

1700027

Applied Math

COURSE INFORMATION

Credits:3

PREREQUISITES AND/OR COREQUISITES

None

COURSE DESCRIPTION

This course is designed to present basic facts of arithmetic including whole numbers, fractions, decimals, powers, roots, English and metric measurement, ratio-proportion, percentages, introduction to algebra, and introduction to geometry. Instruction includes use of scientific hand-held calculators and emphasis placed on critical thinking, problem solving skills.

COURSE GOALS

This course will:

1. Enhance and upgrade the student's understanding of general mathematics.
2. Allow the student to apply basic mathematical functions including addition, subtraction, multiplication, division, exponents, square roots, and order of operation to whole numbers, fractions, and decimals.
3. Provide opportunities for the student to solve word problem applications throughout the course.
4. Introduce problems using the properties of proportions.
5. Provide opportunities for the student to solve various types of percent problems.
6. Demonstrate the conversion of linear measurement, weight, and volume in U.S. Customary units and the metric system.
7. Demonstrate basic geometry operations, including perimeter, area and volume of certain geometric figures.
8. Introduce the student to basic algebra, including the four operations with signed numbers and solving linear equations.
9. Provide instruction in the use of a calculator.

STUDENT LEARNING OUTCOMES

I. Whole Numbers

- A. Read, write, and round whole numbers.
- B. Add, subtract, multiply and divide whole number
- C. Apply the definition of exponent and square root to whole numbers.
- D. Use the order of operations.
- E. Solve word problems involving addition, subtraction, multiplication and division.

- F. Find the prime factorization of a whole number and the least common multiple of two or more whole numbers
- II. Fractions
 - A. Read and write fractions.
 - B. Use the four basic operations with fractions by hand and with a calculator.
 - C. Find equivalent fraction expressions in fraction and mixed number form.
 - D. Apply the order of operations to fractions.
 - E. Solve word problems involving addition, subtraction, multiplication and division of fractions.
- III. Decimals
 - A. Read, write and round decimals.
 - B. Add, subtract, multiply and divide decimals by hand and with the calculator.
 - C. Use exponents and square roots with decimal numbers.
 - D. Apply the order of operation to decimals.
 - E. Solve word problems involving addition, subtraction, multiplication and division of decimals.
 - F. Change decimal notation to fractional notation, and vice versa
- IV. Ratio and Proportion
 - A. Write the comparison of two quantities as a ratio.
 - B. Determine if two ratios are equivalent.
 - C. Write and solve proportions
 - D. Solve direct or indirect proportion application problems.
- V. Percentages
 - A. Change notation of values using fractions, decimal numbers, and percentages.
 - B. Solve percent problems.
 - C. Solve word problems involving applications of percentages
- VI. Descriptive Statistics
 - A. Interpret and use data that are presented in a circle graph, bar graph, a line graph, or a pictogram
 - B. Construct bar graphs, line graphs from raw data
 - C. Find the mean, weighted mean, median and mode for a set of data.
- VII. Units of Measure
 - A. Convert linear, weight, and volume measurements in U.S. Customary units.
 - B. Convert linear, weight, and volume in the metric system.
 - C. Change metric units to U.S. Customary units, and vice versa.
- VIII. Introduction to Geometry
 - A. Find the perimeter of polygons and circles.
 - B. Find the area of rectangles, squares, parallelograms, triangles, trapezoids, circles, and sectors.
 - C. Find the volume of a rectangular solids, cylinders, and spheres.
 - D. Use angle properties and definitions of angle pairs and types of angles to solve problems.
 - E. Find the side of a right triangle by using the Pythagorean Theorem.
 - F. Define and use the properties of similar triangles.
- IX. Introduction to Algebra
 - A. Use the properties of signed numbers.
 - B. Apply the definition of absolute value.
 - C. Simplify and evaluate algebraic expressions.
 - D. Solve equations in one variable by using the addition and multiplication principles.
 - E. Solve word problems by writing and solving an equation with one variable.

COURSE MATERIALS

Practical Math 4th Edition, Editorial Staff, American Technical Publishers Inc., 2015, ISBN # 978-0-8269-2250-2

GRADING CRITERIA

Students can expect to be graded on Written Assignments, Quizzes, Tests, Lab Activities, and Attendance. There is currently no scheduled time available to makeup classes or labs that are missed.

PARTICIPATION/ATTENDANCE POLICY

Students can expect that attendance/participation will be a part of their final grade, and determined by the instructor at his/her discretion. Students are encouraged to attend every class as regular attendance as it contributes to successful course completion and will impact the final grade.

COURSE EXPECTATIONS

For successful completion of this course, students are expected to Read Course Material, Complete all Assignments, Take Notes, Study and Participate in classroom discussions.

ACADEMIC INTEGRITY AND CONDUCT POLICY

The integrity of a class and program rests on the principle that the grades awarded to students must reflect only their own individual efforts and achievement. Students are required to perform the work specified by the instructor and are responsible for the content of work submitted, such as papers, reports, examinations, and other work. Violations of academic integrity include various types of plagiarism and cheating.

Plagiarism

Plagiarism includes, but is not limited to:

- Using exact words from a source without appropriate crediting
- Cutting and pasting electronically from any source without appropriate crediting
- Using wording and/or sentence structure too close to the original in paraphrasing
- Using visual images in whole or in part created by someone else without appropriate crediting
- Buying a paper and presenting any part of it as your own
- Borrowing any part of a paper and presenting it as your own without appropriate crediting
- Falsifying or inventing any information or citation in an academic exercise

Cheating

Cheating includes, but is not limited to:

- Obtaining or giving assistance in any academic work such as on quizzes, tests, homework, etc., without instructor's consent
- Taking a test or course or turning in work for someone else
- Allowing someone to take a test or course or turn in work in your name

- Using crib notes or electronic devices to get unauthorized assistance on tests or other in-class work
- Using work from another class or previous semester without instructor consent

CLASS CANCELLATION POLICY

Class meetings can occasionally be called off due to bad weather, check the local news and radio for information or call 319-296-4444 for the current status of college closings, class cancellations, delay start, or early dismissal information.

STUDENTS' SPECIAL NEEDS STATEMENT

Hawkeye Community College (HCC) strives for student-centered, quality education with flexibility to allow for students' special needs. Students with physical, mental, or learning disabilities should contact the Special Needs Coordinator in Student Services at 319-296-4014 or specialneeds@hawkeyecollege.edu to learn how to apply for accommodations at HCC. Or, visit our website for more information and forms: <http://www.hawkeyecollege.edu/students/services/student-disability-services/default.aspx>

NONDISCRIMINATION STATEMENT

Hawkeye Community College does not discriminate on the basis of sex; race; age; color; creed; national origin; religion; disability; sexual orientation; gender identity; genetic information; political affiliation; or actual or potential parental, family, or marital status in its programs, activities, or employment practices as required by Iowa Code §§ 216.6 and 216.9, Titles VI and VII of the Civil Rights Act of 1964 (42 U.S.C. §§ 2000d and 2000e), the Equal Pay Act of 1973 (29 U.S.C. § 206, et seq.), Title IX (Educational Amendments, 20 U.S.C. §§ 1681-1688), Section 504 (Rehabilitation Act of 1973, 29 U.S.C. § 794), and Title II of the Americans with Disabilities Act (42 U.S.C. § 12101, et seq.). Veteran status is also included to the extent covered by law. Any person alleging a violation of equity regulations shall have the right to file a formal complaint. Inquiries concerning application of this statement should be addressed to: John Clopton (Equity Coordinator and Title IX Coordinator for Employees) or Nancy Henderson (Title IX Coordinator for Students), Hawkeye Community College, 1501 East Orange Road, P.O. Box 8015, Waterloo, Iowa 50704-8015, telephone 319-296-4405, email: equity-titleIX@hawkeyecollege.edu, or the Director of the Office for Civil Rights, U.S. Department of Education, Citigroup Center, 500 W. Madison, Suite 1475, Chicago, IL 60661, phone number 312/730-1560, fax 312/730-1576.

DISCLAIMER

This syllabus is believed to be accurate at the time it was written. However, the instructor reserves the right to make changes as deemed necessary, provided notification is given to the students.

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