

# MATH 370D: ARITHMETIC OF INTEGERS-MODULE 2

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**Originator**

mflora

**Justification / Rationale**

Add modalities, clarify course content, update textbook

**Effective Term**

Fall 2022

**Credit Status**

Noncredit

**Subject**

MATH - Mathematics

**Course Number**

370D

**Full Course Title**

Arithmetic of Integers-Module 2

**Short Title**

INTEGERS II

**Discipline****Disciplines List**

Mathematics

**Modality**

Face-to-Face

100% Online

Hybrid

**Catalog Description**

This is a course in basic operations of arithmetic of integers. Topics include multiplying and dividing integers; graphing integers on the real number line; exponents; the order of operations; and applications of integers and their products and quotients.

**Schedule Description**

This course will focus on multiplying and dividing integers with applications. Advisory: MATH 370A, MATH 370B, & MATH 370C

**Non-credit Hours**

18

**Lecture Units**

0

**Lab Units**

0

**In-class Hours**

18

**Out-of-class Hours**

0

**Total Course Units**

0

**Total Semester Hours**

0

**Override Description**

Noncredit

**Prerequisite Course(s)**

Advisory: MATH 370A, MATH 370B, &amp; MATH 370C

**Required Text and Other Instructional Materials****Resource Type**

Book

**Open Educational Resource**

Yes

**Author**

David Arnold, Department of Math, College of the Redwoods

**Title**

Prealgebra Textbook

**Edition**

2

**Publisher**

College of the Redwoods

**Year**

2013

**College Level**

No

**Flesch-Kincaid Level**

7.7

**ISBN #**<https://www.redwoods.edu/Portals/121/PreAlgText/Prealgebra.pdf?ver=2016-02-09-153714-077>

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**Resource Type**

Book

**Open Educational Resource**

No

**Author**

Martin-Gay

**Title**

Basic College Mathematics with Early Integers

**Edition**

4

**Publisher**

Pearson

**Year**

2019

**College Level**

No

**ISBN #**

9780135176931 (book only)

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**Resource Type**

Web/Other

**Year**

n/a

**Description**

Pearson MyLab and Mastering may be used with the Martin-Gay textbook

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**Resource Type**

Book

**Open Educational Resource**

Yes

**Author**

Lynn Maracek, MaryAnne Anthony-Smith, Andrea Honeycutt Mathis

**Title**

Prealgebra

**Edition**

2

**City**

Houston

**Publisher**

OpenStax

**Year**

2020

**College Level**

No

**Flesch-Kincaid Level**

5.4

**ISBN #**

978-0-9986257-9-9 (hardcover)

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**Resource Type**

Web/Other

**Open Educational Resource**

No

**Year**

n/a

**Description**

WebAssign may be used with the OpenStax textbook

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**Resource Type**

Web/Other

**Open Educational Resource**

Yes

**Year**

n/a

**Description**

MyOpenMath may be used with any textbook.

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**For Text greater than five years old, list rationale:**

The College of the Redwoods textbook is older than 5 years, but it should work fine since the content should not have changed since then. Since it's an open resource, if there are mistakes that the professor comes across while using it, those can be corrected easily.

**Class Size Maximum**

40

**Entrance Skills**

Identify and describe place values of whole numbers.

**Requisite Course Objectives**

MATH 370A-Demonstrate proficiency in basic whole number facts such as place value, addition of whole numbers, and subtraction of whole numbers.

MATH 370A-Comprehend the different ways of writing whole numbers such as writing in standard notation and in expanded notation.

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**Entrance Skills**

Add, subtract, multiply, and divide whole numbers.

**Requisite Course Objectives**

MATH 370A-Demonstrate proficiency in basic whole number facts such as place value, addition of whole numbers, and subtraction of whole numbers.

MATH 370A-Compute using the basic operations of addition and subtraction on the whole numbers.

MATH 370A-Apply the basic operations to solve application problems including those involving perimeter of basic geometric shapes.

MATH 370B-Describe the meanings of multiplication and division.

MATH 370B-Compute products and create multiplication tables.

MATH 370B-Identify divisors of whole numbers.

MATH 370B-Compute quotients of whole numbers with and without remainders.

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**Entrance Skills**

Use addition, subtraction, multiplication, and division of whole numbers to solve application problems.

**Requisite Course Objectives**

MATH 370A-Compute using the basic operations of addition and subtraction on the whole numbers.

MATH 370A-Apply the basic operations to solve application problems including those involving perimeter of basic geometric shapes.

MATH 370B-Compute products and create multiplication tables.

MATH 370B-Compute quotients of whole numbers with and without remainders.

MATH 370B-Apply the basic operations to solve application problems including those involving area and volume of basic geometric shapes.

MATH 370B-Apply the order of operations to evaluate expressions involving addition, subtraction, multiplication, division, and natural number exponents of whole numbers.

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**Entrance Skills**

Use the order of operations to evaluate expressions involving sums, differences, products, quotients, and positive integer exponents of whole numbers.

**Requisite Course Objectives**

MATH 370B-Apply the basic operations to solve application problems including those involving area and volume of basic geometric shapes.

MATH 370B-Apply the order of operations to evaluate expressions involving addition, subtraction, multiplication, division, and natural number exponents of whole numbers.

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**Entrance Skills**

Find the prime factorizations of positive integers.

**Requisite Course Objectives**

MATH 370B-Identify divisors of whole numbers.

MATH 370B-Find the prime factorizations of whole numbers.

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**Entrance Skills**

Use integers to describe various phenomena.

**Requisite Course Objectives**

MATH 370C-Describe the meanings and uses of positive and negative integers.

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**Entrance Skills**

Calculate sums and differences of signed integers.

**Requisite Course Objectives**

MATH 370C-Compute using addition and subtraction on the integers.

MATH 370C-Apply the order of operations to simplify expressions involving addition and subtraction of integers.

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**Entrance Skills**

Use addition and subtraction of integers and multiplication and division of whole numbers to solve application problems.

**Requisite Course Objectives**

MATH 370A-Apply the basic operations to solve application problems including those involving perimeter of basic geometric shapes.

MATH 370B-Apply the basic operations to solve application problems including those involving area and volume of basic geometric shapes.

MATH 370C-Use addition and subtraction to solve application problems involving integers.

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**Course Content**

1. Review
  - a. Basic integer facts
  - b. Addition and subtraction of integers
  - c. Multiplication and division of integers
  - d. Absolute value
  - e. Plotting integers on the real number line
2. Multiplication
  - a. Products of signed integers
  - b. Signed integers raised to natural number exponents
3. Division
  - a. Quotients with and without remainders of signed integers
4. Additional topics
  - a. Order of operations
  - b. Applications

### Course Objectives

Objectives	
Objective 1	Calculate products of integers.
Objective 2	Calculate quotients and remainders of integers.
Objective 3	Evaluate integer expressions containing natural number exponents of integer bases.
Objective 4	Apply the order of operations to evaluate expressions involving sums, differences, products, quotients, and natural number exponents of integers.
Objective 5	Use integer multiplication and division to solve application problems, including those involving area and volume of basic geometric shapes.

### Student Learning Outcomes

Upon satisfactory completion of this course, students will be able to:	
Outcome 1	Use multiplication and division of integers to solve application problems and evaluate the reasonableness of the results.
Outcome 2	Apply the order of operations to integer expressions involving addition, subtraction, multiplication, division, and natural number exponents.

### Methods of Instruction

Method	Please provide a description or examples of how each instructional method will be used in this course.
Technology-based instruction	Students will complete problem sets and receive feedback (automated and/ or from professor) on assignments.
Laboratory	Students will participate in individual and group exploration of course topics. Professor, ISA(s), and students will discuss and explore course topics.
Demonstration, Repetition/Practice	Students will be given additional problem sets to complete on their own to improve skills.
Tutorial	Students will read, watch, and/or listen to material presented and explained through various media.

### Methods of Evaluation

Method	Please provide a description or examples of how each evaluation method will be used in this course.	Type of Assignment
Computational/problem-solving evaluations	Students will solve problems that involve whole numbers and operations on whole numbers. They will receive feedback on their answers and explanations from the professor. The out of class portions of these problem sets should require about 16 hours of work over the course.	In and Out of Class
Self-paced testing	Students may take short quizzes for grade and/or for credit and/or self-evaluation purposes. Out of class self-paced testing should be elective and used for the purposes of studying.	In and Out of Class
Mid-term and final evaluations	Unit tests and a final examination will consist of questions about course concepts and problems requiring students to perform operations on whole numbers. These examinations may have take-home components.	In and Out of Class

### Assignments

#### Other In-class Assignments

1. Students will take notes on lectures, videos, and/or reading.
2. Students will participate in classroom activities that serve to review, analyze, and evaluate skills with whole numbers.

### Other Out-of-class Assignments

1. Students will read textbooks, read online material, watch videos, and/or participate in technology-based tutorials.
2. Students may be asked to summarize assignments and activities.

### Grade Methods

Pass/No Pass Only

## Distance Education Checklist

Include the percentage of online and on-campus instruction you anticipate.

### Online %

100

### On-campus %

0

### What will you be doing in the face-to-face sections of your course that necessitates a hybrid delivery vs a fully online delivery?

Although the course can be offered entirely online, it may also be offered hybrid to take advantage of collaboration activities that are more suited to in-person interaction.

Examinations can be given in a controlled location.

## Lab Courses

### How will the lab component of your course be differentiated from the lecture component of the course?

Lab activities and discussions will involve more active learning than lecture activities.

### From the COR list, what activities are specified as lab, and how will those be monitored by the instructor?

Lab activities may include group-work, problem sets, exploration-based learning, and/or discussions. Discussions and other work completed in Canvas are monitored and evaluated by the professor. Work that does not take place in Canvas are evaluated by the professor based on write-ups (which may include summaries and feedback from the participants). Anonymous and non-anonymous feedback opportunities will be available to students to allow the professor further monitor effectiveness and appropriateness of activities that take place somewhere other than on the course LMS.

### How will you assess the online delivery of lab activities?

Reports and other forms of write-ups will be submitted on the course LMS for evaluation and feedback.

## Instructional Materials and Resources

### If you use any other technologies in addition to the college LMS, what other technologies will you use and how are you ensuring student data security?

Depending on the textbook used, the professor may choose to use Pearson MyLab and Mastering, WebAssign, or MyOpenMath. All of these are considered to be safe for use in education for both faculty and students. All can also be integrated with the college LMS (Canvas), which decreases the amount of times students will need to sign-in-and-out of accounts and open them up to data breaches.

### If used, explain how specific materials and resources outside the LMS will be used to enhance student learning.

Professors who choose to use Pearson MyLab and Mastering, WebAssign, or MyOpenMath do so in order to assign pre-written or instructor-created problems that are more complicated than those that can be created in Canvas while still receiving instantaneous feedback.

## Effective Student/Faculty Contact

### Which of the following methods of regular, timely, and effective student/faculty contact will be used in this course?

#### Within Course Management System:

Discussion forums with substantive instructor participation  
Online quizzes and examinations  
Private messages  
Regular virtual office hours  
Timely feedback and return of student work as specified in the syllabus  
Weekly announcements

**External to Course Management System:**

Direct e-mail  
Posted audio/video (including YouTube, 3cm mediasolutions, etc.)  
Synchronous audio/video  
Telephone contact/voicemail

**For hybrid courses:**

Scheduled Face-to-Face group or individual meetings

**Briefly discuss how the selected strategies above will be used to maintain Regular Effective Contact in the course.**

Faculty will regularly contact students individually and as a group through Canvas messages and/or COD email. Students will also receive regular announcements with information about the course, COD as a whole, or other relevant information.

In discussions and through other lab assignments, students will communicate with each other and their professor regularly and frequently.

**If interacting with students outside the LMS, explain how additional interactions with students outside the LMS will enhance student learning.**

Students may prefer to contact their professor via email or on the phone, which allows for an improved experience for those who communicate better in those contexts. The professor may direct students to access free supplemental resources as well.

**Other Information****MIS Course Data****CIP Code**

27.0101 - Mathematics, General.

**TOP Code**

170100 - Mathematics, General

**SAM Code**

E - Non-Occupational

**Basic Skills Status**

Basic Skills

**Prior College Level**

Five levels below transfer

**Cooperative Work Experience**

Not a Coop Course

**Course Classification Status**

Other Non-credit Enhanced Funding

**Approved Special Class**

Not special class

**Noncredit Category**

Elem/Secondary Basic Skills

**Funding Agency Category**

Not Applicable

**Program Status**

Program Applicable

**Transfer Status**

Not transferable

**General Education Status**

Y = Not applicable

**Support Course Status**

N = Course is not a support course

**Allow Audit**

No

**Repeatability**

Yes

**Repeatability Limit**

NC

**Repeat Type**

Noncredit

**Justification**

The course is designed to allow students to learn, re-learn, and/or practice material that is fundamental to mathematics study. If a student has taken the course but is not confident enough in their skills to sign up for a more advanced course, they may repeat this course to improve both skills and confidence.

**Materials Fee**

No

**Additional Fees?**

No

**Approvals****Curriculum Committee Approval Date**

11/18/2021

**Academic Senate Approval Date**

12/09/2021

**Board of Trustees Approval Date**

01/21/2022

**Chancellor's Office Approval Date**

03/13/2022

**Course Control Number**

CCC000630461

**Programs referencing this course**

Integers Certificate of Competency (<http://catalog.collegeofthedesert.eduundefined/?key=161>)