

HUDSON COUNTY COMMUNITY COLLEGE

MAT-102 **Mathematics for the Health Sciences**

COURSE NUMBER AND TITLE: MAT-102 Mathematics for the Health Sciences

Semester :

COURSE CREDIT: 3

PREREQUISITES: Exit Basic English

Instructor name: **Instructor e-mail:**

Room:

Class meeting:

Office hours:

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 OUTCOMES/OBJECTIVES:

At the termination of this course, the student 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.

D. APPROXIMATE SCHEDULE OF TOPICS:



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
<p>Multiplication and division of fractions and mixed numbers Introduction to decimals; basic operations with decimals</p> <p>Introduction to percents Expressing percents as equivalent fractions and decimals</p>	<p>Lecture, Group activity</p> <p>Exam 1</p>	<p>Chapter 3</p> <p>Chapter 5 workbook homework</p>
<p>Equations involving percents Determine unknown quantities using percent equations</p> <p>Introduction to metric measure; metric mass and temperature measure; Fahrenheit/Celsius</p>	<p>Lecture, Group activity</p>	<p>Chapter 5 workbook homework</p> <p>Chapter 4 workbook homework</p>
<p>Ratio and Proportion; Compare quantities using ratios; identify means and extremes; determine unknown components in simple proportions; calculate drug dosages</p>	<p>Lecture</p> <p>Exam 2</p>	<p>Chapter 6 workbook homework</p>

Topic	Class events	Assignments
<p>Computations with proportions; determine unknown components in ratio pairs and proportions; calculate drug dosages</p> <p>Ratio and Proportion; Use basic principles of ratio, proportion, and percent to solve problems in health care; Interpreting medication orders; Calculate drug dosages</p>	<p>Lecture, Group activity</p>	<p>Chapter 6 workbook homework</p> <p>Chapter 7 HW</p>
<p>Calculate correct dosages; Identify route of administration for medications, the correct dosage on syringes and other devices.</p> <p>Interpreting charts and graphs; Analyze data via bar graphs, line graphs, circle graphs, pictographs</p>	<p>Lecture ch 10 & 12 Group activity</p> <p>Final Exam</p>	<p>Chapter 10 workbook homework</p>

EVALUATION CRITERIA AND METHODS:

Tests	40%
Final Exam	30%
Assignments	30%

E. BIBLIOGRAPHY:

SUPPLEMENTAL READING MATERIALS: The following list is a sample of those journals and periodicals with which the student should become familiar. This is by no means exhaustive.

JAMA, Hastings Report, Drug Topics, CMA Today, Journal of Clinical Ethics

REQUIRED TEXT:

Lesmeister, Michele Benjamin, Math Basics for the Health Care Professional. Upper Saddle River, NJ: Pearson

LIBRARY COMPONENT: Research medication errors.

Attendance policy

I encourage you to be in class on time because as a health care professional, it is professional to be on time.

Students that miss 30 minutes of class will be counted as absent. Students are allowed to miss only two classes.

All cell phones must be powered down during lecture. NO EXCEPTIONS. Students who disturb class with their cell phones may be asked to leave the classroom and will receive no credit for any assignments or class work activities occurring that day.

Accessibility SUPPORT STATEMENT:

Students with disabilities who believe that they might need accommodations in this class are encouraged to contact, Disability Support Services at (201) 360-4157, as soon as possible to better ensure that such accommodations are implemented in a timely fashion. All disabilities must be documented by a qualified professional such as a Physician, Licensed Learning Disabilities Teacher Consultant (LDTC), Psychiatrist, Psychologist, Psychiatric Nurse, Licensed Social Worker or Licensed Professional Counselor, who is qualified to assess the disability that the student claims to have and make recommendations on accommodations for the student. All information provided to the Disability Support Services Program will be confidential between the program, professors involved with the student and individual student.

ACADEMIC INTEGRITY STATEMENT:

Academic Integrity Standards

Academic integrity is central to the pursuit of education. For students at HCCC, this means maintaining the highest ethical standards in completing their academic work. In doing so, students earn college credits by their honest efforts. When they are awarded a certificate of degree, they have attained a goal representing genuine achievement and can reflect with pride on their accomplishment. This is what gives college education its essential value.

Violations of the principle of academic integrity include:

- Cheating on exams
- Reporting false research data or experimental results
- Allowing other students to copy one's work to submit to instructors
- Communicating the contents of an exam to other students who will be taking the same test
- Submitting the same project in more than one course, without discussing this first with the instructor
- Submitting plagiarized work. Plagiarism is the use of another writer's words or ideas without properly crediting that person. This unacknowledged use may be from published books or articles, the Internet, or another student's work

HCCC Helps

HCCC is committed to supporting students who face non-academic barriers to success. If you are experiencing challenges outside of the classroom that are impacting your academic performance, please visit the [Hudson Helps](#) portal page to access additional student supports and resources