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1 Course Description

MTB 1371, Math for Health-Related Professions, 2 credit hours. Prerequisite: Knowledge of basic arithmetic. Math for Health-Related Professions is designed for students completing a degree or certificate in a health-related field. The course is not intended to satisfy general education requirements in mathematics. Topics covered include: 1. Arithmetic; 2. The metric system; 3. Apothecary measurements; 4. Techniques of health-data analysis; 5. Applications to various fields in the health-care system.

2 Method of Instruction

This is an on-line course. Students will view on-line course videos, study the on-line textbook, and work the practice and homework problems found in the textbook. The on-line textbook is provided at no additional charge and is posted under the Lessons tab in Angel. Access to an internet-connected computer is required. Students should check Angel frequently (almost daily) for e-mails and announcements.

3 Required Materials

Text: The on-line textbook, authored by Professor J. Lloyd Harris, is posted under LESSONS in Angel. There is no additional charge to access the textbook.

Calculator: A basic calculator (addition, subtraction, multiplication, division, square root) will be needed on all proctored tests and exams except for Test 1. Graphing calculators, scientific calculators, and cell phone calculators will not be permitted. Students testing in the Panama City Campus Testing Center will be provided with a calculator to use during tests. Off-site students must have their calculator approved in advance by the instructor.

Internet and printer access: Students must have access to an internet-connected computer and to a printer. (Computers are available for student use in the college library. Items may be printed in the college library on a pay-for-print basis.)

4 Student Learning Outcomes

The students will:

- Perform operations involving fractions, decimals, percents, and proportions.
- Perform conversions within and between the metric, apothecary, and household systems of measure.
- Compute the number of dosage units or the volume required to administer the correct dose of a medication.
- Interpret information on medication labels and in prescribers' medication orders.
- Determine body surface area (BSA), and calculate dosages based on BSA and on weight.
- Perform intravenous therapy calculations.

5 Grading

There will be 4 proctored unit tests and a proctored final exam. (See Testing Schedule.) There are also on-line and written at-home quizzes, the average of which will count as one test grade. (See Quizzes.) See the following tables for how final averages are calculated and reported.

<i>Assignment</i>	<i>Weight</i>
Test 1	15%
Test 2	15%
Test 3	15%
Test 4	15%
Quiz Average	15%
Final Exam	25%
Total	100%

<i>Letter</i>	<i>Range</i>
A	90 – 100
B	80 – 89
C	70 – 79
D	60 – 69
F	0 – 59

At the discretion of your instructor, the final exam score might also substitute for your lowest unit test score, if doing so raises your final average.

5.1 Testing Schedule

<i>Test</i>	<i>Covered Material</i>	<i>Testing Window</i>
Test 1	Modules 1, 2, and 3	Jan 28 – Feb 3, 2015
Test 2	Modules 4 and 5	Feb 25 – Mar 3, 2015
Test 3	Module 6	Mar 25 – Mar 31, 2015
Test 4	Module 7	Apr 22 – Apr 28, 2015
Final Exam	All Modules	Apr 30 – May 5, 2015

5.2 Testing Policies

Tests will be given in the on-campus Testing Center, which is on the third floor of the Student Union West building. Contact information for the Testing Center can be found in Angel.

Students living in Bay County must take exams as scheduled on campus or make alternative arrangements with the Testing Center. Students living near the Gulf/Franklin Center may make arrangements to take exams at the Gulf/Franklin Center by contacting the Testing Center. Students living outside Bay County may make proctor arrangements at the start of the semester by calling the Testing Center or by emailing vcampus@gulfcoast.edu.

Any student who needs an off-campus proctor must have the proctor approved by the Testing Center at the beginning of the semester. Note that non-GCSC proctors might charge fees for this service; these fees are the student's responsibility.

Students will not be allowed to leave a testing situation (unit test, midterm, or final) and come back at a later time to finish the test. Students will not be allowed to retake a unit test, midterm, or final.

The unit tests and the final exam will be written paper-and-pencil tests. The graded unit tests will be returned via U.S. Mail. The Final Exam will not be returned.

5.2.1 RegisterBlast

IMPORTANT: Students testing in the Testing Center are required to schedule on-line through RegisterBlast. The Testing Center has strict rules about how far in advance students must register. (To ensure that appointments are available, students are advised to register well ahead of time.) Check the Testing Center website for operating hours. Call the Testing Center for any technical issues with RegisterBlast or if you need to reschedule a test.

5.2.2 Testing Center Policies

Testing Center policies include but are not limited to the following.

- Students must schedule to take all exams through RegisterBlast.
- Students must present a valid picture ID before each test.
- Students must sign-in (Who's Next) on the computer in the SUW 3rd floor stairwell to take each test.
- No cell phones allowed. If a phone rings or vibrates, the exam will be taken up and the student will be asked to leave.
- No personal items (books, purses, backpacks, or bags) allowed.
- No extra paper allowed. Scratch paper will be provided and it must be returned at the end of the exam.
- Exam proctoring will end at scheduled time, regardless of completion, unless instructor has given prior approval for extension.
- See the Testing Center's website for other information.

5.3 Quizzes

On-line and written at-home quizzes will be assigned. The average of these quizzes will count the same as one test grade. These quizzes, both on-line and written, are due by the end of the testing window for the corresponding unit test. In addition, an on-line quiz on the course syllabus will be assigned, and this quiz will have a specific due date sometime in the first few days of the semester.

6 Homework

Homework and practice problems will be assigned with each topic but will not be collected. However, **students should not view the completion of these problems as optional.** The homework and practice problems provide practice needed to master the material.

7 Withdrawal Policy

1. Students who have submitted no assignments by 12:00 noon on **January 27, 2015**, shall be classified as “no show” and withdrawn from the course.
2. **Student-initiated withdrawal:** Students are free to withdraw themselves from the course for any reason until **March 11, 2015**. Students who withdraw themselves will receive a “W” for the course on their transcript. (Exception: If a student has attempted the course two or more times before, then the student cannot be granted a “W” and must receive a grade for the course.) See the college catalog or contact your instructor for instructions about how to withdraw.
3. Students who simply stop submitting assignments or fail to show up for tests will not automatically be withdrawn, except as per (1) above. Students who wish to withdraw must follow the college's withdrawal procedure. Students contemplating withdrawal are strongly encouraged to contact their instructor.
4. **Withdrawal with a “W” after the deadline is not permitted.** Instructors no longer have the ability or authority to report a “W” after the deadline published in the college catalog (**March 11, 2015**). If a student has extenuating circumstances preventing him/her from successfully completing the course, and the withdrawal deadline has passed, the student may make an appeal with the Office of Student Affairs.
5. See the college catalog for more information.

Two withdrawals are permitted per course. After that, a grade will be assigned. Please be concerned about withdrawals. When admitting students into certain programs, colleges and universities may calculate withdrawals as grades.

8 Grade Forgiveness

A student may repeat a course when a grade of “D” or “F” has been earned. The last grade counts. However, universities may count forgiven grades in calculating the grade point average. Forgiven grades may also be calculated in determining financial aid eligibility.

9 Attempts

This course may be attempted three times. On the third attempt, 100% of the full cost of instruction will be charged. Students with major extenuating circumstances may submit a letter of appeal stating the circumstances to the dean of students. All grades from third and subsequent attempts will be calculated in the grade point average.

10 Calculator Policy

A basic calculator (addition, subtraction, multiplication, division, and square root) will be needed on all proctored tests and exams except for Test 1. Graphing calculators, scientific calculators,

and cell phone calculators will not be permitted. Students testing in the Testing Center will be provided with a calculator to use during tests. Off-site students must have their calculator approved in advance by the instructor. **Calculators will not be allowed on Test 1.**

11 Make-up Work

No quizzes will be made up. If you miss a unit test for a valid, documented reason, you may take a make-up test at the discretion of the instructor. Consideration for make-up tests will be given only for documented extenuating circumstances, and only when the student informs the instructor no later than the time of the test that he/she will be absent. **Make-up tests might be more difficult than regular unit tests.**

12 Academic Honesty

Disciplinary action in the case of cheating will be administered in accordance with college policy.

13 Americans with Disabilities

Any student who feels she or he needs an accommodation based on the impact of a disability should contact the Office of Disability Support Services at 850-872-3834 or in Student Union East Room 59 (SUE 59). The Office of Disability Support Services will coordinate reasonable accommodations for students with documented disabilities.

14 Success in this Course

Studying requires discipline, tenacity, and hard work. View this course as a job. A good strategy is as follows:

1. First, watch the course video for the Session you want to work on. Take notes, just as if you were in class. When the video asks you to pause and work out a problem, do so. Keep your notes organized in a notebook.
2. Second, read over the Session in the on-line textbook. Work ***all*** of the practice problems and the homework problems found in the textbook, checking your answers as you go along. (All of the answers are found at the end of the Session.) Keep your worked problems organized in a notebook, in a separate tab from your notes.
3. As needed, visit or e-mail your instructor with specific questions. You should ask about specific homework or practice problems, or specific problems worked in the video or in the textbook. When referencing homework/practice problems or textbook examples, be sure to give your instructor the problem number, the module/session number, and the page number. If referencing a video, give the module and session numbers, as well as

the time in the video that the problem occurs (for example, 3:52). The more specific you are, the better able your instructor will be to render assistance.

4. After you've done all of the above, then attempt the quizzes.

14.1 Available Help

1. **Your Instructor:** Full-time faculty have posted office hours on their schedules. Students having difficulty are strongly encouraged to see the instructor for additional help. Students who contact the instructor via e-mail can expect a reply within 1 business day. Voicemail will be returned within 1 to 3 business days.
2. **Math Lab:** Math tutors are available in Rooms 260 and 261 of the Student Union West building (second floor). There is no charge for Gulf Coast State College students. See the GCSC Math Lab website for hours of operation.
3. **Academic Counselors:** The Counseling Center is located on the first floor of Student Union East.

15 Specific Course Objectives

- Identify proper fractions, improper fractions, mixed numbers
- Convert from an improper fraction to a mixed number
- Convert from a mixed number to an improper fraction
- Apply divisibility rules
- Reduce fractions
- Get equivalent fractions
- Add, subtract, multiply, and divide fractions
- Simplify complex fractions
- Identify place values
- Add, subtract, multiply, divide decimals
- Round decimal numbers to a desired place value
- Convert a decimal to a fraction
- Convert a fraction to a decimal
- Write a decimal as a percent
- Write a fraction as a percent
- Write a percent as a decimal
- Write a percent as a fraction
- Solve a percent equation
- Solve application problems using proportions
- Identify the units of measurement in the metric system
- Identify the units of measurement in the apothecary system
- Identify the units of measurement in the household system
- State the equivalents for the units of weight, volume, and length
- Recognize the abbreviations for the units of measurement in all three systems

- Convert from one unit to another unit within each of the three systems
- Convert from one unit to another unit between each of the three systems
- Convert temperatures
- Use dimensional analysis
- Identify the meanings of standard abbreviations used in medication administration
- Translate doctors' orders
- Interpret information on a medication label
- Solve dose calculations using ratio-proportion and dimensional analysis
- Identify and calculate doses for oral and liquid medications
- Calculate doses of parenteral medication
- Determine the best concentration strength for medications ordered when there are several directions for mixing
- Calculate doses from reconstituted medications
- Convert body weight from lb to kg and from kg to lb
- Determine body surface area (BSA)
- Calculate doses based on weight and on BSA
- Calculate IV flow rates
- Calculate infusion times and completion times
- Recalculate IV flow rates and determine the percentage of increase or decrease
- Calculate heparin IV rates
- Determine the appropriate volume of insulin to administer based on prescribers' orders and product strength
- Make accurate calculations for U-100 and U-500 insulins
- Describe the consequences of insulin medication errors

16 QEP Vision Statement



We believe that teaching Critical Academic Literacy (CAL) strategies will improve student learning. Students will construct knowledge as they develop their analysis, synthesis, and evaluation skills. CAL strategies must be taught explicitly through direct classroom instruction and be reinforced through consistent practice.