

HTEC-1610: INTRODUCTION TO PHARMACOLOGY

Cuyahoga Community College

Viewing: HTEC-1610 : Introduction to Pharmacology

Board of Trustees:

January 2024

Academic Term:

Fall 2024

Subject Code

HTEC - Health Technology

Course Number:

1610

Title:

Introduction to Pharmacology

Catalog Description:

Acquaint students with general principles and concepts of pharmacology. Provides understanding of indications, uses, doses and contraindications associated with individual drugs as well as mechanisms of drug administration and therapeutic management of patients with specific disease processes. Review of basic mathematics related to correct calculation of drug dosages and preparation of solutions.

Credit Hour(s):

2

Lecture Hour(s):

2

Lab Hour(s):

0

Other Hour(s):

0

Requisites

Prerequisite and Corequisite

ENG-0995 Applied College Literacies, or appropriate score on English Placement Test. and MATH-0915 Basic Arithmetic or qualified Math Placement.

Note: ENG-0990 Language Fundamentals II taken prior to Fall 2021 will also meet prerequisite requirements.

Outcomes

Course Outcome(s):

Summarize the formulation and regulation of medications.

Objective(s):

1. Discuss the role of the DEA, FDA, and Controlled Substance Act.
2. Identify generic versus trade names.
3. Identify drug sources and chemical constituents of drugs.
4. Discuss the legal aspects of medication orders.

Course Outcome(s):

Discuss the responsibility of the health care professional in the general administration of medications.

Objective(s):

1. State the different drug preparations.
2. Relate factors which influence the absorption and action of drugs in the body.
3. Identify the proper routes of administration.
4. Identify approved abbreviations.
5. Discuss the legal aspects of medication orders.
6. Identify important aspects of patient teaching when undergoing drug therapy.
7. Describe the impact of medication therapy on older adults.

Course Outcome(s):

Explain drugs in each of the major categories: vitamins, minerals, and electrolytes; and immunizations, anti-infectives, antineoplastics, psychotropics; and narcotic and nonnarcotic analgesics.

Objective(s):

1. Discuss the therapeutic use of a given drug from the above categories.
2. Identify the main side effects and adverse reactions of a given drug from the above categories.

Course Outcome(s):

Explain drugs for each of the body systems: autonomic nervous, central nervous, urinary, respiratory, digestive, cardiac, endocrine and reproductive system.

Objective(s):

1. Discuss the therapeutic use of a given drug for the above body systems.
2. Identify the main side effects and adverse reactions of a given drug for the above body systems.

Course Outcome(s):

Calculate accurate medication conversions and dosages

Essential Learning Outcome Mapping:

Quantitative Reasoning: Analyze problems, including real-world scenarios, through the application of mathematical and numerical concepts and skills, including the interpretation of data, tables, charts, or graphs.

Objective(s):

1. Perform conversions between metric and US measurement systems.
2. Perform medication dosage calculations.
3. Calculate pediatric dosages.

Methods of Evaluation:

1. Quizzes
2. Unit Tests
3. Oral Presentation
4. Classroom written assignments
5. Clinical conversions and dosages calculation assignments/tests
6. Final examination

Course Content Outline:

1. Pharmacologic principles
 - a. DEA, FDA, and Controlled Substance Act
 - b. Generic versus trade names
 - c. Drug sources and chemical constituents of drugs
 - d. Legal aspects of medication orders
2. Responsibility of the health care professional in the general administration of medications

- a. Drug preparations
- b. Absorption and action of drugs in the body
- c. Routes of administration
- d. Medication conversions
- e. Abbreviations
- f. Patient teaching and drug therapy
- g. Medication therapy for older adults
- 3. Calculation of conversions and dosages
 - a. Systems of measurement
 - i. Metric system
 - ii. US measurement system (household system)
 - b. Calculate conversions of units
 - c. Calculation of dosages
 - i. Dosage calculation formula
 - ii. Ratio and proportion
 - iii. Pediatric dosages
 - d. Prevention of medication errors
- 4. Major drug categories:
 - a. Vitamins
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
 - b. Minerals
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
 - c. Electrolytes
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
 - d. Immunizations
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
 - e. Anti-infectives
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
 - f. Antineoplastics
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
 - g. Psychotropics
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
 - h. Narcotic analgesics
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
 - i. Nonnarcotic analgesics
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
 - j. Autonomic nervous system drugs
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
 - k. Central nervous system drugs
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
 - l. Urinary system drugs
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
 - m. Respiratory system drugs
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
 - n. Gastrointestinal drugs
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions

- o. Cardiovascular drugs
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
- p. Endocrine system drugs
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions
- q. Reproductive system drugs
 - i. Therapeutic use
 - ii. Main side effects and adverse reactions

Resources

Holland, Adams, Brice. *Core Concepts In Pharmacology*. 5th. Boston: Pearson, 2017.

Colbert, Woodrow. *Essentials of Pharmacology for Health Professions*. 9th. Boston: Cengage, 2022.

Woods. *Nursing 2024 Drug Handbook*. Philadelphia: Lippincott, 2023.

Resources Other

Internet topic related sites.

<https://www.cdc.gov/drugresistance/index.html> (<https://www.cdc.gov/drugresistance/>)

<https://www.drugabuse.gov/drugs-abuse/opioids/opioid-summaries-by-state> (<https://www.drugabuse.gov/drugs-abuse/opioids/opioid-summaries-by-state/>)

Local newspaper articles.

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