Syllabus

Allied Health Dosage Calculation–Online

ALH-1202

Contact information

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CLASS HOURS: There are no specific class hours but please pay close attention to all due dates for quizzes.

CLASS ATTENDANCE: Since this is an online class, there is No attendance policy. Every time you log into the class you are attending class. Although I encourage logging in at least 3 or 4 times a week, it is up to the student to meet all weekly requirements. The student will receive points each week for logging in and completing the tasks assigned (see Assessment/Grading info)

PREREQUISITES: Math 0900

Welcome

Welcome to Drug Calculations Online, a course designed to accompany Clinical Calculations, edition 6, by Joyce Kee and Sally Marshall. This online course is designed to be used with your textbook to provide a comprehensive course covering the essential calculations for the safe administration of medication in the clinical setting.
Course Description

This course covers common mathematical requirements for Allied Health professions with a focus on nursing. It includes a review of the following: basic math, systems including conversions, metric, apothecary, and household, interpretations of drug labels, charting, abbreviations, and methods of calculations for oral, injectable, and intravenous drugs, calculations for specialty areas including pediatrics, critical care, labor and delivery

Instructional method

Content and all assignments are presented through Evolve website. Quizzes and exams are directly related to the content areas and are typically assigned after each module. Critical thinking exercises and problems solving are also a component of this class.

Instructional Materials


Evolve website  [http://evolve.elsevier.com](http://evolve.elsevier.com)

Reading: Clinical Calculations With Applications to general and Specialty Areas, Kee and Marshall, *Saunders*, 6th Ed.

Assignments: All Assignments will be outline in the Calendar portion of the Evolve. Again, please take all deadlines seriously. All assigned work will be due on the date assigned by 10:00pm. NO ASSIGNEMNT WILL BE ACCEPTED LATE.

Honor System: All students are expected to submit their own work. The instructor reserves the right to withdrawal the student from class for academic dishonesty if cheating is suspected and proved. Please see IVCC Student Code of Conduct.

Other: If you are a student with a cognitive, physical or psychiatric disability you may be eligible for academic support services such as extended test time, texts on tape, notetaking services, please contact the Special Populations office at 815-224-0284, office B-204.
**WITHDRAWL**: If you do withdrawal by the last day for automatic withdrawal, you will earn a “W” grade, which does not affect your grade point average (GPA). Please note: In order to withdrawal from this course, YOU must request a withdrawal from the instructor. This request may be in the form of an office visit, a phone call, a letter, or an e-mail. In the absence of the instructor please contact (Pam Mammano, DON) at 815-224-0322. I will withdrawal a student if he or she misses two weeks of assignments or has not attempted any modules/quizzes by midterm. All withdrawals earn a grade of “W” which does not affect the GPA but deletes the course credit(s) for the involved course. Please see the IVCC catalog for a full description of the college’s withdrawal policy. It is your responsibly to initiate a withdrawal.

**Methods of Evaluations**

grading scale: 100-90 = A / 89-80= B / 78-70= C / 69-60= D / 59- = F

Assessment/Grading: Assessments and grades are based on points accumulated at the end of each module and at the end of the semester. Percentage of completion and benchmarks set throughout the course – participation.

Module 1 lessons 1-4 and 6

- read and write numbers in the two number systems (Arabic and Roman) used for drug dosages.
- convert between the two number systems.
- perform calculations using fractions.
- perform calculations using decimal numbers.
- perform calculations using percentages.

Module 2 lessons 1-4 (part 1)

Lesson 1: Systems Used for Drug Administration

- identify the three measurement systems (metric, apothecary, and household) utilized to calculate medication dosages.
- perform the calculations necessary to convert a measurement expressed in one standard unit within the system to a measurement expressed in another unit within that same system, for the metric, apothecary, or household system.

Module 2 lessons 1-4 (part2)

Lesson 1: Conversions between the Metric, Apothecary, and Household Systems

- identify principles for converting medication dosages by weight between the metric and apothecary systems.
- convert medication dosages ordered by weight between the metric and apothecary systems.
- Identify when to use the ratio and proportion method to convert dosages ordered by weight in one measurement system to the dose in another measurement system.
- Identify principles for converting medication dosages ordered by liquid volume between the metric, apothecary, and household systems.
- Convert medication dosages ordered by liquid volume from one system (liters, milliliters) to another (ounces, drops).

**Module 3 Lessons 1 and 5 Only**

- Identify four methods utilized to calculate medication dosages.
- Calculate medication dosages utilizing the **dimensional analysis method**.

**Module 4 Lessons 1-5**

- Demonstrate a basic knowledge of the abbreviations utilized in the administration of medications.
- Identify the differences between brand names and generic names of medications.
- Accurately interpret medication labels.
- Identify the types of medication orders.
- Identify the necessary components of a medication order.
- Identify the "5 rights" of medication administration.
- Accurately interpret appropriate military times.
- Demonstrate accurate documentation of the administration of medications.

**Module 5 Lessons 1-5**

- Identify various supplies used to administer intravenous medications.
- Identify various forms of intravenous medications.
- Identify types of intravenous medication administration.
- Calculate dosages of intravenous medications.

**Module 6 Lesson 1**

- Identify the relationship of concentration to weight and volume.
- Calculate the amount of medication in a given solution

**Module 7 Lessons 1-3**

- Identify various alternate forms of medications (other than oral, parenteral, and enteral) that are referred to as **topical** medications.
- Identify the two major categories of topical medications (percutaneous and transdermal).
- Identify the methods of administration of the alternate medication forms.

**Module 8 Lessons 1-6**

- Identify terminology associated with the use of nomograms and titration.
- Identify the common units of measure used for medications in solution.
- Determine the concentration of a medication in solution.
- Determine dosage per milliliter.
- Determine infusion rates on the basis of concentration of medication in solution and volume of solution to be infused per unit time.
- Determine infusion rates on the basis of dosage in relation to body weight and time.
Module 9 lessons 1-5

- identify factors influencing pediatric medication administration.
- recognize two methods of calculating drug dosages for the pediatric client.
- convert adult medication dosages to pediatric medication dosages.
- describe factors that influence intravenous (IV) medication administration in the pediatric client.

Module 10 lessons 1-7

- identify factors influencing administration of IV fluids and IV medications to the pregnant female.
- identify the types of fluids administered in care of the pregnant female.
- calculate infusion rates of medications ordered by concentration or volume.
- distinguish between the use of loading doses and fluid boluses for the pregnant client.
- calculate administration rates for loading doses and fluid boluses.

Module 11 lessons 1-5

- identify conversion factors often used in the community setting.
- describe the three methods for preparing a medication solution and the three ways in which the concentration of the solution may be expressed.
- calculate the volume of medication solution to prepare a solution of a specific concentration.
- calculate the volume of medication solution needed to prepare a weaker percent solution from a stronger percent solution.
- identify criteria for home intravenous therapy.

Comprehensive exams
Class Schedule for Dosage Calculations

The following is a tentative schedule that may change as the semester progresses. A more detailed schedule will be listed on the course web-page. (www.evolve.elsevier.com)

Class starts may 24th
Ends July 11th Final due
Each week you will be assigned the module and specific lessons – you find them listed in the “Calendar Section” on your Evolve website.