Cerro Coso College

Course Outline of Record Report

10/14/2021

MATHC040 : Pre-Algebra

General Information

Author:	• Sarah King
Course Code (CB01) :	MATHC040
Course Title (CB02) :	Pre-Algebra
Department:	Mathematics
Proposal Start:	Fall 2013
TOP Code (CB03) :	(1701.00) Mathematics, General
SAM Code (CB09) :	Non-occupational
Distance Education Approved:	Yes
Course Control Number (CB00) :	CCC000382814
Curriculum Committee Approval Date:	10/04/2013
Board of Trustees Approval Date:	11/14/2013
External Review Approval Date:	02/26/2014
Course Description:	This course covers basic arithmetic, introductory concepts in algebra, and problem solving techniques. Specific topics include addition, subtraction, multiplication and division of signed numbers, percentage, and applications of these skills. The course introduces algebraic concepts, including algebraic operations of polynomials, solving equations, formulas, and an introduction to solving word problems.
Submission Type:	Mandatory Revision
Author:	No value

Faculty Minimum Qualifications

Master Discipline Preferred:	• Mathematics
Alternate Master Discipline Preferred:	• Business • Computer Science • Engineering • Physics/Astronomy
Bachelors or Associates Discipline Preferred:	No value
Additional Bachelors or Associates Discipline Preferred:	No value

Course Development Options

Basic Skills Status (CB08)

Course is a basic skills course.

Course Special Class Status (CB13)

Course is not a special class.

Grade Options

- Letter Grade Methods
- Pass/No Pass

Allow Students to Gain Credit by Exam/Challenge

Allowed Number of Retakes
0

Course Prior To College Level (CB21)
Three levels below transfer.

Rationale For Credit By Exam/Challenge
No value

Retake Policy Description
Type:|Non-Repeatable Credit

Allow Students To Audit Course

Course Support Course Status (CB26)
No value

Associated Programs

Course is part of a program (CB24)

Associated Program
No value

Award Type
No value

Active

Transferability & Gen. Ed. Options

Course General Education Status (CB25)
No value

Transferability
Not transferable

Transferability Status
Not transferable

Units and Hours

Summary

Minimum Credit Units (CB07)	4
Maximum Credit Units (CB06)	4
Total Course In-Class (Contact) Hours	72
Total Course Out-of-Class Hours	144
Total Student Learning Hours	216
Faculty Load	0

Credit / Non-Credit Options

Course Credit Status (CB04)
Credit - Degree Applicable

Course Non Credit Category (CB22)
Credit Course.

Non-Credit Characteristic
No Value

Course Classification Status (CB11)

Funding Agency Category (CB23)

Credit Course.

Not Applicable.

☐ Cooperative Work Experience Education Status (CB10)

☐ Variable Credit Course

Weekly Student Hours

	In Class	Out of Classs
Lecture Hours	4	8
Laboratory Hours	0	0
Activity Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	0
Course In-Class (Contact) Hours	
Lecture	0
Laboratory	0
Activity	0
Total	72
Course Out-of-Class Hours	
Lecture	0
Laboratory	0
Activity	0
Total	144

Time Commitment Notes for Students

No value

Faculty Load

Extra Duties: 0

Faculty Load: 0

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Pre-requisites, Co-requisites, Anti-requisites and Advisories

Prerequisite

MATHC020 - Basic Arithmetic Skills

Entrance Skills

Entrance Skills	Description
No value	No value

Limitations on Enrollment

Limitations on Enrollment	Description
No value	No value

Specifications

Methods of Instruction

Methods of Instruction	Other
Rationale	Other Methods: A. Textbook readings B. Lectures C. Online course management system D. Discussions
Methods of Instruction	Lecture
Rationale	No value
Methods of Instruction	Discussion
Rationale	No value

Assignments

Daily homework assignments Example: Students work mathematics problems assigned from the text and from hand-outs to reinforce concepts and skills discussed in lecture.

Methods of Evaluation	Rationale
Other	D. Homework assignments Homework assignments that reflect the lecture are assigned each class meeting in order to allow students additional practice of skills. The homework may be in the form of exercises on the MyMathLab website, written exercises from the text, or problems to solve on a handout.
Tests	B. Weekly Quizzes Quizzes cover skills presented in lecture, homework, and in-class assignments. They are used to assess the student's understanding. C. Chapter Exams

	Chapter or multiple chapter exams designed to assess student mastery of SLO's are administered. In many cases, practice exams are given prior to the exam in order to prepare students.
Participation	A. Daily in-class assignments : Example: Students work collaboratively on solving equations assigned from the text and/or hand-out to reinforce the procedure discussed in lecture. This assignment is assessed by the instructor and used as a guide in lesson planning and in implementing remediation.

Equipment

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
	Bittinger, M., Ellenbogen, D.. (2012) Prealgebra, 6th, Addison-Wesley Publishing Company			

Other Instructional Materials

No Value

Materials Fee

No

Learning Outcomes and Objectives

Course Objectives

No value

CSLOs

Add, subtract, multiply, and divide whole numbers, fractions, and decimals.	Expected SLO Performance: 70.0
Add, subtract, multiply, and divide signed numbers with whole numbers, fractions, and decimals.	Expected SLO Performance: 70.0
Understand, use, and apply percents and proportions.	Expected SLO Performance: 70.0
Add, subtract, and multiply polynomials and be able to evaluate algebraic expressions.	Expected SLO Performance: 70.0
Solve algebraic equations.	Expected SLO Performance: 70.0
Accurately apply the order of operations.	Expected SLO Performance: 70.0
Apply basic graphing techniques.	Expected SLO Performance: 70.0

Employ learning skills. Expected SLO Performance: 70.0

Demonstrate a self-efficacy skill. Expected SLO Performance: 70.0

Outline

Course Outline

A.Whole Numbers
- 1.Place value
- 2.Adding & subtracting whole numbers
- 3.Multiplication of whole numbers
- 4.Division of whole numbers
- 5.Order of operations
- 6.Evaluating formulas
- 7.Associative; commutative; and distributive laws
- 8.Geometric formulas
  - a.Perimeter of rectangles and triangles
  - b.Area of rectangles and triangles
- 9.Factoring to primes
- 10.Solve whole number equations

B.Signed Numbers (Integers)
- 1.Concept of signed numbers
  - a.Recognizing opposites
  - b.Understanding absolute value
  - c.Inequality notation
- 2.Addition of signed numbers
- 3.Subtraction of signed numbers
- 4.Multiplication and division of signed numbers
- 5.Order of operations
- 6.Evaluating formulas
- 7.Real-Life problems
- 8.Solve equations involving integers

C.Signed Fractions
- 1.Concepts of fractions
- 2.Addition and subtraction with like denominators
- 3.Using prime factors to find the lowest common denominator
- 4.Multiplication of fractions
- 5.Division and reciprocals
- 6.Equivalent fractions (both reducing and building fractions)
- 7.Addition and subtraction with different denominators
- 8.Addition; subtraction; multiplication; and division of mixed numbers and improper fractions
- 9.Comparing and rounding off fractions
- 10.Unit cancelation conversion
- 11.Real-Life problems
- 12.Determining Areas for rectangles and triangles using fractions
- 13.Solve equations containing fractions

D.Signed Decimals
- 1.Concept of the decimal system
- 2.Rounding off
- 3.Addition and subtraction of decimals
- 4.Multiplication of decimals
- 5.Division of decimals
- 6.Conversion of decimals to fractions and fractions to decimals
- 7.Order of operations; and evaluation of formulas with decimals
- 8.Real-life applications of decimals
- 9.Solve equations containing decimals

E.Percents
- 1.Percents and conversion to decimals and fractions
- 2.Changing from decimals and fractions to percents
- 3.Real-life applications - calculating percentage of a number

F. Polynomials
- 1.Algebra terminology (term; factor; constant; coefficient; monomial; binomial; polynomial)
- 2.Exponents
  - a.Expressing terms with integers as the base and natural numbers as the exponent
  - b.Evaluating terms involving exponents
- 3.Combining like terms
- 4.Adding and subtracting polynomials
- 5.Dividing polynomials by monomials (optional)
- 6.Using the distributive law to multiply polynomials by monomials

7.Using the distributive law to factor a polynomial into a product of a monomial and a polynomial
8.Order of operations
9.Evaluating algebraic expressions
10.Real-life problems (optional)

G.Solving Linear Equations
1.Concept of an equation and what the solution to an equation means
2.Solving equations that require only one step:
a.Adding or subtracting a constant to both sides
(x + a = b with a and b rational numbers)
b.Multiplication or Division of both sides
(ax = b with a and b rational numbers)
3.Solving linear equations that require more than one step:
a.variable on one side of the equation
b.variable on both sides of the equation

H.Graphing
1.Graphing points on a number line
2.Graphing points in the Cartesian plane
3.Making tables of values
4.Graphing linear equations; y=mx+b
5.Graphing quadratic equations of the form

I.Word Problems
1.Translating a verbal phrase into a mathematical expression
2.Translating a verbal sentence into a mathematical equation
3.Solving a simple word problem
4.Solving percentage problems.

J. Learning/Study Skills- All sections present instruction in two or more of the skills below appropriate to the course.
1. Goal setting (within a course)
2. Time management (within a course)
3. Reducing test anxiety
4. Using syllabus
5. Using textbooks
6. Note-taking
7. Question strategies
8. Listening skills
9. Effective organizing
10. Study aides
11. Mnemonics/memory skills
12. Test preparation
13. Test question prediction
14. Relating of details to whole
15. Locating errors

K. Self Efficacy Skills &ndash: All sections present direct instruction in a skill below:
1. Responsibility and Control
2. Goal Setting (holistic)
3. Time Management (holistic)
4. Family Involvement
5. School Involvement
6. Wellness
7. Social Integration
8. Balancing Life/Work/School

Delivery Methods and Distance Education

Delivery Method: Please list all that apply -Face to face -Online (purely online no face-to-face contact) -Online with some required face-to-face meetings (“Hybrid”) -Online course with on ground testing -iTV – Interactive video = Face to face course with significant required activities in a distance modality -Other

Face 2 Face
Online with proctoring
Hybrid
Interactive

Rigor Statement: Assignments and evaluations should be of the same rigor as those used in the on-ground course. If they are not the same as those noted in the COR on the Methods of Evaluation and out-of-class assignments pages, indicate what the differences are and why they are being used. For instance, if labs, field trips, or site visits are required in the face to face section of this course, how will these requirements be met with the same rigor in the Distance Education section?

Online classes contain the same homework and testing requirements as on ground classes. Approved exam proctors for all exams in all online sections.

Effective Student-Instructor Contact: Good practice requires both asynchronous and synchronous contact for effective contact. List the methods expected of all instructors teaching the course. -Learning Management System -Discussion Forums -Moodle Message -Other Contact -Chat/Instant Messaging -E-mail -Face-to-face meeting(s) -Newsgroup/Discussion Board -Proctored Exam -Telephone -iTV - Interactive Video -Other (specify)

forums
message
chat
email
face2face
discussion
proctored
phone

Software and Equipment: What additional software or hardware, if any, is required for this course purely because of its delivery mode? How is technical support to be provided?

software Desktop or laptop computer with high-speed internet access.

Accessibility: Section 508 of the Rehabilitation Act requires access to the Federal government's electronic and information technology. The law covers all types of electronic and information technology in the Federal sector and is not limited to assistive technologies used by people with disabilities. It applies to all Federal agencies when they develop, procure, maintain, or use such technology. Federal agencies must ensure that this technology is accessible to employees and the public to the extent it does not pose an "undue burden". I am using -iTV—Interactive Video only -Learning management system -Publisher course with learning management system interface.

itv
LMS
publisher

Class Size: Good practice is that section size should be no greater in distance ed modes than in regular face-to-face versions of the course. Will the recommended section size be lower than in on-ground sections? If so, explain why.

class_size Hybrid