



## Sports Medicine I

PEIMS Code: N1150040

Abbreviation: SPORTMD1

Grade Level(s): 9-10

Award of Credit: 1.0

### 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:

The purpose of the Sports Medicine I course is to allow high school students interested in the sports medicine health care professions to gain the introductory knowledge and concepts of the sports medicine and athletic training professions.

- (1) The student outcomes will align with exploring the concepts of sports injury, athletic healthcare team, sports injury law, sports injury prevention, sports psychology, nutrition, emergency action plan and initial injury recognition, first aid, cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), immediate care of athletic injuries of specific body areas, skin conditions in sports, bloodborne pathogens, thermal injuries, and special medical concerns of the adolescent athlete.

These outcomes will allow the student to gain knowledge for preparation for college-level courses.

### Essential Knowledge and Skills:

General requirements. This course is recommended for students in grades 9 and 10. Students shall be awarded one credit for the successful completion of this course.

- (b) Introduction.
  - (1) In Sports Medicine I students will acquire an introduction to the various health-related professions involved in Sports Medicine careers. Sports Medicine I is for students interested in medical careers.
  - (2) Sports Medicine I is designed to provide students with the opportunity to study the knowledge and skills of sports medicine including concepts of sports injury, athletic healthcare team, sports injury law, sports injury prevention, sports psychology, nutrition, emergency action plan and initial injury evaluation, first-aid/CPR/AED, the injury process, immediate care of athletic injuries of specific body areas, skin conditions in sports,

bloodborne pathogens, thermal injuries, and special medical concerns of the adolescent athlete.

(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, including mild, moderate, and severe;
  - (D) classify the severity of an injury as it relates to sprains and strains using provided data;
  - (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 in 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-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 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 the Health Insurance Portability and Accountability Act (HIPPA) of 1996 and describe its application when managing a sports injury incident;
  - (F) research and discuss local school 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 the 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 on 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 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 and describe 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) identify the sports in which eating disorders occur;
  - (H) describe the signs or behaviors that may indicate the development of an eating disorder;
  - (I) assess the harmful effects of pathogenic eating disorders;
  - (J) evaluate factors such as physical appearance, sports environment, biological characteristics, and psychological characteristics related to an increase of eating disorders in athletes; 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 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 benefits 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 the issues pertaining to return-to-play decisions made by a medical professional.
- (8) Cardiopulmonary resuscitation and automated external defibrillator. The student 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 how to treat an obstruction to the airway.
- (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 the physiological effects and the time frame of the healing process for various sports injuries;
  - (C) evaluate how the injury process affects soft tissue and bone;
  - (D) define pain and describe the assessment of pain and pain control;
  - (E) identify the pharmacologic agents commonly used in the healing process;
  - (F) differentiate between cryotherapy and thermotherapy;
  - (G) describe the importance of the role 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 and 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 and 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 and symptoms and first-aid care;
  - (C) describe the classification of fractures to the upper arm and their signs and symptoms and first-aid care;
  - (D) describe the etiology, signs and symptoms, and first-aid care for sprains, dislocations, and fractures of the elbow;
  - (E) identify the causes, signs and symptoms, and first-aid care for elbow contusions, epicondylitis, and osteochondritis dissecans;
  - (F) describe the etiology, signs and symptoms, and first-aid care for fractures, nerve

- injuries, and tendon injuries of the wrist; and
- (G) describe the etiology, signs and 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 and symptoms, and first-aid care;
- (C) identify sports internal injuries of the thorax and abdomen and their signs and symptoms and first-aid care;
- (D) describe the injuries and related conditions to the lungs, liver, kidneys, spleen, and bladder;
- (E) identify the signs and 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 and symptoms, and first-aid care;
- (C) identify the soft tissue injuries of the pelvis and hip and the etiology, signs and 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 and 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 and 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 and symptoms, and first-aid care for patella femoral joint injuries;
- (H) identify specific patella femoral conditions;

- (I) describe the etiology, signs and symptoms, and first-aid care of patella femoral conditions;
  - (J) identify specific menisci injuries;
  - (K) describe the etiology, signs and symptoms, and first-aid care of menisci injuries;
  - (L) identify specific knee ligament injuries;
  - (M) describe the etiology, signs and symptoms, and first-aid care for knee ligament injuries;
  - (N) research 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 and 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 and 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 a 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 types of wounds;
  - (B) discuss the prevention, etiology, signs and symptoms, and treatment of skin problems related to ultraviolet light;
  - (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 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 and 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 and 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 that 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 and symptoms and treatment of viral infections and bacterial illnesses common to sports participants; and
  - (B) compare the participation guidelines for infections such as respiratory, gastrointestinal, 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:
- (A) research 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, rheumatologic, infections, and psychological issues;
  - (E) discuss the benefits, safety, and appropriate age for strength training;
  - (F) investigate solutions for problematic weight-lifting techniques;
  - (G) analyze 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 affecting the female athlete.

**Recommended Resources and Materials:**

- DVD's illustrating the identification and management of sports injuries
- Existing training room facility will be used as laboratory
- Classroom set of textbooks, such as Concepts of Athletic Training
- NATA Journal and other periodicals

## Sports Medicine I

- Anatomical models
- Miscellaneous equipment for lab practicum's
- Computer software
- Internet resources

### Recommended Course Activities:

- Read text materials.
- Complete worksheets/exams.
- 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.
- Conduct lab experiments with modality equipment in training room.

### Optional Activities:

- Invite a local pharmacist to discuss the effects of various drugs used as doping agents by athletes.
- Invite a speaker from the local health department to talk about sexually transmitted diseases and bloodborne pathogens.
- Require students to investigate UIL rules associated with protective equipment
- Design an athletic training room facility.
- Create a working budget and discuss the difficulties they experience.
- Investigate personal liability insurance and discuss different examples of policies including the details of each policy.
- Research case studies on legal issues of athletic training and have a class discussion on the legal implications of each case.
- Perform a nutritional analysis of students' diets.
- Have students prepare a pre-game menu for an athletic team.
- Demonstrate and explain the use of a psychrometer.

### 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.)
- Instructor textbook test bank
- American Red Cross first aid/CPR certification
- Demonstration of taping techniques
- Demonstration of precautions for bloodborne pathogens
- Demonstration of the application of various modalities (ice, heat, ultrasound, electric stimulation, whirlpool, etc.)
- Demonstration of stretching techniques
- Demonstration of therapeutic exercises including isometric, isotonic, and isokinetic
- Design a training room facility
- Create a working budget for training room supplies and equipment
- Research projects on sports medicine topics

## Sports Medicine I

### Teacher qualifications:

An assignment for the Texas State Athletic Trainers Association (TSATA) Sports Medicine I, II, and III courses 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.

The local school board has 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 “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.

TSATA Sports Medicine Instructor’s Curriculum Course: Cost \$425.00 (One-time fee)

Update Courses are available, but not required: Cost \$100.00

### Additional information:

For more information about the instructor course please visit <http://www.tsata.com/sports-medicine-courses/>