

**PHT 155 Course Outline as of Fall 2025****CATALOG INFORMATION**

Dept and Nbr: PHT 155                      Title: PHARMACOLOGY  
 Full Title: Pharmacology  
 Last Reviewed: 8/26/2024

Units	Course Hours per Week		Nbr of Weeks	Course Hours Total		
Maximum	4.00	Lecture Scheduled	4.00	17.5	Lecture Scheduled	70.00
Minimum	4.00	Lab Scheduled	0	17.5	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	4.00		Contact Total	70.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 140.00

Total Student Learning Hours: 210.00

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: PHARM 155

**Catalog Description:**

The pharmacy technician student will be introduced to the historical development of the use of drugs, the basic mechanism of drug action, pharmacokinetics, and basic concepts related to the administration of pharmacologic agents. The student will learn the therapeutic effects of identified groups of drugs, side effects, interactions, and potential errors. There will be a focus on selected drug classes.

**Prerequisites/Corequisites:****Recommended Preparation:****Limits on Enrollment:****Schedule of Classes Information:**

Description: The pharmacy technician student will be introduced to the historical development of the use of drugs, the basic mechanism of drug action, pharmacokinetics, and basic concepts related to the administration of pharmacologic agents. The student will learn the therapeutic effects of identified groups of drugs, side effects, interactions, and potential errors. There will be

a focus on selected drug classes. (Grade Only)

Prerequisites/Corequisites:

Recommended:

Limits on Enrollment:

Transfer Credit:

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

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>CSU Transfer:</b>		Effective:	Inactive:
<b>UC Transfer:</b>		Effective:	Inactive:

**CID:**

**Certificate/Major Applicable:**

Both Certificate and Major Applicable

## **COURSE CONTENT**

### **Student Learning Outcomes:**

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

1. Identify the pharmacological action and therapeutic effects of common medications prescribed to treat dysfunction of selected body systems.
2. Describe the history of drug development and the impact on current pharmacological practice.
3. Identify duplication of common medications and the required reporting process.

### **Objectives:**

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

1. Identify common side effects and drug interactions within selected drug classifications.
2. Identify brand and generic names from a selected list of drugs.
3. Identify appropriate routes of administration for commonly prescribed drugs.
4. Identify dosage ranges for frequently prescribed medications.
5. Interpret common prescription errors and alert the pharmacist.
6. Explain the development of drugs and their evolution over time.

### **Topics and Scope:**

#### I. History of Drug Development

- A. Drug legislation
- B. Drug testing and approval
- C. Food and Drug Administration (FDA) food health claims

#### II. Introduction to Pharmacology

- A. Receptors and mechanisms of drug action
- B. Pharmacokinetics
- C. Drug effects

1. Therapeutic
  2. Side effects
  3. Interactions
- III. Administration of Pharmacologic Agents
- A. Seven "Rights" for correct drug administration
  - B. Dosage forms and routes
  - C. Factors that influence drug effects
- IV. Autonomic Nervous System Drugs
- A. Parasympathetic Nervous System and cholinergic agents (parasympathomimetics)
  - B. Sympathetic Nervous System
    1. Adrenergic agents (sympathomimetics)
    2. Sympatholytics
- V. Anti-Infectives and Drugs for the Common Cold
- A. Antibiotics
    1. Fighting bacterial infections
    2. Antibiotic treatment and action
    3. Classes of antibiotics
      - a. Sulfonamides
      - b. Penicillins
      - c. Cephalosporins
      - d. Tetracyclines
      - e. Macrolides
      - f. Quinolones
      - g. Streptogramins
      - h. Aminoglycosides
      - i. Miscellaneous antibiotics
  - B. Antivirals
  - C. Antiretrovirals
    1. Nucleoside reverse transcriptase inhibitors (NRITs)
    2. Non-nucleoside reversed transcriptase inhibitors (NNTRIs)
    3. Protease inhibitors (PI's)
  - D. Anti-fungals
    1. Topical
    2. Systemic
  - E. Antihistamines
  - F. Decongestants
  - G. Antitussives
  - H. Expectorants
- VI. Cardiovascular Drugs
- A. Antiarrhythmics
    1. Membrane stabilizing agents/sodium channel blockers (class I)
    2. Beta blockers (class II)
    3. Potassium channel blockers (class III)
    4. Calcium channel blockers (class IV)
  - B. Congestive Heart Failure
    1. Antiarrhythmics
    2. Vasodilators
    3. Angiotensin converting enzyme (ACE) inhibitors
    4. Angiotensin II antagonists
  - C. Myocardial Infarction-Beta blockers
  - D. Angina Pectoris
    1. Nitrates

2. Calcium channel blockers
  3. Beta blockers
- E. Hypertension
1. Diuretics
  2. Calcium channel blockers
  3. ACE inhibitors
  4. Angiotensin II - receptor antagonist
  5. Beta blockers
  6. Central nervous system (CNS) agents
  7. Peripheral acting agents
  8. Vasodilators
- F. Anticoagulants and Antiplatelets
1. Antiplatelet agents
  2. Anticoagulant agents
  3. Fibrinolytic agents
- G. Hyperlipidemia
1. Hydroxymethylglutaryl-CoA (HMG-CoA) reductase inhibitors
  2. Fibric acid derivatives
  3. Bile acid sequestrants
- VII. Urinary System Drugs
- A. Renal drug therapy
1. Erythropoietin therapy
  2. Vitamin therapy
  3. Phosphate binders
- B. Urinary tract drugs
1. Antibiotics
  2. Antispasmodic agents
  3. Local anesthetics
- C. Diuretics
1. Thiazides
  2. Loop diuretics
  3. Potassium sparing diuretics
  4. Carbonic anhydrase inhibitors
  5. Osmotic diuretics
- VIII. Topicals, Ophthalmics and Otics
- A. Common skin conditions
1. Acne
  2. Itching
  3. Psoriasis
  4. Dandruff
  5. Fungal infection
  6. Poison ivy
  7. Atopic dermatitis
  8. Lice
- B. Ophthalmics
1. Antibiotics
  2. Corticosteroids
  3. Anti-fungal
  4. Antivirals
  5. Agents to treat glaucoma
- C. Otics
1. Analgesics

- 2. Antibiotics
- 3. Wax dissolvers
- IX. Narcotic Pain Relievers and Other Nervous System Drugs
  - A. Anesthetics, analgesics and narcotics
    - 1. General anesthetics
    - 2. Pain management
      - a. Narcotics and opiates
      - b. Addiction and dependence
      - c. Combination drugs for managing pain
    - 3. Migraine headaches
      - a. Selective 5-hydroxytryptamine receptors (5-HT) receptor agents
      - b. Ergot preparations
      - c. Antiemetic agents
      - d. Opioid analgesics
  - B. Antidepressants, antipsychotics and anti-anxiety agents
    - 1. Antidepressants
      - a. Selective serotonin reuptake inhibitors (SSRI)
      - b. Tricyclic antidepressants
      - c. Monoamine Oxidase Inhibitors (MAOI)
      - d. Drugs used in bipolar disorders
    - 2. Antipsychotics
    - 3. Antianxiety agents
      - a. Panic disorders
      - b. Sleep disorders
  - C. Anticonvulsants and drugs to treat other nervous system disorders
    - 1. Anti-epileptic drug therapy
    - 2. Anti-parkinson agents
- X. Respiratory Drugs
  - A. Asthma
  - B. Emphysema and chronic bronchitis
- XI. Gastrointestinal Drugs
  - A. Peptic ulcer disease
  - B. Antidiarrheals/laxatives
  - C. Anti-inflammatory drugs
  - D. Anti-parasitic drugs
- XII. Non-Narcotic Analgesics and Muscle Relaxants
  - A. Salicylates
  - B. Nonsteroidal anti-inflammatory drugs (NSAID)
  - C. Muscle relaxants
- XIII. Hormones
  - A. Thyroid
  - B. Adrenal hormones
  - C. Corticosteroids
  - D. Hypoglycemic agents
  - E. Growth hormone
  - F. Female hormones
  - G. Contraceptives
- XIV. Chemotherapy
  - A. Recombinant DNA agents
  - B. Chemotherapy agents
    - 1. Alkylating agents
    - 2. Antimetabolites

- 3. Nitrogen mustards
  - 4. Plant alkaloids
  - 5. Topoisomerase I inhibitors
  - 6. Miscellaneous agents
  - 7. Cytoprotective (rescue) agents
  - C. Drugs used for mucositis
- XV. Vitamins and Nutritional Supplements
- A. Total parenteral nutrition
  - B. Vitamins
  - C. Electrolytes
  - D. Natural supplements
- XVI. Poisons and Antidotes
- A. Antidotes
  - B. Supportive therapy
- XVII. Code Blue Emergencies
- A. Cardiac drugs
  - B. Respiratory drugs
  - C. Anti-seizure drugs
  - D. Diabetic drugs

**Assignment:**

- 1. Reading assignments in textbook (30-40 pages per week)
- 2. Complete review questions at end of each chapter (10-20)
- 3. Workbook activities (10-15)
- 4. Internet assignments at end of chapters as assigned (3-15)
- 5. Quizzes (10-15)
- 6. Midterm
- 7. Final exam
- 8. Pharmacology research paper (3-6 pages)
- 9. Group presentation

**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.

Review questions, workbook, internet assignments, and research paper
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Writing 30 - 50%
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**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

None
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Problem solving 0 - 0%
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**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, midterm, final

Exams  
40 - 50%

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

Group presentation

Other Category  
10 - 20%

**Representative Textbooks and Materials:**

Pharmacology for Technicians. 7th ed. Mckennon, Skye and Alvarez, Sara and Danielson, Jennifer. Paradigm Education Solutions. 2021.

Instructor prepared materials