

**PHARM 153 Course Outline as of Spring 2003****CATALOG INFORMATION**

Dept and Nbr: PHARM 153 Title: DOSAGE CALCULATIONS

Full Title: Dosage Calculations

Last Reviewed: 2/22/2016

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	2.00	Lecture Scheduled	2.00	17.5	Lecture Scheduled	35.00
Minimum	2.00	Lab Scheduled	0	17.5	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	2.00		Contact Total	35.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 70.00

Total Student Learning Hours: 105.00

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

**Catalog Description:**

Calculation of the correct oral and parenteral dosages of drugs using information from prescriptions or medications orders. Accurate determination of the correct amount of ingredients for the compounding of pharmaceutical products from a prescription or medications order.

**Prerequisites/Corequisites:**

Course Completion or Current Enrollment in CSKLS 100 ( or CSKL 100 or CSKL 374 or CSKL 373B) OR Course Completion or Current Enrollment in PHARM 100 ( or PHARM 374)

**Recommended Preparation:****Limits on Enrollment:****Schedule of Classes Information:**

Description: Calculation of the correct oral and parenteral dosages of drugs using information from prescriptions or medications orders. Accurate determination of the correct amount of ingredients for the compounding of pharmaceutical products from a prescription or medications order. (Grade Only)

Prerequisites/Corequisites: Course Completion or Current Enrollment in CSKLS 100 ( or CSKL

100 or CSKL 374 or CSKL 373B) OR Course Completion or Current Enrollment in PHARM 100 ( or PHARM 374)

Recommended:

Limits on Enrollment:

Transfer Credit:

Repeatability: Two Repeats if Grade was D, F, NC, or NP

### **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>CSU Transfer:</b>		Effective:	Inactive:
<b>UC Transfer:</b>		Effective:	Inactive:

**CID:**

**Certificate/Major Applicable:**

Certificate Applicable Course

### **COURSE CONTENT**

#### **Outcomes and Objectives:**

Upon successful completion of this course the student will be able to:

1. Read and write proper medical notation on the drug order.
2. Interpret and compare information on drug labels.
3. Calculate the oral dosages of drugs, both solid and liquid forms, using ratio-proportion and formula.
4. Employ critical thinking skills to determine a 'reasonable dose'.
5. Calculate the parenteral dosages of drugs using ratio-proportion and formula.
6. Reconstitute and label medications supplied in dry or concentrated form.
7. Differentiate between various directions and select the correct direction for reconstitution.
8. Calculate the percentage strength and the ratio of concentration.
9. Calculate standard pediatric dosages.
10. Calculate concentrations and dilutions using V/V, W/W, W/V AND V/W.
11. Calculate dosages using milliequivalents.
12. Calculate intra-venous solution flow rate for electronic and manual infusion systems.
13. Calculate intra-venous solution volume and infusion time.

#### **Topics and Scope:**

##### **A. Medical Notation**

1. Standard common medical abbreviations
2. Notation specifying dosage, route, and frequency of medication

- 3. Medication orders
- B. Drug labels
  - 1. Brand and generic names
  - 2. Strengths
  - 3. Forms
  - 4. Total volume
  - 5. Directions for mixing
  - 6. Route of administration
  - 7. Manufacturer name and lot number
  - 8. Expiration date
- C. Oral dosage of drugs
  - 1. Conversions of units of measurement to the same system and same size units
  - 2. Reasonable amounts
  - 3. Ratio-proportion drug dosage
  - 4. 10% maximum, variance
  - 5. Tablets, capsules, and liquids
- D. Parenteral dosage of drugs
  - 1. Conversion of units of measurement to the same system and same size units
  - 2. Reasonable amounts
  - 3. Ratio-proportion drug dosage
  - 4. Reconstitution directions
  - 5. Insulin measurements and syringes
  - 6. Types and sizes of syringes
  - 7. Dosage expressed as ratio or percent
- E. Pediatric dosages
  - 1. Young's Rule
  - 2. Clark's Rule
  - 3. Fried's Rule
  - 4. Body Weight Method
  - 5. BSA Method
  - 6. Alternate BSA Method
  - 7. Combination drugs calculation
  - 8. Safe dosages
- F. Concentrations and dilutions
  - 1. V/V
  - 2. W/W
  - 3. W/V
- G. Millequivalents
  - 1. Calculating millequivalents
  - 2. Calculations using milliequivalents
- H. IV Calculations
  - 1. Components
  - 2. Milliliters per hour
  - 3. Drop factor/calibration
  - 4. IV flow rates in gtt/min
  - 5. Flow rate for off-schedule intravenous infusion
  - 6. Small volume IVPB

**Assignment:**

1. Perform dosage calculations.
2. Answer questions at the end of each chapter.
3. Answer instructor supplied questions.

### Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Written homework

Writing  
30 - 40%

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Weekly dosage calculation scenarios

Problem solving  
10 - 20%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None

Skill Demonstrations  
0 - 0%

**Exams:** All forms of formal testing, other than skill performance exams.

Multiple choice

Exams  
40 - 50%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

None

Other Category  
0 - 0%

### Representative Textbooks and Materials:

Ogden, Sheila J. Calculation of Drug Dosages. St. Louis: Mosby, 2001