

Imperial Valley College
Nursing and Allied Health Education
Fall Semester 2012
Nursing 100 – Medication Mathematics CRN 10788
Wednesday's 0800 – 1015 room 2139
Dates: Aug 23rd – Oct 11th **Drop Date with "W" Sept 27th**

Instructor: Pam Hansink, BSN, RN
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Required Book: Dimensional Analysis for Meds, 4th Edition Anna M. Curren, MA, RN Copyright© 2010 Delmar Cengage Learning

Recommended CD/Book: Calculating Drug Dosages: An Interactive Approach to Learning Nursing Math, 2nd Edition by Sandra Luz Martinez de Castillo, RN, MA, EdD Copyright © 2010 F.A. Davis Company

- I. Course Description:
This course focuses on those components of safe medication calculation and administration. The emphasis is on accuracy of calculation and the critical thinking involved in client/patient safety. This is an intense class on med math calculations that is required of all RN majors. Clinical application is integrated into the clinical nursing courses.
- II. PREREQUISITES, if any:
1. English 101
 2. Demonstration of Math Competency
 3. Demonstration of Reading Competency
 4. Psych 101
 5. Biology 204 (BIOL 204) and Biology 206 (BIOL 206) or Biology 200 (BIOL 200) and Biology 202 (BIOL 202)
 6. Biology 220 (BIOL 220) General Microbiology
 7. Permission of Instructor
- III. Course Objectives:
1. Calculate basic mathematic problems including addition, subtraction, multiplication & division of fractions & decimals.
 2. Convert metric, apothecary and household measures accurately.
 3. Solve dosage problems using dimensional analysis
 4. Calculate adult & pediatric dosages.
 5. Calculate intravenous flow rates.
 6. Interpret drug orders and labels relevant to the safe administration of drugs.
 7. Discuss the "Six rights" of clients relative to administration of medications.
 8. Describe the routes of administration.
- IV. Specific Course Information
1. **The passing course grade is 75%.**
 2. **Exams will be given periodically during the course. Exams will count for 75% of the final grade.**
 4. **Final exam will count for 25% of the grade. The Final Exam must be passed with a 75%,**
 5. **Nursing Course grades are based on the following scale.**
A= 92-100%
B= 83-91%
C= 75-82%
D= 68-74%
F= Below 68% (No Makeup exams will be given!)

Drug Dosage Calculation Description:

This class will present the dimensional analysis method as a tool to use in solving all drug dosage calculation problems.

Unit Outcome Competencies:

The student will practice problems in class, in the Nursing Learning Center and at home to develop proficiency in calculations.

Student Learning Outcomes.

Upon completion of this class the student will be able to:

1. Calculate the flow rate of a simple primary intravenous line in ml/hr or drops/min as measured by one question on the final exam with a class average for the measured question at 100%.
2. Pass a comprehensive final exam on dosage calculations at 75% including critical care and pediatric problems.

Student Learning Activities:

To assist in learning the content the student will:

1. Complete problems in the assigned references
2. Complete problems on the assigned study guides

Nursing 100 - Medication Math Schedule

| Date | Day | Time | Description | Instructor | Assignment Due |
|--------------------|-----|-------------|--|------------|---|
| 08/23/12 Week 1 | TH | 0900 - 1115 | Introduction to Course Basic Math Review 1. Fractions 2. Decimals 3. Percents 4. Ratios 5. Proportions 6. Solve for (X) 7. Roman Numerals 8. Rounding 9. Conversion Tables. | Hansink | Curren Ch 1-3 Study Guides by Marylynn Carlson CDD-Cd Module basic math review |
| 08/30/12 Week 2 | TH | 0900 - 1115 | EXAM 1: Basic Math Systems of Measurement 1. Dimensional Analysis Concept Introduction.) 2. Conversion Tables 3. Metric System Units of Weight 4. Apothecaries' System 5. Household System 6. Dimensional Analysis and conversions between systems 7. Temperature Conversion Formulas 8. Military Time | Hansink | Curren Ch. 4, 5, Ch 12 Study Guides by MC Study Guides by MC CDD-Cd Methods of Calculation-DM CDD-CD System of measurements |
| 09/06/12 Week 3 | TH | 0900 - 1115 | Exam 2: Conversions in and between systems of Measurements, Temp & Time Prep for Calculation of Drug Dosages. 1. Safety in Medication Adm. 2. Interpretation of Phys. Orders 3. How to read Drug Labels. 4. Abbreviations 5. Unit Dose | Hansink | Curren ch 6,7, Study Guides by MC In class Handouts CDD-CD Reading medication labels |
| 09/13/12 Week 4 | TH | 0900 – 1115 | Dimen. Analysis 1-2 Factors 1. Oral Medications 2. Parenteral Dosages IVP, IM,SC 3. Dosages in Units. IV Fluids 1. Tubing: Micro, Macro, Blood. 2. Primary Line Flow rates (gtts/min) 3. Piggy Back Flow Rate(gtts/min) | Hansink | Curren ch 6, 7, 8, 9, 10,11 CDD-CD Administration of Oral Medication, syringes and needles, administration of Parenteral Medications, IV Calculations Curren Ch 5-6 |
| 09/20/12 Week 5 | TH | 0900 – 1115 | Exam 3: Dimen. Analysis: Oral, Parenteral Dosages, and Units. IV Fluids Continued 1. Using an IV Pump 2. Blood Flow rates 3. Specialty IV: Ins&Hep& Units | Hansink | Curren Ch 15, 16,17 |
| 09/27/12 Week 6 | TH | 0900 – 1115 | Exam 4: IV's Primary, Piggy, Speciality, Blood. (Gtts/min & ml/hr). Multifactor Problems Critical Care Problems 1. mcg/kg/min 2. mcg/min 3. reverse calculations 4. Verifying rates. 5. x-factors. | Hansink | Curren Ch 16,17,18, 19 CDD-CD Titration of medications. |

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| 10/04/12 Week 7 | TH | 0900 – 1115 | Exam 5 Critical Care Calculations. Pediatric Problems 1. Wt based Peds Problems 2. Peds rounding rules. | Hansink | Curren Ch 13,14,20, 21, CDD-cd Pediatric Calculations |
| 10/11/12 Week 8 | TH | 0900 - 1115 | Final Exam ☺ | Hansink | |
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Go to www.imperial.edu/nursing to get all the Math 100 study guides. When you get to that page click “Nursing & Allied Health” on the sub menu. When you get to that page, the study guides are found under “MedMath” in the sub menu.