San Bernardino Valley College

# Course Outline for NURS 108
# PHARMACOLOGY FOR NURSES

I. CATALOG DESCRIPTION

NURS 108, Pharmacology for Nurses
1 hour lecture = 1 unit
Fundamental principles of pharmacology that govern the action of drugs on the human body. Overview of major drug classifications in relation to the physiological and developmental variables. Includes role of drug therapy in assisting clients attain and maintain their optimum level of wellness.

SCHEDULE DESCRIPTION

Fundamental principles of pharmacology that govern the action of drugs on the human body.

PREREQUISITE: NURS 102 with a grade of C or better

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: One

III. EXPECTED OUTCOMES FOR STUDENTS

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

A. Explain how drugs are absorbed, distributed, biotransformed, and eliminated from the body.
B. Discuss how the physiological and developmental variables may impact the pharmacokinetics of drugs.
C. Explain how the normal physiological changes of aging affect the pharmacokinetics of drugs.
D. Explain theories of how drugs produce their effects in the body; i.e. receptor theory, drug enzyme interaction theory, and physiochemical theory.
E. State how dosage scheduling is determined and handled clinically.
F. Explain the mechanisms involved with drug interactions and describe the role of the nurse in managing these interactions.
G. Distinguish between the physiological mechanisms involved with drug allergy/anaphylaxis and describe appropriate nursing management.
H. Identify the mechanism of action, clinical uses, pharmacokinetics, possible adverse reactions, and methods of safe administration for selected classes of drugs.
I. Contrast appropriate variations in drug administration, problems associated with drug therapy, and criteria for evaluation of drug therapy in elder adults.

IV. CONTENT

A. Pharmacokinetics and pharmacodynamics
    1. Transport mechanisms
    2. Absorption (factors affecting), distribution, metabolism, excretion
    3. 3 theories of action
    4. Therapeutic range
    5. Pharmacokinetics in the Elderly
B. Adverse Drug Reactions/Interactions
    1. Additive/synergistic/antagonistic interactions

2. Drug tolerance
3. Drug allergy
4. Anaphylactic shock

C. Antibiotics
1. Types
2. Mechanism of action
3. Adverse reactions

D. Gastrointestinal drugs
1. Antidiarrheal
2. Cathartic/increase motility
3. Antiulcer

E. Respiratory drugs
1. Anti-inflammatory
2. Beta Adrenergic
3. Methylxanthine

F. Antihypertensives/Cardiac drugs
1. Adrenergic blockers
2. Vasodilators
3. Ganglionic Blockers
4. Calcium channel blockers
5. Angiotensin-Converting Enzyme Inhibitors

G. Diuretics
1. Thiazides
2. Loop diuretics
3. Potassium-sparing drugs
4. Osmotic agents
5. Carbonic anhydrase inhibitors

H. Narcotic Analgesics
1. Mechanism of action
2. Tolerance, dependence, addiction

I. Sedatives, hypnotics
1. Barbiturates
2. Benzodiazepines
3. Other

J. Chemotherapeutics agents
1. Alkylating agents
2. Antimetabolites
3. Antibiotics
4. Mitotic inhibitors
5. Hormonal agents
6. Toxic effects

V. METHODS OF INSTRUCTION

A. Lecture
B. Discussion
C. Readings, handouts
D. Media
E. Written Assignments
F. Case analysis

VI. TYPICAL ASSIGNMENTS

A. Complete set of written study questions following required readings.

VII. EVALUATION

A. Methods of evaluation
1. Examinations: objective
Typical examination question:
Which of these is true about urinary excretion of drugs?
a. Non-ionized drugs are more readily excreted
b. Alkaline urine favors the excretion of weak base drugs
c. Acidic urine allows acid drugs to remain non-ionized and more slowly excreted
d. Changing the pH of urine has no effect on drug excretion
2. Written study questions

B. Frequency of evaluation
1. Weekly quizzes and final exam
2. Completion of written study questions with correct information as scheduled

VIII. TYPICAL TEXT(S)

Deglin, J. and A. Vallerand, Davis' Drug Guide for Nurses, 5th ed., Philadelphia: F.A. Davis Co., 1997.

Kee, J.L. and E. Hayes, Pharmacology: a Nursing Process Approach, Philadelphia: W.B. Saunders Co., 1997.

Lehne, R., et.al., Pharmacology for Nursing Care, 3rd ed., W.B. Saunders Co., 1998.

IX. OTHER SUPPLIES REQUIRED OF STUDENTS: none