

VIRGINIA HIGHLANDS COMMUNITY COLLEGE

Course of Study

COURSE NUMBER AND TITLE

MTH 02 – BASIC MATHEMATICS

COURSE DESCRIPTION

This course develops the mathematical proficiency in arithmetic necessary for selected curriculum entrance. Addition, subtraction, multiplication, and division of whole numbers, fractions, and decimals will be covered as well as ratio and proportion, percent, measurement, basic geometry, and signed numbers.

BROAD GOALS OF THE COURSE

1. To provide students with the arithmetic skills necessary for selected curriculum entrance.
2. To learn when to apply arithmetic skills necessary to solve application problems.
3. To eliminate or reduce math anxiety by making arithmetic understandable and applicable to everyday life.

COURSE OVERVIEW

This will be a computer-mediated course. This means students will receive their primary instruction from a computer program. However, students are encouraged to seek help from their instructor with any course material with which they have difficulty. The instructor may be contacted during office hours, by telephone, or by email. Email through the ALEKS program offers the best means of communicating with the instructor from a distance. The instructor is happy to schedule appointments outside of office hours as necessary.

Students are required to spend at least 5 hours each week working on the ALEKS objectives. Failure to meet this requirement may result in the student being withdrawn from the class. The ALEKS program records the number of hours each student spends working, the number of times they log-on, and the number of objectives they complete.

After students complete all of the objectives and take the Goal Assessment in ALEKS, they will take a comprehensive Final Exam consisting of approximately 75 problems. The problems on this exam will be multiple-choice and will be based on the Course Objectives described in this syllabus. In order to successfully complete the course, the student must score at least 60% on this Final Exam. Because there is an opportunity for students to complete practice questions in BB before they take the exam, **students get only one attempt to make the required 60% on the exam.**

TOPICS TO BE COVERED

1. Operations on Whole Numbers
2. Fractional notations and operations on fractions

3. Decimal notation and operations on decimals
4. Percent notation and solving problems involving percents
5. Statistics (analyzing data, using statistical graphs)
6. Geometry and Measurement

SPECIFIC OBJECTIVES

Upon completion of developmental mathematics (MTH 02) students should be able to

1. Perform operations on whole numbers, including reading writing, identifying place values, and rounding
 - a. add, subtract, multiply, and divide whole numbers
 - b. round off and estimate using whole numbers
 - c. solve practical problems involving whole numbers
2. Perform operations on fractions and mixed numbers
 - a. add, subtract, multiply, and divide fractions
 - b. use order of operations with fractions
 - c. add, subtract, multiply, and divide mixed numbers
3. Use the concepts of prime and composite numbers
 - a. factor a composite numbers as the product of prime numbers
 - b. find LCM and GCF using prime factorization
4. Perform operations on decimal numbers including reading, writing, identifying place values, and rounding
 - a. read and write decimals
 - b. add, subtract, multiply, and divide decimal numbers
 - c. round off decimal numbers
 - d. estimate answers to problems involving decimal numbers
 - e. convert decimals to fractions and vice versa
5. Describe and compare data using ratios and proportions
 - a. reduce ratios
 - b. solve proportions
 - c. use proportions to solve practical problems
6. Use the concepts of percents
 - a. convert fractions to percents and vice versa
 - b. estimate solutions to practical problems involving percents
 - c. solve practical problems involving percents
7. Perform operations combining whole numbers, fractions, decimals, proportions, and percents

8. Apply appropriate geometric formulae for area and perimeter
 - a. rectangles
 - b. triangles
 - c. parallelograms
 - d. trapezoids
 - e. circles

9. Apply appropriate formulae for volume
 - a. rectangular prisms
 - b. cylinders
 - c. spheres
 - d. cones

10. Solve problems involving measurement of length, weight/mass, liquid capacity, temperature, and time
 - a. convert units of measure

11. Solve practical problems involving the Pythagorean Theorem

12. Analyze statistical data
 - a. determine averages – mean, median, mode
 - b. find the range of a set of data
 - c. interpret information (data) displayed in tables, graphs, and charts

13. Identify and represent Real Numbers on a Real number line

14. Perform operations on Real numbers
 - a. add, subtract, multiply, and divide Real numbers
 - b. simplify expressions by using order of operations, mental mathematics, and appropriate tools

COURSE MATERIALS

TEXT:

There is no required textbook for this course. Students must purchase a semester license to the web-based software ALEKS. The ISBN for this ALEKS Manual with one semester license code is 0072391308. **DO NOT** purchase a **USED** copy. The code only works one time for one user for one semester.

CALCULATOR:

No specific calculator is required for this course. Students are encouraged to rely as little as possible on calculators in order to strengthen their math skills.

EVALUATION

To obtain a grade of “S” (Satisfactory) in the course, a student must accomplish **both** of the following:

1. Complete **ALL** of the objectives and the Goal Assessment in ALEKS.
2. Earn a score of at least 60% on the Final Exam.

To obtain a grade of "R" (Re-enroll) in the course, a student must accomplish ONE of the following:

1. Meet the semester time requirement but not finish all of the ALEKS objectives.
2. Finish the ALEKS portion of the course but fail to make the required 60% on the final exam.

A grade of "U" (Unsatisfactory) will be given to students who do not meet the time requirement and who do not finish all of the ALEKS objectives.

ACADEMIC DISHONESTY

Any student caught cheating (including not doing his/her own work on ALEKS) will fail the course, not be permitted to re-enroll in any other distance education course taught by Dr. Fleming, and will have charges brought before the Student Judiciary Committee for possible further action.

EMERGENCY POLICY

In the event of a College-wide emergency, course requirements, classes, deadlines, and grading schemes are subject to changes that may include alternative delivery methods, alternative methods of interaction with the instructor, class materials, and/or classmates, a revised attendance policy, and a revised semester calendar and/or grading scheme.

In the case of a College-wide emergency, please refer to the following about changes in this course:

- Course web page (Blackboard)
- Instructor's email (sfleming@vhcc.edu)
- Instructor's chosen emergency telephone number(s) (276-739-2513)

For more general information about the emergency situation, please refer to:

- Web site - www.vhcc.edu
- Telephone Number - 276-739-2400
- Emergency Text Messaging or Phone System- Virginia Highlands Community College uses VHCC Alert to immediately contact you during a major crisis or emergency. VHCC Alert delivers important emergency alerts, notifications and updates to you on your E-mail account (work, home, other), cell phone, pager or smartphone/PDA (BlackBerry, Treo & other handhelds). VHCC Alert is a free service offered by VHCC. Your wireless carrier may charge you a

fee to receive messages on your wireless device. VHCC will test the alert system each semester. Register online at alert.vhcc.edu or by sending a **text message** to **411911** keyword: **VHCC**

In the event of an emergency just regarding this class, the instructor will post announcements on Blackboard and e-mail notification of the postings to students.

Instructor reserves the right to change syllabus.