

Virginia Western Community College

NUR 135

Drug Dosage Calculations

LPN to AAS Nursing Bridge Students

Pre/Corequisite(s) BIO 141, BIO 142, BIO 205, HLT 105, SDV 100

Traditional AAS Nursing Program

Pre/Corequisites: BIO 141, BIO142, HLT 105, NUR 111, NUR 226, HLT 141, SDV 100

Course Description

Focuses on apothecary, metric, household conversions in medication dosage calculation for adult and pediatric clients. Provides a practical approach to learning to calculate and prepare medications and solutions. Includes calculating intravenous flow rates. Safety and evidence based practice are emphasized.

Semester Credits: 2

Lecture Hours: 2

Lab/Clinical/Internship Hours: 0

Required Materials

Required Texts and Other References

Buchholz, S. (2016). *Henke's Med-Math: Dosage Calculation, Preparation & Administration*. (8th edition). Philadelphia, PA: Wolters Kluwer Health: Lippincott Williams & Wilkins. ISBN-13: 978-1-4963-0284-7

Course Objectives

After completion of this course, the student will be able to:

- **Safety:** Perform common arithmetic functions and converts units of measurement within the metric system needed for the safe preparation and administration of medications with and without using a calculator.
- **Patient centered care:** Describes the different formula necessary to calculate medications of all types of patients across the lifespan including weight based medications
- **Critical thinking:** Ensure the policies and procedures are followed to ensure that quality of care is maintained in preparing various types of medications including oral, injections, and intravenous preparations.
- **Teamwork:** Employs teamwork with other professionals to ensure that all patients receive quality care regarding the calculations and dosing of medications.
- **Evidence based practice:** Utilizes the current approved abbreviation list in order to foster patient centered care and best practice.
- **Informatics:** Understand the use of technology and the EMR to promote the essential skills necessary for patient safety in Medication Administration.
- **Culture:** Understand culture and socioeconomic beliefs that can affect the patient's compliance to medication administration. (Culture).

Topical Description

Unit 1: Math Review

- Roman Numerals
- Fractions
- Decimals
- Ratio and Proportion
- Percentages

Unit 2: Systems of Measurement

- Metric System
- Apothecary and Household Systems
- Converting between Systems
- Additional Conversions Useful in the Health Care Setting

Unit 3: Methods of Administration and Calculation

- Medication Administration (Ch. 10)
- Understanding and Interpreting Medication Orders (Ch. 11)
- Medication Administration Records and Drug Distribution Systems (Ch. 12)
- Reading Medication Labels (Ch. 13)
- Dosage Calculation Using the Formula Method

Unit 4: Oral and Parenteral Dosage Forms and Insulin

- Calculation of Oral Medications
- Parenteral Medications
- Reconstitution of Solutions
- Insulin

Unit 5: Intravenous, Heparin and Critical Care Calculations

- Intravenous Solutions and Equipment
- Intravenous Calculations)
- Pediatric and Adult Dosage Calculation Based on Weight

Note to Instructors