

Pathophysiology (HPRS 2301)



Credit: 3 semester credit hours (3 hours lecture)

Prerequisite/Co-requisite: BIOL 2301 & 2302

Course Description

Study of the pathology and general health management of diseases and injuries across the life span. Topics include etiology, symptoms, and the physical and psychological reactions to diseases and injuries.

Required Textbook and Materials

1. *Human Disease: A Systemic Approach* by M. Zelman, 7th edition. Pearson Publishing.
 - a. ISBN: 9780135155561
2. Blackboard access code
3. Internet access

Course Objectives

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

1. Identify the development of diseases and disorders of the human body. (C1,C5,C6,C7,C9,F1,F2,F5,F6,F7,F8,F9,F10,F11,F12,F13,F16)
2. Identify medical and surgical treatment processes. (C1,C5,C6,C7,C9,F1,F2,F5,F6,F7,F8,F9,F10,F11,F12,F13,F16)
3. Identify the fundamental characteristics of common diseases and conditions. (C1,C5,C6,C7,C9,F1,F2,F5,F6,F7,F8,F9,F10,F11,F12,F13,F16)
4. Distinguish environmental factors, physical, psychosocial, and cognitive characteristics of various diseases and conditions (C1,C5,C6,C7,C9,F1,F2,F5,F6,F7,F8, F9,F10,F11,F12,F13,F16)
5. Recognize the implications of therapeutic interventions for common diseases and conditions. (C1,C5,C6,C7,C9,F1,F2,F5,F6,F7,F8,F9,F10,F11,F12,F13,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

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|----------------------------|------------------------------|
| A. Mechanisms of Disease | a. Introduction |
| 1. Introduction to disease | b. Manifestations of disease |

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- c. Diagnosis
- d. Describing disease
- e. Causes of disease
- f. Risk factors
- g. Treatment of disease
- 2. Immunity and the Lymphatic System
 - a. Immunity
 - b. Specific immunity & the lymphatic system
 - c. Hypersensitivity – allergies
 - d. Autoimmunity
 - e. Immune deficiency
 - f. Vaccination
 - g. Stress and the immune system
 - h. Age and the immune system
- 3. Infectious diseases
 - a. Introduction
 - b. Principles of infectious disease
 - c. Transmission of infectious disease
 - d. Survey of infectious agents and pathogenic microorganisms
 - e. Nosocomial infections
 - f. Treatment of infectious disease
 - g. Emerging and re-emerging infectious disease
 - h. Common childhood vaccine-preventable infectious diseases
- 4. Cancer
 - a. Introduction
 - b. Classification of cancer
 - c. Biology of cancer
 - d. Etiology of cancer
 - e. Human cancer by organ site
 - f. Cancer screening, early diagnosis and prevention
- 5. Heredity and disease
 - a. Introduction
 - b. Transmission of hereditary diseases
 - c. Abnormal chromosome diseases
 - d. Sex anomalies
 - e. Genetic counseling
 - f. Congenital diseases
- B. Disease of the systems
 - 1. Diseases of the cardiovascular system
 - a. The circulatory system
 - b. Diagnostic tests and procedures for cardiac disorders
 - c. Cardiovascular disease
 - d. Congestive heart failure
 - e. Shock
 - f. Heart disease in infants and children
 - 2. Diseases of the blood
 - a. Introduction
 - b. Diagnostic tests for diseases of the blood
 - c. Anemia
 - d. Disorders of hemostasis
 - e. Hereditary disorders
 - f. White blood cells
 - 3. Diseases of the respiratory system
 - a. Structure and function of respiratory system
 - b. Common symptoms of respiratory disease
 - c. Diagnostic procedures for respiratory diseases
 - d. Upper respiratory diseases
 - e. Lower respiratory diseases
 - f. Age-related diseases
 - 4. Diseases of the gastrointestinal system
 - a. The gastrointestinal system
 - b. General disorders of the digestive tract
 - c. Diseases of the mouth
 - d. Diseases of the esophagus

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- e. Diseases of the intestine
- f. Diseases indicated by stool characteristics
- g. Functions of the liver and the gallbladder
- h. Diseases of the liver
- i. Diseases of the gallbladder
- j. Structure and function of pancreas
- k. Age-related diseases
- 5. Diseases of the urinary system
 - a. Functions of the kidney
 - b. Diagnostic tests and procedures
 - c. Diseases of the kidney
 - d. Diseases of urinary bladder and urethra
 - e. Age-related diseases
- 6. Diseases and disorders of the reproductive system
 - a. Anatomy of female reproductive system
 - b. Physiology of female reproductive system
 - c. Diagnostic procedures
 - d. Diseases of female reproductive system
 - e. Benign conditions of the breast
 - f. Menstrual disorders
 - g. Disorders of pregnancy
 - h. Anatomy of male reproductive system
 - i. Physiology of male reproductive system
 - j. Diseases of male reproductive system
 - k. Sexually transmitted infections
 - l. Female age-related diseases
 - m. Male age-related diseases
- 7. Diseases of endocrine system
 - a. Introduction
 - b. Structure and function of pituitary gland
 - c. Hormones of anterior pituitary
 - d. Diagnostic procedure for endocrine diseases
 - e. Diseases of the anterior pituitary
 - f. Hypofunction of the posterior pituitary
 - g. Structure and function of thyroid gland
 - h. Diseases of the thyroid gland
 - i. Structure and function of the adrenal glands
 - j. Diseases of the adrenal cortex
 - k. Diseases of the adrenal medulla
 - l. Structure and function of parathyroids
 - m. Diseases of parathyroid gland
 - n. Endocrine function of the pancreas
 - o. Hyposecretion of the pancreas
 - p. Abnormalities of secretion of sex hormones
 - q. Age-related diseases
- 8. Diseases of nervous system and special senses
 - a. Structural organization of nervous system
 - b. diagnostic procedures for nervous system
 - c. Diseases of nervous system
 - d. Infectious diseases of nervous system
 - e. Degenerative neural diseases
 - f. Convulsions
 - g. Developmental errors or malformations
 - h. Brain injury
 - i. Stroke or cerebrovascular accident
 - j. Traumatic disorders
 - k. Brain tumors
 - l. Cranial nerve disease

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- m. Pain
- n. Diseases of special senses:
 eye and ear
- o. Age-related diseases
- 9. Mental illness and cognitive disorders
 - a. Mental illness
 - b. Causes of mental illness
 - c. Diagnostic tests for mental illness
 - d. Disorders of infancy, childhood, or adolescence
 - e. Developmental disorders
 - f. Substance abuse disorders
 - g. Schizophrenia
 - h. Mood disorders
 - i. Anxiety disorders
 - j. Eating disorders
 - k. Personality disorders
 - l. Suicide
 - m. Age-related disorders
- 10. Diseases of musculoskeletal system
 - a. Interaction of bones, joints and muscles
 - b. Structure and function of bones, joints, and muscles
 - c. Diagnostic tests for musculoskeletal diseases
 - d. Diseases of bones
 - e. Diseases of joints
 - f. Diseases of muscles
 - g. Age-related diseases
- 11. Diseases of integumentary system
 - a. Functions of skin
 - b. Structure of skin
 - c. Diagnostic procedures for skin diseases
 - d. Skin lesions
 - e. Epidermoid and pilar cysts
 - f. Drug eruptions
 - g. Infectious skin diseases
 - h. Hypersensitivity or immune disorders of skin
 - i. Benign tumors
 - j. Nonmelanoma skin cancer
 - k. Sebaceous gland disorders
 - l. Pigment disorders
 - m. Skin trauma
 - n. Age-related diseases

Grade Scale

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

Course Evaluation

Final grades will be calculated according to the following criteria:

Chapter exercises/case studies	40%
Unit Exams (3)	45%
Final Exam	15%

Course Requirements

1. Completion of interactive chapter exercises including multiple choice quizzes, true/false quizzes, and fill in the blank.
2. Completion of case studies
3. Completion of unit exams

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4. Completion of final exam

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

Course Schedule

Week of Semester	Topic	Textbook Reference
Week 1	Course Introduction; Introduction to Disease	Chapter 1 p. 2 - 7
Week 2	Immunity, Inflammation, & Immune Disorders	Chapter 2 p. 8 -27
Week 3	Infectious Disease	Chapter 3 p. 28 - 43
Week 4	Neoplasms	Chapter 4 p. 44 - 57
Week 5	Heredity and Disease, Test 1	Chapter 5 p. p 58 - 95
Week 6	Diseases of Cardiovascular System	Chapter 6 p. 96 - 129
Week 7	Diseases of Blood	Chapter 7 p. 130 - 145

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Week 8	Diseases of Respiratory System	Chapter 8 p. 145 - 165
Week 9	Diseases of Digestive System, Test 2	Chapter 9 p. 166 - 199
Week 10	Diseases of Urinary System	Chapter 10 p. 200 - 221
Week 11	Diseases of Reproductive System	Chapter 11 p. 222 - 257
Week 12	Diseases of Endocrine System	Chapter 12 p. 258 - 291
Week 13	Diseases of Nervous System & Special Senses; Test 3	Chapter 13 p. 292 - 321
Week 14	Mental Illness	Chapter 14 p. 322 - 345
Week 15	Diseases of Bones, Joints & Muscles	Chapter 15 p. 346 - 367
Week 16	Diseases of Skin; Final Exam	Chapter 16 p. 368 - 398