

MATH 370B: ARITHMETIC OF WHOLE NUMBERS-MODULE 2

Originator

mflora

Justification / Rationale

Add modalities, clarify course content, update textbook

Effective Term

Fall 2022

Credit Status

Noncredit

Subject

MATH - Mathematics

Course Number

370B

Full Course Title

Arithmetic of Whole Numbers-Module 2

Short Title

WHOLE NUMBERS II

Discipline**Disciplines List**

Mathematics

Modality

Face-to-Face

100% Online

Hybrid

Catalog Description

This is a course in basic operations of arithmetic of whole numbers. Topics include the definitions of prime and composite numbers; multiplying and dividing whole numbers; factoring whole numbers into products of prime numbers; finding the quotient and remainder in a division problem; and applications of operations with whole numbers. Additional emphasis includes basic whole number facts, such as multiplication tables, divisibility criteria, and the order of operations on whole numbers.

Schedule Description

This course will focus on multiplying and dividing whole numbers with applications to real life situations. Advisory: MATH 370A

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

18

Override Description

Noncredit

Prerequisite Course(s)

Advisory: MATH 370A

Required Text and Other Instructional Materials**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)

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>

Resource Type

Web/Other

Open Educational Resource

No

Year

n/a

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

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)

Resource Type

Web/Other

Open Educational Resource

No

Year

n/a

Description

WebAssign may be used with the OpenStax textbook

Resource Type

Web/Other

Open Educational Resource

Yes

Year

n/a

Description

MyOpenMath may be used with any textbook

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.

Entrance Skills

Add and subtract 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.

Entrance Skills

Use addition and subtraction 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.

Course Content

1. Basic number facts review (place value, expanded form, addition, and subtraction)
2. Multiplication of whole numbers
 - a. Meaning of multiplication
 - b. Computation of products
 - c. Applications of multiplication
3. Prime numbers
 - a. Definition
 - b. Prime factorizations of whole numbers
4. Division of whole numbers

- a. Meaning of division
- b. Computation of quotients with or without remainders
- c. Applications of division

Course Objectives

| | Objectives |
|-------------|---|
| Objective 1 | Describe the meanings of multiplication and division. |
| Objective 2 | Compute products and create multiplication tables. |
| Objective 3 | Identify divisors of whole numbers. |
| Objective 4 | Compute quotients of whole numbers with and without remainders. |
| Objective 5 | Find the prime factorizations of whole numbers. |
| Objective 6 | Compute the value of expressions containing natural number exponents with whole number bases. |
| Objective 7 | Apply the basic operations to solve application problems including those involving area and volume of basic geometric shapes. |
| Objective 8 | Apply the order of operations to evaluate expressions involving addition, subtraction, multiplication, division, and natural number exponents of whole numbers. |

Student Learning Outcomes

| | Upon satisfactory completion of this course, students will be able to: |
|-----------|--|
| Outcome 1 | Use multiplication and division of whole numbers to solve application problems and evaluate the reasonableness of the results. |
| Outcome 2 | Evaluate expressions involving more than one operation on whole numbers by correctly applying the order of operations. |

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

CCC000630459

Programs referencing this course

Whole Numbers Certificate of Competency (<http://catalog.collegeofthedesert.eduundefined/?key=163>)