

Course Outline

COURSE: MATH 400 **DIVISION:** 10 **ALSO LISTED AS:**

TERM EFFECTIVE: Fall 2015 **CURRICULUM APPROVAL DATE:** 03/09/2015

SHORT TITLE: ELEM ARITHMETIC

LONG TITLE: Elements of Arithmetic

<u>Units</u>	<u>Number of Weeks</u>	<u>Type</u>	<u>Contact Hours/Week</u>	<u>Total Contact Hours</u>
3	18	Lecture:	3	54
		Lab:	1	18
		Other:	0	0
		Total:	4	72

COURSE DESCRIPTION:

This course covers essential arithmetic operations, whole numbers, integers, fractions, decimals, ratio, proportion, percent, applications of arithmetic, and critical thinking, as well as math-specific study skills. This is a pass/no pass course, with pass being given for mastery of the content. Units earned in this course do not count toward the associate degree and/or other certain certificate requirements.

PREREQUISITES:

COREQUISITES:

CREDIT STATUS: C - Credit - Degree Non Applicable

GRADING MODES

P - Pass/No Pass

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

02 - Lecture and/or discussion

03 - Lecture/Laboratory

04 - Laboratory/Studio/Activity

STUDENT LEARNING OUTCOMES:

1. Perform basic operations with whole numbers, fractions, and decimals

Measure: Quiz, Test

PLO:

ILO: 2,1,6

GE-LO:

Year assessed or anticipated year of assessment:

2. Perform basic operations with integers, signed fractions and decimals+ utilize the rules for completing these operations

Measure: Test

PLO:

ILO: 2,1,6

GE-LO:

Year assessed or anticipated year of assessment:

3. Perform the conversion from percent to decimal, from percent to fraction and backwards

Measure: Quiz

PLO:

ILO: 2,1

GE-LO:

Year assessed or anticipated year of assessment:

4. Solve basic percentage problems utilizing the proportional method.

Measure: Quiz, Test

PLO:

ILO: 2,1,6

GE-LO:

Year assessed or anticipated year of assessment:

5. Be able to identify and apply right strategies for solving real life percent problems.

Measure:

PLO:

ILO: 2,1

GE-LO:

Year assessed or anticipated year of assessment:

6. Be able to solve percent problems and apply these strategies to solve real live problems

Measure:

PLO:

ILO: 2,1,5

GE-LO:

Year assessed or anticipated year of assessment:

7. Utilizing proportion properties for solving application problems

Measure:

PLO:

ILO: 2,1

GE-LO:

Year assessed or anticipated year of assessment:

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS

Curriculum Approval Date: 03/09/2015

WEEK 1

3 lec, 1 lab

CONTENT: Introduction to whole numbers, addition of whole numbers.

Orientation to Math Lab and Tutorial Center

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to identify place value, order, add whole numbers without the use of a calculator, and solve applications problems.

WEEK 2

3 lec, 1 lab

CONTENT: Subtraction, Multiplication and division of whole numbers.

Study skills lab

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to subtract, multiply and divide whole numbers without the use of a calculator and solve related application problems. Students will assess their study skills and identify strategies for studying math.

WEEK 3

3 lec, 1 lab

CONTENT: exponential notation, order of operations, prime numbers.

Prime number lab exercise.

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to evaluate exponential expressions and use order of operations to simplify a numerical expression without the use of a calculator. Student will understand concept of a prime number and be able to identify all prime numbers between one and one-hundred.

WEEK 4

3 lec, 1 lab

CONTENT: divisibility rules, exam #1 - whole numbers, introduction to fractions.

Review for exam, test taking techniques

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to identify factors of a given number using divisibility rules, compute the prime factorization of a number and identify numerator and denominator of a fraction. Students will be able to identify appropriate math specific test taking strategies.

WEEK 5

3 lec, 1 lab

CONTENT: equivalent fractions, LCD, adding fractions and mixed numbers.

Fraction group exercise.

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to simplify fractions, find the LCD of two fractions and add fractions without the use of a calculator and solve related application problems.

WEEK 6

3 lec, 1 lab

CONTENT: subtracting, multiplying and dividing fractions and mixed numbers

fraction activity

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to subtract, multiply and divide fractions and mixed numbers without a calculator, and solve related application problems.

WEEK 7

3 lec, 1 lab

CONTENT: review of operations on fractions, order of operations and exponents

Review for exam, test taking techniques

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to evaluate numerical expressions involving fractions without a calculator and identify and utilize test taking strategies.

WEEK 8

3 lec, 1 lab

CONTENT: exam #2 - fractions, introduction to decimals

Review exam 2 results

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to identify place value in decimal numbers and convert decimals to fractions. Student will assess their test taking and study skills and determine areas that need improvement.

WEEK 9

3 lec, 1 lab

CONTENT: adding/subtracting decimals, multiplying decimals

Decimal group activity

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to add, subtract and multiply decimals without a calculator, and solve related application problems.

WEEK 10

3 lec, 1 lab

CONTENT: dividing decimals, converting from fraction to decimal and

vice versa

Decimal activity/Review for exam

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to divide decimals, convert decimals to fractions and vice versa, and evaluate numerical expressions involving both decimals and fractions without a calculator and solve related application problems.

WEEK 11

3 lec, 1 lab

CONTENT: exam #3 - decimals, ratio problems and applications

ratio workshop

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to set up and simplify a ratio for a give application.

WEEK 12

3 lec, 1 lab

CONTENT: proportion problems and applications, introduction to percent

Proportion group project

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to set up and solve a problem involving proportions and their applications, and understand the concept of percent.

WEEK 13

3 lec, 1 lab

CONTENT: converting between percent, fraction and decimal, solving percentage problems

Percentage group project

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to express a percentage as a fraction or decimal and vice versa, and solve a simple percentage problem.

WEEK 14

3 lec, 1 lab

CONTENT: more on solving percentage problems, exam #4 - ratio, proportion and percentages

Review for exam

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to solve percentage problems using a variety of strategies.

WEEK 15

3 lec, 1 lab

CONTENT: introduction to integers, adding and subtracting integers

Integer project or game

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to identify order of integers, add and subtract integers without a calculator, and solve related application problems.

WEEK 16

3 lec, 1 lab

CONTENT: multiplying and dividing integers, review of operations with integers.

Integer project

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to add/subtract, and multiply/divide integers and solve relative application problems without the use of a calculator.

WEEK 17

3 lec, 1 lab

CONTENT: order of operations with integers, exam # 5 - integers, review for final exam

Review for exam

HOMEWORK: Read sections of the book and complete problems assigned, complete lab exercise.

PERFORMANCE OBJECTIVES: Student will be able to evaluate a numerical expression without the use of a calculator.

WEEK 18

2 hour

final exam

Homework will be assigned after each class. Throughout the course applications will be emphasized.

METHODS OF INSTRUCTION:

Lecture, group work, use of basic computer software in lab, discussions.

METHODS OF EVALUATION:

CATEGORY 1 - The types of writing assignments required:

Percent range of total grade: 0% to 0%

If this is a degree applicable course, but substantial writing assignments are not appropriate, indicate reason

Course is primarily computational

Course primarily involves skill demonstration or problem solving

CATEGORY 2 -The problem-solving assignments required:

Percent range of total grade: 90 % to 100 %

Homework Problems

Quizzes

Exams

Other: Projects, study skills assignment

CATEGORY 3 -The types of skill demonstrations required:

Percent range of total grade: 0% to 0%

CATEGORY 4 - The types of objective examinations used in the course:

Percent range of total grade: 5 % to 10 %

Multiple Choice

True/False

Matching Items

CATEGORY 5 - Any other methods of evaluation:

Percent range of total grade: 0% to 0%

REPRESENTATIVE TEXTBOOKS:

Required:

Aufman. Basic College Mathematics. Cengage, Year of Publication: 2014. Or other appropriate college level text.

ISBN: 078113365440

Reading level of text, Grade: 12th Verified by: Ken Wagman

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:

CSU GE:

IGETC:

CSU TRANSFER:

Not Transferable

UC TRANSFER:

Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: B

Classification: Y

Noncredit Category: Y

Cooperative Education:

Program Status: 2 Stand-alone

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department:

CSU Crosswalk Course Number:

Prior to College Level: D

Non Credit Enhanced Funding: N

Funding Agency Code: Y

In-Service: N

Occupational Course: E

Maximum Hours:

Minimum Hours:

Course Control Number: CCC000211543

Sports/Physical Education Course: N

Taxonomy of Program: 170100