

Northern Marianas College
CURRICULUM ACTION REQUEST

Course: MA087 Fundamentals of Mathematics

Effective Semester / Session: Spring 2022

Type of Action:

- New
- Modification
- Move to Inactive (Stop Out)
- Cancellation

Course Alpha and Number: MA087

Course Title: Fundamentals of Mathematics

Reason for initiating, revising, or canceling:

Periodic course guide review needed over time, adding virtual class resources for *Estimated Cost of Course* and *Instructional Resources Needed* sections.

Eric W. Johnson

EWJ



1-27-22

Proposer

Date

Velma C. Deleon Guerrero



1/28/2022

Department Chair

Date

Adam Walsh



01.27.22

Language & Format Review Specialist

Date

Ajani Burrell



1.27.2022

Academic Council Chair

Date

Vilma S. Reyes



1/28/22

Interim-Dean of Academic Programs and Services

Date

Northern Marianas College

Course Guide

Page: 2

Course: MA087 Fundamentals of Mathematics

1. Department

Sciences, Mathematics, Health & Athletics

2. Purpose

The purpose of this course is to help students develop and improve their basic arithmetic skills. The course will introduce, explore, and apply concepts of introductory mathematics—including integers, fractions, decimals, and exponents—essential for preparing students for the successful completion of subsequent math courses required for graduation from NMC. This course will also help students enhance their self-concept with regard to their mathematical ability.

3. Description

A. Required/Recommended Textbook(s) and Related Materials

Required:

Aufmann, Richard N. and Joann S. Lockwood, *Prealgebra*, An applied Approach, 6th ed. Belmont, CA: Brooks/Cole, Cengage Learning, 2014.

Recommended: None

B. Contact Hours

1. **Lecture:** 2 per week / 30 per semester

2. **Lab:** 2 per week / 30 per semester

3. **Other:** None

C. Credits

1. **Number:** 3

2. **Type:** Non-Degree Units

D. Catalogue Course Description

Note: MA087, MA089, and MA091 are preparatory courses in mathematics and do not carry college degree credit (i.e. non-degree units [NDU]). This course covers basic concepts of arithmetic, including integers, fractions, decimals, and exponents. This course is designed to assist students who need to upgrade their basic math skills so that they can be successful in subsequent mathematics courses. Prerequisites: BE111 or concurrent enrollment & EN085. (Offered Fall, Spring, and Summer)

E. Degree or Certificate Requirements Met by Course

None. A passing grade in this course satisfies only the mathematics proficiency requirement for entry into MA089: Pre-Algebra.

Northern Marianas College

Course Guide

Page: 3

Course: MA087 Fundamentals of Mathematics

F. Course Activities and Design

Course activities include: lecture, group work, peer-teaching, discussions, homework assignments, viewing audio-visual materials, lab work in the classroom, quizzes, tests, and a final exam.

4. Course Prerequisite(s); Concurrent Course Enrollment

Prerequisites: BE111 or as concurrent course enrollment

Concurrent Course Enrollment: BE111

Required English/Mathematics Proficiency Level(s)

English Placement Level: EN085

Mathematics Placement Level: MA087

5. Estimated Cost of Course; Instructional Resources Needed

Cost to the Student: Tuition for a 3-credit course, cost of textbook, and the student activities fee.

Cost to the College: Instructor's salary.

Instructional resources needed for this course include: whiteboard and whiteboard markers, an ELMO projector, and audiovisual equipment.

6. Method of Evaluation

Students will be evaluated by their performance on the chapter quizzes, homework, tests as well as the completion of the final exam. NMC's grading and attendance policies will be followed.

Course: MA087 Fundamentals of Mathematics

7. Course Outline

This is a topical outline and does not necessarily indicate the sequence in which the material will be presented.

1.0 Whole Numbers

- 1.1 Introduction to whole numbers
- 1.2 Addition and subtraction of whole numbers
- 1.3 Multiplication and division of whole numbers
- 1.4 Solving equations with whole numbers
- 1.5 Order of operations agreement

2.0 Integers

- 2.1 Introduction to integers
- 2.2 Addition and subtraction of integers
- 2.3 Multiplication and division of integers
- 2.4 Solving equations with integers
- 2.5 Order of operations agreement

3.0 Fractions

- 3.1 Least common multiple and greatest common factor
- 3.2 Introduction to fractions
- 3.3 Addition and subtraction of fractions
- 3.4 Multiplication and division of fractions
- 3.5 Solving equations with fractions
- 3.6 Exponents, complex fractions, and the order of operations agreement

4.0 Decimal and Real Numbers

- 4.1 Introduction to decimals
- 4.2 Addition and subtraction of decimals
- 4.3 Multiplication and division of decimals
- 4.4 Solving equations with decimals
- 4.5 Radical expressions
- 4.6 Real numbers

Northern Marianas College Course Guide

Page: 5

Course: MA087 Fundamentals of Mathematics

8. Instructional Goals

The course will introduce students to:

- 1.0 Operations Using Whole Numbers;
- 2.0 Operations Using Integers;
- 3.0 Operations Using Fractions; and
- 4.0 Operations Using Decimals.

Course: MA087 Fundamentals of Mathematics

9. Student Learning Outcomes

Upon successful completion of this course, students will be able to:

- 1.0 Add, subtract, multiply, divide and solve equations with whole numbers using the order of operations agreement;
- 2.0 Add, subtract, multiply, divide and solve equations with integers using the order of operations agreement;
- 3.0 Add, subtract, multiply, divide and solve equations with fractions using the order of operations agreement, also including exponents and complex fractions; and
- 4.0 Add, subtract, multiply, divide and solve equations with decimals using the order of operations agreement, also including radical expressions and real numbers.

10. Assessment Measures of Student Learning Outcomes

Assessment of student learning may include, but not be limited to, the following:

- 1.0 Quizzes;
- 2.0 Tests;
- 3.0 Assignments;
- 4.0 Lab Work; and
- 5.0 Comprehensive Final Exam.