

**Master Syllabus**

**COURSE: HPHM 1405 Fundamentals of PHARMACY TECHNICIAN MATH**

**CRN:**

**CREDIT HOURS (Lecture/Lab/Total):** 2/0/2

**CONTACT HOUR (Lecture/Lab/Total):** 60/0/60

**INSTRUCTOR INFORMATION**

**Name:**

**Email:**

**Phone:**

**Office:**

**Office Hours:**

**Class Location:**

**COURSE DESCRIPTION:** This course is a review of basic mathematics as well as use of systems of measurements, dosage calculations, concentrations and dilutions involving pharmaceutical calculations. This course teaches the pharmacy technician student 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 medication orders, and drug product labels emphasizing pharmacy calculations that are used on a daily basis in retail and institutional pharmacies. Business terms and business math skills essential to pharmacy practice including inventory and purchasing, profit margins, and inventory control are also covered in this course.

**PREREQUISITES:** MATH 1160 or ACT Math 17+;

## LEARNING OUTCOMES:

Upon successful completion of this course, with a minimum of 70% accuracy, the student will be able to:

1. Describe subdivisions of numbers, number systems, estimating, and accuracy.
2. Demonstrate the relationship between units of measurement, and use their correct abbreviations.
3. Describe the use of ratios, percent’s, and proportions in pharmacy practice.
4. Use the ratio-proportion and dimensional analysis methods in performing pharmacy calculations.
5. Calculate doses related to the administration of medication using various systems of measurement.
6. Accurately read drug labels for amount of active ingredient contained in a measured amount of medication, and calculate the amount of medication to dispense for a specific dose.
7. Calculate the quantity of active ingredient in a percentage solution and solid mixture.
8. Calculate the amount of concentrate and diluent needed for a stock dilution compound.
9. Calculate age- and weight-specific drug doses or dose range when given recommended dose information.
10. Determine body surface area (BSA) using both a nomogram and the Mosteller equation.
11. Calculate a patient-specific dose of medication using BSA.
12. Describe the types of intravenous (IV) sets.
13. Calculate IV drip rates and flow rates.
14. Calculate the amounts of ingredients needed to enlarge or reduce a formula.
15. Use the alligation method to calculate the amount of two strengths of active ingredient needed to prepare a product whose concentration lies between the two extremes.
16. Determine the amount of two ingredients using the weight-in-weight (w/w) formula.
17. Calculate the least weighable quantity when given the specifications of the measuring device being used.
18. Describe how to prepare a special dilution.
19. Calculate business application needs such as percent markup, percent profit, overhead, profit, gross profit, percentage of average wholesale price (AWP), capitation, days’ supply of inventory, and inventory maintenance ordering with minimums and maximums.

**ASSESSMENT MEASURES:** Student assessments will be based upon total points earned on examinations, quizzes, & other related written assignments.

**Assignments are weighted by group:**

| **Group** | **Weight** |
| --- | --- |
| **Attendance/Participation** | 5.0% |
| **Homework/Assignments** | 10.0% |
| **Practice Tests** | 10.0% |
| **Chapter Assessments** | 15.0% |
| **Special Projects** | 5.0% |
| **Midterm Exam** | 25.0% |
| **Final Exam** | 30.0% |
| **Total** | 100% |

## TEXTBOOK/S: Pharmacy Calculations for Technicians. 6th edition, Paradigm Educations Solutions

**SUPPLIES AND EQUIPMENT:** Pencil, Paper, Calculator, Computer. Students will need to have computer access with an up-to-date browser, and some additional software to take this class. Additional software will include Microsoft Word, PowerPoint, Adobe Acrobat Reader and Respondus Lockdown. the ability to connect to the Internet and Canvas is a must.

**ATTENDANCE POLICY:** It is the student’s responsibility to maintain regular contact with instructors. Class attendance is the responsibility of the student. All students must be officially enrolled in any course that they attend. It is expected that students attend all classes and be on time. If an absence occurs, it is the responsibility of the student for making up examinations, obtaining lecture notes, and otherwise compensating for what may have been missed. Students who stop attending class and do not officially drop, withdraw, or resign from the college may receive a grade of “F” for all coursework missed. Absences affect performance in this course and do not reflect well on participation. No student may substitute the attendance of another student. **Online students must be actively participating in online courses to be considered making progress.** **Hybrid students must attend face-to-face meetings as well as complete online assignments.**

Students should frequently check Canvas (Learning Management System) for notifications and updates to the course. Students are expected to use the online resources provided by NTCC to:

1. Track course assignments and progress

2. Discuss topics and issues with fellow students

3. Turn in assignments, quizzes, and tests

4. Check for any updates, changes or alterations to the course

5. Access all course materials to include presentations, assignments, quizzes, and tests.

## GRADING REQUIREMENTS:

**GRADING SCALE:**

100-90             A

89-80               B

79-70               C

69-60               D

59-0                 F

**ACADEMIC INTEGRITY AND CONDUCT:** Students are expected to maintain the highest standards of academic integrity. Behavior that violates these standards is not acceptable. Plagiarism, cheating, and other forms of academic dishonesty are prohibited and are subject to disciplinary actions established in the Student Code of Conduct. The instructor reserves the right to assign a grade of “F” on any type of assignment or examination based on evidence that the student has violated the Student Code of Conduct.

**STUDENT BEHAVIOR/CLASSROOM DECORUM:** Students are encouraged to discuss, inquire, and express their thoughts and views during class. Classroom behavior that interferes with either the instructor’s ability to conduct the class or the ability of students to benefit from the instruction is not acceptable. Students are required to turn off all cell phones or similar electronic devices (or place them on silent mode) before coming into the classroom. The instructor reserves the right to assign no credit for work on that day if a student talks or texts on a cell phone or similar electronic device. The classroom is not a place for children, and students are not to bring their family members into the classroom.

**DISABILITY CODE:** If you are a qualified student with a disability seeking accommodations under the Americans with Disabilities Act, you are required to self-identify with the Student Affairs. No accommodations are granted without documentation authorized from Student Affairs.

**WITHDRAWAL POLICY:** The last day to withdraw from a course or resign from the college is **\_\_\_\_\_\_\_\_\_\_\_\_\_**. If you intend to withdraw from the course or resign from the college, you must initiate the action by logging into LoLA. The instructor will not withdraw you automatically.

**COMMUNICATION POLICY:** My.NorthshoreCollege.Edu is the official student email communication within Northshore Technical Community College. Therefore, the College has the right to send communications to students via their College email address and the right to expect that those communications will be received and read in a timely fashion. Every student is assigned a My.NorthshoreCollege.Edu. Students can redirect their College email address to an outside email provider. However, the College is not responsible for handling outside email providers, and redirecting their College email address does not absolve a student from their responsibilities associated with communication sent to their official College email address.

**COPYRIGHT POLICY:** Unless a student has obtained permission from the copyright holder, it is a violation of Copyright Law to print or photocopy chapters from a textbook that the student did not purchase. If the course requires the use of an electronic textbook, a student must look for a statement that allows for photocopying and/or printing of the eTextbook.

**NETIQUETTE POLICY:** This term is used to describe accepted, proper behavior on the Internet. Remember the following when communicating online (messages, discussion board, etc.):

* Never post profanity, racist, or sexist messages
* Be respectful of fellow students and instructors
* Never insult any person or their message content
* Never plagiarize or publish intellectual property
* Do not use text messaging abbreviations or slang
* Do not type in all CAPS (this is considered online yelling)