

Health Science Career Cluster
Sports Medicine
Course Number: 25.44600

Course Description:

Sports Medicine is the third course in the Therapeutic Services/Sports Medicine Career Pathway. The course is appropriate for students who wish to pursue a career in healthcare with a focus on the musculoskeletal system, injury assessment, injury prevention, or rehabilitation including careers in Sports Medicine and Rehabilitative Services. This course will enable students to receive initial exposure to therapeutic services skills and attitudes applicable to the healthcare industry. The concepts of anatomy and physiology, assessment, preventative and rehabilitative care are introduced. Fundamental healthcare skills development is initiated, including medical terminology, kinesiology, patient assessment, record keeping, and basic life support. The prerequisites for this course are Introduction to Healthcare and Essentials of Healthcare.

Mastery of these standards through project-based learning, technical-skills practice, and leadership-development activities of the career and technical student organization, HOSA (Health Occupations Students of America), will provide students with a competitive edge for entry into either the healthcare global marketplace or a post-secondary institution to pursue further education and training.

Course Standard 1

HS-SM-1

Demonstrate employability skills required by business and industry.

The following elements should be integrated throughout the content of this course.

- 1.1 Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.
- 1.2 Demonstrate creativity with multiple approaches to ask challenging questions resulting in innovative procedures, methods, and products.
- 1.3 Exhibit critical thinking and problem solving skills to locate, analyze, and apply information in career planning and employment situations.
- 1.4 Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.
- 1.5 Apply the appropriate skill sets to be productive in a changing, technological, and diverse workplace to be able to work independently, interpret data, and apply team work skills.
- 1.6 Present a professional image through appearance, behavior, and language.

Course Standard 2

HS-SM-2

Analyze anatomic positions, directional terms, movements, and postures as related to the appendicular skeleton.

- 2.1 Identify the terminology used to describe body part locations, reference positions, anatomical directions, and planes of motion, with their respective axis of rotation in relation to human movement.
- 2.2 Describe the various types and characteristics of bones and joints in the human body.
- 2.3 Define and demonstrate the joint movement of the skeletal system.

Course Standard 3

HS-SM-3

Utilize correct terminology, abbreviations, symbols and practices to appropriately communicate oral and written information within the physical medicine setting.

- 3.1 Interpret common terminology, abbreviations, symbols, and acronyms related to physical medicine.
- 3.2 Explain the importance of reporting and recording information within the physical medicine team.
- 3.3 Define and demonstrate the Subjective, Objective, Assessment and Plan (SOAP) that is standard note writing in patient documentation.
- 3.4 Perform record keeping and administrative duties specific to careers within Physical Medicine and Rehabilitation.
- 3.5 Demonstrate the ability to obtain and document client history, observation, palpation, and specific tests (HOPS).
- 3.6 Demonstrate a variety of methods for recording patient information and special considerations for electronic information and records.
- 3.7 Analyze the legal responsibilities regarding privacy for patient information (HIPAA regulations).
- 3.8 Organize thoughts and information to develop clear and accurate reports both verbal and written.

Course Standard 4

HS-SM-4

Demonstrate injury classifications and evaluations.

- 4.1 Differentiate between evaluate and diagnose.
- 4.2 Distinguish between a sign and a symptom.
- 4.3 Identify and demonstrate appropriate anatomical structures to palpate during an injury evaluation.
- 4.4 Administer active and passive ROM tests using standard goniometric techniques.
- 4.5 Explain the use of proper manual muscle testing techniques.
- 4.6 Examine the use of Orthopedic Special tests and the role in injury assessment.
- 4.7 Compare and contrast injuries based upon the onset and duration of symptoms.
- 4.8 Clarify the various degrees of open and closed tissue injuries.
- 4.9 Classify and explain the various injuries to the bone and joint articulations.
- 4.10 Categorize nerve injuries according to mechanism, severity, signs and symptoms.
- 4.11 Identify signs and symptoms of skin infections and other dermatological conditions, and outline the proper treatment procedures for these conditions.

Course Standard 5

HS-SM-5

Analyze and describe the basic principles and concepts of healing.

- 5.1 Define the terminology associated with wound healing.
- 5.2 Distinguish between primary and secondary healing.
- 5.3 Classify and explain the three phases of acute injury healing.
- 5.4 Identify the chronology of wound and common growth factors in healing.

Georgia Department of Education

- 5.5 Describe the healing characteristics of specific tissues.
- 5.6 Discuss factors that affect healing.

Course Standard 6

HS-SM-6

Demonstrate the steps of Basic Life Support (BLS) with Automated External Defibrillator (AED). Assess and manage patients with bleeding, bony injuries, soft tissue as well as musculoskeletal injuries.

Completion of this standard will enable students to obtain certifications in the American Heart Association (AHA) Basic Life Support, American Red Cross (ARC) CPR, or American Safety and Health Institute's (ASHI) CPR, as well as First Aid certification with either the American Red Cross or the American Heart Association.

- 6.1 Demonstrate CPR, First Aid, and the AED utilizing current standards.
- 6.2 Successfully complete CPR, AED, and First Aid training according to American Heart Association or American Red Cross, or other nationally recognized certifying agency.
- 6.3 Identify soft tissue injuries.
- 6.4 Demonstrate first aid techniques for managing soft tissue injuries associated within the field of Physical Medicine.
- 6.5 Demonstrate first aid techniques for managing boney tissue injuries associated within the field of Physical Medicine.
- 6.6 Assess a victim requiring first aid, identification of the signs and symptoms, and how to locate the victim's injuries.
- 6.7 Adapt resources at the scene of injury for the provision of first aid techniques as necessary.
- 6.8 Demonstrate performing basic triage techniques for emergency situations involving multiple victims.
- 6.9 Assess the treatment needed for environmental injuries including cold and heat related injuries.
- 6.10 Assess common medical conditions and disorders, and the potential treatment that might be needed.
- 6.11 Create an effective emergency action plan.

Course Standard 7

HS-SM-7

Identify and describe pathogens commonly encountered in physical medicine and demonstrate appropriate infection control principles.

- 7.1 Demonstrate, through practice, aseptic techniques in the physical medicine setting, including use of hand washing and hand sanitizer.
- 7.2 Compare the different levels of septic control and uses in physical medicine.
- 7.3 Demonstrate utilizing appropriate PPE whenever there is a risk for contact with bodily fluids.
- 7.4 Demonstrate properly disposing of hazardous waste and utilizing standard precautions, as described in the rules and regulations set forth by the Occupation Safety and Health Administration (OSHA).

Course Standard 8

HS-SM-8

Analyze the anatomy, muscular structure, vascular structure, Range of Motion (ROM), Manual Muscle Tests (MMT) and special tests, as well as prevention and treatment, of the upper extremity.

- 8.1 Identify and locate the bones associated with the joints of the upper extremity on either a human skeleton or subject.
- 8.2 Identify and locate the major muscles of the upper extremity on either a human skeleton or subject.
- 8.3 Demonstrate muscle actions associated with the joints of the upper extremity.
- 8.4 Identify the primary blood vessels and nerves that innervate the joints of the upper extremity.
- 8.5 Administer Passive Range of Motion (PROM) and Active Range of Motion (AROM) of the joints of the upper extremity.
- 8.6 Describe how to perform and assess MMTs specific to the joints of the upper extremity.
- 8.7 Identify specific type of injuries that occur to the joints of the upper extremity.
- 8.8 Define the proper evaluation procedures and Orthopedic Special Tests specific to injuries associated with the joints of the upper extremity. (Drop Arm, Apley's Scratch etc.)
- 8.9 Identify and demonstrate proper preventative techniques associated with the joints of the upper extremity.
- 8.10 Utilize proper treatment techniques specific to the joints of the upper extremity.
- 8.11 Participate in mock examinations and practical simulations.

Course Standard 9

HS-SM-9

Analyze the anatomy, muscular structure, vascular structure, Range of Motion (ROM), Manual Muscle Tests (MMT) and special tests, as well as prevention and treatment, of the lower extremity.

- 9.1 Identify and locate the bones associated with the joints of the lower extremity on either a human skeleton or subject.
- 9.2 Identify and locate the major muscles of the lower extremity on either a human skeleton or subject.
- 9.3 Demonstrate muscle actions associated with the joints of the lower extremity.
- 9.4 Identify the primary blood vessels and nerves that innervate the joints of the lower extremity.
- 9.5 Administer Passive Range of Motion (PROM) and Active Range of Motion (AROM) tests to the joints of the lower extremity.
- 9.6 Describe how to perform and assess MMTs specific to the joints of the lower extremity.
- 9.7 Identify specific type of injuries that occur to the joints of the lower extremity.
- 9.8 Define the proper evaluation procedures and Orthopedic Special Tests specific to injuries associated with the joints of the lower extremity. (Drop Arm, Apley's Scratch etc.)
- 9.9 Identify and demonstrate proper preventative techniques associated with the joints of the lower extremity.
- 9.10 Demonstrate utilizing proper treatment techniques specific to the joints of the lower extremity.
- 9.11 Participate in mock examinations and practical simulations.

Course Standard 10

HS-SM-10

Analyze the anatomy, muscular structure, vascular structure, and describe the mechanisms signs and symptoms and potential complications associated with head and facial injuries.

- 10.1 Identify and locate the bones associated with the head and face on either a human skeleton or subject.
- 10.2 Identify and locate the major muscles of the head and face on either a human skeleton or subject.
- 10.3 Demonstrate performing an examination of the cranial nerves.
- 10.4 Identify and describe specific type of injuries that occur to the head and face.
- 10.5 Administer Passive Range of Motion (PROM) and Active Range of Motion (AROM) tests to the joints of the lower extremity.
- 10.6 Discuss the potential consequences and delayed symptoms of head and facial trauma.
- 10.7 Demonstrate utilizing proper treatment specific to head and facial injuries.
- 10.8 Describe how to perform an on-site examination of potential head or facial injuries, including special tests for cognition, balance and coordination to include the criteria for medical referral.
- 10.9 Research the proper evaluation procedures and Orthopedic Special Tests specific to injuries associated with the joints of the lower extremity. (Lachman's, Anterior Drawer, etc.).
- 10.10 Identify and demonstrate proper preventative techniques associated with the joints.
- 10.11 Utilize proper treatment techniques specific to the joints of the lower extremity.
- 10.12 Participate in mock examinations and practical simulations.

Course Standard 11

HS-SM-11

Analyze the anatomy, muscular structure, vascular structure, ROM, MMT and special tests, as well as prevention and treatment, of the spine.

- 11.1 Identify and locate the bones associated with the spine on either a human skeleton or subject.
- 11.2 Identify and locate the major muscle of the spine on either a human skeleton or subject.
- 11.3 Demonstrate muscle actions associated with the spine.
- 11.4 Demonstrate performing a functional assessment of myotomes, dermatomes, reflexes and vascularity.
- 11.5 Investigate the causes of neuropathy relative to spinal pathology.
- 11.6 Explain how to perform Passive Range of Motion (PROM) and Active Range of Motion (AROM) tests of the spine.
- 11.7 Describe Manual Muscle Testing (MMT) specific to the spine.
- 11.8 Describe how to perform an on-site examination of potential head or facial injuries, including special tests for cognition, balance and coordination to include the criteria for medical referral.

Course Standard 12

HS-SM-12

Analyze the anatomy, muscular structure, vascular structure, ROM, and special tests, as well as prevention and treatment, of the thoracic and abdominal regions.

- 12.1 Identify and locate the bones associated with the thoracic region on either a human skeleton or subject.
- 12.2 Locate major muscles of the thoracic and abdominal regions on either a human skeleton or subject.
- 12.3 Classify all the major organs of the thoracic and abdominal regions.
- 12.4 Identify specific type of injuries that occur associated with the thoracic and abdominal regions.
- 12.5 Identify the signs and symptoms from direct or indirect trauma to the thoracic or abdominal area.
- 12.6 Describe proper treatment specific to chest and abdominal injuries.
- 12.7 Explain how to perform an on-site examination of potential chest and abdominal injuries, indicating criteria for medical referral.

Course Standard 13

HS-SM-13

Evaluate the importance of nutrition in physical medicine.

- 13.1 Identify the six classes of nutrients and describe the functions of each.
- 13.2 Demonstrate the ability to create a balanced meal plan utilizing the current Dietary Guidelines for Americans (e.g., myPlate).
- 13.3 Identify and explain the role of nutritional supplements and ergogenic aids and potential dangers of incorrect usage.
- 13.4 Define the term calorie and explain the role in weight maintenance, weight loss, and weight gain.
- 13.5 Distinguish between the signs, symptoms, and treatments of various eating disorders.
- 13.6 Analyze the importance of water and describe the signs of dehydration.
- 13.7 Compare and contrast different methods of fluid replacement for the physically active person.
- 13.8 Describe the components of pre- and post-event meals.

Course Standard 14

HS-SM-14

Demonstrate the process for basic assessment (i.e. vital signs, height, weight, etc.), monitoring, and reporting/recording patient/client's health status.

- 14.1 Demonstrate the ability to measure temperature, pulse, respirations, blood pressure, height and weight and identify normal and abnormal values.
- 14.2 Demonstrate the ability to create a balanced meal plan utilizing the current Dietary Guidelines for Americans (e.g., myPlate).
- 14.3 Apply mathematical concepts and perform mathematical calculations appropriate to clinical expectations and/or work-based learning site.

Course Standard 15

HS-SM-15

Analyze and describe the basic principles and concepts of rehabilitation.

- 15.1 Describe muscle fiber types and the proper use of each during activity.
- 15.2 Distinguish between anaerobic and aerobic exercise.
- 15.3 Identify and demonstrate types of isotonic, isometric, and isokinetic exercises.
- 15.4 Assess the difference between concentric and eccentric muscle contractions.
- 15.5 Distinguish between open and closed kinetic chain activity.
- 15.6 List the Proprioceptive Neuromuscular Facilitation (PNF) techniques commonly used in rehabilitation.
- 15.7 Identify the basic guidelines, components, objectives and phases of rehabilitation.
- 15.8 Evaluate and outline a patient's progress in rehabilitation and return-to-competition criteria.
- 15.9 Outline and demonstrate a therapeutic exercise program for a specific injury.

Course Standard 16

HS-SM-16

Analyze and describe the principles of pharmacology.

- 16.1 Identify the role that the following types of medications have on the body, including the following:
 - anti-pyretic
 - anti-inflammatory
 - analgesic
 - anti-fungal
 - gastrointestinal
 - antibiotics
 - asthma medication
 - other over-the-counter (OTC) medications
- 16.2 Explain the legality of using prescription and over the counter medications with minors.
- 16.3 Identify specific prescription medications commonly used after sustaining an injury.

Course Standard 17

HS-SM-17

Analyze and describe the appropriate use of therapeutic modalities.

- 17.1 Identify the types and describe the physiological effects and considerations in the use of the following:
 - cold and hot therapies
 - ultrasound therapy
 - electrotherapy
 - manual and mechanical modalities therapy
 - light modalities