Multiple Category Scope and Sequence: Scope and Sequence Report For Course Standards and Objectives, Content, Skills, Vocabulary

Tuesday, August 19, 2014, 11:48PM

	Unit	Course Standards and Objectives	Content	Skills	Vocabulary
District Basic **Exercise Science/Sports Medicine (51.0913) (District)** 2014-2015 **Collaboration**	**Medical Terminology** (Week 1, 2 Weeks)	UT: CTE: Health Education, UT: Grades 9-12, Exercise Science/Sports Medicine Standard 2 Students will apply medical terminology. ▪ Objective 1 Identify and utilize anatomical positions, planes, and directional terms. a. Demonstrate what anatomical position is and how it is used to reference the body. b. Distinguish between the commonly used anatomical planes and recognize their individual views. • Sagittal / Midsagittal Plane • Frontal / Coronal Plane • Transverse / Horizontal Plane	**Anatomical Position** **Anatomical Planes** ▪ sagittal plane ▪ frontal plane ▪ transverse plane **Anatomical Positions and Directions** ▪ superior / inferior ▪ anterior / posterior ▪ medial / lateral ▪ distal / proximal ▪ superficial / deep ▪ ventral / dorsal ▪ prone / supine **Movements** ▪ flexion / extension ▪ adduction / abduction ▪ pronation / supination ▪ retraction / protraction ▪ elevation / depression ▪ rotation / circumduction ▪ external rotation / internal rotation ▪ inversion / eversion ▪ dorsiflexion / plantarflexion ▪ radial deviation / ulnar deviation **Additional Vocabulary Terms** ▪ Various terms that are included in this Unit, but are repeated in various units throughout the course.	▪ Apply terms in describing body positions. ▪ Critique injuries and the mechanism of injury using appropriate terms. ▪ Construct / interpret a SOAP note using medical terms ▪ Differentiate anatomical structures based on positional terms; i.e. ACL / PCL, MCL / LCL ▪ Assess movement based on the the planes and dimensions involved ▪ Determine proper treatment by recognizing the type of wound	1. Anatomical Planes ▪ Sagittal Plane ▪ Frontal Plane ▪ Transverse Plane 2. Terms of Position and Directions ▪ Superior - Inferior ▪ Anterior - Posterior ▪ Medial - Lateral ▪ Distal - Proximal ▪ Superficial - Deep ▪ Ventral - Dorsal ▪ Prone - Supine ▪ Unilateral - Bilateral 3. Terms of Movement ▪ Flexion - Extension ▪ Adduction - Abduction ▪ Pronation - Supination ▪ Retraction - Protraction ▪ External Rotation - Internal Rotation ▪ Elevation - Depression ▪ Movements of the Foot ▪ Inversion - Eversion ▪ Dorsiflexion - Plantarflexion ▪ Movements of the Wrist and Thumb ▪ Radial Deviation - Ulnar Deviation ▪ Opposition 4. Injury Vocabulary ▪ Over 50 words: Alphabetically from Abrasion through Vasodilator

c. Apply directional terms to their location on the human body.
• Superior / Inferior
• Anterior / Posterior
• Medial / Lateral
• Distal / Proximal
• Superficial / Deep
• Ventral / Dorsal
• Prone / Supine
• Unilateral / Bilateral

- Objective 2 Demonstrate body movements.
a. Compare and contrast the various movements of the body and their counter-movements.
• Flexion / Extension / Hyperextension
• Adduction / Abduction
• Pronation / Supination
• Retraction / Protraction
• Elevation / Depression
• Rotation / Circumduction
• External Rotation / Internal Rotation
• Lateral

		Flexion (side-bending left or right) b. Compare and contrast the various movements of the foot /ankle and their counter-movements. • Inversion / Eversion • Dorsiflexion / Plantarflexion • Pronation / Supination c. Compare and contrast the lateral movements of the wrist/hand and their counter-movements. • Radial Deviation / Ulnar Deviation • Opposition ▪ Objective 3 Define terms associated with Exercise Science. a. Define the terminology that describes common sports injuries. b. Define the concepts related to the injury process.			
Injury Prevention (Week 3, 3	UT: CTE: Health Education, UT: Grades 9-12, Exercise	▪ Prevention of Athletic Injuries - Equipment ▪ Equipment design ▪ Sport specific protection	▪ Invent a piece of protective	Prevention Terms: Taping Terms:	

Weeks)	Science/Sports Medicine Standard 3 Students will apply injury prevention principles. ▪ Objective 1 Describe the basic principles and specialized equipment used in the prevention of athletic injury. a. Recognize types and functions of protective equipment. • Helmet / face mask / ear guards • Mouth guards • Neck collars • Padding • Sports bras • Athletic supporter / cup • Shin guards • Shoe • Other sport specific protection devices b. Discuss the legal ramifications of manufacturing, buying, and issuing equipment. • NOCSAE warning • Modification of equipment • Proper fit and selection	▪ Types and Functions of Protective Equipment ▪ Helmet, face mask, eye protection, ear guards ▪ mouth guards ▪ neck collars ▪ padding ▪ sports bras ▪ athletic supporters - cup ▪ shin guards ▪ shoe ▪ other sport specific protection devices ▪ Legal ramifications of manufacturing, buying and issuing equipment ▪ NOCSAE warning ▪ Modification of equipment ▪ Proper fit and selection ▪ Use of defective or worn out equipment	equipment that could be used in your sport ▪ Explain factors that are important in the prevention of athletic injuries ▪ Prioritize the need of a team with the constraints of a budget to buy equipment ▪ Demonstrate how to fit a helmet ▪ Investigate different options for eye and ear protection based on the athlete's sport ▪ Demonstrate how a mouth guard is fitted ▪ Recommend the proper shoe based on an athlete's foot ▪ Explain the NOCSAE warning on the helmet of those sports requiring helmets	Air bladder Athletic tape Air pocket Underwrap Broken jaws Heel and Lace pads Comfort Adhesive spray Concussions Shark / scissors Contact point Decelerate forces Anchor Design Stirrup Discomfort Horseshoe Ear guards Spica Ear plugs Heel-lock Eye protection Checkrein / fan Face mask Flack jacket Focal point Foot pronation Foot supination Functional Helmet Interference Knee braces Mouth guards

• Use of defective or worn out equipment

- Objective 2 Demonstrate theory and principles of prophylactic taping.
  a. Analyze the basic principles of prophylactic taping.
  b. Identify the necessary supplies and their purpose for prophylactic taping.
  • Athletic tape (various size)
  • Underwrap
  • Heel and lace pad
  • Adhesive spray
  • Shark / Scissors
  c. Analyze the basic principles of proper tape removal.
  d. Explain the terminology associated with prophylactic taping procedures.
  • Anchor
  • Stirrup
  • Horseshoe
  • Spica
  • Heel-Lock
  • Checkrein / fan
  e. Competently tape an ankle using the

- Recognize the legal ramifications for modifying, or altering athletic equipment

Neck collars

NCAA

NOCSAE

Prophylactic

Restriction

Shin guards

Sports bras

Threat

Weapon

		standard prophylactic taping method. f. Competently tape an arch using the standard prophylactic taping method. g. Competently tape a thumb using the standard prophylactic taping method. h. Competently tape a wrist using the standard prophylactic taping method. ▪ Objective 3 Identify principles of protective bracing. a. Discuss the differences between functional and prophylactic bracing. b. Identify the function of joint sleeves (compression).			
Performance Enhancement (Week 6, 3 Weeks)	UT: CTE: Health Education, UT: Grades 9-12, Exercise Science/Sports Medicine Standard 4	▪ Performance enhancement terms ▪ General conditioning principles ▪ Overload principle ▪ Specificity ▪ Reversibility ▪ Periodization	▪ Calculate lung volume from the volume of air expired	▪ adaptation ▪ overload ▪ specificity ▪ reversibility ▪ periodization ▪ atrium	

Students will examine performance enhancement philosophies.

- Objective 1 Define terms associated with performance enhancement .
  a. Cardiovascular endurance
  b. Muscular endurance
  c. Power
  d. Speed
  e. Strength
- Objective 2 Discuss general conditioning principles.
  a. Adaptation
  b. Overload
  c. Specificity
  d. Reversibility
  e. Periodization
- Objective 3 Examine the roll the cardiovascular / respiratory systems have on fitness/athletic performance.
  a. Describe the anatomy of the cardiovascular / respiratory systems.
  • Heart – 4 chambers, 4 valves, 4 blood vessels
  • Lungs –
- Cardio/Respiratory Systems
  - Anatomy of the cardiovascular and respiratory systems
    - cardiovascular and respiratory parameters
      - blood pressure
      - respiratory rate
      - pulse rate
      - lung volume
      - stroke volume\
      - cardiac output
      - VO2 max
  - Aerobic and anaerobic fitness
  - Cardiovascular training methods
    - interval training
    - Fartlek training
    - circuit training
  - FIT
- Strength training
  - Types of movements
    - fiber types
    - isometric exercises
    - isotonic exercises
    - isokinetic exercises
    - eccentric vs. concentric
    - closed vs. open chain exercises
    - plyometrics
  - Training methods
    - free weights
    - weight machines
    - exercise tubing
    - body weight exercises
  - Conditioning principles
    - building strength and size: high resistance/low reps
    - building muscle endurance: low resistance/high reps
    - building power: rapid movements
- Flexibility
  - static stretching
  - ballistic stretching
  - dynamic stretching
  - PNF stretching
    - contract/relax
    - hold/relax

in a balloon

- Explain how heart rate recovery rate relates to fitness levels
- Compare open vs. closed chain exercises and justify the use of each type of exercise in a particular setting
- Calculate target heart rate based on maximum heart rate and fitness level
- Monitor blood pressure using a sphygmonometer and cuff and analyze the results
- Relate VO2 max to aerobic fitness and investigate training methods for improving endurance capacity
- Demonstrate different stretching techniques
- Contrast
- ventricles
- tricuspid valve
- bicuspid valve
- artery
- vein
- capillary
- respiration
- ventilation
- pharynx
- larynx
- trachea
- bronchi
- alveoli
- systolic pressure
- diastolic pressure
- tidal volume
- vital capacity
- spirometer
- stroke volume
- cardiac output
- VO2max
- aerobic fitness
- anaerobic fitness
- Max heart rate
- Target heart rate
- slow twitch
- fast twitch
- resitance
- repitition
- set
- ROM

	oxygen exchange from alveoli to capillaries b. Identify vital signs related to the cardiovascular / respiratory system. • Describe and accurately measure blood pressure (systolic / diastolic) • Describe and accurately measure respiratory rate • Describe and accurately measure pulse rate • Describe lung volume • Describe the importance of cardiac output, stroke volume, and heart rate during exercise c. Examine different types of tests used to quantify cardiovascular fitness. • VO2max • Harvard step test • 12 minute run test d. Describe the effects	slow twitch fibers and fast twitch fibers in terms of microstructure and aerobic capacity

exercise has on the cardiovascular / respiratory systems.
• Immediate effects of exercise (heart rate, ventilation)
• Long term effects of exercise (heart rate, stroke volume, cardiac output)
e. Compare and contrast aerobic / anaerobic training.
f. Examine the importance of a warm up / cool down in a training program.
g. Examine different cardiovascular training methods.
• Interval
• Fartlek
• Circuit
• Continuous
h. Apply general conditioning principles to improve cardiovascular fitness.
• Rate of perceived exertion (BORG scale)
• Target heart rate

- Objective 4

Examine the effects of the environment on training and performance.
a. Discuss the effect of high and low altitude.
b. Describe the effects of acclimatizatio n.
c. Recognize the effects of travel on the body.

- Objective 5
Examine the roll strength training has on fitness / athletic performance.
a. Compare and contrast the difference between slow twitch and fast twitch muscles fibers and the type of athletic performance each influence.
b. Compare and contrast different types of movements related to strength training.
• Isometric / isotonic / isokinetic
• Eccentric / concentric
• Closed chain / open chain

• Plyometrics
c. Identify methods of resistance.
d. Apply general conditioning principles to improve strength.
• Speed
• Muscular endurance
• Power

- Objective 6 Examine the importance of flexibility in fitness / athletic performance.
a. Explain the general guidelines of flexibility.
• Define ROM and how it relates to fitness / athletic performance
• Identify the benefits of flexibility: Decrease risk of injury, reduce muscle soreness, improve muscular balance and postural awareness
• Demonstrate proper timing of flexibility techniques: Before activity and after activity
b. Identify the different

	methods to increase flexibility and the safety / effectiveness of each. • Static stretching • Ballistic Stretching • Dynamic Stretching • Proprioceptive Neuromuscular Facilitation Stretching: Contract/Relax and Hold / Relax			
Sports Nutrition (Week 9, 3 Weeks)	UT: CTE: Health Education, UT: Grades 9-12, Exercise Science/Sports Medicine Standard 5 Students will explore various aspects of sports nutrition. ▪ Objective 1 Describe the basics components of nutrition. a. Utilize the Food Guide Pyramid at www.MyPyramid.gov to recognize the components of a sound diet. b. Recognize the basic human needs and the sources of the following nutrients:	Describe the basics components of nutrition. Utilize the Food Guide Pyramid to recognize the components of a sound diet. Recognize basic human needs and sources of the following nutrients: • Carbohydrates • Proteins • Fats • Vitamins • Minerals • Water Describe basic body composition. Define body composition. Compare and contrast the most common methods for analyzing body composition. • Hydrostatic • Bod Pod • Calipers • BIA • Infrared Describe the parameters of safe weight loss and weight gain. Examine the importance of fluid replacement and hydration. Examine the importance of water and its role in the body. Explain the correct process of hydration during athletic activity. Identify the dangers of inappropriate hydration techniques. Identify the dangers of dehydration. Compare and contrast advantages and disadvantages of sports drinks. Identify the roll of sports drinks in hydration. Discuss the correct chemical make-up of sports drinks. Discuss the dangers of energy drinks and their effects on the body. Identify the components of a pre and post event meal and	Critique the basic components of nutrition. Plan a balanced healthy meal using the criteria from the Food Guide Pyramid. Assess the six necessary nutrients needed in a healthy diet and detect the human needs of each of them. Varigy body composition. Justify which common method to use when analyzing body composition. Formulate parameters of safe weight loss and weight gain.	Nutrition- Hydration- Pre-Game Meal- Post-Game Meal- Re-Loading- Carbohydrate Loading- Nutrition Goals- Food Pyramid- Macronutrients- Carbohydrates- Fats (Lipids) Proteins (Amino Acids) Gastrointestinal Tracks-

• Carbohydrates • Proteins • Fats • Vitamins • Minerals • Water ▪ Objective 2 Describe basic body composition. a. Define body composition. b. Compare and contrast the most common methods for analyzing body composition. • Hydrostatic • Bod Pod • Calipers • BIA • Infrared c. Describe the parameters of safe weight loss and weight gain. ▪ Objective 3 Examine the importance of fluid replacement and hydration. a. Examine the importance of water and its role in the body. b. Explain the correct process of hydration during athletic	explain the value of each. Describe recommended nutrient percentages of pre and post event meals. Identify foods that are easily digested. Identify foods that should be avoided. Identify when pre and post event meals should be eaten. Explain the process of carbohydrate loading and discuss when it is most effective. Recognize disorders associated with nutrition. Identify signs, symptoms, and effects of Anorexia Nervosa. Identify signs, symptoms, and effects of Bulimia Nervosa. Identify signs, symptoms, and effects of the Female Athlete Triad. Compare and contrast the physiological and psychological effects of ergogenic aids. Define ergogenic aid. Recognize the effects and possible dangers of common ergogenic aides. Stimulants • Narcotics • Anabolic steroids • Beta blockers • Diuretics • Human growth hormone • Blood doping products • Erythropoietin • Anesthetics • Corticosteroids • Creatine	Detect the importance of fluid replacement and hydration. Formulate the dangers of dehydration. Debate the advantages and disadvantages of sports drinks. Formulate the components and nutrient percentage of a pre-game and post-game meal. Detect the signs and symptoms of the major eating disorders. Assess the components of the Female Athlete Triad. Justify what an ergogenic aide is and its purpose. Weigh the effects and possible dangers of common ergogenic aides.	Glycogen – Glucose- Nutrients- Adequate Intake- Kilo Calorie (kcal)- Fiber- Hormone- Enzyme- Catalyze- Essential/Indispensable Amino Acid - Non-Essential Amino Acids- Dietary Reference Intake (DRI)- Energy Yields- Vitamins- Vitamin deficiency- Synthesize- Fat Soluble- Water Soluble- Emulsify- Excretion- Nutrient Dense- Caloric Density-

activity.
• Identify the dangers of inappropriate hydration techniques.
• Identify the dangers of dehydration.
c. Compare and contrast advantages and disadvantages of sports drinks.
• Identify the roll of sports drinks in hydration.
• Discuss the correct chemical make-up of sports drinks.
d. Discuss the dangers of energy drinks and their effects on the body.

- Objective 4
Identify the components of a pre and post event meal and explain the value of each.
a. Describe recommended nutrient percentages of pre and post event meals.
b. Identify foods that are easily digested.
c. Identify foods that should be

Supplements-

Pre-Existing-

Minerals-

Essential Minerals-

Calcium-

Potassium-

Iron-

Sodium-

Phosphorus-

Chloride-

Electrolytes-

Water-

Thermoregulation-

Convection-

Conduction-

Evaporation-

Fluid Replacement-

Muscle Contraction-

Heat Production-

Capillary-

Artery-

Vein-

avoided.
d. Identify when pre and post event meals should be eaten.
e. Explain the process of carbohydrate loading and discuss when it is most effective.

- Objective 5 Recognize disorders associated with nutrition.
a. Identify signs, symptoms, and effects of Anorexia Nervosa.
b. Identify signs, symptoms, and effects of Bulimia Nervosa.
c. Identify signs, symptoms, and effects of the Female Athlete Triad.
- Objective 6 Compare and contrast the physiological and psychological effects of ergogenic aids.
a. Define ergogenic aid.
b. Recognize the effects and possible dangers of common ergogenic

Homeostasis-

Fluid Concentration-

VO2 Max-

Fatigue-

Heat Illness-

Heat Exhaustion-

Heat Stroke-

Reabsorption-

Fluid Replacement-

Muscle Cramps/Cramping-

Optimize-

Detrimental Effects-

Gastric Emptying-

Dehydration-

Pre-Hydration-

Rehydration-

Dietary Supplement-

Ingestion-

Hyponatremia-

Motility-

Hypotonic-

Hypertonic-

aides.
• Stimulants
• Narcotics
• Anabolic steroids
• Beta blockers
• Diuretics
• Human growth hormone
• Blood doping products
• Erythropoietin
• Anesthetics
• Corticosteroids
• Creatine

Extracellular Fluid-

Prevention-

Seizure-

Coma-

FDA-

Guarana-

Taurine-

Gingko-

Ginseng-

Caffeine-

Insulin-

Insulin Resistance-

Diabetes (Type I & II)-

Energy Drinks-

Sports Drinks-

Stimulants-

Metabolize-

Metabolism-

Dopamine-

“Crash”-

“Spike”-

Body Composition-

Body Ratio-

Body Density-

Fat Mass (FM)-

Fat Free Mass (FFM)/Lean Body Mass-

Essential Fats/Lipids-

Sex Specific-

Body Mass Index (BMI)-

Cadaver-

Underweight-

Healthy weight-

Overweight-

Obesity-

Gram (g)-

Kilogram (kg)-

Milligram (mg)-

Pound (lb)-

Hydrostatic Weighing (Underwater)-

Plethysmography (BodPod)-

Displacement-

Skin Fold Calipers-

Bioelectrical Impedance Analysis (BIA)-

Electrodes-

Near Infrared Reactance (NIR)-

Absorption-

Reflection-

Weight Gain-

Weight Loss-

Maintain Weight-

Resistance Exercise-

Analysis-

Congenital-

Theoretical-

Hypothetical-

Satiety-

Satiety Signal-

“Crash Diet”-

Energy Expenditure-

Energy Deprivation-

Energy Deficit-

Caloric Restriction-

Eating Disorder/Disordered Eating-

Malnutrition-

Chronic Fatigue-

Overuse Injury-

Anorexia Nervosa-

Emaciate-

Bulimia Nervosa-

Binge-

Purge-

Fasting-

Enema-

Diuretic-

Laxative-

Female Athlete Triad-

Amenorrhea-

Osteoporosis-

Adaptation-

Physiological-

Luteinizing Hormone (LH)-

Estrogen-

Secretion-

Susceptibility-

Stress Fracture-

Bone Mineral Density-

Cardiac Arrest-

Prevention-

				Treatment- Sign- Symptom- Ergogenic Aid- Ephedra- Caffeine- Narcotics- Beta Blockers- Diuretics- Anabolic Steroids- Human Growth Hormone- Erythropoietin (EPO)- Blood Doping- Anesthetic- Creatine- Substance Abuse- Addiction-
Injury and Healing Process (Week 12, 2 Weeks)	UT: CTE: Health Education, UT: Grades 9-12, Exercise Science/Sports Medicine Standard 6 Students will describe the injury and healing process. ▪ Objective 1 Discuss the inflammatory	Understand the difference between acute and chronic injuries. Understand the bodies normal response to an injury. Know the three phases of an injury. Understand the time frame and what occurs during each phase of an injury. Recognize the 5 signs of inflammation.	Analyzing degrees of injury on athletes in the training room as the athletic trainer demonstrates tests on injured athletes. Or invite injured athletes into class and have the teacher demonstrate tests and have students watch feel and try the tests.	Acute injury Chronic Injury Biomechanical issues Jumpers knee Medial Tibial Stress Syndrome

response and the healing process.
a. Identify proper PPE / BSI precautions.
b. Discuss the purpose of inflammation.
c. Categorize the stages of acute injury healing and explain the processes involved in each:
• Acute (Inflammation) Phase:
- Signs and symptoms of inflammation (heat, redness, swelling, pain, loss of function)
• Time frame
- Define vasodilatation and explain why it occurs
- Define hypoxia and explain its role in secondary injury
• Subacute (Repair and Regeneration) Phase
- Time frame
- Explain what fibroblasts are
- Explain what collagen is and its role in scar tissue

What factors causes pain in an injury

What is the reason for redness and heat in an injury?

What causes swelling.

What is the difference between scare tissue and adhesion's?

How do you prevent adhesion's?

Explain the 3 degrees of injuries and recognize the signs and symptoms.

Osgood Schlatters

Inflammation

Acute Phase

Primary cell death

Secondary cell death

Hypoxia

Pain

Swelling

Osmotic pressure

Vasodilatation

Heat

Redness

Loss of function

Subacute Phase

Repair and regeneration phase

Cellular debris

Scare tissue

Collagen

Fibroblasts

Remodeling (Maturation) Phase

Adhesions

Collagen fibers

	formation • Remodeling (Maturation) Phase • Time frame • Define adhesions • Explain Wolff's Law ▪ Objective 2 Compare and contrast injury classifications. a. Describe first degree injuries b. Describe second degree injuries c. Describe third degree injuries			Wolff's Law Stimulus 1st Degree (Grade 1) Micro tears 2nd Degree (Grade 2) Ecchymosis Joint laxity 3rd Degree (Grade 3) Joint integrity
Injury Management (Week 14, 2 Weeks)	UT: CTE: Health Education, UT: Grades 9-12, Exercise Science/Sports Medicine Standard 7 Students will be able to recognize common injuries and administer injury management. ▪ Objective 1 Explain an injury assessment (HIPS) a. Identify proper PPE / BSI precautions. b. Identify the components included in obtaining an accurate history. c. Identify the	1. We want students to know the system of evaluating injuries. HIPS Protocol 2. Students need to know basic injuries. 3. Students need to know how to immobilize an athlete. 4. Students need to know how to treat different medical conditions 5. Students need to know how to treat athletes for different environmental conditions.	Students will be able to immobilize an injured athlete Perform a HIPS Assessment Identify environmental factors that can lead to different conditions Show skills to control bleeding Identify the different Heat injuries Know the difference between different cold injuries Fit crutches on	Palpation Abrasion Avulsion Bites Blisters Contusions Lacerations Ringworm Jock itch IMpetigo MRSA

components of an inspection.
d. Describe the process of palpation.
e. Describe the purposes of special tests.
• Range of Motion: Passive, Active, and Resistive
• Stress Tests (structural integrity)
• Neurological
• Functional
f. Discuss the decisions that can be made from a HIPS evaluation.
g. Explain a HIPS assessment.

- Objective 2 Identify soft tissue injuries and skin conditions.
a. Differentiate signs and symptoms and treatment for: Avulsions, Abrasions, Bites, Blisters, Contusions, Lacerations and Stings
b. Differentiate signs and symptoms and treatment for:

individuals	Eczema
Identify when a person may have an abdominal injury	Seizures
	Fainting
	Diabetes
	Anaphylactic Shock
	Asthma
	Heat Stroke
	Heat Exhaustion
	Hypothermia
	Frostbite

Ring worm, Jock itch, Athlete's foot, Impetigo, MRSA, Warts and Eczema

- Objective 3
  Recognize abdominal injuries, bleeding, and shock.
  a. Discuss external bleeding.
  b. Demonstrate proper procedures to control bleeding.
  • Apply direct pressure with sterile gauze pad
  • Apply a pressure dressing
  • Check circulation
  c. Identify signs, symptoms, and treatment of internal bleeding.
  d. Identify signs and symptoms and treatment of abdominal injuries.
  • Ruptured spleen
  • Appendicitis
  • Hernia
  e. Describe shock and the treatment for it.
- Objective 4
  Discuss

immobilization techniques.
a. Identify fracture signs and symptoms.
b. Explain the steps to immobilization.
• Splint in the position found
• Immobilize the joint above and the joint below
• Check circulation distal to the injury
c. Explain head / neck immobilization.
• Maintain in-line stabilization.
• Monitor ABC's.
d. Demonstrate crutch fitting to any size individual.

- Objective 5
  Describe the treatment for medical conditions.
  a. Seizures
  b. Fainting
  c. Diabetes
  d. Anaphylactic shock
  e. Asthma
- Objective 6
  Recognize and provide treatment for environmental conditions.

	a. Compare and contrast the causes, signs, symptoms, and treatment of heat illnesses. • Heat cramps • Heat exhaustion • Heat stroke b. Compare and contrast the causes, signs, symptoms, and treatment of cold exposure. • Hypothermia • Frostbite			
Specific Sports Injuries (Week 16, 3 Weeks)	UT: CTE: Health Education, UT: Grades 9-12, Exercise Science/Sports Medicine Standard 8 Students will explore specific sports injuries. ▪ Objective 1 Recognize common injuries to the head and neck to include: concussion, cervical spine fractures, brachial plexus injuries, and nose bleeds. a. Review the anatomy of the head and	The anatomy of the head and neck signs and symptoms of head and neck injuries Prevention strategies for head and neck injuries Anatomy of the upper extremity Bones of the shoulder, chest and arms Anatomy of the lower extremity Bones of the pelvis, legs and feet	Identify the major bones of the upper extremity Identify the major bones of the Lower Extremity Identify the major bones of The skull Identify signs and symptoms of different injuries to the skeletal and muscular system. Show different prevention strategies for injuries.	Occipital Parietal Temporal Mandible Maxillae Zygomatic Nasal Cervical Vertebrae Scapula

neck.
• Bones (Scapula, Clavicle, Humerus, Radius, Ulna, Carpals, Metacarpals, Phalanges)
• Joints (Shoulder – sternoclavicular, acromioclavicular, glenohumeral, scapulothoracic; Elbow, Wrist, Metacarpal Phalangeal, Interphalangeal)
• Soft tissues (Subacromial bursa, AC ligament, Glenoid Labrum)
• Muscles (Deltoid, SITS, Biceps Brachii, Triceps Brachii)
b. Identify the mechanism of injury.
c. Identify the signs and symptoms of the injury.
d. Indicate appropriate treatment for the injury.
e. Describe injury prevention strategies.

- Objective 2 Recognize common

Clavicle

Humerus

Radius

Ulna

Carpals

Metacarpals

Phalanges

Bursa

AC Ligament

Triceps

Biceps

Femur

Tibia

Fibula

Pubis

Ischium

Ilium

ACL

PCL

MCL

LCL

Deltoid

injuries to the upper extremity to include: clavicle fracture, impingement syndrome, rotator cuff injuries, glenohumeral dislocation, AC joint separation, epicondylitis, and interphalangeal dislocation.
a. Review the anatomy of the upper extremity.
• Bones (Scapula, Clavicle, Humerus, Radius, Ulna, Carpals, Metacarpals, Phalanges)
• Joints (Shoulder – sternoclavicular, acromioclavicular, glenohumeral, scapulothoracic; Elbow, Wrist, Metacarpal Phalangeal, Interphalangeal)
• Soft tissues (Subacromial bursa, AC ligament, Glenoid Labrum)
• Muscles (Deltoid, SITS, Biceps

Soleus

Brachii, Triceps Brachii)
b. Identify the mechanism of injury.
c. Identify the signs and symptoms of the injury.
d. Indicate appropriate treatment for the injury.
e. Describe injury prevention strategies.

- Objective 3 Recognize common injuries to the lower extremity to include: collateral ligament sprains, cruciate ligament sprains, meniscal injury, patello-femoral injuries, ankle sprains, plantar fasciitis, turf toe, thigh contusions, quadriceps/hamstring strains, and medial tibial stress syndrome - "shin splints".
a. Review the anatomy of the lower extremity.
• Bones (Femur,

Tibia, Fibula, Patella, Talus, Calcaneus, Metatarsals, Phalanges)
• Joints (Tibial Femoral, Patello Femoral, Talocrural, Subtalar)
• Soft tissues (patellar tendon, ACL, MCL, PCL, LCL, lateral and medical meniscus. Anterior tibiofibular ligament, Anterior talofibular ligament, Deltoid ligament)
• Muscles (Quadriceps, Hamstrings, Peroneals, Tibialis Anterior, Tibialis Posterior, Gastrocnemi us, Soleus, Achilles Tendon)
b. Identify the mechanism of injury.
c. Identify the signs and symptoms of the injury.
d. Indicate appropriate treatment for the injury.
e. Describe injury prevention

	strategies.				
Modalities and Rehabilitation (Week 19, 1 Week)	UT: CTE: Health Education, UT: Grades 9-12, Exercise Science/Sports Medicine Standard 9 Students will explain therapeutic modalities and rehabilitation techniques. ▪ Objective 1 Explore therapeutic modalities. a. Identify the purpose of therapeutic modalities. b. Explain how to properly select the use of therapeutic modalities. c. Identify the Gate Control Theory as a principle of pain management and describe the physiological process of the theory. ▪ Objective 2 Describe the physiologic effects, indications, contraindications, and application of: a. Cryotherapy • Ice packs • Ice massage	▪ What is a Modality ▪ Assess Legal concerns with use of modalities ▪ Examen the Gate Control Theory ▪ Implement RICE ▪ Execute the types of Modalities ▪ Cryotherapy, Thermotherapy, Contrast Bath, Electtotherapy, Massage ▪ Applications of each type of modality. ▪ Weigh the indications and contraindications of each type of modality. ▪ Examon the Rehabilaatation process. ▪ Determon what influences a rehabilitation program ▪ Implement the five guidelines in rehabilitation. ▪ Detect common mistakes of the rehabillitation process. ▪ Critique Rehabilitation components. ▪ Joint stability, decrease pain and swelling, range of motion, muscle endurance, muscle power, Agility and cardiovascular endurance ▪ Implement the three phase approach to rehabilitation ▪ Construct SAID and specificity a rehabilitation program. ▪ Use the overload principle.	▪ Construct the Raynaud's Phenomenon. ▪ Formulate an ice bag. ▪ Execute an ice massage treatment. ▪ Execute an ice immersion modality. ▪ Implament joint movement evaluation using Gonimeter.	Therapeutic Modality Gate control theory Cryotherapy Thermotherapy Contrast bath Electrotherapy Massage therapy Physiological effect Vasoconstriction Vasodilation RICE Indication Contraindication Ultrasound therapy Rehabilitation Immobilization Bracing ROM Muscular endurance Cardiovascular endurance

• Ice immersion
• Cold whirlpool
• Chemical coolant
• Describe the R.I.C.E. method for acute injuries
b. Thermotherapy
• Heat packs
• Ultrasound
• Hot whirlpool
• Contrast baths
c. Electrotherapy
d. Massage

- Objective 3 Discuss the components and goals of a rehabilitation program.
a. Identify the general guidelines of a rehabilitation program.
• Individualize each program
• Be as aggressive as possible without causing harm
• Use a variety of equipment
• Common mistakes
- Treat the cause not the symptoms
- Not addressing

Overload principle

SAID

Individualization

Biomechanics

Anatomical alignment

Sprain

Strain

the contra-lateral side
- Postural defects, anatomical mal-alignment, and biomechanical imbalances are often neglected
• Appropriate goal setting
• Components of a rehabilitation program
b. Phase I
• Body conditioning/ maintain cardiovascular fitness throughout all phases
• Control swelling
• Control pain
• Increase range of motion
c. Phase II
• Restore full range of motion
• Strength, endurance, speed, power in all muscle groups
• Begin skill patterns and proprioception
d. Phase III
• Functional and sport specific skills
• Restore balance and proprioception

	• Return to sport e. Relate the different exercise principles to rehabilitation. • SAID • Overload		
Sports Psychology (Week 20, 1 Week)	UT: CTE: Health Education, UT: Grades 9-12, Exercise Science/Sports Medicine Standard 10 Students will describe principles of sports psychology. ▪ Objective 1 Identify the psychological implications of an injury to an athlete. a. Describe the five psychological phases an athlete experiences following an injury. • Denial • Anger • Bargaining • Depression • Acceptance b. Compare and contrast athletes that deny pain and loss of function or view injury as a source of relief. ▪ Objective 2 Identify effective psychological intervention	Detect what an athlete feels when hurt and can not compete. Construct the five psychological stages. Know the value of goal setting. Plan the 3 types of goals. Assess the difference between staleness and burnout. Hypothesize skills to prevent staleness and burnout. Formulate use of the overload principle. Construct ready to play requirements. Invent ways of keeping an injured athlete involved with the team.	Denial Anger Bargaining Depression Acceptance Performance Goals Outcome Goals SMART Goals Focus Breathing Progressive Muscle Relaxation Kinesthetics Visual Imagery Staleness Burn out

skills.
a. Describe the importance of goal setting.
• Performance goals
• Outcome goals
• SMART goals
b. Examine different relaxation techniques and how they can help performance.
• Focused breathing
• Progressive muscle relaxation
c. Analyze the use of visual imagery in sport.
• Aid in rehabilitation and healing
• Reduce anxiety
• Improve performance

- Objective 3 Identify potential problems associated with overtraining.
a. Compare and contrast staleness and burnout.
b. Identify interventions to prevent or treat staleness or burnout.
• Remove

	from activity • Time off • Allow athlete to have more control • Decreasing emotional and stressful demands • Avoid repetition • Sufficient attention to complaints and small injuries • Supportive and caring environment				
Overview (Week 21, 1 Week)	UT: CTE: Health Education, UT: Grades 9-12, Exercise Science/Sports Medicine Standard 1 Students will explore the fundamental aspects of Exercise Science/Sports Medicine. ▪ Objective 1 Identify members of the Sports Medicine team. a. Recognize the primary members of the sports medicine team to include: Coach, Athlete, Parents, Team Physician, and Certified	**Members of the Sports Medicine Team** ▪ Coach, Athlete, Parents, Team Physician, Athletic Trainer, **Therapeutic Careers** ▪ Athletic Trainer, Conditioning Coach, Chiropracter, Exercise Physiologist, Physician, Physical Therapist, Occupational Therapist, Physicians Assistant, Sports Psychologist **Risk Management of Sports Injuries** ▪ Collision Sports Injuries, Contact Sports Injuries, Non-contact Sports Injuries **Legal Terminology** ▪ Vocabulary Terms **Ethical Conduct** ▪ Americans with Disabilities Act, Fair Play & Sportsmanship, Title IX, Winning at All Costs	▪ Differentiate the educational requirements for a variety of medical fields of interest. ▪ Explore CTE pathways and how it will connect them to their career of choice. ▪ Understand the range of salaries of a variety of medical professions. ▪ Research and learn the	▪ therapeutic careers negligence ▪ collision sport proximate cause ▪ contact sports gender equity (Title IX) ▪ non-contact sports EAP ▪ assumption of risk SOAP note ▪ battery ▪ commission & ommission ▪ failure to warn ▪ HIPAA ▪ informed consent ▪ liability ▪ malpractice ▪ negligence ▪ proximate cause ▪ gender equity (Title IX) ▪ EAP ▪ SOAP note	

Athletic Trainer, and Allied Health professionals.
b. Understand that other careers provide support to the sports medicine team.
c. Compare and contrast the roles of each member of the sports medicine team.

- Objective 2 Explore a variety of therapeutic careers and describe the job duties and skills, education required, job settings, and potential salary for:
a. Certified Athletic Trainer
b. Physical Therapist
c. Physical Therapy Assistant
d. Physical Therapy Aide
e. Occupational Therapist
f. Occupational Therapy Assistant
g. Occupational

Documentation & Facilities

- SOAP note
- EAP
- Supervision

following regarding several medical professions: educational requirements, the typical salary, the job settings, and job outlook for the future.

- Know the legal expectations for medical professionals in their chosen field and what constitutes negligence.

- Understand the "code of conduct" expectations within a chosen profession.

Therapy Aide
h. Exercise Physiologist
i. Orthopedic Surgeon
j. Physician
k. Physician Assistant
l. Massage Therapist
m. Chiropractor
n. Sports Psychologist
o. Certified Strength & Conditional Specialist/Personal Trainer
p. Dietician
q. Podiatrist

- Objective 3
  Explain legal issues and legal terminology.
  a. Discuss risk management in an athletic setting (collision, contact, non-contact; surfaces).
  b. Define legal terminology and discuss issues including:
  • Assumption of Risk
  • Battery
  • Commission and Omission
  • Failure to Warn
  • HIPAA
  • Informed Consent
  • Liability
  • Malpractice

• Negligence (Duty of care, breach of duty, damage/injury, proximal cause)
• Standard of Care
c. Discuss parameters of ethical conduct and associated issues including:
• Americans with Disabilities Act
• Cheating
• Drug testing
• Fair play and sportsmanship
• Performance enhancing drugs
• Scope of practice
• Title IX (Gender equity in sports)
• Winning at all costs
d. Review preventative measures to reduce potential risks of litigation.
• Be familiar with athletes
• Carry liability insurance
• Continuing education
• Demonstrate

		appropriate documentation (SOAP) • Follow physician orders and recommendations • Have an emergency action plan • Maintain adequate supervision • Maintain good rapport with the Sports Medicine Team