

ExSc 320 Introduction to Athletic Training

MWF 10–12pm

Spring 2011



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Course Description: An introductory course, with emphasis on the prevention and care of athletic injuries.

Overview of Course: Injuries are an inherent part of athletics and sports participation. Courses like this are designed for anyone who needs to understand the fundamentals of preventing and caring for such injuries. This course will cover the sports medicine team, injury prevention techniques, including padding, bracing, and protective taping and bandaging. Types of injuries, the body's response to injury, signs and symptoms, immediate care, including emergency procedure and legal responsibility, follow-up care and general rehabilitation will be discussed.

Course Learning Outcomes (educational competencies and proficiencies):

- RM-C1 Explain the risk factors associated with physical activity.
- RM-C2 Identify and explain the risk factors associated with common congenital and acquired abnormalities, disabilities, and diseases.
- RM-C4 Identify and explain the recommended or required components of a pre-participation examination based on appropriate authorities' rules, guidelines, and/or recommendations.
- RM-C5 Describe the basic concepts and practice of wellness screening.
- RM-C6 Describe the general principles of health maintenance and personal hygiene, including skin care, dental hygiene, sanitation, immunizations, avoidance of infectious and contagious diseases, diet, rest, exercise, and weight control.
- RM-C7 Explain the importance for all personnel to maintain current certification in CPR, automated external defibrillator (AED), and first aid.
- RM-C8 Explain the principles of effective heat loss and heat illness prevention programs. Principles include, but are not limited to, knowledge of the body's thermoregulatory mechanisms, acclimation and conditioning, fluid and electrolyte replacement requirements, proper practice and competition attire, and weight loss.
- RM-C9 Explain the accepted guidelines, recommendations, and policy and position statements of applicable governing agencies related to activity during extreme weather conditions.
- RM-C10 Interpret data obtained from a wet bulb globe temperature (WBGT) or other similar device that measures heat and humidity to determine the scheduling, type, and duration of activity.
- RM-C12 Explain the components and purpose of periodization within a physical conditioning program
- RM-C13 Identify and explain the various types of flexibility, strength training, and cardiovascular conditioning programs. This should include the expected effects (the body's anatomical and physiological adaptation), safety precautions, hazards, and contraindications of each.
- RM-C16 Explain the basic principles associated with the use of protective equipment, including standards for the design, construction, fit, maintenance and reconditioning of protective equipment; and rules and regulations established by the associations that govern the use of protective equipment; and material composition.
- RM-C17 Explain the principles and concepts related to prophylactic taping, wrapping, bracing, and protective pad fabrication
- RM-C18 Explain the principles and concepts related to the fabrication, modification, and appropriate application or use of orthotics and other dynamic and static splints. This includes, but is not limited to, evaluating or identifying the need, selecting the appropriate manufacturing material, manufacturing the orthosis or splint, and fitting the orthosis or splint.
- RM-C19 Explain the basic principles and concepts of home, school, and workplace ergonomics and their relationship to the prevention of illness and injury.
- RM-C20 Recognize the clinical signs and symptoms of environmental stress.
- RM-P6 Obtain, interpret, and make decisions regarding environmental data. This includes, but is not limited to the ability to:

- RM-P6.2 Formulate and implement a comprehensive, proactive emergency action plan specific to lightening safety
- PA-C3 Explain normal and abnormal circulation and the physiology of fluid homeostasis.
- PA-C4 Identify the normal acute and chronic physiological and pathological responses (e.g., inflammation, immune response, and healing process) of the human body to trauma, hypoxia, microbiologic agents, genetic derangements, nutritional deficiencies, chemicals, drugs, and aging affecting the musculoskeletal and other organ systems, and musculoskeletal system adaptations to disuse.
- PA-C5 Describe the etiology, pathogenesis, pathomechanics, signs, symptoms, and epidemiology of common orthopedic injuries, illnesses and diseases to the body's systems.
- PA-C6 Describe the body's responses to physical exercise during common diseases, illnesses, and the injury.
- DI-C4 Explain directional terms and cardinal planes used to describe the body and the relationship of its parts.
- DI-C5 Describe the principles and concepts of body movement including functional classification of joints, arthrokinematics, normal ranges of joint motion, joint action terminology, and muscle groups responsible for joint actions (prime movers, synergists), skeletal muscle contraction, and kinesthesia / proprioception.
- DI-C6 Describe common techniques and procedures for evaluating common injuries including taking a history, inspection/observation, palpation, functional testing, special evaluation techniques, and neurological and circulatory tests.
- DI-C7 Explain the relationship of injury assessment to the systematic observation of the person as a whole.
- DI-C8 Describe the nature of diagnostic tests of the neurological function of cranial nerves, spinal nerves, and peripheral nerves using myotomes, dermatomes, and reflexes.
- DI-C10 Explain the roles of special tests in injury assessment.
- DI-C12 Describe strength assessment using resistive range of motion, break tests, and manual muscle testing.
- DI-C14 Describe the clinical signs and symptoms of environmental stress.
- DI-C17 Describe the components of medical documentation (e.g. SOAP, HIPS and HOPS).
- MC-C4 Describe and know when to refer common eye pathologies from trauma and/or localized infection (e.g., conjunctivitis, hyphema, corneal injury, stye, scleral trauma).
- MC-C5 Describe and know when refer common ear pathologies from trauma and/or localized infection (e.g., otitis, ruptured tympanic membrane, impacted cerumen).
- MC-C6 Describe and know when to refer common pathologies of the mouth, sinus, oropharynx, and nasopharynx from trauma and/or localized infection (e.g., gingivitis, sinusitis, laryngitis, tonsillitis, pharyngitis).
- MC-C10 Explain the possible causes of sudden death syndrome.
- MC-C21 Describe and know when to refer common injuries or conditions of the teeth (e.g., fractures, dislocations, caries).
- MC-C22 Explain the importance and proper procedures for measuring body temperature (e.g., oral, axillary, rectal).
- AC-C1 Explain the legal, moral, and ethical parameters that define the scope of first aid and emergency care and identify the proper roles and responsibilities of the certified athletic trainer.
- AC-C5 Describe the principles and rationale of the initial assessment including the determination of whether the accident scene is safe, what may have happened, and the assessment of airway, breathing, circulation, level of consciousness and other life-threatening conditions.
- AC-C6 Differentiate the components of a secondary assessment to determine the type and severity of the injury or illness sustained.
- AC-C8 Describe pathological signs of acute/traumatic injury and illness including, but not limited to, skin temperature, skin color, skin moisture, pupil reaction, and neurovascular function.
- AC-C13 Describe the proper management of external hemorrhage, including the location of pressure points, use of universal precautions, and proper disposal of biohazardous materials.
- AC-C14 Identify the signs and symptoms associated with internal hemorrhaging.
- AC-C15 Describe the appropriate use of aseptic or sterile techniques, approved sanitation methods, and universal precautions for the cleansing and dressing of wounds.
- AC-C16 Describe the injuries and illnesses that require medical referral.
- AC-C17 Explain the application principles of rest, cold application, elevation, and compression in the treatment of acute injuries.
- AC-C18 Describe the signs, symptoms, and pathology of acute inflammation.

- AC-C19 Identify the signs and symptoms of head trauma, including loss of consciousness, changes in standardized neurological function, cranial nerve assessment, and other symptoms that indicate underlying trauma.
- AC-C20 Explain the importance of monitoring a patient following a head injury, including obtaining clearance from a physician before further patient participation.
- AC-C21 Define cerebral concussion, list the signs and symptoms of concussions, identify the methods for determining the neurocognitive status of a patient who sustains a concussion and describe contemporary concepts for the management and return-to-participation of a patient who sustains a concussion.
- AC-C22 Identify the signs and symptoms of trauma to the cervical, thoracic and lumbar spines, the spinal cord, and spinal nerve roots, including neurological signs, referred symptoms, and other symptoms that indicate underlying trauma and pathology.
- AC-C23 Describe cervical stabilization devices that are appropriate to the circumstances of an injury.
- AC-C24 Describe the indications, guidelines, proper techniques and necessary supplies for removing equipment and clothing in order to evaluate and/or stabilize the involved area.
- AC-C26 Identify the appropriate short-distance transportation method, including immobilization, for an injured patient.
- AC-C27 Identify the signs, symptoms, possible causes, and proper management of the following:
- AC-C27a Different types of shock
- AC-C27e Allergic, thermal, and chemical reactions of the skin (including infestations and insect bites)
- AC-C29 Identify the signs, symptoms, and treatment of patients suffering from adverse reactions to environmental conditions.
- AC-C30 Identify information obtained during the examination to determine when to refer an injury or illness for further or immediate medical attention.
- AC-P1 Survey the scene to determine whether the area is safe and determine what may have happened.
- TM-C1 Describe the physiological and pathological processes of trauma, wound healing and tissue repair and their implications on the selection and application of therapeutic modalities used in a treatment and/or rehabilitation program.
- EX-C4 Describe the appropriate selection and application of therapeutic exercises taking the following into consideration:
- EX-C4a The physiological responses of the human body to trauma
- EX-C4b The physiological effects of inactivity and immobilization on the musculoskeletal, cardiovascular, nervous, and respiratory systems of the human body
- EX-C4d The physiological adaptations induced by the various forms of therapeutic exercise, such as fast- versus slow-twitch muscle fibers
- EX-C8 Explain the effectiveness of taping, wrapping, bracing, and other supportive/protective methods for facilitation of safe progression to advanced therapeutic exercises and functional activities.
- PH-C4 Explain the concepts of pharmacokinetics (absorption, distribution, metabolism, and elimination) and the suspected influence that exercise might have on these processes.
- PH-C5 Explain the concepts related to bioavailability, half-life, and bioequivalence.
- PH-C6 Explain the general pharmacodynamic principles as they relate to the mechanism of drug action and therapeutic effectiveness (e.g. receptor theory, dose-response relationship, potency, and drug interactions).
- PH-C7 Describe the common routes used to administer medications (e.g., oral, inhalation, and injection) and their advantages and disadvantages.
- PS-C2 Explain the stress-response model and the psychological and emotional responses to trauma and forced inactivity.
- PS-C3 Describe the motivational techniques that the athletic trainer must use during injury rehabilitation and reconditioning.
- PS-C5 Describe the basic principles of general personality traits, associated trait anxiety, locus of control, and patient and social environment interactions.
- PS-C6 Explain the importance of providing health care information to patients, parents/guardians, and others regarding the psychological and emotional well being of the patient.
- PS-C7 Describe the roles and function of various community-based health care providers (to include, but not limited, to: psychologists, counselors, social workers, human resources personnel) and the accepted protocols that govern the referral of patients to these professionals.

- PS-C8 Describe the theories and techniques of interpersonal and cross-cultural communication among athletic trainers, their patients, and others involved in the health care of the patient.
- PS-C9 Explain the basic principles of counseling (discussion, active listening, and resolution) and the various strategies that certified athletic trainers may employ to avoid and resolve conflicts among superiors, peers, and subordinates.
- PS-C13 Describe the acceptance and grieving processes that follow a catastrophic event and the need for a psychological intervention and referral plan for all parties affected by the event.
- NU-C13 Explain consequences of improper fluid replacement.
- AD-C1 Describe organization and administration of preparticipation physical examinations and screening including, but not limited to, developing assessment and record-keeping forms that include the minimum recommendations from recognized health and medical organizations, scheduling of appropriate health and medical personnel, and efficient site use.
- AD-C2 Identify components of a medical record (e.g., emergency information, treatment documentation, epidemiology, release of medical information, etc.), common medical record-keeping techniques and strategies, and strengths and weaknesses of each approach and the associated implications of privacy statutes (Health Insurance Portability and Accountability Act [HIPAA] and Federal Educational Rights Privacy Act [FERPA]).
- AD-C3 Identify current injury/illness surveillance and reporting systems.
- AD-C10 Describe the various types of health insurance models (e.g., health maintenance organization [HMO], preferred provider organization [PPO], fee-for-service, cash, and Medicare) and the common benefits and exclusions identified within these models.
- AD-C11 Describe the concepts and procedures for third-party insurance reimbursement including the use of diagnostic (ICD-9-CM) and procedural (CPT) coding.
- AD-C12 Explain components of the budgeting process, including purchasing, requisition, bidding, and inventory.
- AD-C13 Describe basic architectural considerations that relate to the design of safe and efficient clinical practice settings and environments.
- AD-C16 Identify and describe basic components of a comprehensive emergency plan for the care of acutely injured or ill patients, which include (1) emergency action plans for each setting or venue; (2) personnel education and rehearsal; (2) emergency care supplies and equipment appropriate for each venue; (3) availability of emergency care facilities; (4) communication with onsite personnel and notification of EMS; (5) the availability, capabilities, and policies of community-based emergency care facilities and community-based managed care systems; (6) transportation; (7) location of exit and evacuation routes; (8) activity or event coverage; and (9) record keeping.
- AD-C17 Explain basic legal concepts as they apply to a medical or allied health care practitioner's responsibilities (e.g., standard of care, scope of practice, liability, negligence, informed consent and confidentiality, and others).
- AD-C18 Identify components of a comprehensive risk management plan that addresses the issues of security, fire, electrical and equipment safety, emergency preparedness, and hazardous chemicals.
- AD-C19 Describe strategic processes and effective methods for promoting the profession of athletic training and those services that athletic trainers perform in a variety of practice settings (e.g., high schools and colleges, professional and industrial settings, hospitals and community-based health care facilities, etc.).
- AD-C20 Differentiate the roles and responsibilities of the athletic trainer from those of other medical and allied health personnel who provide care to patients involved in physical activity and describe the necessary communication skills for effectively interacting with these professionals.
- AD-C21 Describe role and functions of various community-based medical, paramedical, and other health care providers and protocols that govern the referral of patients to these professionals.
- PD-C1 Explain the role and function of state athletic training practice acts and registration, licensure, and certification agencies including (1) basic legislative processes for the implementation of practice acts, (2) rationale for state regulations that govern the practice of athletic training, and (3) consequences of violating federal and state regulatory acts.
- PD-C2 Describe the process of attaining and maintaining national and state athletic training professional credentials.
- PD-C3 Describe the current professional development requirements for the continuing education of athletic trainers and how to locate available, approved continuing education opportunities.
- PD-C4 Describe the role and function of the governing structures of the National Athletic Trainers' Association.

- PD-C5 Differentiate the essential documents of the national governing, certifying, and accrediting bodies, including, but not limited to, the Athletic Training Educational Competencies, Standards of Practice, Code of Ethics, Role Delineation Study, and the Standards for the Accreditation of Entry-Level Athletic Training Education Programs.
- PD-C7 Describe the role and function of the professional organizations and credentialing agencies that impact the athletic training profession.
- PD-C9 Identify the objectives, scope of practice and professional activities of other health and medical organizations and professions and the roles and responsibilities of these professionals in providing services to patients.
- PD-C10 Identify the issues and concerns regarding the health care of patients (e.g., public relations, third-party payment, and managed care).
- PD-C16 Summarize the history and development of the athletic training profession.
- PD-C17 Describe the theories and techniques of interpersonal and cross-cultural communication among athletic trainers, patients, administrators, health care professionals, parents/guardians, and other appropriate personnel.

Text: Prentice, W.E. Principles of Athletic Training. St. Louis: Mosby College Publishing (most current edition).

Grading Criteria:

2 Written Exams @ 100pts	200 points
1 Final Exam @ 100 pts	100 points
3 Abstracts	90 points
Random Quizzes	0–30 points

94 - 100% = A	90 - 93% = A-	87 - 89% = B+	84 - 86% = B	80 - 83% = B-	77 - 79% = C+
74 - 77% = C	70 - 73% = C-	67 - 69% = D+	63 - 66% = D	60 - 62% = D-	Below 60% = E

Examinations: 100 points. 75% multiple choice and True/False; 25% short answer. Final examination will be 100% multiple choice and true/false.

Abstracts: No more than one page, single spaced. Each abstract will come from a different domain of athletic training (prevention, recognition and evaluation, management and care, rehabilitation, administration, professional development, and education and counseling). The abstract will be an original research article taken from one of the following journals:

- Journal of Athletic Training
- American Journal of Sports Medicine
- Journal of Orthopedic Sports Physical Therapy
- Medicine and Science in Sports and Exercise
- Journal of Sport Rehabilitation
- Journal of Bone and Joint Surgery
- International Journal of Sports Medicine

List the source in AMA format 1st, followed by a structured abstract consisting of subheadings (Background, Methods, Results, and Discussion). The discussion should contain your opinions about the article and what contribution it makes to athletic training. A copy of the article must be attached to the abstract.

Example AMA Reference:

Hopkins JT, Ingersoll CD, Edwards JE, Klootwyk TE. Cryotherapy and TENS decrease arthrogenic muscle inhibition of the vastus medialis after knee joint effusion. *J Athl Train.* 2002;37:25-31.

Random Quizzes: Random quizzes will be given periodically over previously discussed lecture material.

Students with Disabilities

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Honor Code

You signed the honor code. You know what it is. Follow it. I will enforce it.

** Course outline may vary slightly over the term.

Session	Topic	Assignments
4/27	Introduction	
4/29	The Sports Medicine Team	Ch. 1
5/2	Training and Conditioning	Ch. 4
5/4	Nutritional Considerations	Ch. 5
5/6	Environmental Conditions	Ch. 6
5/9	Protective Equipment	Ch. 7
	Acute Care & Emergency	Ch. 12
5/11	Psychology of Injury	Ch. 11
	Review and Catch-up	Ch. 17
		Abstract #1 Due
5/13	Examination #1	
5/16	Tissue Response to Injury	Ch. 10
5/18	Mechanisms and Characteristics of Injury	Ch. 9
5/20	Therapeutic Modalities	Ch. 15
5/23	Rehab Techniques	Ch. 16
5/25	Injury Assessment	Ch. 13
		Abstract #2 Due
5/27	Examination #2	
6/1	Foot, Ankle & Lower leg	Ch. 18&19
6/3	Finish Foot and Ankle, Knee	Ch. 20
6/6	Knee	
6/8	Thigh, Hip, Groin	Ch. 21
6/10	Shoulder, Elbow, Wrist & Hand	Ch. 22-24
		Abstract #3 Due
6/13	Review and Catch-up	
TBA	Examination #3	