GROSSMONT COLLEGE

Official Course Outline

MATHEMATICS 020 – FOUNDATIONS FOR QUANTITATIVE REASONING

1. Course Number Course Title Semester Units Semester Hours

MATH 020 Foundations for 1 1 hour lecture: 16-18 hours

Quantitative Reasoning 32-36 outside-of-class hours

48-54 total hours

2. Course Prerequisites

None

Corequisite

Math 120

Recommended Preparation

None

3. Catalog Description

Foundations for Quantitative Reasoning (QR) will focus on the skills and concepts needed for success in QR. This course is for students concurrently enrolled in QR (Math 120) at Grossmont College. Students will receive extra support in Arithmetic, Algebra, Geometry, problem solving, and study skills. This course is offered on a Pass/No Pass basis only. (Non degree credit course)

4. Course Objectives

The student will:

a. practice specific skills from arithmetic, algebra, geometry, and problem solving needed to complete QR

b. gain confidence and persist in problem solving

c. assess and improve their mathematical competency.

d. develop and utilize effective study skills.

5. Instructional Facilities

Standard mathematics classroom, with a least two walls of chalk **or** white board

6. Special Materials Required of Student

Scientific or Graphing Calculator

7. Course Content

1. Arithmetic Skills

1) Operations with integers,

2) Fractions and decimals

3) Percentages

4) Order of Operations

b. Algebra Skills

1) Solving equations and inequalities

2) Simplifying expressions

3) Graphing

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7. Course Content (continued)

c. Geometry Skills

1) Right triangles

2) Area/perimeter/volume

3) Circles

4) Rectangles

d. Problem Solving Skills

1) Reading strategies for comprehension

2) Categorizing information

3) Writing equations translating words into equations

4) Interpreting results

e. Study Skills

1) Affective Domain

2) Test taking strategies

3) Reading a textbook for comprehension

4) Note taking

f. Technology Skills

1) Scientific calculator

2) On-line learning management systems (on-line homework, Canvas, etc.)

8. Method of Instruction

a. Lecture and demonstration

b. Collaborative learning and peer review

c. Student presentations

9. Methods of Evaluating Student Performance

a. Quizzes.

b. Tests and/or projects.

c. Comprehensive final exam.

d. Problem sets

e. Student presentations (e.g. creating number systems, analyzing credit card debt)

10. Outside Class Assignments

a. Problem sets

b. Projects (e.g. creating number systems, analyzing credit card debt.)

c. Textbook exercises

11. Texts

a. Required Text(s):

1. Allen Angel, Christine D. Abbott, and Dennis C. Runde. *A Survey of Mathematics*. Boston: Pearson, 2017
2. Ken Johnson, Ted Herr and Judy Kysh. *Crossing the River with Dogs*: *Problem Solving for College Students*. New York: John Wiley and Sons, Inc., 2012.
3. Jeffrey O. Bennett and William L. Briggs. *Using and Understanding Mathematics: A Quantitative Reasoning Approach,* 5th Edition Boston: Pearson, 2018

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Addendum: Student Learning Outcomes

Upon completion of this course, our students will be able to do the following:

1. Use a problem solving process to read the QR texts and problems and interpret the results in the context of the application.
2. Demonstrate relevant arithmetic, algebra, geometry, and technology skills in the context of QR.
3. Develop study habits that promote success in QR.

Date approved by the Governing Board: April 16, 2019