

**J. Sargeant Reynolds Community College
Course Content Summary**

Course Prefix and Number: EMS 206

Credits: 3

Course Title: Pathophysiology for the Health Professions

Course Description: Focuses on the pathological processes of disease with emphasis on the anatomical and physiological alterations of the human body systems. Includes diagnosis and management appropriate to the advanced health care provider in and out of the hospital environment. Prerequisites: BIO 145 or BIO 141-142 combination. Lecture 3 hours per week.

General Course Purpose: The purpose of this course is to teach the pathophysiology of disease related to diagnosis and treatment of patients.

Course Prerequisites and Co-requisites:

Prerequisites: BIO 145 or BIO 141-142 combination

Student Learning Outcomes:

Upon completion of the course, student will be able to

- a. Explain composition and function of a cell;
- b. Relate genetic conditions to health issues;
- c. Differentiate types of shock based on manifestations;
- d. Discuss the components of immune response;
- e. Discuss the components of inflammatory response;
- f. Explain the stress response and its effect on the body; and
- g. Relate the concepts of pathophysiology to the disease process.

Major Topics to Be Included:

- a. Cells
 - Correlation of pathophysiology with disease process
 - Basic cellular functions
 - Alterations in cells and tissues
 - The cellular environment
- b. Genetics and Familial Diseases
 - Genetics and disease
 - Analyzing disease risk
 - Combined effects and interaction among risk factors
 - Common familial disease and associated risk factors
- c. Hypoperfusion
 - Pathogenesis
 - Types of shock
 - Multiple organ dysfunction syndrome (MODS)
 - Cellular metabolism impairment
 - Increased gluconeogenesis, gluconeolysis, and lipolysis

- d. Self-Defense Mechanisms
 - Lines of defense
 - Characteristics of the immune response
 - Introduction of the immune response
 - Humoral immune response
 - Cellular interactions in the immune response
 - Fetal and neonatal immune function
 - Aging and the immune response in elderly

- e. Inflammation
 - The acute inflammatory response
 - Mast cells
 - Plasma protein systems
 - Cellular components of inflammation
 - Cellular products
 - Systemic responses of acute inflammation
 - Chronic inflammation responses
 - Local inflammation responses
 - Phases of resolution and repair
 - Aging and self-defense mechanisms

- f. Stress and Disease
 - Concepts of stress
 - Stress responses
 - Stress, coping, and illness interrelationships

- g. Pathophysiology of the Body Systems
 - Respiratory system
 - Cardiovascular system
 - Digestive system
 - Urinary system
 - Neurological system
 - Endocrine system
 - Musculoskeletal system
 - Integumentary system
 - Reproductive system

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