

**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. There is flexibility within each standard for instruction that is provided towards any related career path.

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 will provide students with a competitive edge for entry into either the healthcare global marketplace or a postsecondary institution to pursue further education and training. Successful completion of this course may lead to a potential opportunity for students to obtain basic credentials recognized in entry level related career fields.

Course Standard 1

HS-SM-1

The following standard is included in all CTAE courses adopted for the Career Cluster/Pathways. Teachers should incorporate the elements of this standard into lesson plans during the course. The topics listed for each element of the standard may be addressed in differentiated instruction matching the content of each course. These elements may also be addressed with specific lessons from a variety of resources. This content is not to be treated as a unit or separate body of knowledge but rather integrated into class activities as applications of the concept.

Standard: 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.

Person-to-Person Etiquette	Telephone and Email Etiquette	Cell Phone and Internet Etiquette	Communicating At Work	Listening
Interacting with Your Boss	Telephone Conversations	Using Blogs	Improving Communication Skills	Reasons, Benefits, and Barriers
Interacting with Subordinates	Barriers to Phone conversations	Using Social Media	Effective Oral Communication	Listening Strategies
Interacting with Co-workers	Making and Returning Calls		Effective Written Communication	Ways We Filter What We Hear
Interacting with Suppliers	Making Cold Calls		Effective Nonverbal Skills	Developing a Listening Attitude
	Handling Conference Calls		Effective Word Use	Show You Are Listening
	Handling Unsolicited Calls		Giving and Receiving Feedback	Asking Questions
				Obtaining Feedback
				Getting Others to Listen

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Nonverbal Communication	Written Communication	Speaking	Applications and Effective Résumés
Communicating Nonverbally	Writing Documents	Using Language Carefully	Completing a Job Application
Reading Body Language and mixed Messages	Constructive Criticism in Writing	One-on-One Conversations	Writing a Cover Letter
Matching Verbal and Nonverbal communication		Small Group Communication	Things to Include in a Résumé
Improving Nonverbal Indicators		Large Group Communication	Selling Yourself in a Résumé
Nonverbal Feedback		Making Speeches	Terms to Use in a Résumé
Showing Confidence Nonverbally		Involving the Audience	Describing Your Job Strengths
Showing Assertiveness		Answering Questions	Organizing Your Résumé
		Visual and Media Aids	Writing an Electronic Résumé
		Errors in Presentation	Dressing Up Your Résumé

1.2 Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.

Teamwork and Problem Solving	Meeting Etiquette
Thinking Creatively	Preparation and Participation in Meetings
Taking Risks	Conducting Two-Person or Large Group Meetings
Building Team Communication	Inviting and Introducing Speakers
	Facilitating Discussions and Closing
	Preparing Visual Aids
	Virtual Meetings

1.3 Exhibit critical thinking and problem-solving skills to locate, analyze and apply information in career planning and employment situations.

Problem Solving	Customer Service	The Application Process	Interviewing Skills	Finding the Right Job
Transferable Job Skills	Gaining Trust and Interacting with Customers	Providing Information, Accuracy and Double Checking	Preparing for an Interview	Locating Jobs and Networking
Becoming a Problem Solver	Learning and Giving Customers What They Want	Online Application Process	Questions to Ask in an Interview	Job Shopping Online
Identifying a Problem	Keeping Customers Coming Back	Following Up After Submitting an Application	Things to Include in a Career Portfolio	Job Search Websites
Becoming a Critical Thinker	Seeing the Customer's Point	Effective Résumés:	Traits Employers are Seeking	Participation in Job Fairs
Managing	Selling Yourself and the Company	Matching Your Talents to a Job	Considerations Before Taking a Job	Searching the Classified Ads
	Handling Customer Complaints	When a Résumé Should be Used		Using Employment Agencies
	Strategies for Customer Service			Landing an Internship
				Staying Motivated to Search

1.4 Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.

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Workplace Ethics	Personal Characteristics	Employer Expectations	Business Etiquette	Communicating at Work
Demonstrating Good Work Ethic	Demonstrating a Good Attitude	Behaviors Employers Expect	Language and Behavior	Handling Anger
Behaving Appropriately	Gaining and Showing Respect	Objectionable Behaviors	Keeping Information Confidential	Dealing with Difficult Coworkers
Maintaining Honesty	Demonstrating Responsibility	Establishing Credibility	Avoiding Gossip	Dealing with a Difficult Boss
Playing Fair	Showing Dependability	Demonstrating Your Skills	Appropriate Work Email	Dealing with Difficult Customers
Using Ethical Language	Being Courteous	Building Work Relationships	Cell Phone Etiquette	Dealing with Conflict
Showing Responsibility	Gaining Coworkers' Trust		Appropriate Work Texting	
Reducing Harassment	Persevering		Understanding Copyright	
Respecting Diversity	Handling Criticism		Social Networking	
Making Truthfulness a Habit	Showing Professionalism			
Leaving a Job Ethically				

1.5 Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply teamwork skills.

Expected Work Traits	Teamwork	Time Management
Demonstrating Responsibility	Teamwork Skills	Managing Time
Dealing with Information Overload	Reasons Companies Use Teams	Putting First Things First
Transferable Job Skills	Decisions Teams Make	Juggling Many Priorities
Managing Change	Team Responsibilities	Overcoming Procrastination
Adopting a New Technology	Problems That Affect Teams	Organizing Workspace and Tasks
	Expressing Yourself on a Team	Staying Organized
	Giving and Receiving Constructive Criticism	Finding More Time
		Managing Projects
		Prioritizing Personal and Work Life

1.6 Present a professional image through appearance, behavior, and language.

On-the-Job Etiquette	Person-to-Person Etiquette	Communication Etiquette	Presenting Yourself
Using Professional Manners	Meeting Business Acquaintances	Creating a Good Impression	Looking Professional
Introducing People	Meeting People for the First Time	Keeping Phone Calls Professional	Dressing for Success
Appropriate Dress	Showing Politeness	Proper Use of Work Email	Showing a Professional Attitude
Business Meal Functions		Proper Use of Cell Phone	Using Good Posture
Behavior at Work Parties		Proper Use in Texting	Presenting Yourself to Associates
Behavior at Conventions			Accepting Criticism
International Etiquette			Demonstrating Leadership
Cross-Cultural Etiquette			
Working in a Cubicle			

Support of CTAE Foundation Course Standards and Georgia Standards of Excellence L9-10RST 1-10 and L9-10WHST 1-10:

Georgia Standards of Excellence ELA/Literacy standards have been written specifically for technical subjects and have been adopted as part of the official standards for all CTAE courses.

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 movements of the skeletal system.

Course Standard 3

HS-SM-3

Identify and utilize proper communication methods and scope of practice protocol that will demonstrate professional, ethical care 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 a physical medicine and/or allied health team.
- 3.3 Define and demonstrate the Subjective, Objective, Assessment and Plan (SOAP) that is standard note writing in patient documentation by obtaining and documenting client history, observation, palpation, and specific tests (HOPS).
- 3.4 Perform record keeping and administrative duties specific to careers within physical medicine and rehabilitation.
- 3.5 Demonstrate a variety of methods for recording patient information and special considerations for electronic information and records.
- 3.6 Analyze the legal responsibilities regarding privacy for patient information (HIPAA & FERPA regulations).
- 3.7 Define and give examples of liability, risk management and malpractice that can occur in the Sports Medicine Team.
- 3.8 Demonstrate proper communication of accurate reports, both verbal and written, between all stakeholders (parents, coaches, athletes, etc.).
- 3.9 Discuss levels of education, credentialing requirements, employment trends and scope of practice in different careers in the Sports Medicine Team.

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 Demonstrate 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 Classify injuries based upon the onset and duration of symptoms.
- 4.8 Identify 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 (including their presentations on diverse patient populations) 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 Compare and contrast the benefits of primary healing over secondary healing.
- 5.3 Classify and explain the three phases of acute injury healing.
- 5.4 Identify the progression of wound healing and common growth factors that may affect healing.
- 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 bony tissue injuries associated within the field of physical medicine.
- 6.6 Demonstrate the ability to recognize common medical conditions and disorders, as well as potential treatment that may be required.
- 6.7 Adapt resources at the scene of injury for the provision of first aid techniques as necessary (including Stop the Bleed procedures).
- 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 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.

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- 8.1 Identify, locate, and palpate the bones associated with the joints of the upper extremity on either a human skeleton, subject, or self.
- 8.2 Identify and locate the major muscles of the upper extremity on either an anatomical model 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), Active Range of Motion (AROM), and Resistive Range of Motion (RROM) 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 & equipment associated with the injuries associated with the joints of the upper extremities (including taping/bracing/wrapping techniques).
- 8.10 Demonstrate utilizing proper treatment techniques specific to the joints of the upper extremity (including taping/bracing/wrapping techniques).
- 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, locate, and palpate 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 an anatomical model 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), Active Range of Motion (AROM), and Resistive Range of Motion (RROM) 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 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. (Anterior Drawer, Lachmans, Valgus Stress Test, 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 an anatomical model or subject.
- 10.3 Identify primary vascular structures and demonstrate performing an examination of the cranial nerves.
- 10.4 Identify and describe specific types of injuries that occur to the head and face (including ROM of the TMJ).
- 10.5 Identify and demonstrate proper preventative techniques & equipment associated with injuries to the head and face.
- 10.6 Discuss the potential consequences and delayed symptoms of head and facial trauma.

- 10.7 Identify the signs and symptoms of a concussion and demonstrate proper treatment and consultation of return to learn & play plans.
- 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 Demonstrate utilizing proper treatment techniques specific to injuries related to the head and face (including cranial nerve assessments) 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 muscles of the spine on either an anatomical model or subject.
- 11.3 Demonstrate muscle actions associated with the spine.
- 11.4 Recognize and describe specific injuries that occur with the spinal region.
- 11.5 Identify and demonstrate proper preventative techniques and equipment associated with injuries to the spinal region.
- 11.6 Demonstrate performing a functional assessment of myotomes, dermatomes, reflexes, and vascularity.
- 11.7 Investigate the causes of neuropathy relative to spinal pathology.
- 11.8 Explain how to perform Passive Range of Motion (PROM), Active Range of Motion (AROM), and Resistive Range of Motion (RRROM) tests of the spine.
- 11.9 Describe Manual Muscle Testing (MMT) specific to the spine.
- 11.10 Demonstrate an on-site examination, prevention and treatment of the spinal region (can be a mock/simulated setting).

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 an anatomical model or subject.
- 12.3 Identify all the major organs and vascular structures of the thoracic and abdominal regions.
- 12.4 Recognize and describe specific 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 Identify and explain the role of nutritional supplements, ergogenic aids, controlled or banned substances, and potential dangers of incorrect usage.
- 13.3 Define the term calorie and explain the role in weight maintenance, weight loss, and weight gain.
- 13.4 Distinguish between the signs, symptoms, and treatments of various eating disorders.
- 13.5 Analyze the importance of water and describe the signs of dehydration.

- 13.6 Compare and contrast different methods of fluid replacement for the physically active person.
- 13.7 Describe the components and timing of pre- and post-event meals.
- 13.8 Explore the different nutritional demands of athletes vs non-athletes.
- 13.9 Compare and contrast methods of measuring body composition.

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 and identify normal vs abnormal values of the following: temperature, pulse, respirations, blood pressure, height, weight, and BMI.
- 14.2 Apply mathematical concepts and perform mathematical calculations appropriate to clinical expectations and/or work-based learning site.
- 14.3 Discuss importance of contextualization of each measure as a part of the holistic patient record.
- 14.4 Demonstrate appropriate and culturally informed communication strategies regarding values (specifically for BMI) considered clinically abnormal.

Course Standard 15

HS-SM-15

Analyze and describe the basic principles and concepts of rehabilitation.

- 15.1 Compare and contrast the types of muscle fibers and the purpose 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 Explain the effects that the following medications have on the body:
 - 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, describe the physiological effects, indications, and contraindications in the use of the following:
 - cold and hot therapies

- ultrasound therapy
- electrotherapy
- manual and mechanical modalities therapy
- light modalities

Course Standard 18

HS-SM-18

Analyze and describe the principles of sports psychology.

- 18.1 Describe stages of grief, emotional or anxiety changes that may appear from an ill or injured athlete.
- 18.2 Identify signs and symptoms of potential psychological changes in the athlete, such as depression and anxiety that may occur with return to play plans.
- 18.3 Identify and demonstrate various methods of psychological interventions that can be applied, including social support.

Course Standard 19

HS-SM-19

Explore how related student organizations are integral parts of career and technology education courses through leadership development, school, and community service projects, entrepreneurship development, and competitive events.

- 19.1 Research the history of the state supported healthcare science CTSO (Career Technical Student Organization).
- 19.2 Discuss the mission, purpose, motto, colors, official dress, and other distinguishing characteristics of the state supported healthcare science CTSO.
- 19.3 Explain how participation in the state supported healthcare science CTSO can promote lifelong responsibility for community service and professional growth and development.
- 19.4 Create a personal leadership plan to participate in programs, conferences, community service and competitive events on the local, state, and national level that align with the competencies, skills, and knowledge of this course.