6 drops will be required to pay additional fees. Prior to course withdrawal, you must confer with your professor or counselor about your study habits, homework, test-taking skills, attendance, course participation, and tutoring or other assistance that is available.

**Homework policy:**

All homework must be completed online before the due dates using MYMATHLAB. If you don't have the package you may purchase a code at [www.coursecompass.com](http://www.coursecompass.com).

**Calculators Policy:**

Calculators are not allowed under any circumstances during tests and examinations.

**Electronic Device Policy:** Under no circumstance are cell phones and other electronic devices allowed during testing. Any devices having a QWERTY keypad arrangement similar to a typewriter or keyboard or other typewriter-like keyboards or keypads are prohibited. If this is not complied with you will be asked to leave the examination room.

**Student Conduct:** Students should not engage in disruptive activities while on the College campus or property. It is expected that all students conduct themselves in compliance with the academic atmosphere generated by the endeavors of your instructor. Any deviation from this course of conduct or any other course of conduct, which would be deemed detrimental to the academic atmosphere, cannot and will not be tolerated. Should the problem of misconduct ever arise, any student found guilty will be requested to leave the classroom until further notice. Especially in regards to cheating during an examination or consistently talking while instructional delivery is in progress. You must understand that any attempt to talk to another student, look at another student's paper, or use any notes or books during an examination will result in the immediate forfeiture of your exam paper. A log of such behavior will be maintained and submitted to the Dean of the College.



**Americans with Disabilities Act (ADA):** The Houston Community College System is committed to providing the least restrictive learning environment for all students. HCCS promotes equity in academic access through the implementation of reasonable accommodations as required by the Vocational Rehabilitation Act of 1973, Title V, Section 504 and the Americans with Disabilities Act of 1990 (ADA) which will enable students with disabilities to participate in and benefit from all post-secondary educational activities. Students needing accommodations due to a documented disability should contact the ADA counselor for their college at the beginning of the semester. The faculty is authorized to provide only the accommodations requested by the Disability Support Services Office.

**How to Improve Your Grade:** Always attend class and read the material to be covered in advance. Practice the suggested exercises in the course syllabus. Arrange your study schedule with someone else taking this class if possible, anyone who seems to have a fairly good understanding of the course content. Work in study groups. Take good notes and ask questions about problems that you do not understand in class. Arrange to conference with you instructor about specific problems that you may have. Supplement your efforts by practicing in the Math Lab.

**Instructional Resources:** There are a variety of supplemental materials that may be helpful to pass this

course. The following is a list of resources that are available to you.

### **Student Solutions Manual**

The Student's Solutions Manual contains complete worked-out solutions to all of the odd-numbered exercises in the text. It also contains solutions for all exercises in the Chapter Tests. It may be purchased from the HCC bookstore.

### **MyMathLab**

MyMathLab is a textbook specific on-line supplement. Ask your instructor about how you may access MyMathLab to practice tests, lessons, worksheets, links, animations, video tutorials, or assignments. Students are encouraged to use MyMathLab as a means of completing the extra hour of work in the course on their own.

### **CD-ROM**

This interactive CD-ROM is a self-paced tutorial specifically linked to the text and reinforces topics through unlimited opportunities to review concepts and to practice problem solving. The CD-ROM contains text, chapter and section specific tutorials, multiple choice questions with feedback, as well as algorithmically generated questions. The text specific CD requires little to no computer training and may be run on PC and Machintosh computers.

### **ADDISON WESLEY'S TUTOR CENTER**

Addison Wesley offers free tutoring through MyMathLab. You can learn more about the tutor center at <http://www.aw-bc.com/tutorcenter/math.html>.

## Course Content

CONTENTS SECTION NUMBERS	(Approximate Time) TOPICS
<b>1</b>	<b>WHOLE NUMBERS</b> (4 hours)
	This unit begins with a brief review of standard notation and the real number line. Included are sections on the meaning of digits in standard notation; converting between standard notation and expanded notation; converting between standard notation and word names; writing addition sentences that correspond to a given situation; adding whole numbers; using addition in finding perimeter; writing a subtraction sentence that corresponds to a situation involving decreasing; writing related subtraction sentence, subtracting whole numbers; rounding to the nearest ten, hundred, thousand; estimating sums and differences by rounding; use of ordering symbols; multiplying whole numbers; estimating products by rounding; use of multiplication in finding area; writing a division sentence that corresponds to a given situation; writing related multiplication sentences; dividing whole numbers; solving linear equations in one variable by trial and error; solving applied problems involving addition, subtraction, multiplication or division of whole numbers; writing and evaluation of exponential notation
	<ul style="list-style-type: none"><li>1.1 Standard Notation</li><li>1.2 Addition</li><li>1.3 Subtraction</li><li>1.4 Rounding and Estimating; Order</li><li>1.5 Multiplication and Area</li><li>1.6 Division</li><li>1.7 Solving Equations</li><li>1.8 Applications and Problem Solving</li><li>1.9 Exponential Notation and Order of Operations</li></ul>
<b>2</b>	<b>INTRODUCTION TO INTEGERS AND ALGEBRAIC EXPRESSIONS</b> (8 hours)
	This unit provides a comprehensive coverage of comparison of two integers, absolute value of an integer; finding integer opposites; adding, subtracting, multiplying and dividing integers without using a number line; application problems using addition and subtraction of integers; finding the product of three or more integers; simplifying powers of integers; using the rules for order of operations with integers; combining like terms; determining the perimeter of a polygon; using the addition principle to solve linear equations in single variable.
	<ul style="list-style-type: none"><li>2.1 Integers and the Number Line</li><li>2.2 Addition of Integers</li><li>2.3 Subtraction of Integers</li><li>2.4 Multiplication of Integers</li><li>2.5 Division of Integers</li><li>2.6 Introduction to Algebra and Expressions</li><li>2.7 Like Terms and Perimeter</li><li>2.8 Solving Equations</li></ul>
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<b>Test #1 : Covers 1 and 2</b> (1 to 1.5 hours)	

**3 FRACTIONAL NOTATION: MULTIPLICATION AND DIVISION (4 hours)**

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; solving linear equations using the multiplication and division principles; an introduction to problem solving related to linear equations in a single variable.

- 3.1 Multiples and Divisibility**
- 3.2 Factorizations**
- 3.3 Fractions**
- 3.4 Multiplication**
- 3.5 Simplifying**
- 3.6 Multiplying, Simplifying, and More with Area**
- 3.7 Reciprocals and Division**
- 3.8 Solving Equations: The Multiplication Principle**

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**4 FRACTIONAL NOTATION: ADDITION AND SUBTRACTION (6 hours)**

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; evaluating expressions using mixed numerals; solving linear equations in a single variable containing fractions; addition, subtraction, multiplication and division of mixed numerals; using fractions in problem solving situations.

- 4.1 Least Common Multiples**
- 4.2 Addition, Order and Applications**
- 4.3 Subtraction, Equations, and Applications**
- 4.4 Solving Equations: Using the Principles Together**
- 4.5 Mixed Numerals**
- 4.6 Addition and Subtraction Using Mixed Numerals: Applications**
- 4.7 Multiplication and Division Using Mixed Numerals: Applications**

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**Test #2: Covers 3 and 4 (1 to 1.5 hours)**

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**5 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, solving linear equations in a single variable that contain decimals. The unit concludes with by problem solving that requires an application of decimals.

- 5.1 Decimal Notation**
- 5.2 Addition and Subtraction with Decimals**
- 5.3 Multiplication of Decimals**
- 5.4 Division with Decimals**
- 5.5 More with Fractional Notation and Decimal Notation**
- 5.6 Estimating**
- 5.7 Solving Equations**
- 5.8 Applications and Problem Solving**

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<b>6</b>	<b>PERCENT NOTATION</b>	<i>(6 hours)</i>
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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; solving applied problems involving sales tax, percent, commission, discount, simple interest, compound interest; interest rates on credit cards and loans.

- 6.1 Ratio and Proportion**
- 6.2 Percent Notation**
- 6.3 Percent and Fraction Notation**
- 6.4 Solving Percent Problems Using Percent Equations**
- 6.5 Solving Percent Problems Using Proportions**
- 6.6 Applications of Percent**
- 6.7 Sales Tax, Commissions, Discount, and Interest**
- 6.8 Interest Rates on Credit Cards and Loans (*Optional*)**

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	<b>Test #3: Covers 5 and 6</b>	<i>(1 to 1.5 hours)</i>
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<b>7</b>	<b>DATA, GRAPHS, AND STATISTICS</b>	<i>(3 hours)</i>
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This unit covers finding the average of a set of numbers; problem solving using averages; finding the median of a set of numbers; solving applications involving medians; finding the mode of a set of numbers; solving problems using modes; comparing two sets of data using their means; extracting and interpreting data from tables; extraction and interpreting data from pictographs; extracting and interpreting data from bar graphs; drawing bar graphs; extracting and interpreting data from bar graphs; drawing bar graphs; extracting and interpreting data from line graphs; drawing line graphs; extracting and interpreting data from circle graphs; drawing circle graphs;

- 7.1 Means, Medians and Modes**
- 7.2 Tables and Pictographs**
- 7.3 Bar Graphs and Line Graphs**
- 7.4 Circle Graphs**

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	<b>Test #4: Covers 7</b>	<i>(1 to 1.5 hours)</i>
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	<b>Review for Final Examination: Covers 1 Through 7</b>	<i>(4 hours)</i>
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**Comprehensive Final Examination: Covers 1 Through 7**

1:00 pm – 3:00 pm Saturday May 14 <sup>th</sup> 2011: <b>(BE ON TIME)</b>	<i>(2 hours)</i>
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**No calculators are to be used on graded course work and in particular all examinations.**

**Final Examination:** The final examination is departmental and consists of 50 multiple-choice problems. The problems cover only the material required in this course.