Syllabus

Allied Health Dosage Calculation–Online

ALH-1202

Contact information

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OFFICE: A-214b PHONE: 815-224-0525 EMAIL: laura_hodgson@ivcc.edu - please feel free to call or email me with any questions you may have.

OFFICE HOURS: Monday-Thursday 8:00-9:00

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: none - Math 0900 is recommended

Welcome

Welcome to Drug Calculations Online, a course designed to accompany Clinical Calculations, edition 7, 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

Clinical Calculations With Applications to General and Specialty Areas, Kee and Marshall, Saunders, 7th Ed.

Evolve website http://evolve.elsevier.com

Reading: Clinical Calculations With Applications to General and Specialty Areas, Kee and Marshall, Saunders, 7th 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 (Bonnie Campbell, DON) at 815-224-0485. **I will withdrawal a student if he or she: has not attempted any modules/quizzes by midterm or has two weeks of inactivity/missed quizzes.** 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.

Effective Summer 2011, students will have the ability to initiate a withdrawal from classes. By completing the form in the Records Office or at [www.ivcc.edu/withdraw](http://www.ivcc.edu/withdraw), the student is authorizing IVCC to remove him/her from the course. Entering the student ID number serves as the student’s electronic signature. IVCC has the right to rescind a withdrawal in cases of academic dishonesty or at the instructor’s discretion.

Students should be aware of the impact of a withdrawal on full-time status for insurance purposes and for financial aid. It is highly recommended that students meet with their instructor or with a counselor before withdrawing from a class to discuss if a withdrawal is the best course of action for that particular student.

**Withdrawal date:** Friday, February 20, 2015

**Please note:** effective summer 2011, all students will be responsible for checking their IVCC e-mail. All electronic college correspondence will only be sent to the IVCC e-mail. **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

- Identify the system of measurement accepted worldwide and the system of measurement used in home settings.
- List the basic units and subunits of weight, volume, and length of the metric system.
- Explain the rules for changing grams to milligrams and milliliters to liters.
- Give abbreviations for the frequently used metric units and subunits.
- List the basic units of measurement for volume in the household system.
- Convert units of measurement within the metric system, and within the household system

Module 2

- State rules for converting drug dosage by weight between the household and metric systems.
- Convert grams/milligrams to grains and grains to grams/milligrams.
- Convert drug dosage by weight from one system to another system by using the ratio method.
- State rules for converting drug dosage by volume among the metric and household systems.
- Convert liters/milliliters to pints and milliliters to tablespoons, and teaspoons.

Module 3

- Identify brand names, generic names, drug forms, dosages, expiration dates, and lot numbers on drug labels.
- Give examples of drugs with "look-alike" drug names.
- Recognize the components of a drug order.
- Explain the computer-based medication administration system.
- Recognize the use of a bar code for unit drug dose.
- Identify the drug information for charting.
- Provide meanings of abbreviations: drug form, drug measurement, and routes and times of drug administration.

Module 4

- Name the "7 rights" in drug administration and give examples of each.
- Discuss some of the causes of drug errors.
- Explain the ways that medication errors can be prevented

Module 5

- Recognize the various methods for drug administration.
- Explain the steps (methods) in drug administration when the various methods are used
Module 6

- Determine the amount of drug needed for a specified time.
- Select a dosage formula, such as basic formula, ratio and proportion, fraction equation, or dimensional analysis, for solving drug dosage problems.
- Convert units of measurement to the same system and unit of measurement before calculating drug dosage.
- Calculate the dosage amount of tablets, capsules, and liquid volume (oral or parenteral) needed to administer the prescribed drug.

Module 7

- State the difference between the weight formulas used for drug calculations.
- Calculate the drug dosages according to body surface area.
- Calculate the drug dosages according to body weight.

Module 8

- State the advantages and disadvantages of administering oral medications.
- Calculate oral dosages from tablets, capsules, and liquids using given formulas.
- Give the rationale for diluting and not diluting oral liquid medications.
- Explain the method for administering sublingual medication.
- Calculate the amount of drug to be given per day in divided doses.
- Determine the amount of tube feeding solution needed for dilution according to the percent ordered.
- Determine the amount of water needed to dilute liquid medication.

Module 9

- Select the correct syringe and needle for a prescribed injectable drug.
- Calculate dosage of drugs for subcutaneous and intramuscular routes from solutions in vials and ampules.
- Explain the procedure for preparing and calculating medications in powder form for injectable use.
- Determine prescribed insulin dosage in units using an insulin syringe.
- Explain the methods for mixing two insulin solutions in one insulin syringe and for mixing two injectable drugs in one syringe.
- Explain the various methods of insulin administration.
- State the various sites for intramuscular injections.
- Explain how to administer intradermal, subcutaneous, and intramuscular injections.

Module 10
• Name catheter sites for intravenous access.
• Examine the three methods for calculating intravenous (IV) flow rate and select one of the methods for IV calculation.
• Calculate drops per minute of prescribed IV solutions for IV therapy.
• Determine the drop factor according to the manufacturer's product specification.
• Calculate the drug dosage for IV medications.
• Calculate the flow rate for IV drugs being administered in a prescribed amount of solution.
• Explain the types and uses of electronic IV infusion devices.
• Calculate the rate of direct IV injection

Module 11

• Use the two primary methods in determining pediatric drug dosages.
• State the reason for checking pediatric dosages before administration.
• Describe the dosage inaccuracies that can occur with pediatric drug formulas.
• Identify the steps in determining body surface area with the square root method.

Module 12

• Calculate the prescribed concentration of a drug in solution.
• Identify the units of measure designated for the amount of drug in solution.
• Describe the four determinants of infusion rates.
• Calculate the concentration of drug per unit of time for a specific body weight.
• Recognize the variables needed for the basic fractional formula.
• Describe how the titration factor is used when infusion rates are changed.
• Recognize the methods of determining the total amount of drug infused over time.

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 January 12, 2015
Ends March 4, 2015
Each week you will be assigned the module and specific lessons – you find them listed in the “Calendar Section” on your Evolve website.