TERM:

COURSE CODE: MAT-102

COURSE TITLE: Mathematics for the Health Science

DAY(S) AND TIME(S):

LOCATION:

INSTRUCTOR:

OFFICE HOURS:

OFFICE LOCATION:

EMAIL:

PHONE:

COURSE PREREQUISITE: Complete MAT-071, MAT-073, or any MAT 100 or above.

CREDITS: 3

COURSE DESCRIPTION:

This course will introduce the student to the logic of mathematics and measurement, the role of mathematics in the health professions, and the application of mathematics to problems encountered by the health care professional. Emphasis will be placed upon such topics as: Basic computation, fractions, decimals, percent, ratios, proportions, and the nature of measurement. The metric system with specific applications to dosages, reading and interpreting medication labels, determining medication orders, filling syringes, and other areas of health care will be stressed.

STUDENT LEARNING OUTCOMES:

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

1. Understand the role of mathematics in the health professions.
2. Develop those mathematical skills appropriate to the tasks encountered by health care professionals.
3. Learn the abbreviations and symbols used in medication orders.
4. Interpret prescription orders, medication labels, package inserts.
5. Calculate correct dosages and route of administration for medications; indicate the correct dosage on syringes and other devices used in the administration of medications.

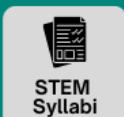**TEXTBOOK AND SUPPLEMENTAL MATERIALS:**
Lesmeister, Michele Benjamin, Math Basics for the Health Care Professional. Upper Saddle River, NJ: Pearson
Supplemental reading:
JAMA, Hastings Report, Drug Topics, CMA Today, Journal of Clinical Ethics

GRADING POLICY:

Tests	40%
Final Exam	30%
Assignments	30%

SAMPLE COURSE SCHEDULE:

Topic	Class events	Assignments
Course Orientation, Schedule & Requirements Introduction; logic of mathematics; basic operations of addition, subtraction, multiplication, division Introduction to fractions and mixed numbers; addition/subtraction of mixed numbers	Lecture Group activity	Chapter 1 workbook homework Chapter 2 workbook HW

Topic	Class events	Assignments
Multiplication and division of fractions and mixed numbers Introduction to decimals; basic operations with decimals Introduction to percents Expressing percents as equivalent fractions and decimals	Lecture, Group activity **Exam 1**	Chapter 3 Chapter 5 workbook homework

Topic	Class events	Assignments
Equations involving percents Determine unknown quantities using percent equations **Introduction to metric measure; metric mass and temperature measure; Fahrenheit/Celsius**	Lecture, Group activity	Chapter 5 workbook homework Chapter 4 workbook homework
Ratio and Proportion; Compare quantities using ratios; identify means and extremes; determine unknown components in simple proportions; calculate drug dosages	Lecture **Exam 2**	Chapter 6 workbook homework
Topic	**Class events**	**Assignments**
Computations with proportions; determine unknown components in ratio pairs and proportions; calculate drug dosages Ratio and Proportion; Use basic principles of ratio, proportion, and percent to solve problems in health care; Interpreting medication orders; Calculate drug dosages	Lecture, Group activity	Chapter 6 workbook homework Chapter 7 HW

Calculate correct dosages; Identify route of administration for medications, the correct dosage on syringes and other devices. Interpreting charts and graphs; Analyze data via bar graphs, line graphs, circle graphs, pictographs	Lecture ch 10 & 12 Group activity **Final Exam**	Chapter 10workbook homework

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