ATHLETIC TRAINING

Mission

The primary mission of the Penn State Undergraduate Athletic Training Education Program (ATEP) is to promote optimal health and well-being in the physically active population by providing educational opportunities to prepare qualified undergraduate students for a career as entry-level certified athletic trainers. The ATEP is structured according to competencies and proficiencies provided by the National Athletic Trainers' Association’s Education Council in accordance with the National Athletic Trainers’ Association (NATA) 5th Edition Role Delineation Study.

Penn State is committed to providing quality classroom and clinical education as well as rewarding field experiences. We will use current technology and promotes the development of the profession through research, publications, and professional lectures. The purpose of this program is to prepare well-rounded students for eligibility to sit for the Board of Certification examination and pursue careers as certified athletic trainers. In addition this program aims to produce students who are committed to academic and clinical excellence, are socially responsible, and have demonstrated cultural sensitivity.

The Athletic Training Education Program seeks to enhance student learning through a variety of interactive and problem solving experiences that mandates that students demonstrate cognitive understanding of the health sciences, work with diverse individuals and populations, and perform specific athletic training skills and techniques. The development of competent athletic trainers is based on a program of curricular experiences that require students to demonstrate and apply their knowledge, skills, and attributes in the clinical setting.

We are committed to an ongoing evaluation of our Athletic Training Education Program to ensure our students are receiving the highest quality education possible. Furthermore, we are committed to staying abreast to the ongoing changes in our profession in order to keep our students current in our evolving field. Penn State aspires to be a program of recognized excellence. It is our intentions to establish this program as a leader in undergraduate athletic training education.

Goals and Objectives
GOAL #1 (Risk Management)
Prepare the individual in the knowledge, skills, values, and decision making related to risk management and injury prevention required of the entry-level athletic trainer.

Objectives
Upon completion of the athletic training education program the individual will be able to:

1. Explain the risk factors associated with physical activity.
2. Identify and explain the risk factors associated with common congenital and acquired abnormalities, disabilities, and diseases.
3. Identify and explain the epidemiology data related to the risk of injury and illness related to participation in physical activity.
4. Identify and explain the recommended or required components of a preparticipation examination based on appropriate authorities’ rules, guidelines, and/or recommendations.
5. Describe the basic concepts and practice of wellness screening.
6. 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.
7. Explain the importance for all personnel to maintain current certification in CPR, automated external defibrillator (AED), and first aid.
8. 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.
9. Explain the accepted guidelines, recommendations, and policy and position statements of applicable governing agencies related to activity during extreme weather conditions.
10. Interpret data obtained from a wet bulb globe temperature (WGBT) or other similar device that measures heat and humidity to determine the scheduling, type, and duration of activity.
11. Explain the importance and use of standard tests, test equipment, and testing protocol for the measurement of cardiovascular and respiratory fitness, body composition, posture, flexibility, muscular strength, power, and endurance.
12. Explain the components and purpose of periodization within a physical conditioning program.
13. 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.
14. Explain the precautions and risks associated with exercise in special populations.
15. Describe the components for self-identification of the warning signs of cancer.
16. 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.
17. Explain the principles and concepts related to prophylactic taping, wrapping,
bracing, and protective pad fabrication.
18. 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.
19. Explain the basic principles and concepts of home, school, and workplace
ergonomics and their relationship to the prevention of illness and injury.
21. Instruct the patient how to properly perform fitness tests to assess his or her
physical status and readiness for physical activity. Interpret the results of these
tests according to requirements established by appropriate governing agencies
and/or a physician. These tests should assess:
   a. Flexibility
   b. Strength
   c. Power
   d. Muscular Endurance
   e. Agility
   f. Cardiovascular Endurance
   g. Speed
22. Develop a fitness program appropriate to the patient’s needs and selected activity
or activities that meet the requirements established by the appropriate governing
agency and/or physician for enhancing:
   a. Flexibility
   b. Strength
   c. Power
   d. Muscular Endurance
   e. Agility
   f. Cardiovascular Endurance
   g. Speed
23. Instruct a patient regarding fitness exercises and the use of weight training
equipment to include correction or modification of inappropriate, unsafe, or
dangerous lifting techniques.
24. Select and fit appropriate standard protective equipment on the patient for safe
participation in sport and/or physical activity. This includes but is not limited to:
   a. Shoulder pads
   b. Helmet/headgear
   c. Footwear
   d. Mouth guard
   e. Prophylactic knee brace
   f. Prophylactic ankle brace
25. Select, fabricate, and apply appropriate preventive taping and wrapping procedures, splints, braces, and other special protective devices. Procedures and devices should be consistent with sound anatomical and biomechanical principles.

26. Obtain, interpret, and make decisions regarding environmental data. This includes, but is not limited to the ability to:
   a. Operate a sling psychrometer and/or wet bulb globe index
   b. Formulate and implement a comprehensive, proactive emergency action plan specific to lightning safety
   c. Access local weather/environmental information
   d. Assess hydration status using weight charts, urine color charts, or specific gravity measurements

27. Plan, implement, evaluate, and modify a fitness program specific to the physical status of the patient. This will include instructing the patient in proper performance of the activities and the warning signs and symptoms of potential injury that may be sustained. Effective lines of communication shall be established to elicit and convey information about the patient’s status and the prescribed program. While maintaining patient confidentiality, all aspects of the fitness program shall be documented using standardized record-keeping methods.

28. Select, apply, evaluate, and modify appropriate standard protective equipment and other custom devices for the patient in order to prevent and/or minimize the risk of injury to the head, torso, spine and extremities for safe participation in sport and/or physical activity. Effective lines of communication shall be established to elicit and convey information about the patient’s situation and the importance of protective devices to prevent and/or minimize injury.

29. Demonstrate the ability to develop, implement, and communicate effective policies and procedures to allow safe and efficient physical activity in a variety of environmental conditions. This will include obtaining, interpreting, and recognizing potentially hazardous environmental conditions and making the appropriate recommendations for the patient and/or activity. Effective lines of communication shall be established with the patient, coaches and/or appropriate officials to elicit and convey information about the potential hazard of the environmental condition and the importance of implementing appropriate strategies to prevent injury.

GOAL #2 (Pathology)
Prepare the individual in the knowledge and values related to the pathology of injuries and illnesses required of the entry-level athletic trainer.

Objectives
Upon completion of the athletic training education program the individual will be able to:

1. Describe the essential components of a typical human cell. Include the normal structure and the function of each component and explain the abnormal symptoms associated with injury, illness, and disease.
2. Explain gross cellular adaptations in response to stress, injury, or disease (e.g., atrophy, hypertrophy, differentiation, hyperplasia, metaplasia, and tumors).
3. Explain normal and abnormal circulation and the physiology of fluid homeostasis.
4. 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.
5. Describe the etiology, pathogenesis, pathomechanics, signs, symptoms, and epidemiology of common orthopedic injuries, illnesses and diseases to the body’s systems.
6. Describe the body’s responses to physical exercise during common diseases, illnesses, and the injury.

GOAL #3 (Diagnosis)
Prepare the individual in the knowledge, skills, values, and decision making related to assessment and evaluation required of the entry-level athletic trainer.

Objectives
Upon completion of the athletic training education program the individual will be able to:

1. Demonstrate knowledge of the systems of the human body.
2. Describe the anatomical and physiological growth and development characteristics as well as gender differences across the lifespan.
3. Describe the physiological and psychological effects of physical activity and their impact on performance.
4. Explain directional terms and cardinal planes used to describe the body and the relationship of its parts.
5. 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.
6. 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.
7. Explain the relationship of injury assessment to the systematic observation of the person as a whole.
8. Describe the nature of diagnostic tests of the neurological function of cranial nerves, spinal nerves, and peripheral nerves using myotomes, dermatomes, and reflexes.
9. Assess neurological status, including cranial nerve function, myotomes, dermatomes and reflexes, and circulatory status.
10. Explain the roles of special tests in injury assessment.
11. Explain the role of postural examination in injury assessment including gait analysis.
12. Describe strength assessment using resistive range of motion, break tests, and manual muscle testing.
13. Describe the use of diagnostic tests and imaging techniques based on their applicability in the assessment of an injury when prescribed by a physician.
15. Describe and identify postural deformities.
16. Explain medical terminology and abbreviations necessary to communicate with physicians and other health professionals.
17. Describe the components of medical documentation (e.g. SOAP, HIPS and HOPS).
18. Obtain a medical history of the patient that includes a previous history and a history of the present injury.
19. Perform inspection/observation of the clinical signs associated with common injuries including deformity, posturing and guarding, edema/swelling, hemarthrosis, and discoloration.
20. Perform inspection/observation of postural, structural, and biomechanical abnormalities.
21. Palpate the bones and soft tissues to determine normal or pathological characteristics.
22. Measure the active and passive joint range of motion using commonly accepted techniques, including the use of a goniometer and inclinometer.
23. Grade the resisted joint range of motion/manual muscle testing and break tests.
24. Apply appropriate stress tests for ligamentous or capsular stability, soft tissue and muscle, and fractures.
25. Apply appropriate special tests for injuries to the specific areas of the body as listed above.
26. Assess neurological status, including cranial nerve function, myotomes, dermatomes and reflexes, and circulatory status.
27. Document the results of the assessment including the diagnosis.
28. Demonstrate a musculoskeletal assessment of upper extremity, lower extremity, head/face, and spine (including the ribs) for the purpose of identifying (a) common acquired or congenital risk factors that would predispose the patient to injury and (b) a musculoskeletal injury. This will include identification and recommendations for the correction of acquired or congenital risk factors for injury. At the conclusion of the assessment, the student will diagnose the patient’s condition and determine and apply immediate treatment and/or referral in the management of the condition. Effective lines of communication should be established to elicit and convey information about the patient’s status. While
maintaining patient confidentiality, all aspects of the assessment should be
documented using standardized record-keeping methods.

a. Foot and toes
b. Ankle
c. Lower leg
d. Knee
e. Thigh
f. Hip/Pelvis/Sacroiliac Joint
g. Lumbar Spine
h. Thoracic Spine
i. Ribs
j. Cervical Spine
k. Shoulder Girdle
l. Upper Arm
m. Elbow
n. Forearm
o. Wrist
p. Hand, Fingers, Thumb
q. Temporomandibular Joint

**GOAL #4 (Medical Conditions)**

Prepare the individual in the knowledge, skills, values, and decision making related to
understanding medical conditions and disabilities associated with physically active
individuals required of the entry-level athletic trainer.

**Objectives**

Upon completion of the athletic training education program the individual will be
able to:

1. Describe and know when to refer common congenital or acquired
   abnormalities, physical disabilities, and diseases affecting people who engage
   in physical activity throughout their life span (e.g., arthritis, diabetes).
2. Understand the effects of common illnesses and diseases in physical activity.
3. Describe common techniques and procedures for evaluating common medical
   conditions and disabilities including taking a history, inspection/observation,
   palpation, functional testing, special evaluation techniques (e.g., assessing
   heart, lung and bowel sounds), and neurological and circulatory tests.
4. Describe and know when to refer common eye pathologies from trauma and/or
   localized infection (e.g., conjunctivitis, hyphema, corneal injury, stye, scleral
   trauma).
5. Describe and know when refer common ear pathologies from trauma and/or
   localized infection (e.g., otitis, ruptured tympanic membrane, impacted
   cerumen).
6. 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).
7. Describe and know when to refer common and significant respiratory infections, thoracic trauma, and lung disorders. (e.g., influenza, pneumonia, bronchitis, rhinitis, sinusitis, upper-respiratory infection (URI), pneumothorax, hemothorax, pneumomediastinum, exercise-induced bronchospasm, exercise-induced anaphylaxis, asthma).

8. Explain the importance and proper use of a peak flowmeter or similar device in the evaluation and management of respiratory conditions.

9. Describe strategies for reducing the frequency and severity of asthma attacks.

10. Explain the possible causes of sudden death syndrome.

11. Describe and know when to refer common cardiovascular and hematological medical conditions from trauma, deformity, acquired disease, conduction disorder, and drug abuse (e.g., coronary artery disease, hypertrophic cardiomyopathy, heart murmur, mitral valve prolapse, commotion cordis, Marfan’s syndrome, peripheral embolism, hypertension, arrhythmogenic right ventricular dysplasia, Wolf-Parkinson-White syndrome, anemias, sickle cell anemia and sickle cell trait [including rhabdomyolysis], hemophilia, deep vein thrombosis, migraine headache, syncope).

12. Describe and know when to refer common medical conditions that affect the gastrointestinal and hepatic-biliary systems from trauma, chemical and drug irritation, local and systemic infections, psychological stress, and anatomic defects (e.g., hepatitis, pancreatitis, dyspepsia, gastroesophageal reflux, peptic ulcer, gastritis and gastroenteritis, inflammatory bowel disease, irritable bowel syndrome, appendicitis, sports hernia, hemorrhoids, splenomegaly, liver trauma).

13. Describe and know when to refer common medical conditions of the endocrine and metabolic systems from acquired disease and acute and chronic nutritional disorders (e.g., diabetes mellitus and insipidus, hypothyroidism, Cushing’s syndrome, thermoregulatory disorders, gout, osteoporosis).

14. Describe and know when to refer common medical conditions of the renal and urogenital systems from trauma, local infection, congenital and acquired disease, nutritional imbalance, and hormone disorder (e.g., kidney stones, genital trauma, gynecomastia, monorchidism, scrotum and testicular trauma, ovarian and testicular cancer, breast cancer, testicular torsion, varicoceles, endometriosis, pregnancy and ectopic pregnancy, female athlete triad, primary amenorrhea, oligomenorrhea, dysmenorrhea, kidney laceration or contusion, cryptorchidism).

15. Describe and know when to refer common and/or contagious skin lesions from trauma, infection, stress, drug reaction, and immune responses (e.g., wounds, bacteria lesions, fungal lesions, viral lesions, bites, acne, eczema dermatitis, ringworm).

16. Describe and know when to refer common medical conditions of the immune system from infection, congenital and acquired disease, and unhealthy lifestyle. (e.g., arthritis, gout, upper respiratory tract infection [URTI], influenza, pneumonia, myocarditis, gastrointestinal infection, urinary tract infection [UTI], sexually transmitted diseases [STDs], pelvic inflammatory disease, meningitis, osteomyelitis, septic arthritis, chronic fatigue and
overtraining, infectious mononucleosis, human immunodeficiency virus (HIV) infection and AIDS, hepatitis B virus infection, allergic reaction and anaphylaxis, childhood infectious diseases [measles, mumps, chickenpox]).

17. Describe and know when to refer common neurological medical disorders from trauma, anoxia, drug toxicity, infection, and congenital malformation (e.g., concussion, postconcussion syndrome, second-impact syndrome, subdural and epidural hematoma, epilepsy, seizure, convulsion disorder, meningitis, spina bifida, cerebral palsy, chronic regional pain syndrome [CRPS], cerebral aneurysm).

18. Describe and know when to refer common psychological medical disorders from drug toxicity, physical and emotional stress, and acquired disorders (e.g., substance abuse, eating disorders/disordered eating, depression, bipolar disorder, seasonal affective disorder, anxiety disorders, somatoform disorders, personality disorders, abusive disorders, and addiction).

19. Describe a plan to access appropriate medical assistance on disease control, notify medical authorities, and prevent disease epidemics.

20. Describe and know when to refer common cancers (e.g., testicular, breast).

21. Describe and know when to refer common injuries or conditions of the teeth (e.g., fractures, dislocations, caries).

22. Explain the importance and proper procedures for measuring body temperature (e.g., oral, axillary, rectal).

23. Obtain a medical history of the patient that includes a previous history and a history of the present condition.

24. Perform a visual observation of the clinical signs associated with common injuries and/or illnesses including deformity, edema/swelling, discoloration, and skin abnormalities.

25. Palpate the bones and soft tissues, including the abdomen, to determine normal or pathological characteristics.

26. Apply commonly used special tests and instruments (e.g., otoscope, stethoscope, ophthalmoscope, peak flowmeter, chemical “dipsticks” [or similar devices]) and document the results for the assessment of:
   a. Vital signs including respiration (including asthma), pulse and circulation, and blood pressure
   b. Heart, lung, and bowel sounds
   c. Pupil response, size and shape, and ocular motor function
   d. Body temperature
   e. Ear, nose, throat and teeth
   f. Urinalysis

27. Demonstrate a general and specific (e.g., head, torso and abdomen) assessment for the purpose of (a) screening and referral of common medical conditions, (b) treating those conditions as appropriate, and (c) when appropriate, determining a patient’s readiness for physical activity. Effective lines of communication should be established to elicit and convey information about the patient’s status and the treatment program. While maintaining confidentiality, all aspects of the assessment, treatment, and determination for activity should be documented using standardized record-keeping methods.
a. Derma
b. Head, including the brain
c. Face, including the maxillofacial region
d. Abdomen, including the abdominal organs, the renal and urogenital systems
e. Eyes
f. Ear, nose and throat

**GOAL #5 (Acute Care)**

Prepare the individual in the knowledge, skills, values, and decision making related to recognition, assessment and patient treatment for acute injuries and illnesses and provide appropriate medical referral required of the entry-level athletic trainer.

**Objectives**

Upon completion of the athletic training education program the individual will be able to:

1. 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.
2. Describe the availability, content, purpose, and maintenance of contemporary first aid and emergency care equipment.
3. Determine what emergency care supplies and equipment are necessary for circumstances in which the athletic trainer is the responsible first responder.
4. Know and be able to use appropriately standard nomenclature of injuries and illnesses.
5. 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.
6. Differentiate the components of a secondary assessment to determine the type and severity of the injury or illness sustained.
7. Identify the normal ranges for vital signs.
8. 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.
9. Describe the current standards of first aid, emergency care, rescue breathing, and cardiopulmonary resuscitation for the professional rescuer.
10. Describe the role and function of an automated external defibrillator in the emergency management of acute heart failure and abnormal heart rhythms.
11. Describe the role and function of supplemental oxygen administration as an adjunct to cardiopulmonary resuscitation techniques.
12. Describe the characteristics of common life-threatening conditions that can occur either spontaneously or as the result of direct trauma to the throat, thorax and viscera, and identify the management of these conditions.
13. Describe the proper management of external hemorrhage, including the location of pressure points, use of universal precautions, and proper disposal of biohazardous materials.
14. Identify the signs and symptoms associated with internal hemorrhaging.
15. Describe the appropriate use of aseptic or sterile techniques, approved sanitation methods, and universal precautions for the cleansing and dressing of wounds.
16. Describe the injuries and illnesses that require medical referral.
17. Explain the application principles of rest, cold application, elevation, and compression in the treatment of acute injuries.
18. Describe the signs, symptoms, and pathology of acute inflammation.
19. 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.
20. Explain the importance of monitoring a patient following a head injury, including obtaining clearance from a physician before further patient participation.
21. 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.
22. 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.
23. Describe cervical stabilization devices that are appropriate to the circumstances of an injury.
24. Describe the indications, guidelines, proper techniques and necessary supplies for removing equipment and clothing in order to evaluate and/or stabilize the involved area.
25. Describe the effective management, positioning, and immobilization of a patient with a suspected spinal cord injury.
26. Identify the appropriate short-distance transportation method, including immobilization, for an injured patient.
27. Identify the signs, symptoms, possible causes, and proper management of the following:
   a. Different types of shock
   b. Diabetic coma
   c. Seizures
   d. Toxic drug overdose
   e. Allergic, thermal, and chemical reactions of the skin (including infestations and insect bites)
28. Identify the signs and symptoms of serious communicable diseases and describe the appropriate steps to prevent disease transmission. Identify the
signs and symptoms of serious communicable diseases and describe the appropriate steps to prevent disease transmission.

29. Identify the signs, symptoms, and treatment of patients suffering from adverse reactions to environmental conditions.

30. Identify information obtained during the examination to determine when to refer an injury or illness for further or immediate medical attention.

31. Describe the proper immobilization techniques and select appropriate splinting material to stabilize the injured joint or limb and maintain distal circulation.

32. Describe the proper ambulatory aid and technique for the injury and patient.

33. Describe home care and self-treatment plans of acute injuries and illnesses.

34. Survey the scene to determine whether the area is safe and determine what may have happened.

35. Perform an initial assessment to assess the following, but not limited to:
   a. Airway
   b. Breathing
   c. Circulation
   d. Level of consciousness
   e. Other life-threatening conditions

36. Implement appropriate emergency treatment strategies, including but not limited to:
   a. Activate an emergency action plan
   b. Establish and maintain an airway in an infant, child, and adult
   c. Establish and maintain an airway in a patient wearing shoulder pads, headgear or other protective equipment and/or with a suspected spine injury
   d. Perform one – a two-person CPR on an infant, child, and adult
   e. Utilize a bag-valve mask on an infant, child, and adult
   f. Utilize an automated external defibrillator (AED) according to current accepted practice protocols
   g. Normalize body temperature in situations of severe/life-threatening heat or cold stress
   h. Control bleeding using universal precautions
   i. Administer an EpiPen for anaphylactic shock

37. Perform a secondary assessment and employ the appropriate management techniques for non-life-threatening situations, including but not limited to:
   a. Open and closed wounds (using universal precautions)
   b. Closed-head trauma (using standard neurological tests and tests for cranial nerve function)
   c. Environmental illness
   d. Seizures
   e. Acute asthma attack
   f. Different types of shock
   g. Thoracic, respiratory, and internal abdominal injury or illness
   h. Acute musculoskeletal injuries (i.e. sprains, strains, fractures, dislocations)
38. Demonstrate the ability to manage acute injuries and illnesses. This will include surveying the scene, conducting an initial assessment, utilizing universal precautions, activating the emergency action plan, implementing appropriate emergency techniques and procedures, conducting a secondary assessment and implementing appropriate first aid techniques and procedures for non-life-threatening situations. Effective lines of communication should be established and the results of the assessment, management and treatment should be documented.

GOAL #6 (Therapeutic Modalities)
Prepare the individual in the knowledge, skills, values, and decision making related to therapeutic modalities required of the entry-level athletic trainer.

Objectives
Upon completion of the athletic training education program the individual will be able to:

1. 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.

2. Explain the principles of physics, including basic concepts associated with the electromagnetic and acoustic spectra (e.g., frequency, wavelength) associated with therapeutic modalities.

3. Explain the terminology, principles, basic concepts, and properties of electric currents as they relate to therapeutic modalities.

4. Describe contemporary pain-control theories.

5. Describe the role and function of the common pharmacological agents that are used in conjunction with therapeutic modalities.

6. Explain the body's physiological responses during and following the application of therapeutic modalities.

7. Describe the electrophysics, physical properties, biophysics, patient preparation and modality set-up (parameters), indications, contraindications, and specific physiological effects associated with commonly used therapeutic modalities.

8. Identify appropriate therapeutic modalities for the treatment and rehabilitation of injuries and illness.

9. Describe the process/methods of assessing and reassessing the status of the patient using standard techniques and documentation strategies to determine appropriate treatment and rehabilitation and to evaluate readiness to return to the appropriate level of activity. This includes the ability to:
a. Describe and interpret appropriate measurement and assessment procedures as they relate to the selection and application of therapeutic modalities.
b. Interpret objective measurement results as a basis for developing individualized therapeutic modality application and set-up (parameters).
c. Interpret the results of injury assessment and determine an appropriate therapeutic modality program to return the patient to physical activity.
d. Determine the appropriate therapeutic modality program and appropriate therapeutic goals and objectives based on the initial assessment and frequent reassessments.
e. Determine the criteria for progression and return to activity based on the level of functional outcomes.
f. Describe appropriate methods of assessing progress when using therapeutic modalities and interpret the results.
g. Interpret physician notes, postoperative notes, and physician prescriptions as they pertain to a treatment plan.
h. Describe appropriate medical documentation for recording progress in a therapeutic modality program.

10. Identify manufacturer’s, institutional, state, and federal standards for the operation and safe application of therapeutic modalities.
11. Identify manufacturer’s, institutional, state and federal guidelines for the inspection and maintenance of therapeutic modalities.
12. Assess patient to identify indications, contraindications, and precautions applicable to the application of therapeutic modalities.
13. Obtain and interpret baseline and post treatment objective physical measurements to evaluate and interpret results.
15. Position and prepare the patient for the application of therapeutic modalities.
16. Select and apply appropriate therapeutic modalities according to evidence-based guidelines.
17. Document treatment goals, expectations, and treatment outcomes.
18. Synthesize information obtained in a patient interview and physical examination to determine the indications, contraindications and precautions for the selection, patient set-up, and evidence-based application of therapeutic modalities for acute and chronic injuries. The student will formulate a progressive treatment and rehabilitation plan and appropriately apply the modalities. Effective lines of communication should be established to elicit and convey information about the patient’s status and the prescribed modality(s). While maintaining patient confidentiality, all aspects of the treatment plan should be documented using standardized record-keeping methods.
   a. Infrared modalities
   b. Electrical stimulation modalities
   c. Therapeutic modalities
GOAL #7 (Therapeutic Exercise)
Prepare the individual in the knowledge, skills, values, and decision making related to therapeutic exercise required of the entry-level athletic trainer.

Objectives
Upon completion of the athletic training education program the individual will be able to:
1. Describe the physiological and pathological processes of trauma, wound healing and tissue repair and their implications on the development, progression and implementation of a therapeutic exercise program.
2. Describe the mechanical principles applied to the design and use of therapeutic exercise equipment and techniques (leverage, force, kinesiology and biomechanics).
3. Describe common surgical techniques, pathology, and any subsequent anatomical alterations that may affect the implementation of a therapeutic exercise program.
4. Describe the appropriate selection and application of therapeutic exercises taking the following into consideration:
   a. The physiological responses of the human body to trauma
   b. The physiological effects of inactivity and immobilization on the musculoskeletal, cardiovascular, nervous, and respiratory systems of the human body
   c. The anatomical and/or biomechanical alterations resulting from acute and chronic injury and improper mechanics
   d. The physiological adaptations induced by the various forms of therapeutic exercise, such as fast- versus slow-twitch muscle fibers
   e. The physiological responses of additional factors, such as age and disease
5. Describe the indications, contraindications, theory, and principles for the incorporation and application of various contemporary therapeutic exercise equipment and techniques, including aquatic therapy, manual therapy and mobilization.
7. Describe the process/methods of assessing and reassessing the status of the patient using standard techniques and documentation strategies in order to determine appropriate treatment and rehabilitation plans and to evaluate the readiness to return to the appropriate level of activity. This includes the ability to:
   a. Describe and interpret appropriate measurement and functional testing procedures as they relate to the selection and application of therapeutic exercise.
b. Interpret objective measurement results (muscular strength/endurance, range of motion) as a basis for developing an individualized therapeutic exercise program.
c. Interpret the results of a physical assessment and determine an appropriate therapeutic exercise program to return the patient to physical activity.
d. Determine the appropriate therapeutic exercise program and appropriate therapeutic goals and objectives based on the initial assessment and frequent reassessments.
e. Determine the criteria for progression and return to activity based on the level of functional outcomes.
f. Describe appropriate methods of assessing progress in a therapeutic exercise program and interpret the results.
g. Interpret physician notes, postoperative notes, and physician prescriptions as they pertain to a therapeutic exercise program.
h. Describe appropriate medical documentation for recording progress in a therapeutic exercise program.
8. Explain the effectiveness of taping, wrapping, bracing, and other supportive/protective methods for facilitation of safe progression to advanced therapeutic exercises and functional activities.
9. Describe manufacturer’s, institutional, state and federal guidelines for the inspection and maintenance of therapeutic exercise equipment.
10. Assess a patient to determine specific therapeutic exercise indications, contraindications, and precautions.
11. Obtain and interpret baseline and postexercise objective physical measurements to evaluate therapeutic exercise progression and interpret results.
12. Inspect therapeutic exercise equipment to ensure safe operating condition.
13. Demonstrate the appropriate application of contemporary therapeutic exercises and techniques according to evidence-based guidelines.
17. Synthesize information obtained in a patient interview and physical examination to determine the indications, contraindications and precautions for the selection, application, and evidence-based design of a therapeutic exercise program for injuries to the upper extremity, lower extremity, trunk, and spine. The student will formulate a progressive rehabilitation plan and appropriately demonstrate and/or instruct the exercises and/or techniques to the patient. Effective lines of communication should be established to elicit and convey information about the patient’s status and the prescribed exercise(s). While maintaining patient confidentiality, all aspects of the exercise plan should be documented using standardized record-keeping methods.
18. Program for injuries to the upper and lower extremity, trunk and spine
a. Exercises and Techniques to Improve Joint Range of Motion  
b. Exercises to Improve Muscular Strength  
c. Exercises to Improve Muscular Endurance  
d. Exercises to Improve Muscular Speed  
e. Exercises to Improve Muscular Power  
f. Exercises to Improve Balance, Neuromuscular Control, and Coordination  
g. Exercises to Improve Agility  
h. Exercises to Improve Cardiorespiratory Endurance  
i. Exercises to Improve Activity-Specific Skills, including Ergonomics and Work Hardening  

GOAL #8 (Pharmacology)  
Prepare the individual in the knowledge, skills, values, and decision making related to pharmacology required of the entry-level athletic trainer.  

Objectives  
Upon completion of the athletic training education program the individual will be able to:  
1. Explain the laws, regulations, and procedures that govern storing, transporting, dispensing, and recording prescription and nonprescription medications (Controlled Substance Act, scheduled drug classification, and state statutes).  
2. Identify appropriate pharmaceutical terminology and abbreviations used in the prescription, administration, and dispensing of medications.  
3. Identify information about the indications, contraindications, precautions, and adverse reactions for common prescription and nonprescription medications (including herbal medications) using current pharmacy resources.  
4. Explain the concepts of pharmacokinetics (absorption, distribution, metabolism, and elimination) and the suspected influence that exercise might have on these processes.  
5. Explain the concepts related to bioavailability, half-life, and bioequivalence.  
6. 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).  
7. Describe the common routes used to administer medications (e.g., oral, inhalation, and injection) and their advantages and disadvantages.  
8. Explain the relationship between generic or brand name pharmaceuticals.  
9. Identify medications that might cause possible poisoning, and describe how to activate and follow the locally established poison control protocols.  
10. Explain the known usage patterns, general effects, and short- and long-term adverse effects for the commonly used performance-enhancing substances.  
11. Identify which therapeutic drugs and nontherapeutic substances are banned by sport and/or workplace organizations in order to properly advise patients about possible disqualification and other consequences.
12. Obtain and communicate patient education materials regarding physician-prescribed medications, over-the-counter drugs, and performance-enhancing substances using appropriate references.
13. Abide by federal, state, and local regulations for the proper storage, transportation, dispensing (administering where appropriate), and documentation of commonly used medications.
14. Activate and effectively follow locally established poison control protocols.

**GOAL #9 (Psychosocial)**

Prepare the individual in the knowledge, skills, values, and decision making related to psychosocial intervention and referral required of the entry-level athletic trainer.

**Objectives**

Upon completion of the athletic training education program the individual will be able to:

1. Explain the psychosocial requirements (i.e., motivation and self-confidence) of various activities that relate to the readiness of the injured or ill individual to resume participation.
2. Explain the stress-response model and the psychological and emotional responses to trauma and forced inactivity.
3. Describe the motivational techniques that the athletic trainer must use during injury rehabilitation and reconditioning.
4. Describe the basic principles of mental preparation, relaxation, visualization, and desensitization techniques.
5. Describe the basic principles of general personality traits, associated trait anxiety, locus of control, and patient and social environment interactions.
6. Explain the importance of providing health care information to patients, parents/guardians, and others regarding the psychological and emotional well being of the patient.
7. 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.
8. 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.
9. 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.
10. Identify the symptoms and clinical signs of common eating disorders and the psychological and sociocultural factors associated with these disorders.
11. Identify and describe the sociological, biological and psychological influences toward substance abuse, addictive personality traits, the commonly abused substances, the signs and symptoms associated with the abuse of these
substances, and their impact on an individual’s health and physical performance.

12. Describe the basic signs and symptoms of mental disorders (psychoses), emotional disorders (neuroses, depression), or personal/social conflict (family problems, academic or emotional stress, personal assault or abuse, sexual assault, sexual harassment), the contemporary personal, school, and community health service agencies, such as community-based psychological and social support services that treat these conditions and the appropriate referral procedures for accessing these health service agencies.

13. 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.

14. Explain the potential need for psychosocial intervention and referral when dealing with populations requiring special consideration (to include but not limited to those with exercise-induced asthma, diabetes, seizure disorders, drug allergies and interactions, unilateral organs, physical and/or mental disability.

15. Describe the psychosocial factors that affect persistent pain perception (i.e., emotional state, locus of control, psychodynamic issues, sociocultural factors, and personal values and beliefs) and identify multidisciplinary approaches for managing patients with persistent pain.

16. Demonstrate the ability to conduct an intervention and make the appropriate referral of an individual with a suspected substance abuse or other mental health problem. Effective lines of communication should be established to elicit and convey information about the patient’s status. While maintaining patient confidentiality, all aspects of the intervention and referral should be documented using standardized record-keeping methods.

17. Demonstrate the ability to select and integrate appropriate motivational techniques into a patient’s treatment or rehabilitation program. This includes, but is not limited to, verbal motivation, visualization, imagery, and/or desensitization. Effective lines of communication should be established to elicit and convey information about the techniques. While maintaining patient confidentiality, all aspects of the program should be documented using standardized record-keeping techniques.

**GOAL #10 (Nutrition)**

Prepare the individual in the knowledge, skills, values, and decision making related to nutritional aspects of injuries and illnesses required of the entry-level athletic trainer.

**Objectives**

Upon completion of the athletic training education program the individual will be able to:

1. Describe personal health habits and their role in enhancing performance, preventing injury or illness, and maintaining a healthy lifestyle.

2. Describe the USDA’s “My Pyramid” and explain how this can be used in performing a basic dietary analysis and creating a dietary plan for a patient.
3. Identify and describe primary national organizations responsible for public and professional nutritional information.
4. Identify nutritional considerations in rehabilitation, including nutrients involved in healing and nutritional risk factors (e.g., reduced activity with the same dietary regimen and others).
5. Describe common illnesses and injuries that are attributed to poor nutrition (e.g., effects of poor dietary habits on bone loss, on injury, on long-term health, and on other factors).
6. Explain energy and nutritional demands of specific activities and the nutritional demands placed on the patient.
7. Explain principles of nutrition as they relate to the dietary and nutritional needs of the patient (e.g., role of fluids, electrolytes, vitamins, minerals, carbohydrates, protein, fat, and others).
8. Explain the physiological processes and time factors involved in the digestion, absorption, and assimilation of food, fluids, and nutritional supplements. Further, relate these processes and time factors to the design and planning of preactivity and postactivity meals, menu content, scheduling, and the effect of other nonexercise stresses before activity.
9. Describe the principles, advantages, and disadvantages of ergogenic aids and dietary supplements used in an effort to improve physical performance.
11. Identify and interpret pertinent scientific nutritional comments or position papers (e.g., healthy weight loss, fluid replacement, pre-event meals, and others).
12. Explain principles of weight control for safe weight loss and weight gain, and explain common misconceptions regarding the use of food, fluids, and nutritional supplements in weight control.
14. Describe disordered eating and eating disorders (i.e., signs, symptoms, physical and psychological consequences, referral systems).
15. Identify effects of macronutrients (e.g., saturated fats, incomplete proteins, and complex carbohydrates) on performance, health, and disease.
16. Describe signs, symptoms, and physiological effects of mineral deficiency (e.g., iron, and calcium), and identify foods high in specific mineral content.
17. Identify and explain food label Daily Value recommendations and common food sources of essential vitamins and minerals in using current USDA Dietary Guidelines.
18. Describe the principles and methods of body composition assessment (e.g., skinfold calipers, bioelectric impedance, body mass index [BMI]) to assess a patient’s health status and to monitor progress in a weight loss or weight gain program for patients of all ages and in a variety of settings.
19. Explain the relationship between basal metabolic rate, caloric intake, and energy expenditure in the use of the Food Pyramid Guidelines.
20. Identify the nutritional benefits and costs of popular dietary regimen for weight gain, weight loss, and performance enhancement.
21. Assess body composition by validated technique (e.g., skinfold calipers, bioelectric impedance, BMI, etc.) to assess a patient’s health status and to monitor progress during a weight loss or weight gain program.
22. Calculate energy expenditure, caloric intake, and BMR.
23. Provide educational information about basic nutritional concepts, facts, needs, and food labels for settings associated with physically active individuals of a wide range of ages and needs.
24. Demonstrate the ability to counsel a patient in proper nutrition. This may include providing basic nutritional information and/or an exercise and nutrition program for weight gain or weight loss. The student will demonstrate the ability to take measurements and figure calculations for a weight control plan (e.g., measurement of body composition and BMI, calculation of energy expenditure, caloric intake, and BMR). Armed with basic nutritional data, the student will demonstrate the ability to develop and implement a preparticipation meal and an appropriate exercise and nutritional plan for an active individual. The student will develop an active listening relationship to effectively communicate with the patient and, as appropriate, refer the patient to other medical professionals (physician, nutritionist, counselor or psychologist) as needed.
25. Demonstrate the ability to recognize disordered eating and eating disorders, establish a professional helping relationship with the patient, interact through support and education, and encourage vocal discussion and other support through referral to the appropriate medical professionals.

GOAL #11 (Administration)
Prepare the individual in the knowledge, skills, values, and decision making related to health care administration required of the entry-level athletic trainer.

Objectives
Upon completion of the athletic training education program the individual will be able to:
1. 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.
2. 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]).
3. Identify current injury/illness surveillance and reporting systems.
4. Identify common human resource policy and federal legislation regarding employment (e.g., The Americans with Disabilities Act, Family Medical

5. Describe duties of personnel management, including (1) recruitment and selection of employees, (2) retention of employees, (3) development of policies-and-procedures manual, (4) employment performance evaluation, 5) compliance with nondiscriminatory and unbiased employment practices.

6. Identify principles of recruiting, selecting, and employing physicians and other medical and allied health care personnel in the deployment of health care services.

7. Describe federal and state infection control regulations and guidelines, including universal precautions as mandated by the Occupational Safety and Health Administration (OSHA), for the prevention, exposure, and control of infectious diseases and discuss how they apply to the athletic trainer.

8. Identify key accrediting agencies for health care facilities (e.g., Joint Commission on Accreditation of Healthcare Organizations [JCAHO], Commission on Accreditation of Rehabilitation Facilities [CARF] and allied health education programs (e.g., Commission on Accreditation of Athletic Training Education [CAATE]) and describe their function in the preparation of health care professionals and the overall delivery of health care.

9. Identify and describe technological needs of an effective athletic training service and the commercial software and hardware that are available to meet these needs.

10. 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.

11. Describe the concepts and procedures for third-party insurance reimbursement including the use of diagnostic (ICD-9-CM) and procedural (CPT) coding.

12. Explain components of the budgeting process, including purchasing, requisition, bidding, and inventory.

13. Describe basic architectural considerations that relate to the design of safe and efficient clinical practice settings and environments.

14. Describe vision and mission statements to focus service or program aspirations and strategic planning (e.g., “weaknesses, opportunities, threats and strengths underlying planning” [WOTS UP], “strengths, weaknesses, opportunities and threats” [SWOT]) to critically bring out organizational improvement.

15. Explain typical administrative policies and procedures that govern first aid and emergency care (e.g., informed consent and incident reports).

16. 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.

17. 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).

18. Identify components of a comprehensive risk management plan that addresses the issues of security, fire, electrical and equipment safety, emergency preparedness, and hazardous chemicals.

19. 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.).

20. 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.

21. 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.

22. Describe basic components of organizing and coordinating a drug testing and screening program, and identify the sources of current banned-drug lists published by various associations.

23. Develop risk management plans, including facility design, for safe and efficient health care facilities.

24. Develop a risk management plan that addresses issues of liability reduction; security, fire, and facility hazards; electrical and equipment safety; and emergency preparedness.

25. Develop policy and write procedures to guide the intended operation of athletic training services within a health care facility.

26. Demonstrate the ability to access medical and health care information through electronic media.

27. Use appropriate terminology and medical documentation to record injuries and illnesses (e.g., history and examination findings, progress notes, and others).

28. Use appropriate terminology to effectively communicate both verbally and in writing with patients, physicians, colleagues, administrators, and parents or family members.

29. Use a comprehensive patient-file management system that incorporates both paper and electronic media for purposes of insurance records, billing, and risk management.

30. Develop operational and capital budgets based on a supply inventory and needs assessment.

**GOAL #12 (Professional Development)**
Prepare the individual in the knowledge, skills, values, and decision making related to professional development and responsibilities required of the entry-level athletic trainer.

**Objectives**

Upon completion of the athletic training education program the individual will be able to:

1. 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.
2. Describe the process of attaining and maintaining national and state athletic training professional credentials.
3. Describe the current professional development requirements for the continuing education of athletic trainers and how to locate available, approved continuing education opportunities.
4. Describe the role and function of the governing structures of the National Athletic Trainers' Association.
5. 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.
6. Summarize the position statements regarding the practice of athletic training.
7. Describe the role and function of the professional organizations and credentialing agencies that impact the athletic training profession.
8. Summarize the current requirements for the professional preparation of the athletic trainer.
9. 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.
10. Identify the issues and concerns regarding the health care of patients (e.g., public relations, third-party payment, and managed care).
11. Identify and access available educational materials and programs in health-related subject matter areas (audiovisual aids, pamphlets, newsletters, computers, software, workshops, and seminars).
12. Summarize the principles of planning and organizing workshops, seminars, and clinics in athletic training and sports medicine for health care personnel, administrators, other appropriate personnel, and the general public.
13. Describe and differentiate the types of quantitative and qualitative research and describe the components and process of scientific research (including statistical decision-making) as it relates to athletic training research.
14. Interpret the current research in athletic training and other related medical and health areas and apply the results to the daily practice of athletic training.
15. Identify the components of, and the techniques for constructing, a professional resume.
16. Summarize the history and development of the athletic training profession.
17. 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.
18. Collect and disseminate injury prevention and health care information to health care professionals, patients, parents/guardians, other appropriate personnel and the general public (e.g., team meetings, parents’ nights, parent/teacher organization [PTO] meetings, booster club meetings, workshops, and seminars).
19. Access by various methods the public information policy-making and governing bodies used in the guidance and regulation of the profession of athletic training (including but not limited to state regulatory boards, NATA, BOC).
20. Develop and present material (oral, pamphlet/handout, written article, or other media type) for an athletic training-related topic.
21. Develop a research project (to include but not limited to case study, clinical research project, literature review) for an athletic training-related topic.

Developed: 7/01 (CRD)
Revised: 7/08 (LCK)