

HIBBING COMMUNITY COLLEGE COURSE OUTLINE

COURSE NUMBER & TITLE: PHAR 1022: Fundamental Pharmaceutical Calculations 2

CREDITS: 2 (2 Lec / 0 Lab)

PREREQUISITES: Phar 1021: Fundamental Pharmaceutical Calculations 1 with a grade of "C" or better

CATALOG DESCRIPTION: This course will introduce the student to fundamental mathematical calculations utilized in institutional pharmacy practice. This course will teach mathematical calculation and problem solving for production of pharmaceutical products.

OUTLINE OF MAJOR CONTENT AREAS:

- I. Metric System Review
 - A. Weight (mcg, mg, kg)
 - B. Volume (ml, L, ...)
 - C. Conversions
 - D. Temperatures (Celsius vs Fahrenheit)
 - E. Distance
- II. Review Apothecary and Avoirdupois Calculations
 - A. Theory
 - B. Application
 - C. Appropriateness
- III. Applied Calculations
 - A. Sterile compounding calculations
 - B. Reconstitution of powdered intravenous medications
 - C. Concentration determination for sterile compounding
 - D. Dosing Calculations
 1. Ideal body weight (male and female)
 2. Renal function (GFR)
 3. Body Mass Index (BMI)

COURSE GOALS/OBJECTIVES/OUTCOMES

For Metric System Review, students will demonstrate

1. measurement units of mass in various measures (mcg, mg, and kg).
2. volume measurement in various units (ml, L).
3. distance/length measures in various units (m, kg).
4. body surface area application (BSA).

For Apothecary and Avoirdupois, students will

1. convert from standard western (pounds, inches, gallons) to the metric system (kilograms, centimeters, liters).
2. explain importance of metric system for dosing calculations in institutional pharmacy.
3. describe and apply appropriate measurement units.

For Applied Calculations, students will

1. calculate ingredient amounts needed to:
 - a. compound solutions and suspensions.
 - b. compound topical ointments and creams.
 - c. compound IV drugs.
 - d. reduce and increase formulas for concentrations/dosages.
2. perform dilution and concentration titration calculations.

MNTC GOALS AND COMPETENCIES MET:

N/A

HCC COMPETENCIES MET:

Communicating Clearly and Effectively
Thinking Creatively and Critically

STUDENT CONTRIBUTIONS:

The student will attend all scheduled class sessions; participate in class discussion; complete required assignments, in-class exercises, and exams by their due date. Students are expected to listen, follow directions, and seek assistance and guidance as needed.

**STUDENT ASSESSMENT SHALL TAKE PLACE USING INSTRUMENTS
SELECTED/DEVELOPED BY THE COURSE INSTRUCTOR.**

**SPECIAL INFORMATION: (SPECIAL FEES, DIRECTIVES ON HAZARDOUS
MATERIALS, ETC.):**

AASC APPROVAL DATE: May 13, 2014

REVIEW DATE: May 2019

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