

## Pharmacology (HITT 1249)



**Credit:** 2 semester credit hours (2 hours lecture)

**Prerequisite/Co-requisite:** BIOL 2301 & BIOL 2302

### Course Description

Overview of the basic concepts of the pharmacological treatment of various diseases affecting major body systems.

### Required Textbook and Materials

1. *Understanding Pharmacology for Health Professionals* by S. Turley, 4<sup>th</sup> edition. Pearson Publishing  
a. ISBN: 978-0-13-514570-8
2. Internet access
3. Blackboard access code (as needed)

### Course Objectives

*Upon completion of the course, the student should be able to:*

1. Identify the drugs associated with the treatment process. (C5, C6, C7, C8, F1, F2, F5, F6, F7, F8, F10, F11, F12, F13, F14, F16)
2. Examine drug therapy, dosages, actions and drug administration routes. (C5, C6, C7, C8, F1, F2, F5, F6, F7, F8, F10, F11, F12, F13, F14, F16)

### SCANS Skills and Competencies

Beginning in the late 1980's, the U.S. Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS) conducted extensive research and interviews with business owners, union leaders, supervisors, and laborers in a wide variety of work settings to determine what knowledge workers needed in order to perform well on a job. In 1991 the Commission announced its findings in *What Work Requires in Schools*. In its research, the Commission determined that "workplace know-how" consists of two elements: foundation skills and workplace competencies.

### Course Outline

- A. The Past History, Present Uses and Future of Drugs
  1. Introduction to Pharmacology
    - a. Origins of pharmacology words
    - b. Medical uses for drugs
    - c. Drugs in Ancient Times
    - d. Modern drugs derived from natural sources
    - e. Drugs in the 1800s and 1900s
    - f. Pharmaceutical timeline
    - g. Mislabeled and dangerous drugs
    - h. Drug legislation and drug agencies
    - i. Prescription and over-the-counter drugs
    - j. Schedule drugs
    - k. Orphan drugs
  2. Drug Design, Testing, Manufacturing, and Marketing
    - a. Drug discovery and creation
    - b. Drug names
    - c. Testing of new drugs
    - d. Drug manufacturing

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- e. Drug marketing
- f. Drug patients
- g. Drug withdrawals and recalls
- 3. Drug Forms
- 4. Routes of Administration and Drug Cycle
  - a. Routes of administration
  - b. The drug cycle
- 5. Using Drugs Therapeutically
  - a. Basis of drug effects
  - b. Local and systemic effects of drugs
  - c. Other drug effects
  - d. Drug-drug and drug-food interactions
  - e. Systems of drug measurement
  - f. The five rights of drug administration
- 6. The Prescription
  - a. Definition of a prescription
  - b. Types of prescriptions
  - c. Medication orders and other types of orders
  - d. Components of prescriptions and medication orders
  - e. The pharmacy and the pharmacist
- B. Drugs by Body Systems
  - 1. Urinary Drugs
    - a. Diuretic drugs
    - b. Potassium supplements
    - c. Drugs used to treat urinary tract infections
    - d. Urinary analgesic drugs
    - e. Urinary antispasmodic drugs
    - f. Combination antibiotic, analgesic and antispasmodic drugs
    - g. Drugs used to treat overactive bladder
    - h. Drugs used to treat benign prostatic hypertrophy
    - i. Drugs used to treat prostatitis
    - j. Drugs used to treat erectile dysfunction
  - 2. Gastrointestinal Drugs
    - a. Drugs used to treat Peptic ulcer disease
    - b. Drugs used to treat H. pylori infection
    - c. Drugs used to treat gastroesophageal reflux disease
    - d. Drugs used to treat gastrointestinal spasms
    - e. Drugs used to treat diarrhea
    - f. Laxative drugs
    - g. Drugs used to treat ulcerative colitis or Crohn's Disease
    - h. Gastric stimulant drugs
    - i. Antiemetic drugs
    - j. Drugs used to treat gallstones
    - k. Drugs used to treat hemorrhoids
    - l. Drugs used to treat obesity
  - 3. Musculoskeletal Drugs
    - a. Drugs used to treat osteoporosis
    - b. Drugs used to treat osteoarthritis
    - c. Drugs used to treat rheumatoid arthritis
    - d. Muscle relaxant drugs
    - e. Drugs used to treat fibromyalgia
    - f. Drugs used to treat gout
  - 4. Pulmonary Drugs
    - a. Bronchodilator drugs
    - b. Corticosteroid drugs
    - c. Leukotriene receptor blocker drugs
    - d. Monoclonal antibody drugs
    - e. Mast cell stabilizer drugs
    - f. Drugs used to treat respiratory infections
    - g. Drugs used to treat Legionnaire's Disease
    - h. Drugs used to treat tuberculosis
    - i. Expectorant drugs
    - j. Drugs used to stop smoking
    - k. Drugs used to treat respiratory distress syndrome
    - l. Drugs used to treat ventilator patients
  - 5. Cardiovascular Drugs used to treat:
    - a. Hypertension
    - b. Hyperlipidemia
    - c. Congestive heart failure
    - d. Angina Pectoris
    - e. Myocardial infarction
    - f. Arrhythmias
    - g. Peripheral vascular disease
    - h. Pulmonary arterial hypertension
    - i. Hypertensive crisis

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6. Hematologic Drugs
  - a. Anticoagulants
  - b. Thrombolytics
  - c. Topical hemostatic drugs
  - d. Drugs used to treat anemia
  - e. Drugs used to treat hemophilia
7. Gynecologic and Obstetric Drugs used to:
  - a. Prevent pregnancy
  - b. Treat infertility
  - c. During Pregnancy
  - d. Treat premature labor
  - e. Induce labor
  - f. Treat postpartum bleeding
  - g. Produce abortion
  - h. Treat endometriosis
  - i. Treat dysmenorrhea, premenstrual syndrome, and premenstrual dysphoric disorder
  - j. Treat abnormal menstruation
  - k. Treat vaginal infections
  - l. Treat sexually transmitted diseases
  - m. Treat menopause
  - n. Treat postmenopausal osteoporosis
8. Endocrine Drugs
  - a. Insulin
  - b. Oral antidiabetic drugs
  - c. Other antidiabetic drugs
  - d. Drugs used to treat thyroid gland dysfunction
  - e. Drugs used to treat pituitary gland dysfunction
  - f. Drugs used to treat adrenal gland dysfunction
  - g. Corticosteroid drugs
  - h. Anabolic steroid drugs
9. Neurologic Drugs used to treat:
  - a. Epilepsy
  - b. Alzheimer's disease
  - c. Parkinson's disease
  - d. Myasthenia gravis and multiple sclerosis
  - e. Neuralgia and neuropathy
  - f. Insomnia
  - g. Narcolepsy
10. Psychiatric Drugs used to treat:
  - a. Anxiety and Neurosis
  - b. Psychosis
  - c. Depression
  - d. Manic-Depressive Disorder
  - e. Obsessive-Compulsive Disorder
  - f. Panic Disorder
  - g. Social Anxiety Disorder
  - h. Posttraumatic Stress Disorder
  - i. Anorexia Nervosa and Bulimia Nervosa
  - j. Withdrawal from Addiction
  - k. Attention-Deficit / Hyperactivity Disorder
11. Dermatologic Drugs used to treat:
  - a. Acne Vulgaris
  - b. Acne Rosacea
  - c. Psoriasis
  - d. Bacterial Infections of the Skin
  - e. Fungal or Yeast Infections of the Skin
  - f. Viral Infections of the Skin
  - g. Inflammation and Itching
  - h. Topical Anesthesia
  - i. Alopecia
  - j. Wrinkles
  - k. Actinic Keratoses
  - l. Scabies and Pediculosis
  - m. Burns, Skin Ulcers, and Wounds
  - n. Vitiligo
12. Ophthalmic Drugs
  - a. Used to Treat Eye Infections
  - b. Used to Treat Eye Inflammation
  - c. Used to Treat Eye Allergy Symptoms
  - d. Used to Treat Glaucoma
  - e. Used to Treat Macular Degeneration
  - f. Anesthetic Ophthalmic Drugs
  - g. Mydriatic Drugs
  - h. Combination Ophthalmic Drugs
  - i. Used to Treat Strabismus
13. Ears, Nose, and Throat Drugs
  - a. Decongestant Drugs
  - b. Antihistamine Drugs
  - c. Mast Cell Stabilizer Drugs
  - d. Corticosteroid Drugs
  - e. Antibiotic Drugs
  - f. Antiyeast Drugs
  - g. Antitussive Drugs
  - h. Combination ENT Drugs

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- C. Other Drug Categories
1. Anti-Infective Drugs
    - a. Antibiotic Drugs
    - b. Used to Treat HIV and AIDS
    - c. Combination Drugs for HIV and AIDS
    - d. Used to Treat Conditions Related to HIV and AIDS
    - e. Used to Treat of Viral Infections
    - f. Used to Treat Fungal and Yeast Infections
  2. Chemotherapy Drugs
    - a. Antimetabolite
    - b. Alkylating
    - c. Demethylating
    - d. Antibiotics
    - e. Hormonal
    - f. Mitosis Inhibitor
    - g. Platinum
    - h. Retinoid
    - i. Interleukin
    - j. Interferon
    - k. Monoclonal Antibody
    - l. Immunomodulator
    - m. Protein-Tyrosine Kinase Inhibitor
    - n. Epidermal Growth Factor Receptor Inhibitor
    - o. Corticosteroid
    - p. Other Chemotherapy Drugs
    - q. Cancer Vaccines
    - r. Chemotherapy Protocols
    - s. Used to Protect Against
    - t. Chemotherapy Toxicity
    - u. Antiemetic Drugs Used with Chemotherapy
  3. Analgesic Drugs
    - a. Salicylate Analgesic Drugs
    - b. Nonsalicylate Analgesic Drugs
    - c. Nonsteroidal Anti-inflammatory Drugs
    - d. Combination Nonnarcotic Analgesic Drugs
    - e. Narcotic Analgesic Drugs
    - f. Combination Nonnarcotic and Narcotic Analgesic Drugs
    - g. Used to Treat Migraine Headaches
  4. Anesthetic Drugs
    - a. Topical Anesthetic Drugs for the Skin, Nose, and Mouth
    - b. Local, Regional, Spinal, and Epidural Anesthetic Drugs
    - c. Drugs Used During the Preoperative Period
    - d. Drugs Used to Obtain General Anesthesia
    - e. Neuromuscular Blocker Drugs Used During General Anesthesia
    - f. Drugs Used During the Postoperative Period
  5. Emergency Drugs, Intravenous Fluids, Blood Products
    - a. Routes of Administration for Emergency Drugs
    - b. Drugs for Emergency Resuscitation
    - c. Drugs Used to Treat a Drug Overdose, Suicide Attempt, or an Accidental Poisoning
    - d. Drugs Used to Treat Anaphylaxis
    - e. Intravenous Fluid Administration
    - f. Intravenous Fluids
    - g. Blood and Blood Products
    - h. Plasma and Plasma Volume Expanders

**Grade Scale**

90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
0 - 59	F

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**Course Evaluation**

Final grades will be calculated according to the following criteria:

Course assignments	20%
Unit Exams	60%
Final Exam	20%

**Course Requirements:**

1. Completion of chapter assignments
2. Completion of unit exams
3. Completion of final exams

**Course Policies:**

1. Students must provide their own textbooks, writing instruments, and other necessary supplies for classes
2. All electronic devices must be turned off. Absolutely no phones calls, text messaging or other telephone communications during class times.
3. Absolutely no food, drinks, or gum.
4. Students must respect one another and all faculty.
5. No children or other family members or friends are allowed to attend class with student.
6. Students are expected to attend class. There are no “excused absences.” Daily attendance will be taken.
7. All exams will be taken on the scheduled dates. There will be **NO MAKE UP EXAMS.**
8. All assignments are due when stated at the beginning of class including Blackboard assignments. Late assignments are not accepted.
9. Additional course policies are outlined in “Classroom Policies” provided at the beginning of the semester.
10. Students are expected to following the Lamar Institute of Technology Code of Conduct and Disciplinary Policy
11. Any violation of classroom policies may result in student being asked to leave class and result in an absence.

**Disabilities Statement:**

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building

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**Course Schedule:**

<b>Week of Semester</b>	<b>Topic</b>	<b>Textbook Reference</b>
Week 1	Introduction, Chapter 1, Chapter 2	p. 1 - 34
Week 2	Chapter 3, Chapter 4	p. 35 - 63
Week 3	Chapter 5, Chapter 6	p. 64 - 96
Week 4	Test 1, Chapter 7	p. 98-112
Week 5	Chapter 8, Chapter 9	p. 113 - 151
Week 6	Chapter 10, Chapter 11	p. 152 - 194
Week 7	Chapter 12, Test 2	p. 195 - 206
Week 8	Chapter 13, Chapter 14	p. 207 - 248
Week 9	Chapter 15, Chapter 16	p. 249 - 291
Week 10	Chapter 17, Chapter 18	p. 292 – 330
Week 11	Chapter 19, Test 3	p. 331 - 344
Week 12	Chapter 20	p. 346 – 372
Week 13	Chapter 21	p. 373 – 401
Week 14	Chapter 22, Chapter 23	p. 402 – 433
Week 15	Chapter 24	p. 434 - 451
Week 16	Review; Final Exam	