

## Departmental Course Syllabus

This syllabus is subject to change. Students will be notified in writing of any substantive changes.

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Department: Allied Health/Medical Assisting                      Revision Date: December 2008  
San Antonio College \* 1300 San Pedro\* San Antonio, TX\* 78212-4299

Course Number and Title: PHRA 1309 Pharmaceutical Mathematics I  
Credit Hours: 3 (3-0)

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- I. **Catalog Description:** Pharmaceutical mathematics including reading, interpreting, and solving calculation problems encountered in the preparation and distribution of drugs. Conversion of measurements within the apothecary, avoirdupois, and metric systems with emphasis on the metric system of weight and volume. Topics include ratio and proportion, percentage, dilution and concentration, milliequivalents, units, intravenous flow rates, and solving dosage problems
- II. Pre-requisites: Math 0300, MDCA 1313
- III. Text: Curren, Anna M Math for Meds Dosages and Solutions with CD-ROM, 9<sup>th</sup> edition, Thomson Learning, 2005
- IV. Instruction will consist of: Lecture, class participation (boardwork), team problem solving activities.
- V. **Course Content:** Solution of mathematical problems relating to calculation of oral, and parenteral medication dosages using the metric, household and apothecary systems of measurement. Emphasis is placed on comprehension of medication orders, an understanding of standard dosages for medications and 100% competency in calculations.
- VI. Learning Outcomes and Performance Objectives with their methods of measurement as used to determine the students' mastery of those outcomes.

**Learning Outcome 1: The student will be able to solve problems using addition, subtraction, multiplication, and division of whole numbers, mixed numbers, fractions, decimals and percentages.**

Performance Objectives/Methods of Measurement for this outcome.

- 1 The student will be able to calculate drug dosages using basic mathematical calculations.

Method of measurement: Written tests and quizzes

**Learning Outcome 2: The student will be able to solve pharmaceutical problems that require conversion between different systems of measurement.**

Performance Objectives/Methods of Measurement for this outcome.

- 1 The student will be able to solve pharmaceutical problems by conversion between household and metric systems of measurement.

Method of measurement: Written tests and quizzes

- 2 The student will be able to solve pharmaceutical problems by conversion between metric and apothecary systems of measurement.

Method of measurement: Class participation, written tests and quizzes.

**Learning Outcome 3: The student will be able to calculate the proper dose for an adult or pediatric patient.**

Performance Objectives/Methods of Measurement for this outcome.

- 1 The student will be able to calculate correct drug dosages using Clarke's Rule, Young's Rule, Fried's Rule, Body Surface Area, and Body Weight.

Method of measurement: Written tests and quizzes.

- 2 The student will be able to calculate doses that require conversion between kilogram and pound body weight.

Method of measurement: Written tests and quizzes, class participation.

**Evaluation Ratio:**

Tests and Quizzes	50%
Return Demonstrations/Class Participation	5%
Comprehensive Final Exam	45%

**A score of 100% within three (3) attempts must be achieved on the final exam in order to pass this course and continue on with MDCA 1448 Pharmacology and Administration of Medications. All students will sign a form acknowledging this requirement.**

**SCANS - Competencies:**C5                      **Foundations:** F1, F2, F3,F4, F9, F11, F12, F13, F17

**CAAHEP Standards:** III.C.1.g.(5), III.C.3.c.(4)(g)

**VII. Course requirements and grade computation.**

**A. College Requirements:**

A written, comprehensive final examination, not to exceed two and one-half hours in length, shall be given at the end of each semester for each course at the regularly scheduled time. Any exceptions to these requirements must be approved by the appropriate dean. Other examinations are given at the discretion of the instructor.

A student who must be absent from a final examination should petition that instructor for permission to postpone the examination. **A student absent without permission from a final examination is graded "F."** Postponed examinations result in a grade of "I." The final exam must be taken within 120 calendar days from the end of the semester or the grade automatically becomes an "F." (San Antonio College Bulletin, Faculty Handbook - January 1995)

B. Departmental Requirement:

Admission Requirements for Program:

Advisement by faculty member and completion of program admission forms.

Current Physical Examination.

Ability to meet the national medical assisting technical standards.

Up to date and complete immunizations, to include completed Hepatitis B vaccination series.

TB test.

Satisfactory Criminal Background Check.

Negative Drug Screening Results.

Successful completion of the dosage calculation final exam with a score of 100% on three attempts.

C. Instructor Requirements:

Grading Policy:

90-100 = A

80-89 = B

70-79 = C

60-69 = D

0-59 = F

One make up test will be allowed for unauthorized absences.

Materials Required: Calculator, 2 inch three ring binder.

See individual instructor course outlines for attendance policies.

VIII. College Policies:

- A. San Antonio College does not discriminate on the basis of race, religion, color, national origin, sex, age, or disability with respect to access, employment programs or services.
- B. Students are urged not to bring children to either a class or a lab. Minors under

the age of twelve (12) must not be left unattended on campus. College Academic Council - April, 1998

- C. ADA Statement: "As per Section 504 of the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, if accommodation is needed contact the Office of DisABILITY Support Services, CAC 124C, Phone: (210) 733-2347.
- D. A Rapid Response Team exists for the purpose of responding to emergencies. If you have a disability that will require assistance in the event of a building evacuation, notify Disability Support Services, Chance Academic Center 124C, Phone: (210) 733-2347.
- E. Academic Dishonesty: Students may be subject to disciplinary proceedings resulting in an academic penalty or disciplinary penalty for academic dishonesty. Academic Dishonesty includes, but is not limited to, cheating on a test, plagiarism and collusion. For additional information refer to the "Student Code of Conduct" in the San Antonio College Bulletin.
- F. Students are required to silence all electronic devices (e.g., pagers, cellular phones, etc.) when in classrooms, laboratories and the library. College Academic Council, 01/ 2000.
- G. San Antonio College Attendance Policy: Regular and punctual attendance at all classes and laboratories, day and/or evening is required. A student absent for any reason is responsible for all work missed. Both tardiness and early departure from class are forms of absenteeism. The instructor establishes the policy with regard to each. Absences of each student are recorded without exception. The counting of absences begins on the first day of class. A student absent the equivalent of two weeks of instruction in a 16-week semester may be dropped by the instructor. If a student is dropped from a class for excessive absences, the instructor will record a grade of "W" (withdraw). It is the student's responsibility to ensure that the withdrawals have been submitted.
- H. San Antonio College is a smoke free campus.
- I. ACCD DPS Emergency Phone Numbers:
  - ACCD DPS Emergency Phone (210) 222-0911
  - ACCD DPS General Phone (210) 208-8099
  - ACCD DPS Weather Phone (210) 208-8189 (For information on college closures)
- J. Students must also abide by the policies, procedures, and rules set forth in the "Student Code of Conduct" and all other policies set forth in the San Antonio College Bulletin. . [www.accd.edu/sa/sacmain/schedule/SAC\\_Bulletin\\_07-08.pdf](http://www.accd.edu/sa/sacmain/schedule/SAC_Bulletin_07-08.pdf)

