

HIBBING COMMUNITY COLLEGE COURSE OUTLINE

COURSE NUMBER & TITLE: PHAR 1021: Fundamental Pharmaceutical Calculations 1

CREDITS: 2 (2 Lec / 0 Lab)

PREREQUISITES Placement exam of 69 in arithmetic or with instructor approval

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

OUTLINE OF MAJOR CONTENT AREAS:

1. Metric System
 - A. Weight (mcg, mg, kg)
 - B. Volume (ml, L, ...)
 - C. Conversions
 - D. Temperatures (Celsius vs Fahrenheit)
 - E. Distance
2. Review of Basic Math (Addition, Subtraction, Multiplication, Division)
 - A. Decimals
 - B. Fractions
 - C. Problem Solving
3. Apothecary and Avoirdupois Calculations
 - A. Theory
 - B. Application
 - C. Appropriateness
4. Applied Calculations
 - A. Non-sterile compounding calculations
 - B. Reconstitution of powdered oral medications
 - C. Concentration determination for non-sterile compounding
 - D. Days supply/quantity for prescription orders

COURSE GOALS/OBJECTIVES/OUTCOMES

For Mathematical Application, students will

1. review addition, subtraction, and division of fractions.
2. review addition, subtraction, and division of decimals.
3. solve basic word problems.

For Metric System, students will

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).

For Apothecary and Avoirdupois, students will

1. convert from standard (pounds, inches, gallons) to the metric system (kilograms, centimeters, liters).
2. explain importance of metric system for dosing calculations.
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.
2. determine the amount of medication needed and days supply for insurance purposes on written prescriptions.

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: December 17, 2014
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REVIEW DATE: December 2019

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