

Body Systems and Disorders

Course overview:

This course focuses on human anatomy and physiology, normal function of body systems, associated pathologies, and medical interventions. Emphasis is on providing students with a thorough understanding of body systems and their interrelationships. The course includes advanced medical terminology as applied to diseases, disorders, and medical interventions. The Body Systems & Disorders Course is a yearlong course designed to facilitate learning and comprehension of the structure and function of each body system as well as the common diseases. Also integrated in the course is medical terminology which will facilitate learning and comprehension of the basic terms and abbreviations used within the medical field.

PREREQUISITE/ ADVISORY ENTRY SKILLS

Before entering the course, students will be able to:

1. Describe the spectrum of careers in the healthcare industry and identify required educational preparation for selected careers.
2. Explain how educational preparation for entry-level health occupations can be used as a first step on a career ladder in a specific healthcare careers

STUDENT LEARNING OUTCOMES

Upon successful completion of the course, students should be able to:

1. Identify ethical and legal standards that guide the provision of healthcare services.
2. Develop competency in basic skills required for success in healthcare careers such as medical terminology.
3. Demonstrate a knowledge of terminology related to the major body systems.
4. Be able to identify disorders common in each body system and describe them using appropriate medical terminology.
5. Demonstrate knowledge of commonly used abbreviations for each body system.

Professionalism (15 hours)

Confidentiality

Job skills/ Mock Interview

Preparing for the world of work

History of Healthcare Industry (5 hours)

Documentation in Healthcare (5 hours)

Business skills- checks, receipts, making appointments, telephone skills.

Medical Records

Written communications and documentation

Legal and ethical standards

Developmental and Socio-cultural Aspects of Healthcare (5 hours)

Patient Observations

Child Abuse

Ethics and Legal Foundations (10 hours)

Controversial Issues

CELL PHYSIOLOGY

- A. Describe basic cell structure and normal cell function.
- B. Describe transmembrane movement.
- C. Understand the importance of fluid balance in maintaining the integrity of cell structure.
- D. Describe symptoms of water excess and of dehydration.
- E. Identify electrolytes.
- F. Understand the importance of electrolyte balance.
- G. Identify symptoms and effects of electrolyte imbalance.
- H. Describe acid-base balance in healthy human physiology.
- I. Describe symptoms and effects of imbalance in acid/base.

BASICS OF MEDICAL TERMINOLOGY

1. Building medical vocabulary
2. Organizational vocabulary- cavities, quadrants of the abdomen, positional and directional terms, planes, etc.
3. Abbreviations for each system covered

II. DISEASE

1. Define disease.
 2. Distinguish between acute and chronic disease.
 3. Understand that pathology is the study of changes in bodily structure and function as a result of disease.
- D. Distinguish between anatomic and clinical pathology.
1. Understand how 'normal' is defined in medical professions.
- F. Differentiate between symptom and sign.
- G. Understand the usefulness of tests in diagnosis.
- H. Understand the meaning of normal range as it applies to medical tests.

III. RESPIRATORY SYSTEM

- A. Identify the structures of the respiratory tract.
- B. Discuss the mechanism of inspiration and expiration.
- C. Describe the regulation of breathing and transport of gases.
- D. Identify normal/abnormal lung sounds
- E. Explain procedures used to evaluate respiratory diseases.
- F. Identify symptoms, etiology, and pathology of common obstructive pulmonary disorders.
- G. Identify symptoms, etiology, and pathology of common restrictive and other pulmonary disorders.
- H. Describe management of common respiratory disorders.
- I. Identify practices that encourage a healthy respiratory system, and identify environmental hazards that can be reduced or eliminated.
- J. Define, build, and spell medical terms built from word parts related to the respiratory system.

IV. GENITOURINARY SYSTEM

- A. Identify anatomy of the female reproductive system.
- B. Identify anatomy of the male reproductive system.
- C. Identify gynecologic disorders and treatments.
- D. Identify male reproductive disorders and treatments.

- E. Identify the structure and normal function of the kidneys.
- F. Understand measures of renal function.
- G. Identify etiology, manifestations, and management of renal failure.
- H. Identify pathology of the urinary tract.
- I. Identify both primary and secondary renal diseases.
- J. Define, build, and spell medical terms built from word parts related to the reproductive system.
- K. Define, build, and spell medical terms built from word parts related to the urinary system.

V. CARDIOVASCULAR/CIRCULATORY SYSTEM

- A. Define blood pressure, and distinguish between systolic and diastolic pressures.
- B. Identify normal blood pressure range.
- C. Describe and identify the gross structure of the heart.
- D. Describe the internal conduction system of the heart.
- E. Identify normal/abnormal heart sounds
- F. Explain how the heart and circulatory system function.
- G. Discuss the function of the different types of blood cells.
- H. Distinguish blood types.
- I. Identify common disorders of the heart and circulatory system, including etiology, manifestations, and management.
- J. Describe a variety of diagnostic procedures for heart disorders.
- K. Define, build, and spell medical terms built from word parts related to the cardiovascular/circulatory system.

VI. THE IMMUNE SYSTEM

- A. Distinguish components of the immune system and their functions.
- B. Understand defense mechanisms such as mechanical factors and secretions that protect the body against infection.
- C. Identify steps in the inflammatory process, and distinguish types of inflammation.
- D. Identify factors that contribute to lowered resistance to infection.
- E. Identify common immune disorders, including pathogenesis, manifestations, and treatment.
- F. Identify common tests that are indicators of immune system health.
- G. Define, build, and spell medical terms built from word parts related to the immune system.

VII. ENDOCRINE SYSTEM

- A. Identify components of the endocrine system and their normal functioning.
- B. Identify disorders of the pituitary, thyroid, and parathyroid, including physiology, manifestations, and causes.
- C. Identify adrenal and pancreatic endocrine disorders, including etiology, manifestations, and management.
- D. Describe diabetes mellitus, including its physiology, effects, manifestations, and management.
- E. Identify common tests of endocrine system functioning.
- F. Define, build, and spell medical terms built from word parts related to the endocrine system.

VIII. GASTROINTESTINAL SYSTEM

- A. Identify components of the gastrointestinal system and their functions.
- B. Identify disorders of the upper GI tract, including etiology, manifestations, and management.
- C. Identify disorders of the lower GI tract, including etiology, manifestations, and management.
- D. Identify disorders of the liver, gall bladder, and pancreas, including etiology, manifestations, and management.

- E. Identify common tests of gastrointestinal functioning.
- F. Define, build, and spell medical terms built from word parts related to the gastrointestinal system.

IX. NERVOUS SYSTEM

- A. Identify components of the nervous system and their functions.
- B. Identify cerebral function disorders, including etiology, manifestations, and treatment.
- C. Identify sensory and motor disorders, including etiology, manifestations, and treatment.
- D. Identify tests of sensory-motor function.
- E. Define, build, and spell medical terms built from word parts related to the nervous system.

X. MENTAL HEALTH DISEASES AND DISORDERS

- A. Discuss mental health care concepts/theories.
- B. Outline the historical progress of mental health care.
- C. Identify major mental health disease, disorders and treatment.

XI. MUSCULOSKELETAL SYSTEM

- A. Describe the gross structure, formation, and function of bone.
- B. Explain the composition of bone.
- C. Identify the components of the axial and appendicular skeleton.
- D. Identify the types and names of muscles.
- E. Describe the gross structure, formation, and function of muscle.
- F. Explain the physiology of contraction.
- G. Identify types of fractures, treatment, and interventions.
- H. Identify disorders of the muscles and bones, including etiology, manifestations, and management.
- I. Define, build, and spell medical terms built from word parts related to the musculoskeletal system.

XII. INTEGUMENTARY SYSTEM

- A. Identify components of the integumentary system and their functions.
- B. Identify disorders of the integumentary system including etiology, manifestations, and management.
- C. Identify cancerous disorders, including physiology, manifestations, and causes.
- D. Identify staphylococcus and streptococcus, including etiology, manifestations, and management.
- E. Identify common surgical procedures used in treating diseases and disorders of the integumentary system.
- F. Define, build, and spell medical terms built from word parts related to the integumentary system.

XIII. EYE AND EAR

- A. Identify components of the eye and ear and their functions.
- B. Identify disorders of the eye and ear including etiology, manifestations, and management.
- C. Identify common surgical procedures used in treating diseases and disorders of the eye and ear.
- D. Define, build, and spell medical terms built from word parts related to the eye and the ear.

XIV. DIRECTIONAL TERMS, PLANES, REGIONS, AND QUADRANTS

1. Identify directional terms as related to human anatomy.
2. Identify anatomic planes, abdominopelvic regions, and abdominopelvic quadrants.

1. Interpret the meaning of abbreviations related to directional terms and abdominopelvic quadrants.

XV. HEALTH MAINTENANCE

- A. Describe the role of the major food groups in maintaining human health.
- B. Understand the specific role of vitamins and minerals in human physiology.
- C. Understand the physiological effects of exercise on body systems, and identify benefits of exercise.
- D. Identify environmental factors affecting human physiology.
- E. Identify common carcinogens.
- F. Identify other common toxins and their effects.
- G. Design an individual health maintenance/improvement plan.
- H. Understand the importance of maintaining personal health records.

XVI. FOUNDATION STANDARDS

- A. Understand how personal skill development—including positive attitude, honesty, self-confidence, work ethic, time management, and other positive traits—affects employability.
 - 1. Define professional responsibilities.
 - 2. Identify ethical/legal roles and responsibilities, including confidentiality, non-disclosure, and consent.
 - 3. Explain the need for all health care workers to understand and adhere to federal HIPAA regulations.
- B. Understand principles of effective interpersonal skills, including group dynamics, conflict resolution, and negotiation.
 - 1. Identify sociocultural factors that influence health care delivery.
 - 2. Interact professionally with patients, families, and health care professionals.
 - 3. Understand the importance of team work in the health occupations.
- C. Understand the importance of good basic skills, critical thinking, and problem-solving skills in the workplace.
 - 1. Recognize the importance of good reading, writing, and math skills in the health care professions, and implement a plan for self-improvement as needed.
 - 1. Apply estimation, measurement, and calculation skills on the job, including metrics.
 - 1. Read, write, give and follow directions.
 - 2. Spell and pronounce medical terms.
 - 3. Interpret labels, patient health information, and other documents.
 - 1. Apply critical thinking and problem-solving skills to analyze health care-related issues.
 - 1. Use appropriate reference materials to locate information.
 - 1. Recognize problem situations and outline problem-solving steps needed for troubleshooting.
 - 1. Understand the importance and impact of health care literacy.
- 10. Distinguish credible from non-credible sources of medical information on the internet.
- D. Understand principles of effective communication.
- E. Understand occupational safety issues, including ergonomics, body mechanics, infection control, and the avoidance of physical hazards.
 - 1. Define and use standard precautions.
 - 2. Identify The Joint Commission patient safety goals and DHS safety standards.
 - 3. Identify high-risk infections.
 - a. HIV/AIDS
 - b. hepatitis
 - c. tuberculosis
 - d. others

4. Define medical asepsis.
 5. Understand isolation procedures.
 6. Observe electrical safety standards.
 7. Identify hazards of, and reporting procedures for, needle sticks and exposure to bodily fluids.
 8. Describe procedures for handling and disposal of biohazardous waste.
 9. Identify hazardous material common to the work environment.
 10. Understand fire and disaster procedures.
 11. Recognize the importance of emergency preparedness.
 12. Identify OSHA requirements.
- F. Understand career paths and strategies for obtaining employment.
1. Identify career paths within the health care industry and the role of the health care worker.
 2. Fill out application forms completely and correctly, including electronic forms and submission.
 3. Prepare a resume.
 4. Apply effective job search skills, including locating employment information.
 5. Identify effective interviewing techniques.
 6. Participate in a mock interview.
- G. Understand and adapt to changing technology.
1. Understand the importance of lifelong learning adapting to changing technology.
 2. Correctly use and care for all supplies and equipment.
 3. Understand the importance of computers in patient care and record keeping.
 4. Demonstrate basic computer knowledge, function, and skills as required by individual facilities.
 5. Use pagers, fax, imaging and other communications technology.

Written portfolio of each body system

Project on two disorders

Weekly writing assignments focused on evaluating a system and integrating current topics

Teacher will use project-based instruction, Socratic seminars, classroom discussion, lecture, and group

work

Weekly quizzes

An in-depth writing assignment per system

Final portfolio project

Course Materials

Textbooks

Simmers, Louise, (2015) DHO, eighth edition, Thomson Delmar Learning

Pence, Gregory (2004) Classic Cases in Medical Ethics, McGraw-Hill

Ehrlich, Ann and Carol Schroeder, (2005) Medical Terminology for Health Professions, Fifth edition, Thompson Delmar Learning

Supplemental Materials

Zahourek Manikins in Clay

HASPI Curriculum

Starla Ewan Modules

Nursing Anne/Vital Sim unit

METHODS OF INSTRUCTION

Methods of instruction used to achieve student learning outcomes may include, but are not limited to:

- Class lectures on assigned topics to provide a theoretical basis for related discussions that would give students opportunities to clarify content and/or validate their understanding of content presented
- Class demonstrations of selected skills to provide models for student performance
- Videos/films/slides to illustrate examples of topics presented in the class, in the text, or from other sources
- PowerPoint presentations with accompanying student handouts to serve as a guide for note-taking
- Student reports, papers, lab activities and/or presentations that enable students to apply concepts and principles in particular areas of students' interests
- Guest lecturers, especially in areas of specialization, to provide current updates on policies and procedures

METHODS OF EVALUATION

Students will be evaluated for progress in and/or mastery of learning outcomes by methods of evaluation which may include, but are not limited to:

- Formative evaluation measures such as quizzes and tests that enable students to recognize what they have learned from the previous class session and periodic tests that cover sections of course content. Questions include Fill in, multiple choice and short answer. Multiple choice is given separate from the fill in and short answer so the students can't refer to the multiple choice section to get answers or spelling.
- Summative evaluation as reflected by performance on comprehensive Semester final examinations
- Individual student presentations (written, oral, poster, PowerPoint, and/or multimedia) that enable students to explore topics of interest in greater depth
- Group presentations that demonstrate students' abilities to collaborate as members of a team to organize selected course content and directly apply learned concepts and practices