



PHRA 1309-101C3
Pharmaceutical Mathematics I
Fall 2025
Tuesday and Wednesday 10:45am - 12:45pm

Instructor Information: Lisa Homburg, R. Ph., lhomburg@com.edu, 409-933-8685

Office hours and location: Monday-Thursday 1:15pm-3:15pm, or by appointment.
STEAM Building, Office 225-41

Required Textbook/Materials:

Pharmacy Calculations, 6th Edition, Morton Publishing, by Mary F. Powers and David R. Bright. ISBN# 978-1-61731-897-9

Pharmacy Labs for Technicians, 4th Edition, Paradigm Publishing, by Sparks, McCartney, Lubin, Barrera, ISBN# 9780763893644 (MUST HAVE ACCESS CODE)

Course Description: This course covers solving pharmaceutical calculation problems encountered in the preparation and distribution of drugs.

Course requirements:

Quizzes: There will be random quizzes in this course which will be taken in D2L Brightspace.

Assignments: There will be assignments and/or practice problems in each chapter reinforcing the math skills presented.

Labs: There will be 16 hours of hands-on activities. *Labs cannot be made up, so attendance is mandatory. All students must have at least 50 hours of hands-on simulation prior to participating in externships during the Spring semester.*

Exams: There will be 2 multiple choice exams and 1 final exam. These exams will be taken using D2L Brightspace in the classroom. Any student arriving to class more than 10 minutes late will not be allowed to take a scheduled exam and will receive a grade of zero.

Attendance and Participation: Students are expected to attend every class and arrive on time, just as would be expected of an employed pharmacy technician. Pharmacy Technicians are a vital part of the pharmacy staff. On-time attendance will constitute a portion of your final grade as detailed below.

Mandatory Mid-Semester Meeting: All students are required to meet with the Pharmacy Technician Program Director at the mid-point of the semester. This is an opportunity to discuss the student's standing in each course, identify regulatory requirements which must be met, develop a student academic plan, and complete mandatory paperwork. Students who fail to meet with the Program Director at the mid-point of the semester will not be allowed to enroll in the next semester's courses until the meeting has been completed.

Determination of Course Grade/Detailed Grading Formula:

Activity	Percentage Weight
Quizzes	15%
Assignments	15%
Labs	10%
Exams	25%
Final Exam	30%
Attendance and Participation	5%

Grading Scale

Letter Grade	Numerical Point Value
A	90-100
B	80-89
C	70-79
D	65-69
F	64 and below

Late Work, Make-Up, and Extra-Credit Policy:

Late Work Policy: Late work will not be accepted.

Make-Up Policy: There is no make-up policy for this course. Students are expected to complete the course activities in a timely manner according to the due dates stated in the course outline. **The student is responsible for obtaining all missed materials and is responsible for meeting all due dates for assignments, quizzes, and exams, even if the student was absent when the assignment was given.** There will be **no make-up exams** given in any Pharmacy Technician Program course unless prior arrangements have been made with the instructor in response to extenuating circumstances. If a student misses one exam during the semester in any course, they may use their final exam grade in that course in place of the missed exam grade. If any other exams are missed in any course, a grade of zero “0” will be given.

Extra Credit: There will be no extra credit assignments given.

Attendance Policy: Students at COM are expected to attend and participate in every session of all courses for which they are registered. College of the Mainland recognizes no excused absences other than those prescribed by law.

Students are expected to be on time for class and to stay for the entire class period. Three tardies will be equivalent to an absence and will affect your grade.

The student will receive an attendance grade based on on-time attendance and ACTIVE participation.

As a component of attendance, students should check their com.edu email, course announcements, and discussion forums within Brightspace D2L frequently (daily is recommended). The student is solely responsible for checking updates related to the course.

If absent, the student is responsible for contacting a classmate to obtain any assignments or materials. The student is responsible for all missed materials and upcoming quizzes/assignments on the assigned due date.

ASHP accreditation standards require all pharmacy technician students to complete 50 hours of hands-on simulation/lab activities *prior* to engaging in their clinical externship. There are 50 hours of lab exercises incorporated into the fall semester. **Attendance in these lab exercises is MANDATORY.** These labs cannot be made up. Unless prior arrangements have been made with the instructor for extenuating circumstances, a grade of “0” will be given for any “wet” lab missed. Study questions and dry lab exercises may be turned in for partial credit at the instructor’s discretion. If a student fails to participate in 50 hours of hands-on simulation/lab activities, they will not be able to participate in the clinical externship course in the Spring semester.

Note: non-attendance may affect financial aid. If the student fails to meet the attendance requirements, he or she may be recommended for withdrawal from the course. In the case of an anticipated absence, such as military deployment, the student should contact the instructor in

advance and make arrangements to complete the required assignments. In case of an emergency (illness/accident or death in family), the student should contact the instructor as soon as possible providing documentation supporting the need for any late submission of a graded event.

Communicating with your instructor: ALL electronic communication with the instructor must be through your COM email. Due to FERPA restrictions, faculty cannot share any information about performance in the class through other electronic means.

The instructor will respond within 24 hours of receiving your email, Monday through Friday. Emails sent on Friday afternoon or over the weekend may not receive a response until the following Monday.

Student Learner Outcome	Maps to Core Objective	Assessed via this Assignment
1. Solve basic math problems and demonstrate conversion between various systems of measurement including household, metric, and apothecary	Empirical and Quantitative Skills	Exam II
2. Perform adult and pediatric dosage calculations.	Empirical and Quantitative Skills	Lab-Calculating Drug Doses

Academic Dishonesty: Any incident of academic dishonesty will be dealt with in accordance with college policy and the Student Handbook. Academic dishonesty—such as cheating on exams, forging paperwork, or passing someone else’s work off as your own--- is an extremely serious offense and will result in a grade of zero on that exam/assignment and a referral to the appropriate office for disciplinary action. It may result in failure of the course and/or expulsion from the program.

Student Concerns: If you have any questions or concerns about any aspect of this course, please contact me using the contact information previously provided. If, after discussing your concern with me, you continue to have questions, please contact Kay Carrier, Department Chair at 409-933-8414, or kcarrier3@com.edu .

PHRA 1309 Course outline:

Due Date	Activity
Week 1 Aug 19	Lecture: Chapter 1 Numeral Systems in Pharmacy Assignment: Roman Numerals, Quiz Due Aug 27
Aug 20	Lecture: Chapter 2, 3, 4, and 5 Lab: Using Syringes-Volumetric Exercise (1 hour)
Week 2 Aug 26	Lecture: Chapter 2, 3, 4, and 5 Review of Basic Math Operations Lab: Using Volumetric Measuring Devices-Reconstituting Powders (1 hour)
Aug 27	QUIZ-Roman Numerals Lecture: Chapter 7 Percents, Ratios to Percents, and Ratios to Decimals Assignment: Converting Fractions>Decimals>Percent Practice Problems Due Sept 3, Quiz Sept 3
Week 3 Sept 2	DUE: Converting Fractions>Decimals>Percent Practice Problems Lecture: Chapter 7 Percents, Ratios to Percents, and Ratios to Decimals - Converting Fractions>Decimals>Percent
Sept 3	QUIZ-Chapter 7 —Converting Fractions>Decimals>Percent Lecture: Chapter 7 Percents, Ratios to Percents, and Ratios to Decimals - Converting Fractions>Decimals>Percent
Week 4 Sept 9	Lecture: Percentage of Error Lab: Percentage of Error Lab (1 hour)
Sept 10	Lecture: Percentage of Error Review for Exam
Week 5 Sept 16	EXAM: Chapter 1, 2, 3, 4, 5, 7 and Percentage of Error
Sept 17	Lecture: Chapter 8 Interpreting Prescriptions and Converting Household and Metric Measurements—Conversions Assignment: Metric Units, Quiz -Sept 24
Week 6 Sept 23	Lab: Volume: Metric Conversions Compounding Lab (1 hour)

Sept 24	QUIZ: Metric Conversions Lecture: Chapter 8 Interpreting Prescriptions and Converting Household and Metric Measurements—Conversions Lecture: Chapter 9-Converting Apothecary and Metric Measurements Assignment: Household and Apothecary Conversions Quiz Oct 8 Lab: Bath Bombs- Using Household Conversions
Week 7 Sept 30	Lecture: Chapter 8 Interpreting Prescriptions and Converting Household and Metric Measurements—Conversions Lecture: Chapter 9-Converting Apothecary and Metric Measurements Lab: Measuring Liquids Using Different Measuring Systems and Units
Oct 1	Lecture: Chapter 8 Interpreting Prescriptions and Converting Household and Metric Measurements—Conversion Lecture: Chapter 9-Converting Apothecary and Metric Measurements Lab: Geometric Dilution (1 hour)
Week 8 Oct 7	Lecture: Chapter 8 Interpreting Prescriptions and Converting Household and Metric Measurements--Conversions Lecture: Chapter 9-Converting Apothecary and Metric Measurements Lab: Compounding Benzocaine Cream (w/w) (1 hour)
Oct 8	QUIZ: Household and Apothecary and Metric Conversions Lecture: Chapter 8 Interpreting Prescriptions and Converting Household and Metric Measurements--Conversions Chapter 9-Converting Apothecary and Metric Measurements,
Week 9 Oct 14	Lecture: Chapter 10 Converting Between Different Temperature Scales Lecture: Verifying DEA Numbers
Oct 15	Lecture: Verifying DEA Numbers Lab 3: Validating DEA Numbers (1 hour)
Week 10 Oct 21	Lecture: Chapters 8, 9, 10
Oct 22	EXAM Chapter 8, 9, 10
Week 11 Oct 28	Lecture: Chapters 6, 23, 26, 27, 28, 33 Using Ratio and Proportion or Dimensional Analysis to Solve Pharmacy Calculations Lab: M&M Proportion Lab (1 hour)
Oct 29	Lecture: Chapters 6, 23, 26, 27, 28, 33 Using Ratio and Proportion or Dimensional Analysis to Solve Pharmacy Calculations

Week 12 Nov 4	Lecture: Chapters 6, 23, 26, 27, 28, 33 Using Ratio and Proportion or Dimensional Analysis to Solve Pharmacy Calculations Lab 24: Preparing Oral Syringes (1 hour) Assignment: Proportion Practice Problems Due Nov 12
Nov 5	Lecture: Chapters 6, 23, 26, 27, 28, 33 Using Ratio and Proportion or Dimensional Analysis to Solve Pharmacy Calculations Lab: Compounding Alprazolam Syrup (w/v) (1 hour)
Week 13 Nov 11	Lecture: Chapter 11 Calculations for Compounding Lab: Reducing and Enlarging Recipes: Lip Balm (1 hour) Or Lab: Measuring Active Ingredients-Suppository Lab (1 hour)
Nov 12	DUE: Proportion Practice Problems Lecture: Chapter 12 Calculations for Days of Supply Assignment: Days Supply Practice Problems Due Nov 25 Lab: Days of Supply Guidelines: Creams/Ointments/Lotions and Ophthalmic Drops
Week 14 Nov 18	Lecture: Chapter 13 Calculations for Day Supply of Insulin Lab: Insulin Days of Supply Calculations
Nov 19	Lecture: Chapter 14 Adjusting Refills for Short Filled Prescriptions
Week 15 Nov 25	Lecture: Chapter 14 Adjusting Refills for Short Filled Prescriptions Lab: Oral Liquid Calculations Using Medication Labels (1 hour) DUE: Days Supply Practice Problems
Nov 26	Using for Poster Presentations in PHRA 1301 and Career Center Speaker
Week 16 Dec 2	Lab: Applying Ratio and Proportions (1 hour) Lab: Calculating and Measuring Doses Based on Weight (1 hour)
Dec 3	Final Exam

Important Note: This syllabus, along with course assignments and due dates, are subject to change. It is the student's responsibility to check their com.edu email account and D2L Brightspace for corrections or updates to the syllabus. Any changes will be clearly noted in a course announcement or through email

Institutional Policies and Guidelines

Grade Appeal Process: Concerns about the accuracy of grades should first be discussed with the instructor. A request for a change of grade is a formal request and must be made within six months of the grade assignment. Directions for filing an appeal can be found in the student handbook https://www.com.edu/student-services/docs/Student_Handbook_2024-2025_v2.pdf. *An appeal will not be considered because of general dissatisfaction with a grade, penalty, or outcome of a course. Disagreement with the instructor's professional judgment of the quality of the student's work and performance is also not an admissible basis for a grade appeal.*

Academic Success & Support Services: College of the Mainland is committed to providing students the necessary support and tools for success in their college careers. Support is offered through our Tutoring Services, Library, Counseling, and through Student Services. Please discuss any concerns with your faculty or an advisor.

ADA Statement: Any student with a documented disability needing academic accommodations is requested to contact:

Kimberly Lachney, Student Accessibility Services Coordinator

Phone: 409-933-8919

Email: AccessibilityServices@com.edu

Location: COM Doyle Family Administration Building, Student Success Center

Textbook Purchasing Statement: A student attending College of the Mainland is not under any obligation to purchase a textbook from the college-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

Withdrawal Policy: Students may withdraw from this course for any reason prior to the last eligible day for a "W" grade. Before withdrawing students should speak with the instructor and consult an advisor. Students are permitted to withdraw only six times during their college career by state law. The last date to withdraw from the 16-week session is November 14.

FN Grading: The FN grade is issued in cases of *failure due to a lack of attendance*, as determined by the instructor. The FN grade may be issued for cases in which the student ceases or fails to attend class, submit assignments, or participate in required capacities, and for which the student has failed to withdraw. The issuing of the FN grade is at the discretion of the instructor. The last date of attendance should be documented for submission of an FN grade.

Early Alert Program: The Student Success Center at College of the Mainland has implemented an Early Alert Program because student success and retention are very important to us. I have been asked to refer students to the program throughout the semester if they are having difficulty completing assignments or have poor attendance. If you are referred to the Early Alert Program you will be contacted by someone in the Student Success Center who will schedule a meeting with you to see what assistance they can offer in order for you to meet your academic goals.

Resources to Help with Stress: If you are experiencing stress or anxiety about your daily living needs including food, housing or just feel you could benefit from free resources to help you through a difficult time, please click here <https://www.com.edu/community-resource-center/>. College of the Mainland has partnered with free community resources to help you stay on track with your schoolwork, by addressing life issues that get in the way of doing your best in school. All services are private and confidential. You may also contact the Dean of Students office at deanofstudents@com.edu or communityresources@com.edu.

Nondiscrimination Statement: The College District prohibits discrimination, including harassment, against any individual on the basis of race, color, religion, national origin, age, veteran status, disability, sex, sexual orientation, gender (including gender identity and gender expression), or any other basis prohibited by law. Retaliation against anyone involved in the complaint process is a violation of College District policy.

Use of Artificial Intelligence (AI): Any assignment containing material generated by Artificial Intelligence (AI) will receive a **grade of zero** and the student will be referred to the Office of Student Conduct for appropriate disciplinary action.

Notice to Students Regarding Licensing: Effective September 1, 2017, HB 1508 amends the Texas Occupations Code Section 53 that requires education providers to notify potential or enrolled students that a criminal history may make them ineligible for an occupational license upon program completion. The following websites provide links to information about the licensing process and requirements: <https://www.ptcb.org/widget/?cobaltsrc=https://portal.ptcb.org/Login.aspx?ReturnUrl=/>, <https://www.pharmacy.texas.gov/> and https://www.pharmacy.texas.gov/files_pdf/Licensure%20QA.pdf.

Should you wish to request a review of the impact of criminal history on your potential Pharmacy Technician Certification and Texas State Board of Pharmacy Registration prior to or during your quest for a degree, you can visit this link and request a “Criminal History Evaluation”: (<https://www.ptcb.org/> and <https://www.pharmacy.texas.gov/>).

COM is providing this information to all persons who apply or enroll in the program, with notice of the requirements as described above, regardless of whether or not the person has been convicted of a criminal offense. Additionally, HB 1508 authorizes licensing agencies to require reimbursements when a student fails to receive the required notice.

Course Structure: This course will be delivered face-to-face with assignments/quizzes/exams delivered online through the course management system D2L Brightspace. You will use your COM account to log in to the course from the D2L Brightspace login page - <https://com.brightspace.com/>. If you have not activated your COM account, please visit <https://webadvisor.com.edu>. In D2L Brightspace, you will access online lessons, course materials, and resources. At designated times throughout the semester, students will participate in activities which may consist of, but not be limited to, quizzes, exams, questions/assignments,

chat, blogs, discussion forums, email, journaling, blogging, wikis, and web posting using D2L Brightspace and/or alternative Internet-based technologies.

To access this course on D2L Brightspace you will need access to the Internet and a supported Web browser (Chrome, Firefox, Safari). To ensure that you are using the recommended personal computer configurations, please refer to the course requirements section in this syllabus.

Viewing Grades in D2L Brightspace: Students can view their grades by clicking on the **My Grades** link in the course menu in D2L Brightspace.

Required Skills

Students enrolled in this course should possess the following technology skills:

- The ability to use latest stable releases of Google Chrome, Mozilla Firefox, or Safari 10.X web browsers.
- The ability to access information via the Internet
- The ability to use D2L Brightspace and associated tools, including discussion boards, chat rooms, online testing, and assignment submission features
- The ability to use any necessary publisher content
- The ability to use word processing software, and to save in alternate formats
- The ability to send, receive and include attachments using email
- The ability to demonstrate netiquette (appropriate online conduct)

Software and Hardware

- Minimum recommended computer and internet configurations for online courses can be found here.
- Internet connection (DSL, LAN, or cable connection desirable)
- An up-to-date operating system from Microsoft or Apple - PC platforms should run Windows 7 or newer; Mac platforms should run OS 10.8 or newer (Chromebooks, tablets, and mobile devices are not compatible with all online course components)
- Access to D2L Brightspace
- Latest stable release of JAVA
- 256 MB RAM
- 20 MB free disk space
- Any other tools, resources, and materials needed by the student for the course.

Technical Assistance

For technical assistance during the course or to report a problem with D2L Brightspace you can visit the Educational Technology Services support site: <http://de-support.com.edu/requests>
For technical assistance with campus Wi-Fi, COM user ID or password, and other campus related IT needs, visit: <https://helpdesk.com.edu/>

Online Etiquette (Netiquette)

Discussion, chat, and e-mail spaces within this course are for class purposes only, unless otherwise stated. Please remember to conduct yourself collegially and professionally. What you say in the online environment is documented and not easily erased or forgotten.

The following guidelines apply:

- Avoid using ALL CAPS, sarcasm, and language that could come across as strong or offensive.
- Use proper punctuation and grammar and be sure to edit your contribution before posting.
- Read all posts before contributing your own to avoid unnecessarily repeating information.
- Keep chat comments brief and to the point.
- Focus on one topic at a time when chatting or posting to discussions.
- Remember that what you say in discussions and chats is documented and available to be revisited. Choose your words and discussion topics carefully.
- E-mail should only be used for messages pertaining to the course. Please refrain from sending forwards, jokes, etc.

Technology Outage

Students are responsible for maintaining their hardware, software, and Internet connection to the course. If you are incapable of maintaining your own system, please use the computers available on campus or take the CL section of the course. (NB, Access to college computers is limited by the hours of operation for the computer labs and library. You are responsible for staying abreast of these times.) No additional time will be provided for hardware, software, or Internet connection problems that interfere with your ability to access the course and complete your assignments and assessments. If a verifiable interruption in the access to the Course Management System that lasts for fifteen minutes or longer and occurs within twenty-four hours of an assignment or assessment, the deadline for the assignment or assessment may be extended at the discretion of your instructor.