

PHARM 102 Course Outline as of Fall 2016**CATALOG INFORMATION**

Dept and Nbr: PHARM 102 Title: PHARM CALC/PHARM TECH

Full Title: Pharmaceutical Calculations for the Pharmacy Technician

Last Reviewed: 1/23/2023

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	2.00	Lecture Scheduled	2.00	17.5	Lecture Scheduled	35.00
Minimum	2.00	Lab Scheduled	0	5	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	2.00		Contact Total	35.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 70.00

Total Student Learning Hours: 105.00

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

Catalog Description:

Instruction in pharmaceutical calculations designed for Pharmacy Technician students. Prepares students for success in therapeutic calculations through pharmaceutical skills development (dosage, volume, concentration) of computations with absorption rate, admixtures, medicinal compounding and applied measurement systems. Teaches students approaches in bioavailability and bioequivalence alliteration, accurately recognizing pharmaceutical units as required by the California State Board of Pharmacy.

Prerequisites/Corequisites:**Recommended Preparation:**

Eligibility for ENGL 100 or ESL 100 AND CSKLS 100

Limits on Enrollment:**Schedule of Classes Information:**

Description: Instruction in pharmaceutical calculations designed for Pharmacy Technician students. Prepares students for success in therapeutic calculations through pharmaceutical skills development (dosage, volume, concentration) of computations with absorption rate, admixtures,

medicinal compounding and applied measurement systems. Teaches students approaches in bioavailability and bioequivalence alliteration, accurately recognizing pharmaceutical units as required by the California State Board of Pharmacy. (Grade Only)

Prerequisites/Corequisites:

Recommended: Eligibility for ENGL 100 or ESL 100 AND CSKLS 100

Limits on Enrollment:

Transfer Credit:

Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area	Effective:	Inactive:
CSU GE:	Transfer Area	Effective:	Inactive:
IGETC:	Transfer Area	Effective:	Inactive:
CSU Transfer:		Effective:	Inactive:
UC Transfer:		Effective:	Inactive:

CID:

Certificate/Major Applicable:

Certificate Applicable Course

COURSE CONTENT

Student Learning Outcomes:

At the conclusion of this course, the student should be able to:

1. Accurately interpret information and data employing various types of scientific therapeutics, calculations, and pharmaceutical science computations.
2. Explain correct utilization of pharmaceutical science computations in ambulatory, infusion and inpatient healthcare environments.
3. Identify and differentiate between pharmacodynamics, pharmacokinetics, and pharmaceuticals.

Objectives:

Upon completion of the course, students will be able to:

1. Demonstrate working knowledge in computational pharmaceutical science calculations.
2. Explain extemporaneous compounding in ambulatory settings.
3. Cite and evaluate aseptic and infusion compounding techniques.
4. Interpret and compare the collecting, organizing, and evaluating information for direct patient care, drug use review, and departmental management.
5. Employ critical thinking skills in identifying pharmacodynamics, pharmacokinetic, and pharmaceuticals in case studies.

Topics and Scope:

- I. Extemporaneous compounding calculation operations:
 - a. Emulsions
 - b. Elixirs
 - c. Transdermal

- II. Pharmaceuticals:
 - a. Pharmacokinetics
 - b. Pharmacodynamics
 - c. Pharmaceutics
- III. Pharmacy therapeutics
 - a. Half-life
 - b. Inert ingredients
- IV. Parenteral measurement systems:
 - a. High Efficiency Particulate Air (HEPA)
 - b. Drop rate
 - c. Flow rate
 - d. Drop factor
 - e. Infusion rate
- V. Meniscus:
 - a. International sysem
 - b. Apothecary system
- VI. Pharmaceutical analysis:
 - a. Quality
 - b. Solvent
 - c. Solute
 - d. Volume Reconstitution
 - 1. Normal saline
 - 2. Volume dosage concentration
- VII. Drug targets:
 - a. Inaccuracies
 - b. Medication Administration Records (MAR) filling and calculation
 - c. Safety assessment
- VIII. Pharmaceutical and Medicinal abbreviations.

Assignment:

1. Approximately 15 to 25 pages of reading per week
2. 4-10 quizzes (up to 10 questions each) and 1-3 exams
3. 6-10 therapeutic case studies
4. Comprehensive final exam
5. 8-12 pharmaceutical calculation assignments

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Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Written response to case studies

Writing 5 - 10%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Calculation assignments and case studies

Problem solving
20 - 35%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None

Skill Demonstrations
0 - 0%

Exams: All forms of formal testing, other than skill performance exams.

Quizzes, exams, final exam

Exams
60 - 75%

Other: Includes any assessment tools that do not logically fit into the above categories.

None

Other Category
0 - 0%

Representative Textbooks and Materials:

Math Basics for the Health Care Professional, Lesmeister, M., 2013, 4th Edition, Prentice Hall
Instructor prepared materials