

APPROVED COURSE

MATH 402

CATALOG INFORMATION

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Dept & Nbr: MATH 402 Title: PRE-ALGEBRA
Full Title: Pre-Algebra

Units	Course Hours	Per Week	Nbr of Weeks	Course Hours	Total
Max: 3.0	Lecture	3.0	17	Lecture	51.0
Min: 3.0	Lab	1.0		Lab	17.0
	Contact DHR	0.0		Contact DHR	0.0
	Contact Total	4.0		Contact Total	68.0
	Non-contact DHR	0.0		Non-contact DHR	0.0

Title 5 Category: 02 AA DEGREE NON-APPLICABLE
Grading: GR Grade Only
Repeatability: 00 ONE REPEAT IF GRADE WAS D, F, OR NC
Also listed as:

COURSE DESCRIPTION:

This course covers operations with integers, fractions and decimals and associated applications, percentages, ratio, and geometry and measurement, critical thinking and applications. Elementary algebra topics such as variables, expressions, and solving equations are introduced.

PREREQUISITES:

Prerequisite: Completion of Math 400 with a 'C' or better, or assessment test recommendation.

COREQUISITES:

ADVISORY:

No advisories.

LIMITS ON ENROLLMENT:

METHODS OF INSTUCTION:

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

ARTICULATION and CERTIFICATE INFORMATION

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ASSOCIATE DEGREE:	Effective:	Inactive:
Area:		
CSU GE:	Effective:	Inactive:
Transfer area:		
IGETC:	Effective:	Inactive:
Transfer area:		

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CSU TRANSFER: Effective: Inactive:

UC TRANSFER: Effective: Inactive:

CAN:

CERTIFICATE APPLICABLE: N NOT A CERTIFICATE-APPLICABLE COURSE

APPROVAL AND DATES

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Version 04 Submitted by: E. DACHKOVA Date: 05/10/2004
 Department approved: Date:
 Curriculum approved: 07/09/1990 Version approved: 05/10/2004
 Prerequisites approved: 05/10/2004 Last reviewed: 05/10/2004
Term effective: FALL 2005 Last taught: Inactive:

COURSE CONTENT

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COURSE LEARNING OUTCOMES:

1. Perform basic operations with whole numbers, integers, fractions and decimals without the aid of a calculator
ILO: 2, 1
Measure: Quiz, homework, exams, lab work
2. Analyze a variety of problems, decide on a correct method or strategy of solution, implement the strategy to solve the problem, and evaluate solution to determine if it is reasonable using estimation skills
ILO: 2, 1
Measure: Quiz, homework, exams, labwork
3. Simplify algebraic expressions and solve equations involving integers, fractions and decimals without the aid of a calculator.
ILO: 2, 1
Measure: Quiz, homework, exams, labwork
4. Develop and utilize math specific study skills and test-taking strategies.
ILO: 2,1, 6
Measure: Labwork, homework, quizzes and exams
5. Set up and solve applied problems involving proportion, ratio, unit conversion, and percents.
ILO: 2,1
Measure: Quiz, homework, exams, labwork
6. Compute area, volume and perimeter of basic geometric figures.?????
ILO: 2,1
Measure: quiz, homework, exams, labwork
7. Understand basic geometric properties involving lines, angles, and other geometric figures and use these properties to solve problems.
ILO: 2,1
Measure: Quiz, homework, exams, labwork

TOPICS AND SCOPE:

WEEK 1
3 lec, 1 lab
CONTENT: Review Order of operations, adding positive/negative numbers.

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Orientation to math lab and other tutorial sources of help on campus

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to evaluate a numerical expression involving whole numbers, add and subtract integers and solve application problems without a calculator.

WEEK 2

3 lec, 1 lab

CONTENT: Subtracting/Multiplying/dividing and order of ops with integers

Review operations with integers

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to add/subtract, multiply/divide integers, evaluate a numerical expression involving integers without a calculator and solve application problems.

WEEK 3

3 lec, 1 lab

CONTENT: Variables, Simplifying algebraic expressions, solving equations

Math study skills/test taking strategies

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to simplify algebraic expressions and solve simple equations involving integers without a calculator.

WEEK 4

3 lec, 1 lab

CONTENT: Exam #1 - Integers, Simplifying fractions, mixed numbers vs. improper fractions.

Review for exam, practice test

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to simplify fractions and convert between mixed numbers and improper fractions without a calculator.

WEEK 5

3 lec, 1 lab

CONTENT: multiplying dividing fractions, finding LCD

Fraction group project

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to multiply and divide fractions without a calculator, solve application problems and find the LCD of two fractions.

WEEK 6

3 lec, 1 lab

CONTENT: Adding/subtracting fractions, Order of operations

Review of operations with fractions - fraction worksheet

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to add/subtract fractions and evaluate numerical expressions involving fractions without the use of a calculator, and solve application problems.

WEEK 7

3 lec, 1 lab

CONTENT: Simplifying complex fractions, simplifying expressions involving fractions and solving equations with fractions

Fraction project

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HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to simplify complex fractions and algebraic expressions involving fractions and solve simple equations involving fractions without the use of a calculator, and solve application problems.

WEEK 8

3 lec, 1 lab

CONTENT: Review of adding/subtracting, multiplying/dividing decimals, order of operations with decimals.

Decimal Project

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to add/subtract, multiply/divide and evaluate numerical expressions with decimals without a calculator.

WEEK 9

3 lec, 1 lab

CONTENT: Converting between fractions and decimals, equations with decimals

Review fractions and decimals

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to work with a combination of fractions and decimals, and solve equations with fractions and/or decimals without a calculator.

WEEK 10

3 lec, 1 lab

CONTENT: Exam #2 - fractions and decimals, Ratios, Rates and Proportion

Math study skills/reflections of semester progress

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to simplify a ratio, compute a rate, determine proportionality and solve a proportion.

WEEK 11

3 lec, 1 lab

CONTENT: Applications of proportions, similar and congruent triangles
Proportion project

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to solve applications of proportions, including similar triangles.

WEEK 12

3 lec, 1 lab

CONTENT: Review of Percentage/fraction/decimal, Solving percentage problems

Percentage/Fraction/Decimal project

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to express a percentage as a fraction and/or decimal and vice-versa, solve a basic percentage problem using a variety of methods.

WEEK 13

3 lec, 1 lab

CONTENT: Applications of percentages such as sales tax, mark up and discount and percentage increase/decrease.

Percentage group project

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HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to set up and solve a application problem involving percentages.

WEEK 14

3 lec, 1 lab

CONTENT: Exam #3 - ratio, proportions and percentages, Introduction to basic geometry such as measurement of angles, lines, parallel/intersection lines,

Practice Test, Prepare for Exam

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to identify parallel lines, right angles, acute/obtuse angles, and draw an angle with a given measurement.

WEEK 15

3 lec, 1 lab

CONTENT: Linear measurement, Metric vs. English, perimeter
Geometry project

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to compute perimeter of basic geometric objects and convert between English and Metric measurement systems.

WEEK 16

3 lec, 1 lab

CONTENT: Measurement of area, volume, weight and mass
Metric vs. English measurement activity

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will be able to compute area and volume of basic geometric figures and convert between English and Metric measurement systems

WEEK 17

3 lec, 1 lab

CONTENT: Exam #4 - geometry and measurement, Review for final exam
Practice final exam

HOMEWORK: Assigned reading and problems, lab assignment.

STUDENT PERFORMANCE OBJECTIVES: Student will review semesters work and prepare for the final exam.

WEEK 18

2 hours

Final exam

ASSIGNMENTS:

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

METHODS OF EVALUATION:

The types of writing assignments required:
None

The problem-solving assignments required:
Homework problems
Quizzes
Exams

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Other: Study skills assignments, projects

The types of skill demonstrations required:
None

The types of objective examinations used in the course:
Multiple choice
True/false
Matching items
Completion

Other category:
None

The basis for assigning students grades in the course:
Writing assignments: 0% - 0%
Problem-solving demonstrations: 90% - 100%
Skill demonstrations: 0% - 0%
Objective examinations: 5% - 10%
Other methods of evaluation: 0% - 0%

REPRESENTATIVE TEXTBOOKS:

Martin-Gaye, *Prealgebra*, 4th Edition, Prentice Hall, 2004
or other appropriate college level text.
Reading level of text: 12th Grade level. Verified by: G. Curtis

REASON FOR REVISION
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MISCELLANEOUS
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Advisory generate desc: N NO
Area department: NS NATURAL SCIENCES
Audit flag: N NOT AUDITABLE
Basic skills: C COMPUTATION B/SKILLS
CIP code: 00.0000 NOT USED
Classification: B DEVELOPMENTAL PREPARATORY COURSES
Cost level: 01 NOT USED
Disciplines: MATHEMATICS
Division: 10 LIBERAL ARTS AND SCIENCES
Faculty service areas: MATHEMATICS
Fee: \$0.00
In-service: X NOT AN IN-SERVICE COURSE
Level below transfer: 3 3 LEVELS BELOW THE TRANSFERABLE LEVEL
Matric-requiring: M REQUIRES MATH ASSESSMENT
Maximum class size: 0
Maximum wait list: 0
Method of instruction: 03 LECTURE/LABORATORY
Non-credit category: X NOT APPLICABLE, CREDIT COURSE
Open entry/exit: N NOT OPEN ENTRY/OPEN EXIT
Pacs activity: 4930 GENERAL STUDIES
Pacs program project: 0000 UNRESTRICTED
Preq/coreq generate desc: N NO
Preq/coreq provisional: N NO
Preq/coreq reg check: Y PREREQUISITE RULES EXIST
Repeat group id:
Requires instructor sig: N INSTRUCTOR'S SIGNATURE NOT REQUIRED
SAM classification: E NON-OCCUPATIONAL
Selected/special topic: N NOT A SELECTED TOPIC COURSE
Special class: X NOT A SPECIAL COURSE
Subject: XXXXXX NOT USED
TOP code: 4930.41 PRE-ALGEBRA (BASIC MATH/ARITHMETIC)
Workload: 0.0000

VEA support services to voc ed students:

Disabled: N
Academically disadvantaged: N
Economically disadvantaged: N
Limited English proficiency: N
Single parents/displaced homemaker: N
Gender equity: N
Consumer/homemaker education: N

