



**COWLEY COLLEGE
& Area Vocational Technical School**

COURSE PROCEDURE FOR

**PHARMACOLOGY
ALH 5230 3 Credit Hours**

Student Level:

This course is open to students on the college level in either the Freshman or Sophomore year.

Catalog Description:

ALH5230 - PHARMACOLOGY (3 hrs)

This course will provide the basic pharmacology principles with an emphasis on a broad discussion of the primary medications in each of the pharmaceutical classification categories. This course is designed to meet the pharmacology needs of students enrolled in nursing programs, pre-allied health majors and would be beneficial for others in the allied health field who desire a greater understanding of pharmacological principles and agents.

Prerequisites:

BIO 4150 Anatomy and Physiology or ALH 5235 Allied Healthcare Provider Anatomy and Physiology

Controlling Purpose:

This course is designed to meet the pharmacology needs of students enrolled in nursing programs, pre-allied health majors and would be beneficial for others in the allied health field who desire a greater understanding of pharmacological principles and agents.

Learner Outcomes:

Upon completion of the course, the student will develop competencies in the principles of pharmacology and have a greater understanding of medications in each of the pharmaceutical classification categories.

Units Outcomes and Clock Hours of Instruction for Core Curriculum:

The following outline defines the minimum core content not including the final examination period. Instructors may add other material as time allows.

Evaluation Key:

- A = All major and minor goals have been achieved and the achievement level is considerably above the minimum required for doing more advanced work in the same field.
- B = All major goals have been achieved, but the student has failed to achieve some of the less important goals. However, the student has progressed to the point where the goals of work at the next level can be easily achieved.

- C = All major goals have been achieved, but many of the minor goals have not been achieved. In this grade range, the minimum level of proficiency represents a person who has achieved the major goals to the minimum amount of preparation necessary for taking more advanced work in the same field, but without any major handicap of inadequacy in his background.
- D = A few of the major goals have been achieved, but the student's achievement is so limited that he is not well prepared to work at a more advanced level in the same field.
- F = Failing, will be computed in GPA and hours attempted.
- N = No instruction or training in this area.

UNIT 1: FOUNDATIONS OF PHARMACOLOGY						
Outcomes: The student will gain an understanding of the various aspects that affect human pharmacology.						
A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Define basic pharmacology terminology.
						Discuss the metric and apothecary systems used in pharmacology.
						Review the pertinent anatomy and physiology of each major body system.
						Discuss the general properties of medications.
						List the major properties of an ideal medication.
						Discuss responsibilities regarding the administration of medications.
						Explain the role of patient education in medication administration.
						Identify authoritative and legislative sources for drug information.
						Describe the regulation and schedules of medications.
						Discuss investigational medications including the Food and Drug Administration (FDA) approval process and the FDA classifications for newly approved drugs.
						Demonstrate an understanding of drug interactions.
						Discuss idiosyncratic drug variations.
						Differentiate between physical and psychological dependence.
						Discuss special considerations in drug treatment with regard to pregnancy, breast feeding and geriatric patients.
						Explain drug therapy in pediatric patients.
						Describe the risks and benefits of herbal supplements.

UNIT 2: PHARMACOKINETICS AND PHARMACODYNAMICS

Outcomes: The student will gain an understanding of how medications enter the body, cause pharmacological effects and exit the body.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain and differentiate the four processes of pharmacokinetics.
						Calculate drug half-life.
						Discuss the mechanisms of pharmacodynamics.
						Determine the therapeutic index for various medications.

UNIT 3: DRUG CALCULATIONS

Outcomes: The student will gain a basic understanding of how to calculate pharmacological doses.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Calculate intravenous flow rates.
						Calculate medication infusion flow rates.
						Calculate intravenous medication dosages.
						Given a medication order, calculate the proper amount of medication to be administered to the patient.

UNIT 4: UNDERSTANDING THE PHARMACEUTICAL AGENTS BY CLASSIFICATION

Outcomes: The student will gain an understanding of medications by classification.

A	B	C	D	F	N	Specific Competencies
						Discuss the pharmacological properties including pharmacokinetics, pharmacodynamics, classification, clinical indications, medication administration, side effects, adverse reactions, dosages, contraindications, interactions, overdose, and toxicity of the common medications in each of the following classifications:
						Muscarinic agonists and antagonists.
						Cholinesterase inhibitors.
						Neuromuscular blocking agents and ganglionic blocking agents.
						Indirect acting anti-adrenergic agents.
						Medications for Parkinson's disease.

						Medications for Alzheimer’s disease.
						Medications for epilepsy.
						Anti-spasmodics.
						Local and general anesthetics.
						Opioid analgesics and antagonists.
						Non-opioid analgesics.
						Psychotherapeutic medications to include antipsychotic, antidepressant, mood stabilizing and sedative-hypnotic agents.
						Diuretics.
						Cardiovascular medications to include calcium channel blockers, antihypertensive agents, medications used to treat heart failure, antidysrhythmic agents, cholesterol lowering agents, antianginal medications, anticoagulants, fibrinolytics, antiplatelet medications, and hematopoietic growth factors.
						Endocrine medications utilized to treat the following conditions: diabetes mellitus, thyroid, pituitary and adrenal disorders, and androgens.
						Women’s health medications to include estrogens, progestins, birth control and medications affecting uterine health.
						Childhood immunizations.
						Immunosuppressants.
						Respiratory medications to include antihistamines, medications for reactive lung disease, and medications for the treatment of allergic rhinitis, cough and colds.
						Nonsteroidal anti-inflammatory medications and acetaminophen.
						Glucocorticoids.
						Medications used to treat rheumatoid arthritis and gout.
						Gastrointestinal medications to include those used to treat peptic ulcer disease, motion sickness and irritable bowel syndrome and laxatives, emetics, and antidiarrheal agents.
						Medications for the eyes, ears and skin.
						Anticancer medications.
						Antimicrobial, antifungal and antiviral agents.

Projects Required:

Determined and assigned by the instructor.

Textbook:

Contact Bookstore for current textbook.

Materials/Equipment Required:

Calculator

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Criterion Based Evaluation:

See Unit Outcomes and Competencies.

Maximum class size:

Based on classroom occupancy

Course Time Frame:

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

Refer to the following policies:

[402.00 Academic Code of Conduct](#)

[263.00 Student Appeal of Course Grades](#)

[403.00 Student Code of Conduct](#)

Disability Services Program:

Cowley College, in recognition of state and federal laws, will accommodate a student with a documented disability. If a student has a disability which may impact work in this class and which requires accommodations, contact the Disability Services Coordinator.