



PHRM-102 Pharmaceutical Calculations

Brian Dechant

NORTH CENTRAL KANSAS TECHNICAL COLLEGE

COURSE INFORMATION

Students will demonstrate the ability to perform pharmaceutical calculations required for the usual dosage determinations and solution preparation. Emphasis will be placed on basic computations, use of measuring tools, dosage computations, compounding calculations and solution preparation. Topics covered include ratio and proportion, dilution and concentration, milliequivalent, units, and intravenous flow rates.

Instructional Level: Certificate/Degree

Credits: 4

Total Hours: 90

CLASS INFORMATION

Section Number:

Term: Fall Year: 2022 Start Date: 8/22/2022 End Date: 12/16/2022

INSTRUCTOR

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Office Hours:

Monday thru Friday 3:30 and Tuesday and Thursday 9:00

TEXTBOOKS

Pharmacy Calculations for Technicians

Author(s): SKYE MCKENNON, TOVA WIEGAND GREEN

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or

Printed book and access code ISBN: 9780763893200

SUPPLIES

- Paper and pencil. **Description:** Paper and pencil. Required.

- Calculator. **Description:** Calculator. Required.

PROGRAM OUTCOMES

Demonstrate a respectful attitude when interacting with diverse patient populations.

COURSE COMPETENCIES

1. Given mathematical problems using Roman numerals, Arabic numerals, fractions, Apothecary symbols, and decimals, perform the mathematical steps to solve for the correct answer.
2. Given mathematical problems involving reducing and enlarging formulas, perform the mathematical steps to solve for the correct answer.
3. Given mathematical problems involving conversion of weights and measures and direct ratio and proportion, perform the mathematical steps to solve for the correct answer.
4. Given mathematical problems involving calculation of doses for oral drug administration, perform the mathematical steps to solve for the correct answer.
5. Given mathematical problems involving percent strength, weight-in-volume(w/v), weight-in-weight(w/w), and volume-in-volume (v/v), perform the mathematical steps to solve for the correct answer.
6. Given mathematical problems involving ratio strength calculations for pharmaceutical preparations, perform the mathematical steps to solve for the correct answer.
7. Given mathematical problems involving dilution and concentration, perform the mathematical steps to solve for the correct answer.
8. Given mathematical problems involving dilution and concentration, perform the mathematical steps to solve for the correct answer using the alligation method.
9. Given mathematical problems involving flow rate and drip rate, perform the mathematical steps to solve for the correct answer.
10. Given mathematical problems involving IV dosage calculations, perform the mathematical steps involved to solve for the correct answer.

GRADING INFORMATION

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Homework 25% of your final grade comes from homework assignments. Homework assignments must be handed in on the due date.

Quizzes 25% of your final grade comes from quizzes. Quizzes must be taken when assigned.

If class has labs they will count as quizzes.

Exams

The mid-term exam will count for 25% of your grade.

The final exam will count for 25%.

Class participation:is required

1. Faithful class attendance
2. Punctuality: you should be in the class at the beginning of class

3. Mutual respect for teacher, peers and self
4. Constructive participation in class discussions
5. Completion of reading assignments and homework
6. Be prepared everyday with notebook, pen/pencil, relevant homework or assigned material and textbook and computer or smart device
7. Timely completion of formal assessments (Tests and Quizzes)

Pharmacy program students must maintain a "C" or better during the semester and complete all courses, labs, and experiential components in the Student Plan of Study

Pharmacy Department Chair will initiate academic/administrative withdrawal procedures for the violation(s) if the student fails to meet the rules, policies, and/or these standards

Students have the right to appeal the decision of academic/administrative withdrawal through the academic grievance policy as outlined in the NCKTC Student Handbook.

ACADEMIC HONESTY

Membership in the NCK Tech learning community imposes upon the student a variety of commitments, obligations, and responsibilities. It is the policy of this college to impose sanctions on students who misrepresent their academic work. Appropriate classroom instructors or other designated persons will select these sanctions consistent with the seriousness of the violation and related considerations.

Examples of scholastic dishonesty include but are not limited to:

- Plagiarism: i.e. taking someone else's intellectual work and presenting it as one's own. Each department set standards of attribution. Faculty will include disciplinary or class-specific definitions in course syllabi.
- Cheating is unacceptable in any form. Examples include consultation of books, library materials, notes or intentional observation of another student's test on paper or a computer screen; accessing another student's answers from an exam to be given or in progress; submission of falsified data; alteration of exams or other academic exercises; and collaboration on projects where collaboration is forbidden.
- Falsification, forgery or alteration of any documents pertaining to assignments and examinations.
- Students who participate in, or assist with, cheating or plagiarism will also be in violation of this policy.

Classroom instructors and/or administrators will assess sanctions for violations of this policy. The seriousness of the violation will dictate the severity of the sanction imposed. Academic sanctions may include but are not limited to any of the following:

1. verbal or written warning
2. lowering of grade for an assignment
3. lowering of term grade

Administrative sanctions may include but are not limited to either of the following

1. Suspension from the course, program, or College

2. Dismissal from the course, program, or College

NCK TECH MISSION STATEMENT

North Central Kansas Technical College delivers applied, innovative and personalized education to empower learners, enrich lives, develop skilled professionals and strengthen economic systems.

Vision Statement

North Central Kansas Technical College is dedicated to being a leader in workforce development by maximizing value for students, employers and communities through educational excellence.

Core Values

Achieving EXCELLENCE with INTEGRITY through

DEDICATION

INNOVATION

COLLABORATION

COMMUNICATION

NCK TECH NON-DISCRIMINATION POLICY

NCK Tech is committed to nondiscrimination on the basis of race, color, gender, ethnic or national origin, sex, sexual orientation, gender identity, marital status, religion, age, ancestry, disability, military status, or veteran status in admission or access to, or treatment or employment in, its programs and activities. Further, it is the policy of the college to prohibit harassment (including sexual harassment and sexual violence) of students and employees. Any person having inquiries concerning the college's compliance with the regulations implementing Title VI, Title VII, Title IX, Section 504, and the Americans with Disabilities Act Amendments Act is directed to the VP of Student and Instructional Services (Section 504/ADA Compliance Officer and Title VI, Title VII, & Title IX Compliance Officer) at (785)738-9055, cisbell@ncktc.edu, or PO Box 507, 3033 US Hwy 24, Beloit, KS 67420.

NCK TECH TOBACCO USE POLICY

The use of tobacco products in any form and/or electronic cigarettes is prohibited in, or within ten (10) feet of any building owned, leased, or rented by the College.

NCK TECH WEAPONS POLICY

Individuals who choose to carry concealed handguns **are solely responsible to do so in a safe and secure manner in strict conformity with state and federal laws and NCK Tech weapons policy.** Individuals must be 18 years of age to carry concealed handguns.

Safety measures outlined in the NCK Tech weapons policy specify that a concealed handgun:

- Must be under the constant control of the carrier.
- Must be out of view, concealed either on the body of the carrier, or backpack, purse, or bag that remains under the carrier's custody and control and within immediate reach of the individual.
- Must be in a holster that covers the trigger area and secures any external hammer in an un-cocked position
- Must have the safety on, and have no round in the chamber.

Lockers, toolboxes, and/or tool bags are not approved storage devices in accordance with NCK Tech Policy.

OVERVIEW FOR STUDENTS WITH DISABILITIES

NCK Tech is dedicated to providing equal access and opportunity to all campus programs and services for students with disabilities. We are committed to providing reasonable accommodations in accordance with applicable state and federal laws including, but not limited to, Section 504 and 508 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. We strive to create a safe, respectful and inclusive environment and promote awareness, knowledge and self-advocacy.

NCK Tech acknowledges that traditional methods, programs and services are not always appropriate or sufficient to accommodate the limitations experienced by some qualified persons with disabilities. When a student's disability prevents him/her from fulfilling a course requirement through conventional procedures, consideration will be given to alternatives, **keeping in mind that academic standards must be maintained.**

Services are provided through Student Accessibility Services (SAS) staff located in the Student Success Center, on the Beloit Campus, and in Student Services, on the Hays Campus.

- Director of Learning Services, may be reached at [1-785-738-9020](tel:1-785-738-9020); or by mail at [NCK Technical College, 3033 US Hwy 24, Beloit, KS 67420](mailto:Director of Learning Services).

Student Responsibilities

Students requesting support services will need to register ("self-disclose" and complete Student Accessibility Services Intake and Consent Form), provide appropriate documentation (if available) including how the disability affects academic performance and suggested accommodations, and communicate with the Director of Learning Services as part of the interactive process to create an *Educational Accommodation Plan* that will notify Instructors of approved accommodations, services and/or auxiliary aids.

Students are encouraged to make timely and appropriate disclosures and requests, at least two weeks in advance of a course, program, or activity for which an accommodation is requested (or as soon as realistically possible) to allow adequate time for accommodation services to be set in place.

Accommodations, Academic Support Services, or Auxiliary Aids

Reasonable accommodations including academic support services and auxiliary aids are provided to allow students with disabilities an equal opportunity to participate in and benefit from our educational programs. Accommodations will be provided on a case-by-case basis determined by student request, documentation, intake interview, Educational Accommodation Plan team, and assessment of individual needs and course requirements.

Reasonable testing accommodations may include, but are not limited to:

- Extended testing time
- Reduced distraction testing environment
- Test reader and/or scribe
- Use of calculator

Academic support services/auxiliary aids may include, but are not limited to:

- Note-taking assistance (second set of notes, power point slides, or other visual aids provided)
- Sign Language Interpreter
- Preferential seating in the classroom
- Large print exams, handouts, signs, etc.
- Telecommunications devices

- Use of Assistive Technology

Accommodations may not fundamentally alter the nature of the program or activity, lower academic standards, present undue financial or administrative burden on the college, or pose a threat to others or public safety.

Additionally, some accommodations and services cannot be provided, such as personal devices or assistance with personal services.

Auxiliary aids may be available through a variety of sources available to individual students. The student may make a request in obtaining specialized support services from other resources such as Vocational Rehabilitation Services (VR), Recordings for the Blind, Kansas Talking Book Service, etc. For example, Vocational Rehabilitation may fund such items as transportation to the institution, tuition, textbooks, hearing aids, and other individually prescribed medical devices.

If at any time throughout the academic year, a student feels that the agreed upon accommodations are not being followed or that alternate accommodations need to be provided, the student should notify Student Accessibility Services (SAS) staff. NCK Tech is committed to student success; however, we do not require students to use accommodations. The decision of when to utilize approved accommodations or services is up to the student. Integration, self-advocacy and individual responsibility are promoted and expected.

Grievance Procedure

Any student who believes he or she has been subjected to discrimination on the basis of disability or has been denied access or accommodations, shall have the right to invoke the Grievance Procedure.

Students are encouraged to first discuss their concerns with SAS. An attempt will be made to resolve the issue(s) causing concern by assisting the student in discussions with the person(s) involved. Most situations are positively resolved through this process. If the student does not feel the concern or complaint has been appropriately resolved, he or she should contact the [Vice President of Student and Instructional Services](#) at 1-800-658-4655 or PO Box 507, 3033 US Hwy 24, Beloit, KS 67420, where grievance procedures are filed for all students, including students with disabilities.

If the complaint is not resolved at the College level, a student may choose to file a complaint with the [Office for Civil Rights](#) at 1-816-268-0550 or U.S. Department of Education, One Petticoat Lane, 1010 Walnut Street, Suite 320, Kansas City, MO 64106.

Confidentiality

All information regarding a student's disability is confidential. All documentation will remain separate from academic records and will not be released to an individual or source external to NCK Tech without the student's written consent. In order to provide effective services, it may be necessary to communicate limited information on a need-to-know basis regarding disability-related needs to NCK Tech faculty and/or staff.

REASONABLE SUSPICION

If reasonable suspicion of substance abuse exists regarding an employee or student based on objective criteria (including, but not limited to, behavior, appearance, demeanor, detection of the odor of alcohol or any controlled substance), the employee or student will be requested to consent to drug testing performed by NCK Tech's contract vendor at the expense of the college.

- A. A college administrator (or their designee) shall drive the employee or student to the vendor's site for drug testing and shall return the employee or student to his/her residence (or arrange for transportation) following the testing.
- B. Test results shall be sent directly to the college administrator, with a copy also sent to the employee or student. All test results will be considered confidential, access to the results will be limited to institutional personnel who have a legitimate need-to-know.
- C. In the event of a positive test result, the employee or student may request a retest of the sample at the employee or student's expense. The request must be submitted within 24 hours.

D. Positive results for any illegal drugs, or prescription drugs (either not prescribed for the employee or student, or at levels above the prescribed dosage), or blood alcohol level of 0.04 or greater shall be grounds for disciplinary action, up to and including termination or expulsion.

E. Refusal to provide a specimen for this testing shall be treated as a positive drug test result.

F. Test results or specimens that have been determined to be altered by the employee or student shall be grounds for disciplinary action, up to and including termination or expulsion.

G. If the employee or student tests positive for an authorized prescription drug which may impair his/her performance or judgment, the employee or student may not be permitted to participate in college activities until he/she provides a doctor's release.

RIGHT TO MODIFY THE SYLLABUS

The instructor reserves the right to modify the syllabus during the semester. Students will be given advanced notice if a change would occur.

LATE HOMEWORK AND MISSED QUIZZES

All assignments may be turned in early; however, all late work, regardless of the reason, will lose 20% of the possible points if turned in within three days of due date. After three days, late work will receive no credit.

If a quiz is missed a student may make it up during office hours the next day student attends class, if not a zero will be given.

LATE EXAM (MIDTERM AND FINAL)

Students must complete all exams by the scheduled deadline. Make-up exams are permitted only with documentation regarding a situation which prohibited the student from taking the exam on the assigned date. All make-up exams must be scheduled with the instructor and completed the next day during office hours or the student will earn a zero for that exam. (Midterm and Final)