

**STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK**



COURSE OUTLINE

Biology 335 Pathophysiology

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**SCHOOL OF SCIENCE, HEALTH & CRIMINAL JUSTICE
BIOLOGY
May 2015**

- A. **TITLE:** Pathophysiology
- B. **COURSE NUMBER:** BIOL 335
- C. **CREDIT HOURS:** 3
- D. **WRITING INTENSIVE COURSE:** No
- E. **COURSE LENGTH:** 15 weeks
- F. **SEMESTER(S) OFFERED:** Both
- G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**

Online course with lecture presentations

H. CATALOG DESCRIPTION:

This course focuses on the central concepts of cellular and tissue pathophysiology. A systematic survey is undertaken of genetic diseases, cancer, and the diseases of the immune, nervous, endocrine, hematologic, cardiovascular, lymphatic, pulmonary, renal, reproductive, digestive, musculoskeletal and integumentary systems. The etiology, pathophysiology, and clinical manifestations of diseases are discussed.

I. PRE-REQUISITES/CO-REQUISITES:

Pre-requisites: Microbiology (BIOL 209), AND Anatomy and Physiology II (BIOL 218)
OR Animal Anatomy and Physiology (VSCT 144)

J. GOALS (STUDENT LEARNING OUTCOMES):

By the end of this course, the student will be able to:

Course Objectives	Institutional SLO
1. Demonstrate understanding of the pathogenesis of the major diseases of each of the body's organ systems.	2. Critical Thinking
2. Construct characteristic pathophysiology maps of major diseases covered in this course.	2. Critical Thinking 3. Professional Competence
3. Analyze case studies of clients with specific diseases according to their care and treatment implications.	2. Critical Thinking 3. Professional Competence
4. Evaluate the completeness of client teaching materials concerning his or her condition.	2. Critical Thinking 3. Professional Competence
5. Create age and developmentally appropriate client teaching materials for select diseases.	3. Professional Competence

K. TEXTS:

Porth, C. M. 2015. Essentials of Pathophysiology. 4th Edition. Wolters Kluwer.

L. REFERENCES: None

M. EQUIPMENT: Technology enhanced classroom

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS:

- Online Quizzes
- Discussion Board Participation
- Online Pathophysiology Modules
- Mid-term exam
- Final Exam

P. DETAILED COURSE OUTLINE:

I. The Cell

- A. Cellular Biology
- B. Genes and Genetic Diseases
- C. Altered Cellular and Tissue Biology
- D. Fluids and Electrolytes, Acids and Bases

II: Mechanisms of Self-Defense

- A. Innate Defenses: Inflammation
- B. Adaptive Immunity
- C. Hypersensitivities, Infection, and Immune Deficiencies
- D. Stress and Disease

III: Cellular Proliferation: Cancer

- A. Biology of Cancer and Tumor Spread
- B. Cancer Epidemiology, Manifestations, and Treatment
- C. Cancer in Children

IV: The Neurologic System

- A. Structure and Function of the Neurologic System
- B. Pain, Temperature, Sleep, and Sensory Function
- C. Concepts of Neurologic Dysfunction
- D. Alterations of Neurologic Function
- E. Alterations of Neurologic Function in Children

V: The Endocrine System

- A. Mechanisms of Hormonal Regulation
- B. Alterations of Hormonal Regulation

VI: The Hematologic System

- A. Structure and Function of the Hematologic System
- B. Alterations of Hematologic Function
- C. Alterations of Hematologic Function in Children

VII: The Cardiovascular and Lymphatic Systems

- A. Structure and Function of the Cardiovascular and Lymphatic Systems
- B. Alterations of Cardiovascular Function
- C. Alterations of Cardiovascular Function in Children

VIII: The Pulmonary System

- A. Structure and Function of the Pulmonary System
- B. Alterations of Pulmonary Function
- C. Alterations of Pulmonary Function in Children

IX: The Renal and Urologic Systems

- A. Structure and Function of the Renal and Urologic Systems
- B. Alterations of Renal and Urinary Tract Function
- C. Alterations of Renal and Urinary Tract Function in Children

X: The Reproductive Systems

- A. Structure and Function of the Reproductive Systems
- B. Alterations of the Reproductive Systems Including Sexually Transmitted Infections

XI: The Digestive System

A. Structure and Function of the Digestive System

B. Alterations of Digestive Function

C. Alterations of Digestive Function in Children

XII: The Musculoskeletal and Integumentary Systems

A. Structure and Function of the Musculoskeletal System

B. Alterations of Musculoskeletal Function

C. Alterations of Musculoskeletal Function in Children

D. Structure, Function, and Disorders of the Integument

E. Alterations of the Integument in Children

Q. LABORATORY OUTLINE: None