

Cerro Coso College
Course Outline of Record Report
 10/14/2021

MATHC020 : Basic Arithmetic Skills

General Information

Author:	-
Course Code (CB01) :	MATHC020
Course Title (CB02) :	Basic Arithmetic Skills
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) :	CCC000365204
Curriculum Committee Approval Date:	03/11/2011
Board of Trustees Approval Date:	04/14/2011
External Review Approval Date:	04/14/2011
Course Description:	Students perform the basic operations of addition, subtraction, multiplication, and division of whole numbers, fractions, and decimals. Students work with the concepts of ratios and percents.
Submission Type:	New Course
Author:	No value

Faculty Minimum Qualifications

Master Discipline Preferred:	<ul style="list-style-type: none"> Mathematics
Alternate Master Discipline Preferred:	<ul style="list-style-type: none"> Physical Sciences Mathematics Physical Sciences
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 <ul style="list-style-type: none"> Letter Grade Methods Pass/No Pass
<input type="checkbox"/> Allow Students to Gain Credit by Exam/Challenge	Allowed Number of Retakes 0	Course Prior To College Level (CB21) Four 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)

Credit Course.

Variable Credit Course

Funding Agency Category (CB23)

Not Applicable.

Cooperative Work Experience Education Status (CB10)



Weekly Student Hours

	In Class	Out of Class
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

No Value

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	Problem Solving
Rationale	No value

Methods of Instruction	Lecture
Rationale	No value

Methods of Instruction	Group Work
Rationale	No value

Methods of Instruction	Discussion
Rationale	No value

Methods of Instruction	Computational Work
Rationale	No value

Methods of Instruction	Demonstration
Rationale	No value

Assignments

Homework that provides practice of the skills in the detailed topic outline is regularly assigned. As an example, students go to the CourseCompass website outside of class and complete an assignment involving the subtraction of fractions with unlike denominators.

Methods of Evaluation

Rationale

Tests	scheduled exams given upon completion of a chapter or skill set, regularly assigned homework and/or class work assignments such as quizzes, worksheets, and arithmetic exercises.
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Equipment

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
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	Prior, R.,H.. (2010) Basic Mathematics, 1st, Pearson			
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Other Instructional Materials

Description	Software: Pearson Education. Basic Mathematics, 1st ed. -CourseCompass, MyMathLab course management website
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Author	
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Citation	Basic Arithmetic Skills
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Materials Fee

No

Learning Outcomes and Objectives**Course Objectives**

No value

CSLOs

employ addition, subtraction, multiplication and division of whole numbers to solve equations and real life applications. Expected SLO Performance: 70.0

simplify mathematical expressions using order of operations. Expected SLO Performance: 70.0

calculate sums, differences, products, and quotients involving fractions and mixed numbers and apply to real-life examples. Expected SLO Performance: 70.0

solve problems involving decimals using the operations of addition, subtraction, multiplication and division. Expected SLO Performance: 70.0

convert numbers between decimals, fractions and percents and employ this skill to solve applications. Expected SLO Performance: 70.0

employ at least two learning skills (such as reducing test anxiety and note-taking or others) from the list below in the detailed topical outline. Expected SLO Performance: 70.0

demonstrate at least one self-efficacy skill (such as time management, goal setting or other) from the list below in the detailed topical outline. Expected SLO Performance: 70.0

Outline

Course Outline

A. Place Value

1. Place value from ones place to hundred-billions place.
2. Determine value of a digit in any of the place values up to hundred billions.
3. Reading and writing whole numbers.

B. Word Problems

1. Simple word problems as applicable in whole numbers; fractions; decimals; percent; ratio and proportions.

C. Whole Numbers: Addition

1. Using basic facts add two numbers and then add three numbers together.
2. Add two numbers with no regrouping; using 1- and 2- digit numbers.
3. Add two numbers; regrouping ones; using 1- to 4- digit numbers.
4. Add two numbers; regrouping tens; using 2- to 4- digit numbers.
5. Add two numbers; regrouping ones and tens; using 2- 4- digit numbers.
6. Add two or more numbers; regrouping as necessary; using 4- to 6- digit numbers.

D. Whole Numbers: Subtraction

1. Using the basic subtraction facts; subtract a 1- digit number from a number between 0 and 18
2. Subtract a 1- or 2- digit number from a 2- digit number with no regrouping.
3. Subtract a 1- to 3- digit number from a 3- digit number with no regrouping.
4. Subtract a 1- to 3- digit number from a 2- or 3- digit number; regrouping tens.
5. Subtract a 2- or 3- digit number from a 3- digit number;regrouping hundreds.
6. Subtract a 3- or 4- digit number from a 4- digit number;regrouping tens and hundreds.
7. Subtract a 4- or 5- digit number from a 5- or 6- digit number; with regrouping.

E. Whole Numbers: Multiplication

1. Using basic facts; multiply two 1- digit numbers
2. Multiply a 2- or 3- digit number by a 1- digit number with no regrouping.
3. Multiply a 2- or 3- digit number by a 1- digit number; regrouping ones.
4. Multiply a 2- digit number by a 1- digit number; regrouping ones and tens.
5. Multiply a 3- or 4- digit number by a 1- digit number; regrouping as necessary.
6. Multiply a 2- to 4- digit number by a 2- digit multiple of 10.
7. Multiply a 3- or 4- digit number by a 3- digit multiple of 100.
8. Multiply a 4- or 5- digit number by a 4- digit multiple of 1000.
9. Multiply two 2- digit numbers.
10. Multiply a 3- or 4- digit number by a 2- digit number.
11. Multiply a 3- or 4- digit number by a 2- to 4- digit number.
12. Multiply a 3- or 4- digit number by a 3- digit number; using numbers with one or more zeros.

F. Whole Numbers: Division

1. Divide a 2- digit number by a 1- digit number with no remainder.
2. Divide a 3- digit number by a 1- digit number with no remainder.
3. Divide a 3- to 4- digit number by a 2- digit number with a remainder.
4. Divide a 2- to 4- digit number by a 2- digit number with no remainder.
5. Divide a 1- to 4- digit number by a 1- or 2- digit with a remainder.
6. Divide a 3- to 6- digit number by a 2- or 3- digit with a remainder.
7. Divide a 2- to 4- digit number by a 1- to 3- digit number and write the remainder as a fraction.
8. Divide a 2- to 4- digit number by a 1- to 2- digit number and write the answer as a decimal.

G. Fractions: Basic Skills

1. Write a fraction to represent a given part of a whole unit.
2. Identify that part of a whole unit represented by a given fraction.
3. Write a fraction to represent what part a given number of objects is of a total group of objects.
4. Identify the number of objects in a group of objects represented by a given fraction.
5. Find the factors of a number.
6. Find the Greatest Common Factor (GCF) of two or more numbers.
7. Change fractions and mixed numbers to lowest terms.
8. Write consecutive multiples of a numbers.
9. Find the Least Common Multiple (LCM) of two or more numbers.
10. Find the Least Common Denominator (LCD) to two or more fractions.
11. Change fractions to higher terms.
12. Write two or more fractions with a Least Common Denominator (LCD).
13. Write whole numbers or mixed numbers as improper fractions.
14. Write improper fractions as whole numbers or mixed numbers.
15. Rename a whole number or mixed number as an equivalent mixed number.

H. Fractions: Addition

1. Add fractions with like denominators.
2. Add mixed numbers with like denominators (no grouping).
3. Add mixed numbers with like denominators (with regrouping).
4. Add fractions with unlike denominators.
5. Add mixed numbers with unlike denominators.

I. Fractions: Subtraction

1. Subtract fractions with like denominators.
2. Subtract mixed numbers with like denominators (no regrouping).
3. Subtract a fraction or mixed number from a whole number (with regrouping of whole numbers).
4. Subtract mixed numbers with like denominators (with regrouping).
5. Subtract fractions with unlike denominators.
6. Subtract mixed numbers with unlike denominators.

J. Fractions: Multiplication

1. Multiply unit fractions.
2. Multiply fractions where both numerators do not equal 1.
3. Multiply a whole number and a fraction.
4. Multiply a mixed number and a fraction.
5. Multiply a mixed number or a whole number by a mixed number.

K. Fractions: Division

1. Divide a whole number by a unit fraction.
2. Divide a whole number by a fraction.
3. Divide a fraction by a fraction.
4. Divide a mixed number by a fraction.
5. Divide a fraction or a mixed number by a whole number.
6. Divide a whole number; or a fraction; or a mixed number by a fraction.

L. Decimals

1. Write decimals to ten-thousandths.
2. Round decimals to the nearest tenth; hundredth; and thousandth.
3. Write whole numbers; fractions; and mixed numbers as decimals.
4. Write decimals as fractions and mixed numbers.
5. Add decimals to ten-thousandths: first with no regrouping; and then with regrouping.
6. Subtract decimals to ten-thousandths: first with no regrouping; and then with regrouping.
7. Multiply a decimal: first by a whole number; and then by a decimal.
8. Divide a decimal: first by a whole number; and then by a decimal.

M. Proportions

1. Write ratios in simplest form; using "to"; a colon or a fraction.
2. Write rates in simplest form; using a fraction.
3. Determine the units of a given rate.
4. Determine if proportions are true.
5. Solve proportion equations.
6. Write equal rates as a proportion; then solve.

N. Percents

1. Rewrite whole number percents up to 100% in fractional or decimal form.
2. Rewrite whole number percents larger than 100% in fractional or decimal form.
3. Rewrite percents less than 1% in fractional or decimal form.
4. Rewrite mixed number and decimal percents in fractional or decimal form.
5. Rewrite decimals as percents.
6. Rewrite fractions as percents.
7. Rewrite whole numbers and mixed numbers as percents.

O. Learning/Study Skills - All sections present direct instruction in at least two 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

P. Self-Efficacy Skills - All sections present direct instruction in at least one of the skills below:

1. Responsibility and Control
2. Goal Setting (holistic)
3. Competition/Cooperation
4. Time Management (holistic)
5. Family Involvement
6. School Involvement
7. Wellness
8. Social Integration
9. 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

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?

No Value

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)

No Value

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?

No Value

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.

No Value