BIOL 300: HUMAN PATHOPHYSIOLOGY & PHARMACOLOGY

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	4
Hours:	4 lecture per week (48 total per quarter)
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

Student Learning Outcomes

- The student will be able to demonstrate a working knowledge of the implications for dental hygiene care for common physiological diseases or conditions and cite the appropriate modifications to care.
- The student will be able to research and report on the indications for the use of a commonly prescribed drug for given physiological diseases or conditions.

Description

The basis of human disease and its management relevant to the practice of health care professionals. The etiology and pathogenesis of diseases are discussed along with the application of diagnostic procedures and patient care. The pathology and underlying principles of the human systems are presented, along with characteristics of typical drugs, side effects, cautions, and interactions. This is an upper division General Education course, intended for students in the Dental Hygiene Baccalaureate Degree Program; enrollment is limited to students accepted in the program.

Course Objectives

The student will be able to:
A. Analyze the processes that lead to cell injury and describe responses for healing, including inflammation and fever.
B. Analyze the immune response and evaluate some diseases that affect immunity.
C. Describe and distinguish the pathophysiology of the cardiac, respiratory, endocrine, gastrointestinal, genitourinary, hematologic and oncologic diseases, neurologic, central nervous system and psychiatric/behavioral disorders.
D. Assess the pharmacologic agents used to treat various diseases, including the effects, side effects, drug interactions and modifications to care.
E. Demonstrate a working knowledge of the most commonly prescribed medications and the implications for patient care.

Course Content

A. Concepts of the pathologic process
1. Etiology
2. Resistance and susceptibility
3. Pathogenesis
4. Disease manifestations
5. Reversible cell injury
6. Irreversible cell injury
B. Inflammation and repair
1. Acute inflammatory response
2. Cellular components of the acute inflammatory response
3. Chemical mediators of inflammation
4. Systemic manifestations of inflammation
5. Drugs used in the management of inflammatory diseases
C. Immunologic diseases
1. Immune system and response
2. Allergy
3. Rheumatologic and connective tissue disorders
4. AIDS, HIV
5. Autoimmune diseases
6. Drugs used in the management of immunologic diseases
7. Treatment considerations and modifications to patient care
D. Cardiovascular disease
1. Hypertension
2. Ischemic heart disease
3. Cardiac dysrhythmias
4. Heart defects and disorders
5. Drugs used in the management of cardiac diseases
6. Treatment considerations and modifications to patient care
E. Pulmonary diseases
1. Upper respiratory diseases
2. Lower respiratory diseases
3. Obstructive pulmonary diseases
4. Drugs used in the management of pulmonary diseases
5. Treatment considerations and modifications to patient care
F. Endocrine diseases
1. Diabetes mellitus
2. Thyroid diseases
3. Adrenal insufficiency
4. Pregnancy
5. Drugs used in the management of endocrine diseases/disorders
6. Treatment considerations and modifications to patient care
G. Gastrointestinal diseases
1. Liver disease
2. Gastroesophageal reflux
3. Peptic ulcers
4. Crohn disease
5. Inflammatory bowel disease
6. Drugs used in the management of gastrointestinal diseases
7. Treatment considerations and modifications to patient care
H. Genitourniary disease
1. Chronic renal failure and dialysis
2. Renal transplant
3. Sexually transmitted diseases
4. Drugs used in the management of genitourniary diseases
5. Treatment considerations and modifications to patient care
I. Hematologic and oncologic diseases
1. Hematopoietic system
2. Pathogenesis of cancer
a. Types of tumors: benign, premalignant, malignant
b. Staging of tumors
c. Treatments for cancer
3. Disorders of the red blood cells
4. Disorders of the white blood cells
5. Bleeding disorders

6. Drugs used in the management of hematologic and oncologic diseases
7. Treatment considerations and modifications to patient care
J. Neurologic disorders and central nervous system disorders
1. Epilepsy
2. Parkinson disease
3. Bells palsy
4. Dementia and Alzheimer's
5. Stroke
6. Drugs used in the management of neurologic diseases
7. Treatment considerations and modifications to patient care
K. Psychiatric and behavioral disorders
1. Anxiety
2. Depression
3. Eating disorders
4. Biopolar disorder
5. Schizophrenia
6. Drugs used in the management of psychiatric and behavioral disorders
7. Treatment considerations and modifications to patient care

Lab Content

Not applicable.

Special Facilities and/or Equipment

A. Multi-media classroom.
B. Computer with internet access when taught online or as a hybrid course.

Method(s) of Evaluation

Critical thinking patient case study exercises. The patient case studies will require research, analysis and in depth study of diseases and medications to create an evidence based treatment plan for a given patient
Application of Evidence Based Practice (EBP) principles that include: using the highest quality recent research, applying professional knowledge and skills, collaboration to arrive at patient-centered decisions, and evaluating outcomes
Critical writing assignments on focused clinical questions
Objective examinations

Method(s) of Instruction

Lecture
Online presentation of course material
Cooperative learning exercises - patient case studies
Electronic discussions/chat

Representative Text(s) and Other Materials

DeLong, Leslie, and Nancy Burkhart. General and Oral Pathology for the Dental Hygienist, 3rd ed.. 2019.

Lexi-Comp. Drug Information Handbook, USA, 29th ed.. 2020.

Little, Falace, Miller, and Rhodus. Dental Management of the Medically Complex Patient, 9th ed.. 2017.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

A. Web-based research of diseases and related medications.
B. Submission of written reports using current evidence based scientific literature.
C. Weekly critical thinking projects on complex patient case studies with different diseases and pharmacological agents.
D. Weekly reading assignments in the textbook and current scientific journals of approximately 30-50 pages.

Discipline(s)

Biological Sciences or Dental Technology or Health or Nursing