

Sports Medicine I

PEIMS Code: N1150040

Abbreviation: SPORTMD1

Grade Level(s): 9-12

Award of Credit: 1.0

State Approved Innovative Course

- Districts must have local board approval to implement innovative courses.
- In accordance with Texas Administrative Code (TAC) §74.27, school districts must provide instruction in all essential knowledge and skills identified in this innovative course.
- Innovative courses may only satisfy elective credit toward graduation requirements.
- Please refer to TAC §74.13 for guidance on endorsements.

Course Description:

Sports Medicine I provides high school students with the opportunity to gain basic knowledge and skills in the prevention, evaluation, management, treatment, rehabilitation, and reconditioning of sports injuries and illnesses. This course provides information to students who are interested in healthcare careers, including, but not limited to, sports medicine, athletic training, orthopedics, and physical therapy.

Essential Knowledge and Skills:

- (a) General Requirements. Students shall be awarded one credit for successful completion of this course. This course is recommended for students in Grades 9-12.
- (b) Introduction.
 - (1) *Sports Medicine I* provides high school students with the opportunity to gain basic knowledge and skills in the prevention, evaluation, management, treatment, rehabilitation, and reconditioning of sports injuries and illnesses. The course provides information for students who are interested in healthcare careers, including, but not limited to, sports medicine, athletic training, orthopedics, and physical therapy.
 - (2) Statements containing the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.
- (c) Knowledge and Skills.
 - (1) Concepts of sports injury. The student analyzes the concept of sports injury and the areas of concern for sports participants. The student is expected to:
 - (A) define the criteria for a sports injury;
 - (B) explain what constitutes a catastrophic sports injury;
 - (C) discuss the classifications of injury to include mild, moderate, and severe;

- (D) classify the severity of an injury as it relates to sprains and strains;
 - (E) describe open, closed, commuted, and avulsion fractures;
 - (F) describe closed and open dislocations;
 - (G) identify the epidemiology of fractures and dislocations;
 - (H) describe the risks associated with team and individual sports; and
 - (I) identify the incidence rate of injuries identified in various sports.
- (2) Athletic health care team. The student identifies and describes the responsibilities of the sports medicine team. The student is expected to:
- (A) define sports medicine and explain the roles of the athletic trainer and team physician on the sports medicine team;
 - (B) identify the first responder training required in secondary schools;
 - (C) explain the services that should be provided to a secondary school by a team physician;
 - (D) explain the role and the curriculum requirements to become a Board of Certification-certified athletic trainer; and
 - (E) research and discuss professional medical organizations that promote the study of sports medicine.
- (3) Sports injury law. The student investigates and evaluates the legal considerations in the management of sports injuries. The student is expected to:
- (A) define the terms tort and negligence and describe commission and omission negligence;
 - (B) describe the criteria used to evaluate and establish proof of negligence;
 - (C) discuss the Texas Good Samaritan law, including its legal implications for school personnel such as coaches or athletic trainers;
 - (D) describe appropriate procedures to limit liability in the instance of a sports injury;
 - (E) explain Health Insurance Portability and Accountability Act (HIPPA) of 1996 and describe its application when managing a sports injury incident;
 - (F) research and discuss local district policy and procedures related to civil litigation; and
 - (G) discuss the ethics of sports-injury care for athletes.
- (4) Sports injury prevention. The student differentiates and analyzes the important elements of preventing sports injuries. The student is expected to:
- (A) differentiate between intrinsic and extrinsic causative factors leading to sports injury;
 - (B) explain the advantages of the “coordinated team approach” for pre-participation physical examination;
 - (C) describe the components of fitness that can aid in sports injury prevention, such as speed, strength, agility, and coordination;
 - (D) analyze the relationship between volume, intensity, and frequency of training as they relate to periodization;
 - (E) explain range of motion (ROM) relating to joint movement;
 - (F) explain the advantages and disadvantages of various stretching exercises;

- (G) discuss potential hazards and prevention strategies for athletes in high-risk sports;
 - (H) explain the influence that dietary habits, regardless of sport, have on overall performance and recovery from injury;
 - (I) describe the importance of monitoring extrinsic risk factors for sports injury by athletic trainers, coaches, and administrators;
 - (J) identify the role of protective equipment in the prevention of injuries; and
 - (K) explain the steps in fitting protective equipment for sports such as football, softball, baseball, and soccer.
- (5) The psychological effects of sports injury. The student examines the role of psychology in the athlete and in relationship to injury or injurious behaviors. The student is expected to:
- (A) describe variables of personality such as openness, extraversion, agreeableness, or neuroticism;
 - (B) discuss the relationship between an athlete's self-concept and the risk of sports injury;
 - (C) analyze and discuss the relationship between psychosocial variables and the risk of sports injury;
 - (D) discuss the possible relationship between competitive stress and the psychology of the adolescent athlete;
 - (E) investigate the psychological impact of a sports injury on an athlete in terms of stress;
 - (F) discuss the forms of pathogenic eating behaviors practiced by athletes;
 - (G) categorize the sports in which eating disorders occur for both males and females;
 - (H) describe the signs or behaviors that may indicate the development of an eating disorder;
 - (I) assess and discuss the harmful effects of pathogenic eating disorders;
 - (J) evaluate and discuss the factors relating to the increase of eating disorders in athletes, such as physical appearance, sport environment, biological characteristics, and psychological characteristics; and
 - (K) describe how athletic trainers can share information regarding the prevention of eating disorders and discuss the treatments for pathogenic eating disorders.
- (6) Nutritional considerations in sports. The student analyzes the importance of good nutritional practices for athletic performance. The student is expected to:
- (A) describe the molecular structure of carbohydrates, fats, and proteins, and the importance of vitamins and minerals in the body;
 - (B) describe the recommended levels of protein intake and problems associated with excessive consumption of dietary protein;
 - (C) analyze and explain the short-term effects of repeated episodes of extreme, rapid weight loss;
 - (D) discuss the goals of any sports nutrition program, including preparing the athlete for practice and competition, encouraging the athlete to consume food and beverages during activity, and ensuring adequate recovery following activity;
 - (E) explain the guidelines for a pre-competition diet;

- (F) identify the recommended percentages of protein, fat, and carbohydrates in an ideal training diet;
 - (G) describe the effects of dietary fasting on muscle tissue;
 - (H) discuss the relationship of nutrition to injury recovery;
 - (I) identify the potential training benefit and side effects of creatine use; and
 - (J) investigate and explain the legal and illegal ergogenic aids used by athletes for performance gains.
- (7) Emergency plan and initial injury evaluation. The student recognizes the importance of developing an emergency plan and a strategy for injury evaluation. The student is expected to:
- (A) describe the components of an effective emergency plan;
 - (B) analyze the considerations to be addressed when coaches are charged with providing emergency care for athletic injuries;
 - (C) describe the initial check and physical exam in the assessment of an injured athlete;
 - (D) describe the recommended procedure for opening an airway when a neck injury is suspected;
 - (E) identify the early symptoms of internal bleeding;
 - (F) define shock and explain the conditions that may lead to shock;
 - (G) identify the essential components of a physical exam (survey);
 - (H) describe the functions of the emergency team with respect to the emergency plan, including immediate care of the athlete, emergency equipment retrieval, activation of Emergency Medical Service, and directing the Emergency Medical Service to the athlete;
 - (I) summarize the medical training all personnel involved with organized sports programs must receive; and
 - (J) analyze and discuss the issues pertaining to return-to-play decisions made by a medical professional.
- (8) Cardiopulmonary resuscitation and automated external defibrillator. The student understands and summarizes the steps of cardiopulmonary resuscitation (CPR) and the use of an automated external defibrillator (AED). The student is expected to:
- (A) explain the steps in performing CPR;
 - (B) identify and explain the steps in one-rescuer CPR;
 - (C) identify and explain the steps in two-rescuer CPR;
 - (D) identify and explain the steps in using an AED;
 - (E) explain the importance of early defibrillation by first responders; and
 - (F) explain the steps in treating an airway obstruction.
- (9) The injury processes. The student analyzes the effects of the injury process on body tissues. The student is expected to:
- (A) describe the various mechanical forces that can cause injury;

- (B) analyze and discuss the physiological effects and the time needed for the healing process for various sports injuries;
 - (C) evaluate and discuss how the injury process affects soft tissue and bone;
 - (D) define pain and describe the assessment of pain and pain control;
 - (E) identify the pharmacological agents commonly used in the healing process;
 - (F) differentiate between cryotherapy and thermotherapy;
 - (G) describe the importance of exercise in the healing process; and
 - (H) discuss the science and art of rehabilitation.
- (10) Injuries to the head, neck, and face. The student understands the anatomy, mechanisms of injury, symptoms, emergency procedures, and treatment of injuries to the head, neck, and face. The student is expected to:
- (A) identify the anatomy of the skull, meninges, central nervous system, and face;
 - (B) discuss the effects and incidence of head injuries in sports;
 - (C) explain the mechanisms of head injuries in sports;
 - (D) identify the signs and symptoms of concussion (mild head injury);
 - (E) describe the etiology, symptoms, and complications of second impact syndrome;
 - (F) differentiate between cranial and intracranial brain injury;
 - (G) describe the initial treatment guidelines for a suspected head injury;
 - (H) discuss the emergency procedures for head injuries;
 - (I) identify the causes, symptoms, and treatment of dental injuries;
 - (J) describe the symptoms and treatment of eye, ear, and nasal injuries; and
 - (K) summarize the care of facial wounds.
- (11) Injuries to the spine. The student understands the anatomy, mechanisms of injury, symptoms, emergency procedures, and treatment of injuries to the spine. The student is expected to:
- (A) describe and identify the anatomy of the cervical and thoracic spine;
 - (B) identify the etiology, signs and symptoms, and first-aid care for sports injuries to the cervical and thoracic spine;
 - (C) discuss the incidence of cervical spine injuries;
 - (D) differentiate between the different mechanisms of cervical spine injury;
 - (E) describe the guidelines for the initial treatment of suspected cervical and thoracic spine injuries;
 - (F) identify and describe the anatomy of the lumbar, sacral, and coccygeal spine; and
 - (G) identify the etiology, signs and symptoms, and first-aid care for sports injuries to the lumbar, sacral, and coccygeal spine.
- (12) Injuries to the shoulder region. The student understands the anatomy, mechanisms of injury, symptoms, emergency procedures, and treatment of injuries to the shoulder region. The student is expected to:

- (A) identify the bones, articulations, stabilizing ligaments, and musculature of the shoulder complex;
 - (B) summarize the specific skeletal injuries that occur to the shoulder joint;
 - (C) describe the etiology, signs, symptoms, and first-aid care for skeletal injuries to the shoulder region;
 - (D) identify specific soft-tissue injuries that occur to the shoulder joint; and
 - (E) describe the etiology, signs, symptoms, and first-aid care for soft-tissue injuries to the shoulder region.
- (13) Injuries to the arm, wrist, and hand. The student understands the anatomy, mechanisms of injury, symptoms, emergency procedures, and treatment of injuries to the arm, wrist, and hand. The student is expected to:
- (A) identify the bones, articulations, stabilizing ligaments, and musculature of the elbow, forearm, wrist, and hand;
 - (B) describe the soft-tissue injuries of the upper arm and their signs, symptoms, and first-aid care;
 - (C) describe the classification of fractures to the upper arm and their signs, symptoms, and first-aid care;
 - (D) describe the etiology, signs, symptoms, and first-aid care for sprains, dislocations, and fractures of the elbow;
 - (E) identify the causes, signs, symptoms, and first-aid care for elbow contusions, epicondylitis, and osteochondritis dissecans;
 - (F) describe the etiology, signs, symptoms, and first-aid care for fractures, nerve injuries, and tendon injuries of the wrist; and
 - (G) describe the etiology, signs, symptoms, and first-aid care for fractures, sprains, and dislocations of the hand and fingers.
- (14) Injuries to the thorax and abdomen. The student understands the anatomy, mechanisms of injury, symptoms, emergency procedures, and treatment of injuries to the thorax and abdomen. The student is expected to:
- (A) describe the anatomy of the thorax and abdomen;
 - (B) identify sports external injuries of the thorax and abdomen and their etiology, signs, symptoms, and first-aid care;
 - (C) identify sports internal injuries of the thorax and abdomen and their signs, symptoms, and first-aid care;
 - (D) describe the injuries and related conditions to the lungs, liver, kidneys, spleen, and bladder;
 - (E) identify the signs, symptoms, and first-aid care for injuries and related conditions to the heart, lungs, kidneys, spleen, and bladder; and
 - (F) describe the various injuries and health conditions that cause abdominal pain.
- (15) Injuries to the hip and pelvis. The student understands the anatomy, mechanisms of injury, symptoms, emergency procedures, and treatment of injuries to the hip and pelvis. The student is expected to:

- (A) describe the anatomy of the hip and pelvis;
 - (B) identify the skeletal injuries of the pelvis and hip and their etiology, signs, symptoms, and first-aid care;
 - (C) identify the soft tissue injuries of the pelvis and hip and the etiology, signs, symptoms, and first-aid care; and
 - (D) discuss the elements of prevention of injuries to the hip and pelvis.
- (16) Injuries to the thigh, leg, and knee. The student understands the anatomy, mechanisms of injury, symptoms, emergency procedures, and treatment of injuries to the thigh, leg, and knee. The student is expected to:
- (A) describe the anatomy of the thigh, leg, and knee;
 - (B) identify specific skeletal injuries that occur to the thigh, leg, and knee;
 - (C) describe the etiology, signs, symptoms, and first-aid care for skeletal injuries to the thigh, leg, and knee;
 - (D) identify specific soft-tissue injuries that occur to the thigh;
 - (E) describe the etiology, signs, symptoms, and first-aid care for soft-tissue injuries to the thigh, leg, and knee;
 - (F) identify specific patella femoral joint injuries;
 - (G) describe the etiology, signs, symptoms, and first-aid care for patella femoral joint injuries;
 - (H) identify specific patella femoral conditions;
 - (I) describe the etiology, signs, symptoms, and first-aid care of patella femoral conditions;
 - (J) identify specific menisci injuries;
 - (K) describe the etiology, signs, symptoms, and first-aid care of menisci injuries;
 - (L) identify specific knee ligament injuries;
 - (M) describe the etiology, signs, symptoms, and first-aid care for knee ligament injuries;
 - (N) research and discuss the prevention of knee injuries; and
 - (O) explain the appropriate uses of knee braces.
- (17) Injuries to the lower leg, ankle, and foot. The student understands the anatomy, mechanisms of injury, symptoms, emergency procedures, and treatment of injuries to the lower leg, ankle, and foot. The student is expected to:
- (A) describe the anatomy of the lower leg, ankle, and foot;
 - (B) identify specific skeletal injuries that occur to the lower leg, ankle, and foot;
 - (C) describe the etiology, signs, symptoms, and first-aid care for skeletal injuries to the lower leg, ankle, and foot;
 - (D) identify specific soft-tissue injuries that occur to the lower leg, ankle, and foot;
 - (E) describe the etiology, signs, symptoms, and first-aid care for soft-tissue injuries to the lower leg, ankle, and foot;
 - (F) identify specific foot injuries and their care; and

- (G) summarize the steps in preventative ankle taping.
- (18) Skin conditions in sports. The student recognizes the dangers of skin conditions that occur as the result of sports participation. The student is expected to:
- (A) describe abrasion, laceration, and puncture skin wounds and describe the guidelines for cleaning and treating these wounds;
 - (B) discuss the prevention, etiology, signs and symptoms, and treatment of ultraviolet light related skin problems;
 - (C) explain the prevention, etiology, signs and symptoms, and treatment of fungal, bacterial, and viral skin conditions;
 - (D) research the risk factors of skin infections in sports; and
 - (E) describe the etiology and treatment for allergic skin reactions.
- (19) Bloodborne pathogens. The student understands the importance of preventing exposure to bloodborne pathogens. The student is expected to:
- (A) identify and explain the importance of universal precautions as mandated by the Occupational Safety and Health Administration (OSHA) and how such precautions apply to athletic personnel; and
 - (B) analyze and discuss the factors in preventing the spread of bloodborne pathogens in sports related activities.
- (20) Thermal injuries. The student understands thermal injuries can be life threatening and must be prevented. The student is expected to:
- (A) describe the physiology of hyperthermia;
 - (B) identify the clinical signs of exertional heat illness;
 - (C) describe the signs, symptoms, and management of heat cramps, heat exhaustion, and heat stroke;
 - (D) analyze and explain the guidelines to prevent exertional heat illness;
 - (E) identify the signs, symptoms, and management of hypothermia, frostbite, and frostnip;
 - (F) describe the effects of cold urticaria; and
 - (G) interpret and summarize the National Athletic Trainers' Association Position Statement on Exertional Heat Illnesses.
- (21) Other medical concerns affect athletic performance. The student investigates and describes the medical conditions that can affect the performance of athletes in sports. The student is expected to:
- (A) identify and describe the signs, symptoms, and treatment of viral infections and bacterial illnesses common to sports participants; and
 - (B) compare the participation guidelines for infections such as respiratory infections, gastrointestinal infections, and Hepatitis B Virus (HBV) /Human Immunodeficiency Virus (HIV).
- (22) Special medical concerns of the adolescent athlete. The student researches and evaluates special medical concerns for adolescent athletes. The student is expected to:

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- (A) research and discuss the effects of puberty on bone growth in the adolescent athlete;
- (B) identify the mechanism of injuries occurring to adolescent athletes such as ligaments, tendons, growth plates, and cartilage injuries;
- (C) compare intrinsic and extrinsic factors related to sports injuries;
- (D) differentiate between injuries and injury imitators such as oncologic conditions, rheumatologic conditions, infections, and psychological issues;
- (E) discuss the benefits, safety, and appropriate age for strength training;
- (F) investigate and discuss solutions for problematic weight-lifting techniques;
- (G) analyze and discuss the importance of pre-participation physical exams, rehabilitation programs, stretching programs, and coaching techniques as they relate to the prevention of injuries; and
- (H) identify and describe the main orthopedic and medical issues as they relate to the female athlete.

Recommended Resources and Materials:

Resources:

- Trowbridge, Cynthia A., and Cheryl M. Ferris. *Pfeiffer and Mangus's Concepts of Athletic Training*. Burlington, MA: Jones & Bartlett Learning, 2023.
- "Statements." NATA. July 14, 2024. <https://www.nata.org/news-publications/pressroom/statements>.
- "Home." *Korey Stringer Institute*. Accessed August 14, 2024. <https://koreystringer.institute.uconn.edu/>.
- "Health & Safety." *University Interscholastic League (UIL)*. Accessed August 14, 2024. <https://www.uil texas.org/health>.
- "Sports Medicine." Accessed August 14, 2024. <https://www.nfhs.org/resources/sports-medicine/>.
- "Heads Up." *Centers for Disease Control and Prevention*. Accessed August 14, 2024. <https://www.cdc.gov/heads-up/index.html>.

Materials:

- Anatomical models: knee, ankle, shoulder
- Equipment and supplies for labs: disposable gloves, bandaging materials, TheraBand tubing, dumbbell weights

Recommended Course Activities:

- Lecture and discussion with student interaction.
- Cooperative learning group assignments using topics such as concussion management, prevention of heat illness, and developing an Emergency Action Plan.
- Student demonstration of skills taught such as: wound care, taping techniques, CPR techniques.
- Utilize guest speakers including team physicians, professional athletic trainers in various settings, orthopedics, physical therapists, and nutritionists.
- Earn first aid/CPR/AED certification and associated skills.

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- Conduct lab demonstrations with modality equipment in training room.
- Create a working budget for training room supplies and equipment
- Research projects on sports medicine topics

Suggested methods for evaluating student outcomes:

- Written exams
- Oral exams (knee evaluation, ankle and foot evaluation, head and neck evaluation, elbow and hand evaluation, shoulder evaluation, etc.)
- Cooperative learning group projects
- American Red Cross first aid/CPR certification
- Writing assignments for guest speaker presentations

Teacher qualifications:

An assignment for the Texas State Athletic Trainers Association (TSATA) Sports Medicine I course must hold a valid Texas secondary teacher certificate and shall also:

- Be a licensed athletic trainer by the Texas Department of Licensing and Regulation;
- Have completed the TSATA Sports Medicine Instructor's Curriculum Training Course; and
- Hold the TSATA Sports Medicine Instructor certificate of completion.

School district board of trustees have the option to issue a school district teaching permit (SDTP) for individuals who are not certified to teach. The type of SDTP for sports medicine courses would be for any teaching assignment other than "Noncore Academic CTE Courses" certified by the superintendent of the school district and issued by authority of the local district board of trustees. As directed on the form, the employing school district shall submit the completed application form.

Additional information:

- TSATA Sports Medicine Instructor's Curriculum Course; [TSATA.com/Sports Medicine Course](https://www.tsata.com/Sports-Medicine-Course); Cost \$425.00 (One-time fee)