



SYLLABUS

CATALOG DESCRIPTION

This course is designed for students needing pre-algebra concepts review and Math for Health Careers. This course reviews the basics of computational skills involving integers, fractions, decimals, and percents to prepare students for the skills used in this course. This course also introduces the computational skills needed to study in health careers programs. Topics include more difficult operations on fractions, decimals, and percents, as well as the use of formulas, ratios and proportions, and measurements. Students will solve word problems specific to medication orders, the combined gas law, and medical related unit conversions as well as pH and pOH calculations.

Prerequisites: Accuplacer score of 26 or higher or pass of MATH 050

Semester Offered: Fall, Spring and Summer

Common Student Learning Outcomes

Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...

BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

INFORMATION LITERACY

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

Course Learning Outcomes

Upon successful completion of the course, the student will be able to...

1. Mastery of basic math skills.
2. Use of measurement systems including English, Apothecaries', Household and Metric.
3. Ratio, Proportion and Percent

4. Strategies of problem solving needed in health science courses.

Specific Learning Outcomes

Upon successful completion of the course, the student will be able to...

- 1.1 perform operations (addition, subtraction, multiplication, division and exponentiation) with decimals, whole numbers, signed numbers and fractions
- 1.2 apply commutative, associative and distributive laws in simplifying and solving equations involving integers and fractions.
- 1.3 find the prime factorization of a number
- 1.4 find the least common multiple and greatest common factor of a given set of numbers
- 1.5 correctly apply the order of operations to a given set of numbers
- 1.6 manipulate simple algebraic expressions and solve elementary equations
- 1.7 convert between standard and scientific notation, perform arithmetic operations on numbers written and scientific notation
- 1.8 truncate and round numbers
- 1.9 apply algebraic rules to expressions in exponential forms
- 1.10 recognize when to estimate, approximate or compute exact values
- 1.11 apply the rules for simplifying expressions
- 1.12 read and write Roman numerals.

- 2.1 articulate the significance of and need for units of measurement
- 2.2 measure angles and Use angles in appropriate applications for health career areas.
- 2.3 appropriately convert units of length, weight, volume and dosage measurement systems (i.e. Metric, English, Apothecaries' and Household).
- 2.4 use and read mathematical medical abbreviations.
- 2.5 use and read military time.

- 3.1 setup ratios and understand what they represent
- 3.2 set up and solve proportions
- 3.3 use ratios and proportions to solve problems of direct variation in appropriate applications for health career areas.
- 3.4 convert percents to fractions and vice-versa to solve problems in appropriate applications for health career areas.
- 3.5 calculate rates and unit pricing
- 3.6 compute percents, convert numbers to percents and percents to numbers
- 3.7 model applications requiring percents
- 3.8 calculate percents of change
- 3.9 calculate discounts

- 4.1 calculate correct dosages for given medications in all forms (i.e. tablets, liquids, intravenous).
- 4.2 be able to read and construct graphs (i.e. table, bar, circle, line, etc.).
- 4.3 use logarithms to calculate pH and pOH.
- 4.4 compute hydrogen ion and hydroxyl ion concentration from provided information.
- 4.5 understand and apply basic statistics.
- 4.6 compute range, mid-range, median, mode, mean, and standard deviation.
- 4.7 compute 1,2 and 3 standard deviations on either side of the mean of the normal distribution.
- 4.8 apply computational and calculator skills to appropriate applications for health career areas.

4.9 apply logarithms in appropriate applications for health career areas.