**Course Description:**

In this, first course students will apply knowledge and clinical skills necessary to assess, plan, provide, and evaluate care to patients in varied healthcare settings. Students will apply first aid principles and techniques needed for response to choking, cardiopulmonary resuscitation, and other life-threatening emergencies. Emphasis will be placed on regulatory compliance, patient safety, pathophysiology, and medical interventions. Additionally, this course introduces psychomotor skills needed to assist individuals in meeting basic human needs.

**Strand 2. Human Body System**

Learners will describe the various anatomy, physiology, and pathophysiology associated with body systems and alterations related to the normal developmental process, obtain a health history, perform an evaluation of the body systems, and document using medical terminology.

**Outcome 2.1. Human Anatomy, Physiology, and Pathophysiology**

Describe the various human body systems, alterations related to the normal developmental process and possible dysfunctions.

**Competencies**

2.1.1. Identify body planes, directions, cavities, quadrants and regions.

2.1.2. Describe the physical characteristics, components and function of blood (e.g., ABO, Rh, blood cells, precursors and respiratory)

2.1.3. Describe the structures and functions of the cardiovascular system and trace the path of blood and identify factors affecting blood flow.

2.1.4. Describe how blood pressure is controlled and identify factors influencing changes in blood pressure.

2.1.5. Describe the structures and functions of the respiratory system.

2.1.6. Describe function of nerve tissue, nervous system, including regions of the brain.

2.1.7. Describe the structures and functions of the musculoskeletal system.

2.1.8. Describe the structures and functions of the digestive/excretory system.

2.1.9. Describe the structures and functions of the renal/urinary system.

2.1.10. Describe the structures and functions of the immune system.

2.1.11. Describe the structures and functions of the endocrine system.

2.1.12. Differentiate between the structures and functions of the male and female reproductive systems.

2.1.13. Describe the structures and functions of the integumentary system.

2.1.14. Describe the difference between pathology and physiology and the conditions typically observed during a disease state.

*An “X” indicates that the pathway applies to the outcome.*

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| **Pathways** | X | Health Information Management | X | Medical Bioscience | X | Allied Health and Nursing | | X | Exercise Science and Sports Medicine | X | Therapeutic Services |
| **Green Practices** |  | Green-specific |  | Context-dependent | | X | Does not apply | | |  |  |

**Outcome 2.2. Evaluate Body Systems**

Assess the biopsychosocial state of the patient and document using medical terminology.

**Competencies**

2.2.1. Provide privacy and demonstrate sensitivity for diverse populations.

2.2.2. Contact interpretive services for non‐English speaking and English Language Learners (ELL).

2.2.3. Use developmentally appropriate language to systematically review disease processes related to each body system.

2.2.4. Obtain and document vital signs.

2.2.5. Identify and categorize level of consciousness and cognition.

2.2.6. Identify and measure pupil reactivity and accommodation.

2.2.7. Identify site, onset, type, quality and degree of pain.

2.2.8. Identify factors affecting degree and quality of pain.

2.2.9. Auscultate lungs for abnormal breath sounds.

2.2.10. Describe pulmonary function testing (e.g., vital capacity, tidal volumes, total lung capacity).

2.2.11. Auscultate bowel sounds and palpate abdomen for distention and tautness.

2.2.12. Measure range of motion and determine joint mobility.

2.2.13. Measure muscle strength.

2.2.14. Identify various wounds and skin conditions.

2.2.15. Measure and document excessive body fluid loss.

2.2.16. Identify symptoms of substance abuse.

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| **Green Practices** |  | Green-specific |  | Context-dependent | | X | Does not apply | | |  |  |

**Outcome 2.3. Medical Terminology**

Decipher medical terms through word origin and structure with an emphasis on derivation, meaning, pronunciation and spelling.

**Competencies**

2.3.1. Build and decipher medical term meanings by identifying and using word elements (e.g., word

roots, prefixes, suffixes, combining forms).

2.3.2. Apply the rules used to build singular and plural forms of medical terminology derived from

the Greek and Latin language.

2.3.3. Use diagnostic, symptomatic and procedural terms to read and interpret various medical

reports.

2.3.4. Use abbreviations and symbols to identify anatomical, physiological and pathological classifications and the associated medical specialties and procedures.

2.3.5. Communicate medical instructions and prepare medical documents using medical terminology.

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| **Green Practices** |  | Green-specific |  | Context-dependent | | X | Does not apply | | |  |  |

**Strand 3. Therapeutic Interventions**

Learners will assist with improving the individual's health outcome and quality of life throughout the lifespan within their scope of practice.

**Outcome 3.1. Environmental Interventions**

Create and maintain a safe, sterile, efficient, and developmentally appropriate care environment.

**Competencies**

3.1.1. Use standard precaution guidelines, recommended by the governing bodies for reducing the risk of transmission of pathogens.

3.1.2. Maintain individuals’ rights, respect individual’s choices and describe informed consent.

3.1.3. Describe confidentiality guidelines in the Health Insurance Portability and Accountability Act

(HIPAA).

3.1.4. Decrease the risk of injury to individuals or others by using authorized strategies.

3.1.5. Identify and remove environmental and electrical hazards to decrease the risk of falls, injury, or ingestion of dangerous materials.

3.1.6. Identify risks associated with chemical, electrical, and aquatic elements in the work environment.

3.1.7. Describe and follow the precautions used in oxygen therapy and pressurized gases.

3.1.8. Clean, store, or dispose of supplies, specimens and laboratory glassware following protocol and standard precautions.

3.1.9. Determine bleeding risk factors and implement precautions.

3.1.10. Implement disaster preparedness response for emergency situations.

3.1.11. Identify risk factors of exposure to hazardous materials and demonstrate safety precautions.

3.1.12. Differentiate and apply principles of aseptic and sterile techniques.

3.1.13. Follow Occupational Health and Safety Administration protocol for exposure and disposal of contaminated hazardous waste.

3.1.14. Use principles of ergonomics to perform therapeutic interventions.

3.1.15. Account for all instruments, supplies and equipment.

3.1.16. Control the level of distractions and noise in a patient care environment.

3.1.17. Identify and respond to emergency call lights and alarms.

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| **Pathways** | X | Health Information Management | X | Medical Bioscience | X | Allied Health and Nursing | | X | Exercise Science and Sports Medicine | X | Therapeutic Services |
| **Green Practices** |  | Green-specific |  | Context-dependent | | X | Does not apply | | |  |  |

**Outcome 3.2. Health Promotion Interventions**

Identify and communicate health promotion and wellness to individuals, support systems, and communities.

**Competencies**

3.2.1. Describe the national and state health agenda for wellness.

3.2.2. Measure and classify body composition, neuromuscular flexibility, agility, balance, coordination and proprioception.

3.2.3. Measure and classify an individual’s cardiorespiratory fitness, muscular strength, endurance and power.

3.2.4. Identify the needs of the individual, support system, and community related to physical, biological, technological, spiritual, religious, social and behavioral wellness.

3.2.5. Communicate relevant information to promote, maintain and restore overall wellness.

3.2.6. Communicate the medical benefits and risks associated with immunizations and other preventative care across the life span.

3.2.7. Identify the components of wellness.

3.2.8. Communicate the relationship between dimensions of health and wellness.

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**Outcome 3.4. Emergency Interventions**

Identify, activate and respond to medical, environmental, mechanical and natural emergencies and document interventions and outcomes.

**Competencies**

3.4.1. Perform healthcare provider cardiopulmonary resuscitation (CPR) and automated external defibrillation (AED).

3.4.2. Recognize rescuer duties, victim and rescuer safety.

3.4.3. Recognize and treat breathing problems

**Outcome 3.5. Nutritional Interventions**

Identify nutritional needs and communicate information to the individual and support system.

**Competencies**

3.5.1. Describe the role and effects of carbohydrates, proteins, fats, electrolytes, minerals, vitamins and water in body systems.

3.5.2. Calculate the energy of carbohydrates, proteins and fats.

3.5.3. Describe nutritional supplements and ergogenic aids and potential effects.

3.5.4. Calculate caloric needs of the individual and refer the individual to nutritional resources for optimal health and performance.

3.5.5. Provide diet and hydration guidelines to maintain optimal health.

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**Strand 4. Assistive Care**

Learners demonstrate the skills and knowledge to provide personal assistive care for the activities of daily living to a variety of individuals across stages of development within their scope of practice.

**Outcome 4.1. Scope of Practice**

Describe the roles and responsibilities of assistive personnel and identify the medical specialists who treat disorders of each body system.

**Competencies**

4.1.1. Describe the guidelines of the governing body concerning abuse, mistreatment, neglect and

misappropriation of an individual’s property.

4.1.2. Recognize and document changes in an individual’s condition and inform supervisors.

4.1.3. Provide input to and work within an individualized plan of care developed by the interdisciplinary team.

4.1.4. Describe the primary purpose of different healthcare settings.

4.1.5. Identify the medical specialists who treat disorders of each body system.

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| **Green Practices** |  | Green-specific |  | Context-dependent | | X | Does not apply | | |  |  |

**Outcome 4.2. Therapeutic Communication and Interpersonal Skills**

Demonstrate and document communication techniques and behaviors when communicating and interacting with individuals.

**Competencies**

4.2.1. Interpret non‐verbal communication, including gestures, posture, touch, facial expressions, eye contact, body movements, avoidance and appearance.

4.2.2. Describe the importance of maintaining an individual’s personal space.

4.2.3. Identify the importance of empathy in interpersonal relationships and the need for kindness, patience and listening.

4.2.4. Maintain aids that promote oral, auditory and visual health (e.g., eye glasses, hearing aids, dentures).

4.2.5. Arrange food and utensils on the meal tray in a clock fashion for visually impaired individuals.

4.2.6. Position an individual for meals to avoid choking and assist in feeding.

4.2.7. Maintain a proper environment for eating (e.g., noxious odors, contaminated items, loud noises).

4.2.8. Provide aids to facilitate communication for speech impaired individuals (e.g., picture cards, slates, notepads).

**Outcome 4.3. Pathogenic Microorganisms, Infection Control and Infection**

Use principles of infection control to prevent the growth and spread of pathogenic microorganisms and infection.

**Competencies**

4.3.1. Describe the chain of infection.

4.3.2. Describe mechanisms for the spread of infection.

4.3.3. Describe methods of controlling or eliminating microorganisms and the importance of practices that hinder the spread of infection.

4.3.4. Identify and use appropriate level of personal protective equipment (PPE) when encountering body fluids, potential of splashing, or respiratory droplets.

4.3.5. Demonstrate various decontamination techniques and procedures.

4.3.6. Identify and follow standard precaution guidelines.

4.3.7. Identify, follow, and document isolation precautions.

4.3.8. Identify signs and symptoms of infection.

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| **Green Practices** |  | Green-specific |  | Context-dependent | | X | Does not apply | | |  |  |

**Outcome 4.4. Hygiene**

Perform personal hygiene for individuals across stages of development and document.

**Competencies**

4.4.1. Perform oral and denture care.

4.4.2. Perform personal hygiene.

4.4.3. Dress and undress individuals in need of assistance.

4.4.4. Perform nail care and foot soaks.

4.4.5. Observe and report skin condition for abnormalities.

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**Outcome 4.5. Ambulation and Mobility**

Assist and document the safe ambulation and mobility of individuals across stages of development.

**Competencies**

4.5.1. Describe risks of immobilization and take measures to prevent complications.

4.5.2. Educate and monitor use of assistive devices based on individual needs.

4.5.3. Operate wheelchairs, Geri Chairs and lifts.

4.5.4. Educate an individual for ambulation with skid‐proof footwear, use gait belt and

encourage the individual to use assistive devices.

4.5.5. Reposition slowly to avoid adverse outcomes.

4.5.6. Support the individual to prevent falls or injury.

4.5.7. Position the individual in bed for comfort, proper body alignment, and decreased pressure on boney prominences.

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| **Green Practices** |  | Green-specific |  | Context-dependent | | X | Does not apply | | |  |  |

**Outcome 4.6. Elimination**

Assist with elimination needs across the stages of development and document.

**Competencies**

4.6.1. Describe changes in elimination related to the aging process.

4.6.2. Measure intake and output.

4.6.3. Describe the importance of and develop a toileting schedule to maintain the individual’s dignity, prevent falls and decrease skin irritation.

4.6.4. Identify signs and symptoms of abnormalities in elimination.

4.6.5. Assist with elimination needs.

4.6.6. Maintain a closed artificial elimination collection system (e.g., catheter, colostomy, iliaostomy) and monitor, recognize, and report abnormalities.

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**Outcome 4.7. End‐of‐Life Care**

Provide physical, emotional and spiritual support to individuals and support systems at end‐of‐life.

**Competencies**

4.7.1. Describe variations in advanced directives and responsibilities of healthcare providers.

4.7.2. Identify stages of reaction to death and dying.

4.7.3. Describe the purpose of palliative and hospice care.

4.7.4. Provide resources for an individual’s cultural, spiritual and religious needs.

4.7.5. Enable individuals to express their feelings and to control their care.

4.7.6. Perform postmortem care in compliance with legal guidelines and cultural, spiritual, and religious preferences.

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| **Green Practices** |  | Green-specific |  | Context-dependent | | X | Does not apply | | |  |  |

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**Strand 5. Bioscience Research and Development**

Learners will demonstrate the skills and knowledge of interpreting laboratory requests, using personal protective equipment and hazardous material containment, specimen collection procedures, a variety of laboratory testing and techniques and maintenance of laboratory equipment and

supplies.

**Outcome 5.1. Handling, Preparation, Storage and Disposal**

Follow standard operating protocols for handling, preparing, storing and disposing of

specimens, supplies and equipment.

**Competencies**

5.1.1. Use standard operating procedures for the safe use of instruments, equipment and gas

cylinders.

5.1.2. Locate and use safety data sheets to prepare and interpret labels for chemicals, supplies, and to identify hazards associated with handling and storing chemical materials.

5.1.3. Neutralize acids, bases, or caustic solutions for handling and disposal.

5.1.4. Recognize clean room integrity using Standard Operating Procedures (SOPs).

5.1.5. Sample, monitor and record the environmental conditions of the facility (e.g. air quality, humidity, temperature, microbial contaminations).

5.1.6. Adjust, calibrate, maintain and perform systems diagnostics on laboratory equipment per standard operating procedure (SOP) and equipment specifications.

5.1.7. Maintain equipment logs and determine when to perform, implement, or schedule preventive maintenance and/or systems updates.

5.1.8. Verify expiration dates and lot numbers.

5.1.9. Implement a chemical inventory system that includes all pertinent information regarding stability, hazards and sensitivity per standard operating procedure (SOP).

5.1.10. Maintain an inventory system for manufactured products per standard operating procedure (SOP).

5.1.11. Maintain separate in‐processing, quarantine and release areas.

5.1.12. Monitor and maintain animal behavior, welfare and husbandry per standard operating procedure (SOP).

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| **Pathways** |  | Health Information Management | X | Medical Bioscience | X | Allied Health and Nursing | | X | Exercise Science and Sports Medicine |  | Therapeutic Services |
| **Green Practices** |  | Green-specific |  | Context-dependent | | X | Does not apply | | |  |  |

**Outcome 5.9. Clinical Laboratory Techniques and Procedures**

Perform and interpret clinical laboratory techniques and procedures.

**Competencies**

5.9.1. Maintain the integrity of a clinical sample, including patient/client identification and chain of custody and explain how to adhere to chain‐of‐custody guidelines when required (e.g., forensic studies, drug screen).

5.9.2. Describe control substance procedures, protocols, documentation and labeling techniques.

5.9.3. Differentiate between aseptic and sterile procedures when collecting specimens and maintain

bio‐hazardous materials procedures (e.g., urine, feces, sputum, blood).

5.9.4. Discuss the methods of blood collection, specimen processing and labeling procedures and the

potential problems that may occur.

5.9.5. Identify patient/client and inform them of the medical procedure to be performed.

5.9.6. Initiate intravenous (IV) therapy, blood withdrawal and arterial puncture using various

techniques (e.g., butterfly, vacutainer, syringe, capillary puncture) according to current

Occupational Safety and Health Administration (OSHA), Centers for Disease Control (CDC),

Clinical Lab Improvement Act (CLIA) and the National Committee for Clinical Laboratory

Standards (NCCLS) guidelines.

5.9.7. Identify resources needed for special procedures and demonstrate knowledge of special

phlebotomy collection procedures (e.g., phenylketonuria [PKU], galactosemia, blood

donations, blood cultures).

5.9.8. Differentiate between specimen collection, storage and handling techniques (e.g., temperature, light, time, humidity).

5.9.9. Determine order of draw and appropriate anticoagulants for ordered tests and correlate tube

stopper colors with tube additives and their actions.

5.9.10. Identify complications of venipuncture (e.g., patient fainting, short draw, inadequate

inversion, hemolysis, lack of blood flow, hematoma, petechia, nerve injury, mastectomy

issues).

5.9.11. Prepare peripheral blood smears and discuss testing volumes and methods for minimizing

excessive blood collection volumes.

5.9.12. Determine the general criteria for suitability of a specimen for analysis and reasons for specimen rejection and recollection.

5.9.13. Identify major routine tests performed in clinical lab sections (e.g., blood bank, chemistry, hematology, serology, microbiology, urinalysis).

5.9.14. Instruct patients/clients in the collection procedures for random, routine, non‐blood specimen collection (e.g., clean‐catch, mid‐stream urine, stool specimens, semen, or sputum for testing.)

5.9.15. Perform Clinical Laboratory Improvement Act (CLIA) waived tests (e.g., dipstick or tablet reagent urinalysis, blood glucose by glucose monitoring devices, ovulation tests, urine pregnancy tests).

5.9.16. Assist with preparations for non‐CLIA waived procedures.

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| **Green Practices** |  | Green-specific |  | Context-dependent | | X | Does not apply | | |  |  |

**Strand 6. Health Information Management**

Learners will demonstrate basic computer literacy, health information literacy and skills, confidentiality and privacy of health records, information security and basic skills in the use of electronic health records.

**Outcome 6.1. Health Information Literacy**

Apply principles of systems operations used to capture, retrieve and maintain information from internal and external sources.

**Competencies**

6.1.7. Apply concepts of health record documentation requirements of external agencies and organizations (e.g., accrediting bodies, regulatory bodies, professional review organizations, licensure, reimbursement, discipline‐specific, evidence-based good practice).

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| **Green Practices** |  | Green-specific |  | Context-dependent | | X | Does not apply | | |  |  |

**Outcome 6.2. Confidentiality, Privacy and Security**

Apply the fundamentals of confidentiality, privacy and security to communicate health/medical information accurately and within legal/regulatory bounds to other external entities.

**Competencies**

6.2.1. Identify components of the legal system.

6.2.4. Identify what constitutes the authorized access, release and use of personal health information.

6.2.5. Distinguish confidential and non‐confidential information, and document and prioritize requests for personal health information according to privacy and confidentiality guidelines.

*An “X” indicates that the pathway applies to the outcome.*

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| **Green Practices** |  | Green-specific |  | Context-dependent | | X | Does not apply | | |  |  |