PHT 55B: PHARMACOLOGY B

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	3
Hours:	3 lecture per week (36 total per quarter)
Prerequisite:	PHT 55A.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

Student Learning Outcomes

- Describe the basic anatomy and physiology of body tissues and membranes,integumentary, and skeletal systems
- Identify common pathophysiology of body tissues and membranes, integumentary,muscular,skeletal and prescription/non-prescription remedies,side effects and dosages

Description

Introduction to the general principals of pharmacology, with a focus on the anatomy, physiology and application of pharmacological principles pertaining to the circulatory, immune and lymphatic, digestive, respiratory, and integumentary systems. Drugs are discussed related to their mechanism of action, indications, adverse effects, contraindications, precautions and drug interactions. Intended for students in the Pharmacy Technician Program; enrollment is limited to students accepted in the program.

Course Objectives

The student will be able to:
A. Describe the basic anatomy and physiology, pathology and disease states of the circulatory system and explain all components of pharmacology of their most commonly prescribed medications, including dose, side effects, adverse effects, monitoring, contraindications, and interactions.
B. Describe the basic anatomy and physiology, pathology and disease states of the immune and lymphatic system and explain all components of pharmacology of their most commonly prescribed medications, including dose, side effects, adverse effects, monitoring, contraindications, and interactions.
C. Describe the basic anatomy and physiology, pathology and disease states of the digestive system and explain all components of pharmacology of their most commonly prescribed medications, including dose, side effects, adverse effects, monitoring, contraindications, and interactions.
D. Describe the basic anatomy and physiology, pathology and disease states of the respiratory system and explain all components of pharmacology of their most commonly prescribed medications, including dose, side effects, adverse effects, monitoring, contraindications, and interactions.
E. Describe the basic anatomy and physiology, pathology and disease states of the integumentary system and explain all components of pharmacology of their most commonly prescribed medications, including dose, side effects, adverse effects, monitoring, contraindications, and interactions.
F. Recall and identify the pharmacological components of the top 101-200 most commonly prescribed drugs.

Course Content

A. The circulatory system
1. Cardiac physiology and pathology
a. Cardiac function
b. Main diseases of the heart
c. Treatment of heart failure
1) Chronic heart failure (CHF)
2. Pharmacology of the heart
a. Drug therapy options
1) Adrenergic beta blockers
2) Vasodilators
3) Diuretics
4) Cardiac glycosides
b. Non-pharmacological options
3. Antiarrhythmic drugs
a. Types of arrhythmias
1) Class 1 antiarrhythmic drugs: sodium channel blockers
2) Class 2 antiarrhythmic drugs: beta blockers
3) Class 3 antiarrhythmic drugs: potassium channel blockers
4) Class 4 antiarrhythmic drugs: calcium channel blockers
5) Special considerations and preferred therapy for selected arrhythmias
4. Antianginal drugs
a. Classification of angina pectoris
b. Drug therapy options
1) Nitrates
2) Beta-adrenergic blocking drugs
3) Calcium channel blockers
4) Preferred therapy for treatment of angina pectoris
5) Non-pharmacological options
c. Special considerations
d. Incompatibilities and drug interactions
5. Antihypertensives
a. Physiological factors controlling blood pressure
b. Various drugs used to control blood pressure
1) Diuretics
2) Vasodilators
3) Angiotensin II antagonists
4) Drugs that reduce sympathetic activity
5) Treatment of hypertensive crisis
c. Non-pharmacological options
d. Patient education and monitoring
5. Anticoagulants and coagulants
a. Coagulation cascade
b. Anticoagulant mechanisms of action
c. Special considerations and contraindications with anticoagulants
d. Drug options
1) Heparins
2) Oral anticoagulant: warfarin
3) Antiplatelet drugs
4) Fibrinolytic/thrombolytic drugs
e. Monitoring coagulation
f. Coagulants and hemostatics
6. Hypolipidemic drugs
a. Atherosclerosis and arterial disease
b. Drug options
1) Hypolipidemic drugs

2) Antilipemic drugs
3) Other hypolipidemic drugs
c. Contraindications and drug interactions
d. Non-pharmacological options
7. Antianemics
a. Causes of anemia
b. Types of anemia
1) Iron deficiency anemia
2) Cobalamin deficiency anemia
3) Folic acid deficiency
c. Drug options for the treatment of various anemia
d. Erythropoietin stimulating agents
B. The immune and lymphatic system
1. Role of the immune system
2. Infectious disease
3. Pharmacology of infectious diseases
a. Morphology of bacteria
b. Antibacterial agents
1) Penicillins
2) Cephalosporins
3) Aminoglycosides
4) Tetracyclines
5) Sulfonamides
6) Macrolides
7) Fluoroquinolones
8) Miscellaneous antimicrobial drugs
9) Preferred therapy for selected infections
c. Fungal and viral infections
1) Fungal infections
a) Antifungal drugs
2) Viral infections
a) Antiviral drugs
b) Drug interactions
d. Parasitic infections
e. Protozoal infections
1) Malaria
2) Dysentery
3) Other protozoal infections
f. Anthelmintic drugs
g. Antiprotozoal drugs
4. Immunopharmacology
a. The immune system
b. Immunosuppressive drugs
c. Immunomodulating drugs
5. Allergy
a. Action of histamine
b. Mast cell release inhibitors
c. Antihistamine - H1 antagonists
d. Anti-allergic agents
C. The digestive system
1. Anatomy and physiology of the GI system
2. GERD and ulcer production
3. Emesis
4. Bowel function and intestinal motility
5. Pharmacology of the GI tract
a. Drug therapy options
1) Acid neutralization (antacids)
2) Histamine 2 blockers
3) Proton pump inhibitors
4) Sucralfate
5) Miscellaneous agents
6) Antidiarrheals
7) Laxatives and cathartics
b. Nutritional therapy
1) Nutrients
2) Vitamins
a) Fat soluble vitamins
b) Water soluble vitamins
3) Body water
4) Minerals
a) Major minerals
b) Trace elements
5) Electrolyte balance
6) Nutritional care
a) Enteral nutrition
b) Hyperalimentation
c) Total parenteral nutrition
D. The respiratory system
1. Anatomy and physiology of the respiratory system
2. Respiratory diseases
a. Asthma
b. COPD
c. Emphysema
d. Chronic bronchitis
e. Allergic reaction
f. Drugs that affect the respiratory system
1) Bronchodilators
2) Mucolytics and expectorants
3) Anti-inflammatory agents
E. The integumentary system
1. Introduction to the integumentary system
2. Drugs affecting the integumentary system
a. Treatment of dermal fungal infections
b. Treatment of decubitus ulcers and burns
c. Treatment of acne
d. Treatment of eczema
e. Treatment of lice and scabies
F. Identify the pharmacological components of the top 101-200 most commonly prescribed drugs in the current year; generic name, brand name, classification and special considerations

Lab Content

Not applicable.

Special Facilities and/or Equipment

None required.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Objective exams
Oral presentations
Cooperative learning assignments
Research papers
Case studies
Quizzes

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Lecture presentations
Classroom discussion on lecture content
Individual or group presentations regarding research topics followed by in-class discussion and evaluation
Small group recitation sessions to discuss case studies with an emphasis on collaborative learning

Representative Text(s) and Other Materials

Hitner, Henry, and Barbara Nagle. Pharmacology: An Introduction, 7th ed.. 2017.

Ballington, Don, and Robert Anderson. Pharmacy Practice for Technicians, 6th ed.. 2017.

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

A. Weekly reading assignments from text and outside sources ranging from 20-30 pages per week.
B. Review of handouts, lecture notes and relevant reading material.
C. Research and planning of individual projects.

Discipline(s)

Pharmacy Technology