

Course Outline

Course Title: Math Topics For Health Related Professions

Common Course Title: MTB1370

Effective Term: Fall 2022 (Aug 8, 2022)

Credit Hours: 1 Units

Next Review : Aug 7, 2027

Contact Hour Breakdown: *(Per 16 week Term)*

Total: 16

Lecture:

Lab:

Clinic:

Other:

Requirements

This course does not have any required pre-requisites or co-requisites.

Course Description:

This course provides an intensive review of mathematics operations involving rounding rules, fractions, decimals, percentages, ratios, and proportions. Units and measures in apothecaries, metric, and household systems are also discussed with a major emphasis on application for the calculation of both oral and parenteral drug dosages. Military time is also discussed. It is highly recommended that MTB1370 be taken prior to or in conjunction with NUR1020 and NUR1020L or NUR2000 and NUR2000L

Course Outline

UNITS

Unit 1 : Fractions

General Outcome

1.0 Perform the basic operations (addition, subtraction, multiplication, and division) with fractions and mixed numerals.

Specific Learning Outcomes

- 1.1 Convert improper fractions to mixed numbers.
- 1.2 Convert mixed numbers to improper fractions.
- 1.3 Convert fractions and mixed numbers to equivalent fractions with the lowest common denominator.
- 1.4 Add fractions with the same and with unlike denominators.
- 1.5 Subtract fractions with the same and with unlike denominators.
- 1.6 Multiply fractions and reduce results.
- 1.7 Divide fractions and reduce results.

Unit 2 : Decimals

General Outcome

2.0 Convert between fractions and decimals and perform the four basic operations with decimals.

Specific Learning Outcomes

- 2.1 Read decimal numbers.
- 2.2 Determine the value of decimal numerals.
- 2.3 Add and subtract decimals.
- 2.4 Multiply decimals and whole numbers by a power of 10.
- 2.5 Divide decimals and whole numbers by a power of 10.
- 2.6 Convert between decimal and fraction notation.

2.7 Round to specified place value based on BC Nursing Department Rounding Rules

Unit 3 : Percents

General Outcome

3.0 Convert between fraction, decimal, and percentage notation and find a percent of a given number.

Specific Learning Outcomes

- 3.1 Convert a fraction to a percentage .
- 3.2 Convert a decimal to a percentage .
- 3.3 Convert a percentage to a fraction.
- 3.4 Convert a fraction to a decimal.
- 3.5 Calculate a given percent of a number.

Unit 4 : Ratios

General Outcome

4.0 Convert between ratios, fractions, decimals, and percentages.

Specific Learning Outcomes

- 4.1 Convert between fractions and ratios.
- 4.2 Convert between decimals and ratios.
- 4.3 Convert between percentages and ratios.

Unit 5 : Proportions

General Outcome

5.0 Solve problems involving proportion.

Specific Learning Outcomes

- 5.1 Identify the four parts of a proportion.
- 5.2 Set up a proportion problem.
- 5.3 Solve proportions.

Unit 6 : Metric and Household Measurements

General Outcome

6.0 Metric, Household, and Apothecary Measurements

Specific Learning Outcomes

- 6.1 Identify metric prefixes.
- 6.2 Identify place value of metric prefixes.
- 6.3 Convert measures within the metric system by using proportions.
- 6.4 Convert measures between metric and household systems (ounces, teaspoons, etc.) by using proportions.
- 6.5 Perform conversions between apothecary and metric systems by the use of a proportion.

Unit 7 : Non-metric Measurements: Household, Apothecary and Military Time

General Outcome

7.0 Perform conversions within and between the apothecaries' and household measurement systems.

Specific Learning Outcomes

- 7.1 Convert within apothecaries' system (weight and liquid) by the use of proportion.

- 7.2 Convert within the household system by the use of proportions.
- 7.3 Perform conversions between the two systems by using proportions.
- 7.4 Convert between Roman numerals and Arabic numerals.
- 7.5 Convert between Military and International time.

Unit 8 : Oral Dosages

General Outcome

- 8.0 Calculate oral dosages of medications by the use of a proportion.

Specific Learning Outcomes

- 8.1 Verify accuracy of ordered dosage.
- 8.2 Accurately read the amount of medication ordered and the amount of medication available.
- 8.3 Perform conversions if necessary to convert the unit of measure of medication ordered to the unit of measure of the medication on hand.
- 8.4 Properly build and solve proportions.
- 8.5 Determine the amount of medication to be administered.

Unit 9: Parenteral Dosages

General Outcome

- 9.0 Calculate parenteral medication dosages and intravenous infusion flow rates.

Specific Learning Outcomes

- 9.1 Determine the amount of medication ordered and the amount of medication available.
- 9.2 Calculate by using a proportion the correct amount of medication to be administered.
- 9.3 Calculate by using a proportion the correct flow rates for intravenous infusion.
- 9.4 Determine beginning time and ending time for intravenous infusion.
- 9.5 Calculate and correct rate of an off-schedule intravenous infusion