

LEWIS AND CLARK COMMUNITY COLLEGE
MATH 124—HEALTH SCIENCES MATHEMATICS
FALL 2011

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Office Hours:

Class Time Monday/Wednesday: 11:00-11:50 Tuesday/Thursday: 10:50-12:05
and Location: MA 307

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Course Description: Presents mathematics in the practical context of the health sciences, and provides a practical background in mathematics required for the health care field. Develops study skills in math including a review of arithmetic skills as they apply to career problems. Presents computational fundamentals and problem solving that requires unit analysis, measurement system conversions, terminology, and abbreviations. Also covers fractions, rounding, scientific notation, decimal fractions, ratios, proportions, percentages, averages, estimates, graphic representation, some practical geometry, and presents basic operations on algebraic expressions.

Prerequisites: Placement by exam.

Text: Simmers, D.D., *Practical Problems in Mathematics for Health Sciences*. Delmar. 2nd edition.

Required Materials: A calculator is required for this course. Any simple 5-function calculator will work. **You cannot use a graphing calculator on any quizzes or exams in this course!** I, also, recommend that you use flash cards to help you to learn the many conversion factors we will use throughout the class and to learn the needed medical terminology.

Learning Objectives: Upon successful completion of the course, a student should be able to:

1. Demonstrate study skills in math
2. Add, subtract, multiply, and divide real numbers following the prescribed order of operations and solve applied problems using these operations
3. Solve applied problems of addition, subtraction, multiplication, and division of fractions and of decimal fractions
4. Develop proficiency in the use of rounding and scientific notation
5. Develop ratios and proportions and use them to solve practical applications and dosage strengths for drug labels
6. Solve practical applications involving percents, averages, estimates, interest, and discounts
7. Apply the rules of exponents and order of operations with exponents to problems in the health sciences field
8. Apply appropriate units of measure and convert units within measurement systems including the metric, English, and Apothecary systems using appropriate abbreviations

9. Determine perimeter, area, volume, mass, surface area in the context of the health sciences
10. Develop graphic representations using line graphs, pie graphs, bar, stacked graphs
11. Calculate dosages of tablets, capsules, oral solutions, and injectable drugs
12. Interpret and calculate IV fluid flow rates and running times
13. Calculate a patient's body surface area
14. Solve basic problems of geometry

Method of Evaluation: Examinations will be based on course material presented in class. No make-up tests or quizzes will be given unless previous arrangements have been made. The comprehensive final must be passed with a grade of 70% or higher to pass the course in addition to the following overall score being at or over a 70%. Students must also pass the MATH 114 comprehensive final with a 75% or higher in order to pass the course (score will count as a mid-course exam).

Attendance/Participation	2%
Homework	8%
Labs	15%
Quizzes	15%
Six Mid-course Exams	50%
Comprehensive Exit Exam	<u>10%</u>
	100%

Grading Scale:	90-100%	A	Above average work!
	80-89%	B	Better than average work!
	70-79%	C	Common work.
	60-69%	D	Do something.
	Below 60%	F	Uh oh!

Attendance/Participation Rules: I will take attendance daily and students will receive 1 point for each hour in class, meaning is you leave in the middle of class you will only receive ½ point that day. Also daily participation will be given up to 1 point per day. If students are not on task or do not participate in group work, then they may lose participation points for that day. Students will supplied with the same form that I use the first day of class and asked to also keep their own “grade,” and we will compare at the end of week three to be sure that students understand how the attendance/participation works towards the grade. Students are encouraged to keep up with their own grade tally for the entire semester.

Worksheet Homework Rules: (Worksheets are always due TWO class periods after they are assigned.) There will be worksheets that will normally be started while in class and can be finished at home. You will be encouraged to work in groups on these worksheets in class. You will have two days to complete these worksheets and then hand them in for a grade. If you miss class the day that a worksheet is due, then you will have to either email me your answers or fax me your worksheet to get credit. You can receive ½ credit on a worksheet that is turned in one day late, but after that I WILL NOT accept late worksheets for a grade. The answer key to all worksheets will be posted on my office door after class on the third day after the worksheet has been handed out. Students may also pick up missed worksheets on my office door following in the class period that they were distributed. Lab assignments that are given as take-home homework will follow the same rules.

Group Homework: (Group homework is to be turned in the day it is given.) Any group homework given will be due the day that it is handed out and the entire group will receive one grade. All students should participate in the project/lab or participation points will not be given that day and the student may not receive credit for the assignment. Students should always work ALL the problems and not rely on the group to be correct. Lab assignments that are done in groups will follow the same rules.

Lab Rules: There will be many labs throughout the course, namely one per week. A few lab periods will be used to review for the exit exams as deemed appropriate. Depending upon the topic of the lab, either the worksheet or group work rules will apply. Some labs have a pre-lab portion and MUST be completed before students will be allowed to start the lab. Students missing a lab day will NOT be allowed to make up the group work but can turn in the lab worksheets. There are NO make-up lab days since we do not have a formal lab setting and so cannot leave the labs setup to do make-up labs.

Flashcard Quiz/Problem Quiz Rules: Flashcard quizzes will be given once a week starting week two. We will start with the first twenty flashcard facts and add the next ten each week until all the flashcard facts are on the study list. You will need these flashcard facts very soon to do the conversion problems in the course. Flashcard quizzes will be given every Thursday at the end of class, unless there is an exam that day (see calendar). There will be no make-up flashcard quizzes given for any reason. Problem quizzes will be given throughout the semester. You will be notified at least 2 class periods prior to a quiz. Make-up problem quizzes will only be given for a valid reason, and NO ONE WILL BE ALLOWED TO TAKE A LATE QUIZ OR EXAM MORE THAN ONCE A SEMESTER.

Exam Rules: Exams will be given throughout the semester (see the course calendar for dates). If you know that you will miss an exam, you MUST take the exam EARLY, be sure to email me at least 3 days in advance and we can make arrangements to do so, and you MUST have all assignments for that exam completed BEFORE you can take an exam early. You will be given the entire class period to take each exam. I will let you know if there will be any provided equations etc on exams, but you will not be allowed to have note cards, notes, the textbook, etc on exams. ALL exams will have a NO-calculator portion and a calculator portion. Your TI graphing calculator will be allowed on some exams (when allowed) if you have one, however you will still be expected to show work on ALL problems even when using the calculator unless specified in the problem. You should have at least your 5-function calculator to use on exams (when allowed). Exam reviews will be provided as the course progresses to help you to study for exams. These reviews are to HELP study for the exams and will NOT look exactly like the exams. You cannot take exams late unless I make an exception for you. These exceptions will NOT be made unless there is an extenuating circumstance that I deem appropriate. NO ONE WILL BE ALLOWED TO TAKE A LATE QUIZ OR EXAM MORE THAN ONCE A SEMESTER.

Exit Exam Information: We have two exit exams in this course. The first is the MATH 114 exit exam and will be given as the MATH 114 overall exam once we have finished the MATH 114 material. The other is an overall course exit exam that will cover ALL of the concepts covered in the course from day one, meaning all of MATH 111, 112, and 114. Below the rules for each exam are given.

1) The MATH 114 will be administered at the end of the MATH 114 information (see the calendar for date). Students who do not pass the exit exam the first time with a **75%** or higher can take a second chance exam **if the student has at least a 70% overall in the course prior to taking the first MATH 114 exit exam.** The second chance exam will be given the following week (you will have to make an appointment with me to do so). In order to pass this exam the student must receive a grade of **80%** or higher on the second chance exit exam. **If the student fails to do so, they CANNOT receive credit for MATH 114.** Both first and second chance exit exams allow a 55 minute completion time. You CANNOT use a graphing calculator on the MATH 114 exit exam. No partial credit is awarded on the MATH 114 exit exam.

2) There is a comprehensive EXIT EXAM in this course. This means that you MUST PASS THE EXIT EXAM to exit (or pass) the course. **No matter what your grade is in the course you MUST PASS THE EXIT EXAM WITH A 70% OR HIGHER TO PASS THE COURSE with a 'C.'** The exit exam is a 55 minute comprehensive department written exam. The exam will cover the objectives of the course starting with MATH 111, MATH 112, and MATH 114. A review for the exit exam will be given once it is made available to the department. You CANNOT miss the exit exam. The exit exam is 25 multiple-choice problems and no partial credit will be awarded.

Notes:

1. Keeping up with the work in any math class can be a challenge. In addition to your instructor, further help is available in the Math Resource Center located on the Main Campus, Commons Building 223. Lab hours will be posted at the beginning of the semester. No appointment is necessary. This service is provided free of charge. If you cannot see me during my scheduled office hours, let me know and we will try to arrange a time when I can be available to you. I am also happy to answer questions over the phone or through email.

2. If you need an accommodation based on the impact of a disability, please inform me as soon as possible. An appointment will be arranged where we will discuss the course format, anticipate your needs and explore potential accommodations. I rely on Mary Hough, Special Learning Needs Counselor, for assistance in verifying the need for accommodations and accommodation strategies. If you have not previously contacted her, I encourage you to do so at 468-4128 or 468-4121. This does not apply to High School dual credit students.

3. All work on tests and quizzes must be your own. The college has a straightforward policy on academic integrity. Assignments that have been copied from another student or another source will not be scored. "Academic dishonesty including, but not limited to, cheating, plagiarism, and forgery, violates the STUDENT CONDUCT CODE and will lead to disciplinary action up to and including expulsion" (2004-2005 LCCC Catalogue, page 14). The following website will give you in-depth information on the definition of plagiarism and more: http://www.turnitin.com/research_site/e_what_is_plagiarism.html. Please visit this site if you need clarification.

4. PERSONAL TECHNOLOGY DEVICES IN THE CLASSROOM In an effort to preserve the integrity of the academic environment, extraneous use of personal electronic devices (cell phones, bluetooth, PDAs, iPods, etc.) is prohibited during all class meetings. The instructor reserves the right to examine the device in instances where allegations of academic dishonesty are suspected. In emergency situations students must inform the instructor to receive permission to leave the classroom when their cellular phones vibrate(do not have cell phone ring or otherwise disturb the class).

5. Any changes to the syllabus will be announced in class.