PHAR 204 - Pharmaceutical Calculations

Description
In this course, students develop proficiency, accuracy and efficiency in the essential calculations used in pharmacies. Students review basic mathematical principles, including fractions, measurements and conversions, and apply them in pharmacy-specific situations.

3 Credits

Time Guidelines
The standard instructional time for this course is 45 hours.

Course Assessment

Quizzes*	50%
Mid-Term Exam	20%
Final Exam	30%
Total:	100%

*Students must achieve a minimum grade of 75% in each of the quizzes for units 1-4, and will be granted two attempts. If a student does not achieve a minimum grade of 75% on either attempt for a given quiz, they will receive a grade of 0% for that quiz.

Other Course Information
The School of Health and Public Safety (HPS) expects that students familiarize themselves with policies, procedures, and guidelines that are applicable to SAIT, HPS, and their program of study. All students should explore institutional, school, and program-specific information on sait.ca in order to ensure they are informed with regards to relevant policies, procedures, and guidelines.

School of Health and Public Safety Attendance Guideline:

The School of Health and Public Safety (HPS) has expectations, consequences, and processes for excused and unexcused absences. The entire Attendance Guideline may be found on the HPS program orientation requirements resources website. This document is located under the General Resources section found on your Program page. **Students are expected to review the entire Attendance Guideline.** Students should also take note of the attendance expectations shown below.

Attendance Expectations:

Students in the School of Health and Public Safety are expected to achieve 100% attendance for scheduled classes, and to participate in all learning activities. There is a positive correlation between attendance, participation, and grades. Attendance is required to achieve the necessary knowledge, skills, and abilities while attending both SAIT and workplace-integrated learning experiences, in order to become a successful, well-rounded, and job-ready Allied Health graduate. Failure to keep up with course work and/or repetitive and cumulative absences will result in a formal review of a student's progress.

Course Learning Outcomes

1. Solve basic calculation problems.

    Objectives:

        1.1 Convert Roman numerals to Arabic numbers and vice versa.

        1.2 Solve problems involving decimals, ratios and percentages.

        1.3 Convert fractions.

2. Calculate prescription quantities and days' supply.

    Objectives:

        2.1 Calculate oral solid doses.

        2.2 Calculate required strength.

        2.3 Use sig and mitte to calculate days' supply.

        2.4 Use sig and days' supply to calculate mitte.

        2.5 Identify the differences between dispensed and authorized quantity.

        2.6 Use prescription refills to calculate authorized quantity.

        2.7 Calculate dispense quantity for blister-packed medications.

3. Apply calculation concepts to additional dose forms.

    Objectives:

        3.1 Perform calculations for parenteral medications.

        3.2 Calculate quantity and days' supply for respiratory medications.

        3.3 Calculate quantity for eye drops, ear drops and topical medications.

        3.4 Determine days' supply for eye drops, ear drops and topical medications.

        3.5 Calculate quantity and days' supply for subcutaneous injection.

        3.6 Calculate quantity and days' supply for birth control.

4. Apply calculation concepts to liquid medications.

    Objectives:

        4.1 Calculate oral liquid doses.

        4.2 Calculate antibiotics for reconstitution.

        4.3 Use weight to calculate the required dose.

        4.4 Convert pounds to kilograms and vice versa.

5. Solve problems involving conversion and measurement.

    Objectives:

        5.1 Calculate prescription quantities using metric measurements.

        5.2 Convert household measurements to metric measurements and vice versa.

        5.3 Convert imperial measurements to metric measurements.

        5.4 Convert apothecary measurements to metric measurements and household measurements.

5.5 Convert Celsius to Fahrenheit and vice versa.

6. Calculate ingredients required for compounding.

Objectives:

6.1 Define mixture terminology.

6.2 Describe drug strengths.

6.3 Convert drug strengths to standard units.

6.4 Calculate mixtures that contain raw chemicals.

6.5 Interpret provided recipes or formulas.

6.6 Use percentages and ratios to calculate prescription quantities.

6.7 Calculate prescription quantities from a recipe that uses mixed units.

7. Complete prescription billing requirements.

Objectives:

7.1 Compare base price and manufacturer's list price.

7.2 Calculate unit prices, allowable upcharges, total prescription price, prescription price for compounds, and prescription co-pay and deductibles.

7.3 Identify dispensing fees.

8. Apply special medication calculations.

Objectives:

8.1 Calculate medication dosages based on patient body weight and age.

8.2 Calculate medications measured in units, milliequivalents (mEq), millimoles (mmol) and percents of concentration.

8.3 Calculate medication dosages for intravenous use.

8.4 Calculate dilutions and alligations.

8.5 Use provided formulas to perform calculations.

SAIT Policies and Procedures:
For information on the SAIT Grading Scale, please visit policy AC 3.1.1 Grading Progression Procedure, found on the SAIT Academic Policies and Procedures page: https://www.sait.ca/about-sait/administration/policies-and-procedures

For information on SAIT Academic Policies, please visit: www.sait.ca/about-sait/administration/policies-and-procedures/academic-student