**Syllabus:** Pharmaceutical Mathematics I  
**Course Number:** PHRA 1309

**Instructor Information**

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**Required Textbook Information**

* The Pharmacy Technician- Foundation and Practices 2nd ed. by Mike Johnston, CPhT.

ISBN # 978-0-13-289-7594

* The Pharmacy Technician: Foundations and Practices Lab Manual and Workbook

by Mike Johnston, CPhT. ISBN # 978-0-13-289809-6

* Pharmacy Calculations for Technicians Succeeding in Pharmacy Math Fifth Edition with Study Partner CD ISBN # 978-0-76-385-2214

by Don Ballington and Tova Wiegand Green

**Course Description**

Pharmaceutical mathematics including reading, interpreting, and solving calculation problems encountered in the preparation and distribution of drugs. This course teaches students the essential pharmacy calculations that are performed in a pharmacy setting. The primary objective is to develop problem-solving skills, including how to use information from written prescriptions, hospital orders, and labels of products available in a pharmacy.

**Student Learning Outcomes for the Course**

Upon successful completion of this fast-paced course, the student will be able to:

1. Solve basic math problems and demonstrate conversion between various systems of measurement including temperature, household, metric, apothecary, and avoirdupois.
2. Perform adult and pediatric dosage calculations and calculate IV flow rates.
3. Recognize, interpret, and convert between Roman and Arabic numerals.
4. Perform multiple dosage calculations for a single prescription.
5. Calculate the correct number of doses in a prescription.
6. Determine the number to dispense for a prescription.
7. Calculate the amount of active ingredient in a prescription.
8. Calculate the correct days’ supply for a prescription.
9. Perform dosage calculations based upon mg/kg/day.
10. Calculate weight/weight, weight/volume, and volume/volume concentrations.
11. Calculate dilutions of stock solutions.
12. Understand when to use the allegation principle for calculations and solve a variety of allegation related problems.
13. Define and understand how to calculate cost, selling price, and mark-up.
14. Solve business math problems using AWP, deductible and co-payments.
15. ***(Applying) Perform mathematical calculations frequently needed in a pharmacy technician’s work.***

**Student Requirements for Completion of the Course**

Students must complete assigned homework, quizzes, and exams with an average of 70% or greater.

**Student Assessment**

**Student’s final grade for the semester will be determined by the following:**

Daily work – 50%

Test Grades – 50%

Final Exam – 15%

**Grading Scale**

|  |  |
| --- | --- |
| **Grade** |  |
| **A** | 90-100 |
| **B** | 80-89 |
| **C** | 70-79 |
| **D** | 60-69 |
| **F** | 59-below |

**Class Schedule and Assignments**

Class will meet as scheduled: **Monday – Friday 1445-1530**

Assignments, quizzes, and exams will be assigned by instructor in class. Homework assignments should be turned in on the class day following the date of assignment or as advised by the instructor. Quizzes may or may not have prior notification, and the student is to be responsible for staying up to date on reading materials. Students are expected to participate in class discussions, group activities, and presentation activities. Work is to be completed using pencil only. Students may use a simple-function calculator to complete homework and tests. CELL PHONES AND PROGRAMMABLE CALCULATORS ARE NOT PERMITTED

**\**Meets ASHP’s Model Curriculum for Pharmacy Technician Education and Training Programs Third Edition Goal 12 Objective 12.1***

**COURSE OUTLINE**

* Basic Math Skills
* Measurement Systems
* Dosage Calculations
* Concentrations and Dilutions
* Alligations
* Parenteral Calculations
* Business Math

**STUDENT BEHAVIOR POLICIES AND PROCEDURES**

Please refer to the Texarkana College Student Handbook for the full list off rules, policies, and procedures related to student conduct.

**ADDENDUM**

Texarkana College strives to provide a safe and comfortable learning environment free of abuse and distractions. At all times, students are required to practice courteous, respectful, and cooperative behavior. When students violate standards of conduct or act in a manner that disrupts the learning process, it is not fair to the students who do act appropriately. Students who do not comply with the policies of the program, college, and/or clinical facilities will face disciplinary action to encourage compliance.

 Students are to address all instructors, personnel, visitors, guests, and classmates with respect and in a professional manner.

 Disrespecting instructors will not be tolerated. Students will be written up and sent home.

 Food and drink during classroom hours is at the discretion of the instructor.

 NO food/drink items are allowed in carpeted rooms or computer labs.

 Cursing, foul or derogatory language will not be permitted on campus.

 Use of electronic devices, including cell phones, are prohibited during class.

**Clinical rotations are considered class.** These must be set on silent or turned off.

 No talking during lectures,exams, or when working on assignments.

 Students are expected to dress in a professional manner for class. NO pajamas, slippers, or clothing with questionable coverage is allowed (i.e. - cleavage, abdomen, and bottom should be covered at all times).

 Cheating will not be tolerated. Students caught cheating will be subject to disciplinary action after investigation by the Dean of Students. Proven violations will result in the student being dropped from the class with an “F” average.

 No children allowed. A student may not for any reason bring a child to class with them. NO EXCEPTIONS.

 Family members or other acquaintances are not allowed in the classroom or at practicum sites.

 Texarkana College is a tobacco free campus. No tobacco products are allowed.

 Students must strictly follow the Health Occupations drug and alcohol policy.

 Patient confidentiality will be secure at all times. No patient identifying information will be taken from the practicum site.

***Write- Up Offenses***

 Electronic devices including cell phones

 Improper dress and personal appearance

 Leaving class without permission

 Failure to follow procedures/policies

 Sleeping during class (Attendance policy will apply)

 Failure to follow the grooming and dress codes for the classroom

 Failure to notify instructor of absence from a clinical experience before the scheduled start time

***Write up offenses that will include sending student home. (Attendance policy will apply).***

 Profanity anywhere in the building or on campus

 Lack of cooperation with instructors

 Disruptive/unprofessional behavior

 Being unprepared for class

 Failure to adhere to the drug and alcohol policy (Violators may be removed from the program)

 Bringing a child to class

 Failure to follow the grooming and dress codes for clinical experiences. **This includes** **wearing artificial nails, nail polish (including clear) or overlay to a clinical site**.

 Meeting with a family member or acquaintance during class time or at clinical.

 Violations of patient confidentiality (HIPAA)

Actions that pose actual or potential harm to patients (May result in removal from the program)

Individual counseling and a write-up will occur with all violations; the student may be placed on probation from the program. All counseling sessions and write-ups will be documented in the student’s permanent record. The student will be provided an opportunity to document their account of the violation(s), and this documentation will be retained in the student’s record as well. The disciplinary measures implemented are at the discretion of the Program Coordinator and in accordance with written program policies described within this handbook and the Texarkana College Student Handbook.

The student has access through the academic grievance policy for an appeals process for any disciplinary action the student feels is unwarranted or unfair. The academic grievance policy is outlined in the Texarkana College Student Handbook.

**ABSENTEE POLICY**

Texarkana College’s absentee policy allows instructors to withdraw a student from a course due to excessive absences. If a student leaves and returns during class or leaves the class before the class is over, he/she **may** be considered absent. Three tardies constitute one absence. It is the student’s responsibility to check the syllabus for each instructor’s tardy policy.

In some workforce/vocational areas, such as nursing and cosmetology, certification requirements necessitate an absentee policy that is more stringent than the institutional policy. In these instances, the matter of certification takes precedence over local policies, since certification policies are established by the State of Texas.

Faculty members **are not** obligated to provide opportunities for students to make-up missed assignments and tests as a result of a student’s absence from class. The institution is not required to take attendance with the exception of workforce/vocational areas, where certification requirements require taking attendance. However, experience demonstrates that regular attendance enhances academic success. As such, students are expected to attend each meeting of their registered courses.

A student should not stop attending a class without formally withdrawing from the course by the institutions published Last Day for Students to Drop. If a student stops attending class after the published Last Day for Students to Drop, the student may receive a grade of “F” in the class. The instructor will submit the last date of attendance for students receiving a grade of “F” or “W”.

Withdrawal from a course(s) **may** affect a student’s current or future financial aid eligibility. Students should consult the Financial Aid Office to learn both short and long term consequences of a withdrawal.

**EXCUSED ABSENCES**A student’s absence due to school trips and/or school business will not be counted against a student’s allowable number of absences. Military duty and absences for Holy Days (FBD LEGAL) are covered in a separate section of the catalog and the student handbook. These are the only excused absences that are considered by Texarkana College. Responsibility for work missed for any absence is placed on the student. Instructors are required to allow students to make up work missed if the absence is due to military duty\* or religious holy days when students follow the correct notification procedures. Instructors are not required to allow students to make up work for absences due to other reasons. Make-up policies are listed in each individual instructor’s syllabus.

*\*Students interested in Health Occupations should check with the division chair prior to entering the program.*

**ONLINE/HYBRID COURSE ABSENCES**Absence in an **online course** is defined as the lack of an active post or submission within the course including discussion board posts, written assignments, and tests. This standard will be used to determine all absentee issues, including but not limited to, 12th Day Census Reports, last date of attendance, and involuntary withdrawal from a course due to absences. All online students must complete an Enrollment Verification activity within the first week of class (activity depends upon the professor); otherwise the professor **may** drop the student for not having attended. Students must complete at least one activity in their online class per week. Each week in which a student does not complete an activity will be counted as an absence.

If a student is taking a hybrid course, and it does not meet during the first week of class, the student must also complete an Enrollment Verification activity within the first week of class; otherwise the student **may** be dropped for not having attended.

**MAXIMUM ALLOWABLE ABSENCES**After official registration, the following number of unexcused absences will be the maximum allowable before a student **may** be dropped from the class. Mandated program certification requirements detailed for certain programs regarding the maximum allowable unexcused absences takes precedence over the following information.

**Workforce Classes**

|  |  |
| --- | --- |
| **Day Classes** | **Evening Classes** |
| Class meets:  5 days a week (MTWRF)  The instructor **may** withdraw a student from a course if absences exceed five (5) up until the published Last Day for Students to Drop. Absences that exceed this number after the drop day may result in the student receiving an “F” in the program for that semester.  Three tardies count as one absence.  You are considered tardy from the designated class start time through the first 15 minutes of class. After that you will be counted absent. | Class Meets:  4 evenings a week (MTWR)  The instructor **may** withdraw a student from a course if absences exceed five (5) up until the published Last Day for Students to Drop. Absences that exceed this number after the drop day may result in the student receiving an “F” in the program for that semester.  Three tardies count as one absence.  You are considered tardy from the designated class start time through the first 15 minutes of class. After that you will be counted absent. |

Students are allowed 5 class absences. After 5 absences, the student is subject to being dropped from the course. Attendance will be taken at the beginning of each class period. If a student is up to 15 minutes late to class, a tardy will be given. Students who are late will be required to sign in to the instructor’s attendance folder with the time of arrival. After 3 tardies, an absence will be assigned.

**Make-up Policy**

Students are responsible for contacting the instructor to discuss content and makeup work that is missed during an absence. If an exam is missed, the student must make-up the exam within five (5) class days upon their return. Homework that was assigned prior to a student absence should be turned in on the first day back to class. Late homework assignments will not be accepted, and a grade of zero will be given.

**Academic Integrity Statement**

Scholastic dishonesty, involving but not limited to cheating on a test, plagiarism, col­lusion, or falsification of records will make the student liable for disciplinary action after being investigated by the Dean of Students. Proven violations of this nature will result in the student being dropped from the class with an “F”.

This policy applies campus wide, including TC Testing Center, as well as off-campus classroom or lab sites, including dual credit campuses. This information can be found in the Student Handbook at <https://texarkanacollege.edu>.

**Disability Act Statement**

Texarkana College complies with all provisions of the Americans with Disabilities Act and makes reasonable accommodations upon request. Please contact Larry Andrews at 903.823.3283, or go by the Recruitment, Advisement, and Retention Department located in the Administration building for personal assistance.

**Financial Aid:**

**Attention!** Dropping this class may affect your funding in a negative way! You could owe money to the college and/or federal government. Please check with the Financial Aid office before making a decision.

**Security**

Please keep your vehicle locked whenever you are away from it. Make sure you don’t leave any valuables in plain sight (purse, phone, lap top). We want you to be safe. You must acquire a TC parking permit and display it in your vehicle. You must also have a TC student ID badge and keep it with you at all times.

**Campus police EMERGENCY line: (903) 798-3330**

**STUDENT RETENTION AND SUPPORT**

A student retention specialist is available for every student enrolled in the Pharmacy Technician Program. Karen Holt will help you with study skills, referral to Student Support Services, resume writing, job interview skills, direction to social support programs, and other services. Mrs. Holt can be contacted at [Karen.holt@TexarkanaCollege.edu](mailto:Karen.holt@TexarkanaCollege.edu) or at 903-823-3551. Her office is located in the Health Occupations building 2nd floor office # 351.

**Student Support Services’ Information**

Student Support Services is a federally funded program designed to give a helping hand to Texarkana College students who show potential for success in college, but who need assistance in their efforts. Students entering the program have a variety of needs encompassing economic, academic, cultural, and handicapped challenges. Student Support services can help you by offering career information, tutoring, study skills, and college transfer information.

Student Support Services  
Career Education Center, Room 106  
2500 N. Robison Road  
Texarkana, Texas 75501  
  
903-823-3381  
  
Office Hours  
8:00am to 5:00pm, Monday - Friday

This workforce product was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration.  The product was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor.  The U.S. Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.  The H2P Consortium grant project ($19,613,306) is 100% funded through the U.S. Department of Labor’s Trade Adjust Assistance Community College and Career Training program.  H2P Consortium is a WIA Title I – financially assisted program and is therefore an equal opportunity employer/ program which provides auxiliary aids and services upon request to individuals with disability by calling 903-823-3283 Voice/TTY.  For EEOC and Depart of Labor Disclaimers.



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## SYLLABUS AGREEMENT

If you have any questions about this syllabus or the course in general, ask the instructor before you sign this document.

PHRA 1309

Pharmaceutical Mathematics I

I, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, (print name) have read the course syllabus), the course outline and schedule, course grading requirements and methods of evaluation, as well as had each explained to me by the instructor either verbally, or by email on \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

By signing this form I agree to comply with the classroom/online policies, expectations, and rules listed and accept the outline for this class.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

Signature Date

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Print Name

Received by the instructor on: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date