



# HITT 2430 - Pathophysiology and Pharmacology Course Syllabus

## Description

Study of the pathology and general health management of diseases and injuries across the life span. Topics include etiology, symptoms, and the physical and psychological reactions to diseases and injuries. A study of drug classifications, actions, therapeutic uses, adverse effects, routes of administration, and calculation of dosages.

**Prerequisites** Students should have completed and passed courses in basic algebra, medical terminology, anatomy and physiology, and basic computer skills.

## Semester Offered

Fall and Spring semesters

**Credits** 4

**Lecture Hours** 4

**Lab Hours** 0

**Extended Hours** 0

**Contact Hours** 64

**State Approval Code** 51.0707

**Instructor Name** Diane Hawkins

**Semester/Year** Fall 2024

## Meeting Time and Location

Online

## Alternate Operations During Campus Closure

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Panola College to move to altered operations. During this time, Panola College may opt to continue delivery of instruction through methods that include, but are not limited to: online learning management system (CANVAS), online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor Panola College's website ([www.panola.edu](http://www.panola.edu)) for instructions about continuing courses remotely, CANVAS for each class for course-specific communication, and Panola College email for important general information.

## Student Basic Needs

Unexpected circumstances may arise, but Panola College offers various resources to support students. If you need mental health services or are facing challenges with transportation, affording class materials and supplies, or accessing food regularly—issues that may impact your class performance—please visit [panola.edu/resources](http://panola.edu/resources).

## Class Attendance

Regular and punctual attendance of classes and laboratories is required of all students. When a student has been ill or absent from class for approved extracurricular activities, he or she should be allowed, as far as possible, to make up for the missed work. If a student has not actively participated by the census date, they will be dropped by the instructor for non-attendance. This policy applies to courses that are in-person, online, hybrid, and hyflex.

Attendance in online courses is determined by submission of an assignment or participation in an activity. According to federal guidelines, simply logging into a distance learning course without participating in an academic assignment does not constitute attendance. Distance learning is defined as when a majority (more than 50%) of instruction occurs when the instructor and students are in separate physical locations. Students must engage in an academic activity prior to the course census date.

When an instructor feels that a student has been absent to such a degree as to invalidate the learning experience, the instructor may recommend to the Vice President of Instruction that the student be withdrawn from the course. Instructors may seek to withdraw students for non-attendance after they have accumulated the following number of absences:

Fall or spring semesters:

3 or more class meeting times per week - 5 absences

2 class meeting times per week - 3 absences

1 class meeting per week - 2 absences

The student is responsible for seeing that he or she has been officially withdrawn from a class. A student who stops attendance in a class without officially withdrawing from that class will be given a failing grade; consequently, the student must follow official withdrawal procedures in the Admissions/Records Office.

Please note: Health Science and Cosmetology courses may require more stringent attendance policies based on their accreditation agencies. Please see the addendum and/or program handbook for further information concerning attendance.

### **Pregnant/Parenting Policy**

Panola College welcomes pregnant and parenting students as a part of the student body. This institution is committed to providing support and adaptations for a successful educational experience for pregnant and parenting students. Students experiencing a need for accommodations related to pregnancy or parenting will find a Pregnancy and Parenting Accommodations Request form in the Student Handbook or may request the form from the course instructor.

### **Instructional Goals and Purposes**

The purpose of this course is to identify specific common human diseases, disorders, and their medical and surgical therapies. This course introduces allied health students to the fundamentals of, and correlations among, anatomy and physiology, pharmacology, and pharmacology practices. The main objective is to provide students with an accessible and meaningful approach to pharmacology and to apply basic concepts to identifying common medications and their administration.

### **Learning Outcomes**

1. Identify specific common human diseases
2. Identify specific common human disorders
3. Identify specific medical and surgical therapies for common human diseases and disorders
4. Understand drug classifications, actions, therapeutic uses, adverse effects, routes of administration have and calculation of dosages.

### **Specific Course Objectives (includes SCANS)**

After studying all materials and resources presented in the course, the student will be able to have an understanding and identify the following:

1. **Introduction to Pharmacology** (scans reference)
  - a. Define the terms pharmacology and drug.
  - b. Discuss the major advancements in medicine throughout the history of pharmacology.
  - c. Understand ways in which drugs are classified.
  - d. Understand the importance of having a working knowledge of the drugs used in the workplace.
  - e. Obtain strategies for learning pharmacology.
  - f. Discuss the importance of being able to communicate effectively with the proper understanding or use of medical terminology.

- g. Describe the Kolb's Learning Styles Inventory and its significance to an individual's learning and processing of information.
  - h. Learn where to obtain drug information from reliable resources and how to use this information in a health information toolkit.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1bii, 1bv, 1bvi, 1ci, 1ciii, 1civ**  
**SCANS Workplace Skills 2bii, 2biii, 2ci, 2cii, 2ciii, 2civ, 2dii, 2ei**
2. **Pharmaceutical Development** (scans reference)
- a. Describe the various sources of drugs.
  - b. Understand common drug nomenclature including chemical name, generic name, and brand name.
  - c. Explain the process and phases for new drug approvals.
  - d. Understand the Food and Drug Administration's role in drug development and in the packaging, labeling, marketing, and advertising of medications.
  - e. Explain the importance of drug-package inserts, black box warnings, and medication guide.
  - f. Understand the similarities and differences among the drug classifications, including prescription medications, over-the-counter medications, behind-the-counter medications, and dietary supplements.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1bii, 1biv, 1bv, 1bvi, 1ci, 1civ, 1cv**  
**SCANS Workplace Skills 2ai, 2biii, 2ci, 2cii, 2ciii, 2civ, 2di**
3. **Medications and the Body** (scans reference)
- a. Distinguish the classifications for uses of drugs, including therapeutic agents, pharmacodynamic agents, diagnostic agents, prophylactic agents, and destructive agents.
  - b. Understand the control and feedback mechanisms of homeostasis.
  - c. Describe factors that influence absorption, distribution, metabolism, and excretion of drugs from the body.
  - d. Distinguish routes of administration and common dosage formulations.
  - e. Understand the relationship between drug dosage and a patient's unique drug response factors, including age, weight, gender, nutritional status, and liver and kidney functions.  
**SCANS Basic Skills 1ai, 1aii, 1aiii, 1av, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1civ**  
**SCANS Workplace Skills 2bi, 2bii, 2biii, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2cv**
4. **The Allied Health Professional** (scans reference)
- a. Differentiate between a health professional and an allied health professional.
  - b. List the two types of allied health professionals and their distinct roles in healthcare delivery.
  - c. Discover the various career positions that fall under the allied health umbrella.
  - d. Describe the personal qualities of a successful allied health professional.
  - e. State the education, training, and legal requirements of an allied health professional.
  - f. Define scope of practice and examine the general clinical and nonclinical responsibilities of an allied health professional.
  - g. Define accreditation and identify some of the major accreditation bodies in allied health.
  - h. Identify the factors that contribute to the growth of the allied health field.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1bi, 1bii, 1biv, 1bv, 1ci, 1cii, 1ciii, 1civ**  
**SCANS Workplace Skills 2ai, 2aii, 2aiii, 2bi, 2bii, 2biii, 2biv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2di, 2dii**
5. **Prescriptions and Medication Orders** (scans reference)
- a. Distinguish between a prescription and a medication order.
  - b. Identify the various types of components of prescriptions and medication orders.
  - c. Understand common medical abbreviations, acronyms, and symbols used in prescriptions and medication orders.
  - d. Identify the challenges of reading prescribers' orders.
  - e. Describe advantages and disadvantages of using a computerized provider order entry system.
  - f. Understand the information on a prescription medication label.  
**SCANS Basic Skills 1ai, 1aii, 1aiii, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2biii, 2ci, 2cii, 2ciii, 2civ, 2di, 2dii, 2ei**
6. **Pharmacy Measurements and Calculations** (scans reference)
- a. Understand fractions, decimals, ratios, percentages, and proportions, and be able to convert between these different types of numbers.
  - b. Perform basic mathematical operations (addition, subtraction, multiplication, division) with fractions and decimal numbers.

- c. Develop a familiarity with the different number systems and measurement systems that are currently used in medicine and pharmacy.
- d. Be able to perform conversions of values from other measurement systems to the metric system.
- e. Use the ratio-proportion method and the dimensional analysis method to perform simple pharmacy calculations.

**SCANS Basic Skills 1aiii, 1biv, 1bv, 1bvi**

**SCANS Workplace Skills 2ci, 2cii, 2ciii, 2civ, 2di, 2dii**

**7. Medication Safety (scans reference)**

- a. Define medical error and medication error.
- b. Understand the extent of medical and medication errors and their effects on patient health and safety.
- c. Identify the five major categories of medication errors.
- d. Understand the three types of failures that cause medication errors.
- e. Understand the responsibilities of patients, healthcare workers, and organizations in the prevention of medication errors.
- f. Discuss the innovative designs, automation technologies, and strategies that are making a positive impact on medication safety.
- g. Identify the common systems available for reporting medication errors.

**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1bii, 1biii, 1biv, 1bv, 1bvi**

**SCANS Workplace Skills 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2di, 2dii, 2eii**

**8. Pharmacy Laws and Regulations (scans reference)**

- a. Differentiate the meanings of the terms laws, regulations, professional standards, and ethics.
- b. Be aware that the statutes of each state provide guidelines regarding duties of the allied health professional, including the handling of controlled substances.
- c. Discuss the roles of government regulatory agencies such as the US Food and Drug Administration, the Drug Enforcement Administration, and the Occupational Safety and Health Administration.
- d. Identify the different schedule categories for the more commonly prescribed controlled substances.
- e. Understand the more stringent restrictions regulating the prescribing and dispensing processes of Schedule II controlled substances.
- f. Understand the Drug Enforcement Administration's requirements for ordering, record keeping have and inventory of Schedule II controlled substance.

**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cv**

**SCANS Workplace Skills 2bii, 2biii, 2biv, 2bv, 2ci, 2cii, 2ciii, 2civ, 2di, 2dii**

**9. The Integumentary System and Drug Therapy (scans reference)**

- a. Understand the basic anatomy and physiology of the integumentary system.
- b. Describe the common conditions that affect the integumentary system.
- c. Explain the therapeutic and adverse effects of prescription medications and nonprescription medications commonly used to treat diseases of the integumentary system.
- d. Identify the generic names, brand names, indications, dosage ranges, side effects have contraindications, and cautions and considerations associated with the drugs commonly used to treat disease of the integumentary system.
- e. Identify common herbal and alternative therapies that are related to the integumentary system.

**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1biv, 1bv, 1bvi**

**SCANS Workplace Skills 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**

**10. The Skeletal System and Drug Therapy (scans reference)**

- a. Understand the basic anatomy and physiology of the skeletal system.
- b. Describe the common conditions that affect the skeletal system.
- c. Explain the therapeutic effects of prescription medications and non-prescription medications commonly used to treat diseases and disorders of the skeletal system.
- d. Identify the generic names, brand names, indication, dosage ranges, side effects have contraindications, and cautions and considerations associated with the drugs commonly used to treat diseases and disorders of the skeletal system.
- e. Identify common herbal and alternative therapies that are related to the skeletal system.

**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1biv, 1bv, 1bvi**

**SCANS Workplace Skills 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**

11. **The Muscular System and Drug Therapy** (scans reference)
  - a. Understand the basic anatomy and physiology of the muscular system.
  - b. Describe the common conditions that affect the muscular system.
  - c. Explain the therapeutic effects of prescription medications and non-prescription medications commonly used to treat diseases and disorders of the muscular system.
  - d. Identify the generic names, brand names, indication, dosage ranges, side effects have contraindications, and cautions and considerations associated with the drugs commonly used to treat diseases and disorders of the muscular system.
  - e. Identify common herbal and alternative therapies that are related to the muscular system.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**
12. **The Nervous System and Drug Therapy** (scans reference)
  - a. Understand the basic anatomy and physiology of the nervous system.
  - b. Describe the common conditions that affect the nervous system.
  - c. Explain the therapeutic effects of prescription medications and non-prescription medications commonly used to treat diseases and disorders of the nervous system.
  - d. Identify the generic names, brand names, indication, dosage ranges, side effects have contraindications, and cautions and considerations associated with the drugs commonly used to treat diseases and disorders of the nervous system.
  - e. Identify common herbal and alternative therapies that are related to the nervous system.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**
13. **The Nervous System and Drug Therapy for Psychiatric and Mood Disorders** (scans reference)
  - a. Understand the basic anatomy and physiology of neurotransmission as it relates to psychiatric and mood disorders.
  - b. Describe the common psychiatric and mood disorders.
  - c. Explain the therapeutic effects of prescription medications and non-prescription medications commonly used to treat psychiatric and mood disorders.
  - d. Identify the generic names, brand names, indication, dosage ranges, side effects have contraindications, and cautions and considerations associated with the drugs commonly used to treat psychiatric and mood disorders.
  - e. Identify common herbal and alternative therapies that are related to the treatment of psychiatric and mood disorders.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**
14. **The Sensory System and Drug Therapy** (scans reference)
  - a. Understand the basic anatomy and physiology of the eyes and the ears.
  - b. Describe the common conditions that affect the eyes and ears.
  - c. Explain the therapeutic effects of prescription medications and non-prescription medications commonly used to treat diseases of the eyes and ears.
  - d. Identify the generic names, brand names, indication, dosage ranges, side effects, contraindications, and cautions and considerations associated with the drugs commonly used to treat eye and ear disorders.
  - e. Identify common herbal and alternative therapies that are related to the sensory system—specifically, the eyes and the ears.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**
15. **The Cardiovascular System and Drug Therapy** (scans reference)
  - a. Understand the basic anatomy and physiology of the cardiovascular system.
  - b. Describe the common conditions that affect the cardiovascular system.
  - c. Explain the therapeutic effects of prescription medications and non-prescription medications commonly used to treat diseases and disorders of the cardiovascular system.
  - d. Identify the generic names, brand names, indication, dosage ranges, side effects, contraindications, and cautions and considerations associated with the drugs commonly used to treat diseases and disorders of the cardiovascular system.

- e. Identify common herbal and alternative therapies that are related to the cardiovascular system.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**
16. **The Blood and Drug Therapy** (scans reference)
- a. Understand the basic anatomy and physiology of the blood and the hematologic system.
  - b. Describe the common conditions that affect the blood and the hematologic system.
  - c. Explain the therapeutic effects of prescription medications and non-prescription medications commonly used to treat diseases and disorders of the blood and the hematologic system.
  - d. Identify the generic names, brand names, indication, dosage ranges, side effects, contraindications, and cautions and considerations associated with the drugs commonly used to treat diseases of the blood and the hematologic system.
  - e. Identify common herbal and alternative therapies that are related to the blood and the hematologic system.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**
17. **The Respiratory System and Drug Therapy** (scans reference)
- a. Understand the basic anatomy and physiology of the respiratory system.
  - b. Describe the common conditions that affect the respiratory system.
  - c. Explain the therapeutic effects of prescription medications and non-prescription medications commonly used to treat diseases and disorders of the respiratory system.
  - d. Identify the generic names, brand names, indication, dosage ranges, side effects, contraindications, and cautions and considerations associated with the drugs commonly used to treat diseases and disorders of the respiratory system.
  - e. Identify common herbal and alternative therapies that are related to the respiratory system.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**
18. **The Gastrointestinal System and Drug Therapy** (scans reference)
- a. Understand the basic anatomy and physiology of the gastrointestinal system.
  - b. Describe the common conditions that affect the gastrointestinal system.
  - c. Explain the therapeutic effects of prescription medications and non-prescription medications commonly used to treat diseases of the gastrointestinal system.
  - d. Identify the generic names, brand names, indication, dosage ranges, side effects, contraindications, and cautions and considerations associated with the drugs commonly used to treat diseases and disorders of the gastrointestinal system.
  - e. Identify common herbal and alternative therapies that are related to the gastrointestinal system.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**
19. **Nutrition and Drugs for Metabolism** (scans reference)
- a. Describe the basic physiology of nutrition and weight management , including the intake of essential vitamins and minerals.
  - b. Explain the therapeutic effects of vitamins and minerals.
  - c. Identify recommended adequate intakes and common doses of vitamin and mineral products.
  - d. Describe the disorders associated with overnutrition and undernutrition.
  - e. Explain the therapeutic effects of prescription medications and nonprescription medications used to treat obesity.
  - f. Identify the generic names, brand names, indications, dosage ranges, side effects have contraindications, and cautions and considerations associated with the drugs that are commonly used to treat obesity.
  - g. Describe parenteral and enteral nutrition therapies.
  - h. Identify common herbal and alternative therapies that are related to the treatment of obesity.  
**SCANS Basic Skills 1ai, 1aii, 1aiii, 1bii, 1biii, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2bi, 2ci, 2cii, 2ciii, 2civ, 2di**
20. **The Endocrine System and Drug Therapy** (scans reference)
- a. Understand the basic anatomy and physiology of the endocrine system.
  - b. Describe the common conditions that affect the endocrine system.
  - c. Explain the therapeutic effects of prescription medications and non-prescription medications commonly used to treat diseases and disorders of the endocrine system.

- d. Identify the generic names, brand names, indication, dosage ranges, side effects have contraindications, and cautions and considerations associated with the drugs commonly used to treat diseases and disorders of the endocrine system.
  - e. Identify common herbal and alternative therapies that are related to the endocrine system.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**
21. **The Reproductive Systems and Drug Therapy** (scans reference)
- a. Understand the basic anatomy and physiology of the male and female reproductive system.
  - b. Describe the common conditions that affect the male and female reproductive system.
  - c. Explain the therapeutic effects of prescription medications and non-prescription medications commonly used to treat the male and female reproductive system.
  - d. Identify the generic names, brand names, indication, dosage ranges, side effects have contraindications, and cautions and considerations associated with the drugs commonly used to treat the male and female reproductive system.
  - e. Identify common herbal and alternative therapies that are related to the male and female reproductive system.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**
22. **The Renal System and Drug Therapy** (scans reference)
- a. Understand the basic anatomy and physiology of the renal system.
  - b. Describe the common conditions that affect the renal system.
  - c. Explain the therapeutic effects of prescription medications and non-prescription medications commonly used to treat diseases of the renal system.
  - d. Identify the generic names, brand names, indication, dosage ranges, side effects have contraindications, and cautions and considerations associated with the drugs commonly used to treat diseases and disorders of the renal system.
  - e. Identify common herbal and alternative therapies that are related to the renal system.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**
23. **The Immune System and Infectious Disease Therapy** (scans reference)
- a. Understand the basic anatomy and physiology of the immune system.
  - b. Describe the common conditions that affect the immune system and other body systems.
  - c. Explain the therapeutic effects of prescription medications and non-prescription medications commonly used to treat diseases of the infections.
  - d. Identify the generic names, brand names, indication, dosage ranges, side effects have contraindications, and cautions and considerations associated with the drugs commonly used to treat infections.
  - e. Identify common herbal and alternative therapies that are related to the immune system.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**
24. **Acquired Immunity and Autoimmune Disorders** (scans reference)
- a. Understand the basic physiology of acquired immunity and the types of immunity.
  - b. Identify the generic names, brand names, indication, dosage ranges, side effects have contraindications, and cautions and considerations for common vaccines.
  - c. Understand the CDC Immunization Schedule for Adults and know the locations of other immunization schedules for children and healthcare personnel.
  - d. Become familiar with the Vaccine Adverse Event Reporting System and its role in vaccination safety.
  - e. Describe common autoimmune disorders and their impact on various body systems.
  - f. Identify the generic names, brand names, indications, dosage ranges, and routes of administration for immunologic medications commonly used to prevent and treat autoimmune disorders.
  - g. Explain the indications and regimens for antitoxins and antivenoms.  
**SCANS Basic Skills 1ai, 1aii, 1bii, 1biii, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2ai, 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**
25. **Drugs for Pain and Anesthesia** (scans reference)
- a. Describe the basic anatomy and physiology of the nervous system as it relates to pain and sensation.

- b. Describe how pain is categorized by duration, origin, or location and is assessed using different pain scales.
  - c. Explain the therapeutic effects of prescription medications and non-prescription medications commonly used to treat mild-to-moderate and moderate-to-severe pain disorders and to induce anesthesia.
  - d. Identify the generic names, brand names, indication, dosage ranges, side effects have contraindications, and cautions and considerations associated with the drugs commonly used for pain and anesthesia.
  - e. Identify common herbal and alternative therapies that are commonly used for pain and anesthesia.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1bii, 1biii, 1bv, 1bvi**  
**SCANS Workplace Skills 2ci, 2cii, 2ciii, 2civ, 2di**
26. **Fluids and Electrolytes** (scans reference)
- a. Describe the basic physiology of fluid and electrolyte balance.
  - b. Explain the therapeutic effects of fluids and electrolytes.
  - c. Describe the disorders associated with fluid imbalance, electrolyte imbalance, and acid-base imbalance.
  - d. Explain the indications and therapeutic effects of the products used to treat fluid and electrolyte imbalance.
  - e. Identify the products, dosage forms and strengths, and routes of administration of fluid and electrolyte products.
  - f. Identify alternative therapies related to fluid and electrolyte imbalance.  
**SCANS Basic Skills 1ai, 1aii, 1aiii, 1aiv, 1av, 1bii, 1biii, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2ai, 2ci**
27. **Cancer and Chemotherapy** (scans reference)
- a. Explain the basic physiology of malignancy and tumor cell growth.
  - b. Identify and provide examples of traditional chemotherapy and cytotoxic drugs, hormonal drug therapies, and targeted drug therapies.
  - c. Identify the generic names, brand names, indications, dosage ranges, side effects, and cautions and considerations associated with the drugs commonly used to treat cancer.
  - d. Explain strategies that help prevent chemotherapy-related errors.
  - e. Identify current investigational therapies and alternative therapies used to treat cancer. **SCANS Basic Skills 1ai, 1aii, 1aiii, 1aiv, 1av, 1bii, 1biii, 1biv, 1bv, 1bvi, SCANS Workplace Skills 2ai, 2bi, 2bii, 2ci, 2cii, 2ciii, 2civ, 2di**
28. **Pediatric Patients and Drug Therapy** (scans reference)
- a. Explain the unique healthcare challenges of neonatal and pediatric patients.
  - b. Understand the pharmacokinetics and pharmacodynamics of drugs in neonatal and pediatric patients.
  - c. Indicate specific drugs that are contraindicated or to be used with caution in neonatal and pediatric patients.
  - d. Know the common healthcare disorders that affect neonatal and pediatric patients and the drug therapies used to treat these conditions.  
**SCANS Basic Skills 1ai, 1aii, 1aiv, 1av, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci**  
**SCANS Workplace Skills 2ci, 2cii, 2ciii, 2civ, 2di, 2dii**
29. **Geriatric Patients and Drug Therapy** (scans reference)
- a. Explain the unique healthcare challenges of geriatric patients.
  - b. Describe the physiologic and pathophysiologic changes in the human body that occur with the aging process.
  - c. Identify the factors that can contribute to polypharmacy and the possible consequences of this practice.
  - d. Identify measures through which the allied health professional can help prevent polypharmacy.
  - e. Understand the effects that the aging process has on each phase of pharmacokinetics.
  - f. Know the common healthcare disorders that affect the geriatric patient population and the drug therapies used to treat these conditions.
  - g. Become familiar with the Beers Criteria and its importance to drug therapy in geriatric patients.  
**SCANS Basic Skills 1ai, 1aii, 1bii, 1biii, 1biv, 1bv, 1bvi**  
**SCANS Workplace Skills 2ci, 2cii, 2ciii, 2civ, 2di, 2dii**

## Course Content

A general description of lecture/discussion topics included in this course are listed in the Learning Outcomes / Specific Course Objectives sections of this syllabus.

Students in all sections of this course will be required to do the following:

1. Demonstrate knowledge of course material by completing midterm examination and final examination under proctor supervision at either Panola College or an official Panola College testing center.
2. Read all class lecture material, which has been provided in an online format.
3. Use the current learning management system (LMS) to access assignments and course materials.
4. Use the current LMS email to communicate with the instructor.
5. Interact with other students through online discussion groups.
6. Complete all online assignments.

### **Methods of Instruction/Course Format/Delivery**

This course is offered online. Students will be required to have access to computer technology. Just having a smart phone will not enable one to successfully navigate this course. Students will need to allot 3-4 hours of additional study, outside posted class times for successful completion of this course.

Students are expected to demonstrate basic competency in reading, writing, oral communication, math have and computer skills. Students are expected to be an active learning participant by assuming accountability in preparing for each class by completing required readings and/or other learning activities as listed in each unit assignment. Proficiency will be measured by examination scores, case studies and internet research activities.

Students are expected to demonstrate basic competency in reading, writing, oral communication, math have and computer skills. Students are expected to be an active learning participant by assuming accountability in preparing for each class by completing required readings and/or other learning activities as listed in each assignment. Proficiency will be measured by examination scores, oral discussions and/or presentations, case studies and internet research activities.

Students should use the Email within Canvas to communicate with the instructor. Using Canvas email gives you access to the instructor and other classmates without having to remember or type email addresses – you must select a name from the list. If you are not able to contact your instructor using email in Canvas, you may use my Panola College email address, contact me by telephone, or stop by my office. I attempt to respond to all email within 24 hours. Please always include a subject line and your name in your email.

### **Major Assignments/Assessments**

The following items are assigned and assessed during the semester and used to calculate the student's final grade.

#### **Assignments**

1. Review the basics (each chapter)
2. Chapter quiz
3. Homework assignment (each chapter)
4. Discussions
5. Pharmacy calculations

#### **Assessments**

1. Major Exams (3)
2. Case Studies
3. Comprehensive Final Exam

#### **Course Grade**

The grading scale for this course is as follows:

- Discussion/Class Participation 5%
- Assignments (review the basics, chapter quiz, homework assignment) 30%
- Pharmacy calculations 5%

- Case study 10%
- Major Exams 25%
- Final Exam 25%

### Texts Materials, and Supplies

- Danielson, J., Marquis, J., McKennon, S., Pharmacology Essentials for Allied Health. Paradigm Publishing. 2017.

### Required Readings

- Danielson, J., Marquis, J., McKennon, S., Pharmacology Essentials for Allied Health. Paradigm Publishing. 2017.

### Recommended Readings

- Paradigm Education Solutions' Pocket Drug Guide: Generic-Brand Name Reference
- Paradigm Education Solutions' What Language Does Your Patient Hurt In?

### Addendum

Email: [dhawkins@panola.edu](mailto:dhawkins@panola.edu)

- Contact me through my Canvas Email (if you need to reach me)

Pay close attention to the Announcements Board on Canvas for **Weekly Assignments, Due Dates, and Testing Date Reminders**

### Other

- Courses conducted via video conferencing may be recorded and shared for instructional purposes by the instructor.
- For current texts and materials, use the following link to access bookstore listings: <https://www.panolacollegestore.com>.
- For testing services, use the following link: <https://www.panola.edu/student-services/student-support/academic-testing-center>.
- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student Coordinator in Support Services located in the Charles C. Matthews Student Center or go to <https://www.panola.edu/student-services/student-support/disability-support-services> for more information.
- Withdrawing from a course is the student's responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.
- Student Handbook: <https://www.panola.edu/> (located on at the bottom under student)

### SCANS Criteria

1. Foundation skills are defined in three areas: basic skills, thinking skills, and personal qualities.
  - a. Basic Skills: A worker must read, write, perform arithmetic and mathematical operations, listen, and speak effectively. These skills include:
    - i. Reading: locate, understand, and interpret written information in prose and in documents such as manuals, graphs, and schedules.
    - ii. Writing: communicate thoughts, ideas, information, and messages in writing, and create documents such as letters, directions, manuals, reports, graphs, and flow charts.
    - iii. Arithmetic and Mathematical Operations: perform basic computations and approach practical problems by choosing appropriately from a variety of mathematical techniques.
    - iv. Listening: receive, attend to, interpret, and respond to verbal messages and other cues.
    - v. Speaking: Organize ideas and communicate orally.
  - b. Thinking Skills: A worker must think creatively, make decisions, solve problems, visualize, know how to learn, and reason effectively. These skills include:
    - i. Creative Thinking: generate new ideas.

- ii. Decision Making: specify goals and constraints, generate alternatives, consider risks, and evaluate and choose the best alternative.
- iii. Problem Solving: recognize problems and devise and implement plan of action.
- iv. Visualize ("Seeing Things in the Mind's Eye"): organize and process symbols, pictures, graphs, objects, and other information.
- v. Knowing How to Learn: use efficient learning techniques to acquire and apply new knowledge and skills.
- vi. Reasoning: discover a rule or principle underlying the relationship between two or more objects and apply it when solving a problem.
- c. Personal Qualities: A worker must display responsibility, self-esteem, sociability, self management, integrity, and honesty.
  - i. Responsibility: exert a high level of effort and persevere toward goal attainment.
  - ii. Self-Esteem: believe in one's own self-worth and maintain a positive view of oneself.
  - iii. Sociability: demonstrate understanding, friendliness, adaptability, empathy, and politeness in group settings.
  - iv. Self-Management: assess oneself accurately, set personal goals, monitor progress, and exhibit self-control.
  - v. Integrity and Honesty: choose ethical courses of action.
- 2. Workplace competencies are defined in five areas: resources, interpersonal skills, information, systems, and technology.
  - a. Resources: A worker must identify, organize, plan, and allocate resources effectively.
    - i. Time: select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
    - ii. Money: Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.
    - iii. Material and Facilities: Acquire, store, allocate, and use materials or space efficiently. Examples: construct a decision timeline chart; use computer software to plan a project; prepare a budget; conduct a cost/benefits analysis; design an RFP process; write a job description; develop a staffing plan.
  - b. Interpersonal Skills: A worker must work with others effectively.
    - i. Participate as a Member of a Team: contribute to group effort.
    - ii. Teach Others New Skills.
    - iii. Serve Clients/Customers: work to satisfy customer's expectations.
    - iv. Exercise Leadership: communicate ideas to justify position, persuade and convince others, responsibly challenge existing procedures and policies.
    - v. Negotiate: work toward agreements involving exchange of resources, resolve divergent interests.
    - vi. Work with Diversity: work well with men and women from diverse backgrounds. Examples: collaborate with a group member to solve a problem; work through a group conflict situation, train a colleague; deal with a dissatisfied customer in person; select and use appropriate leadership styles; use effective delegation techniques; conduct an individual or team negotiation; demonstrate an understanding of how people from different cultural backgrounds might behave in various situations.
  - c. Information: A worker must be able to acquire and use information.
    - i. Acquire and Evaluate Information.
    - ii. Organize and Maintain Information.
    - iii. Interpret and Communicate Information.
    - iv. Use Computers to Process Information. Examples: research and collect data from various sources; develop a form to collect data; develop an inventory record-keeping system; produce a report using graphics; make an oral presentation using various media; use on-line computer databases to research a report; use a computer spreadsheet to develop a budget.
  - d. Systems: A worker must understand complex interrelationships.
    - i. Understand Systems: know how social, organizational, and technological systems work and operate effectively with them.
    - ii. Monitor and Correct Performance: distinguish trends, predict impacts on system operations, diagnose deviations in systems' performance and correct malfunctions.

- iii. Improve or Design Systems: suggest modifications to existing systems and develop new or alternative systems to improve performance. Examples: draw and interpret an organizational chart; develop a monitoring process; choose a situation needing improvement, break it down, examine it, propose an improvement, and implement it.
- e. Technology: A worker must be able to work with a variety of technologies.
  - i. Select Technology: choose procedures, tools or equipment including computers and related technologies.
  - ii. Apply Technologies to Task: understand overall intent and proper procedures for setup and operation of equipment.
  - iii. Maintain and Troubleshoot Equipment: Prevent, identify, or solve problems with equipment, including computers and other technologies. Examples: read equipment descriptions and technical specifications to select equipment to meet needs; set up and assemble appropriate equipment from instructions; read and follow directions for troubleshooting and repairing equipment.