EVERETT PUBLIC SCHOOLS
SPORTS MEDICINE II

Course: Sports Medicine II		**Total Framework Hours:** 90
CIP Code: 510913	☐ **Exploratory** ☒ **Preparatory**	**Date Last Modified:** 07.2022
Career Cluster: Health Sciences		**Cluster Pathway:** Therapeutic

Industry-Recognized Certificates:

Work-Based Learning:

Course Information:

COMPONENTS AND ASSESSMENTS
Performance Assessments: Students will successfully complete the following: • Summative written and practical first aid test demonstrating what they know through interpreting and reasoning effectively to identify and evaluate various types of injuries, how to respond and treat them, and develop a plan to rehabilitate them. • Students will be self-directed learners and create an Emergency Action Plan for a school or community athletic site. • Students will perform taping assessments on a partner demonstrating the required steps and skills for taping the wrist, thumb, and ankle while being evaluated by their instructor. • **Unit Project/Job Shadow/Extended Learning Options:** 4 Hours of observing videos or the Athletic Certified Trainers responding to various injuries, performing skills to effectively identify, evaluate, treat, and rehabilitate them within this unit – 2 hours may be through video observation and analysis followed by a written reflection/summary of what the student observed.
Leadership Alignment: Students will ***communicate clearly and collaborate with others*** to provide care and implement emergency response skills in given emergency scenarios in class. Students will ***work creatively with others and make judgments and decisions to solve problems*** in given emergency scenarios in class. Students will ***communicate clearly and reason effectively*** to apply necessary and appropriate taping techniques to tape the wrist, thumb, and ankle.
Standards and Competencies
Unit 1: Review First Aid/ Medical Terminology/ Taping
Industry Standards and/or Competencies — **Total Learning Hours for Unit:** 25
• **NATA Objectives/Standards-** • 5.1 Recognize atmospheric conditions that contribute to environmental injury. • 5.2 Explain the environmental factors to be considered when caring for athletes. • 5.3 Determine an appropriate SPF for specific individuals. • 5.4 Explain the complications circadian dysrhythmia could have for various levels of athletes. • 5.5 Discuss the importance of an EAP and policy for thunder and lightning as it relates to athletics. • 5.6 Determine the risks associated with repeated overexposure to the sun. • Immediate and Emergency care

- 10.2 Investigate various blood borne pathogens.
- 10.3 Explain the OSHA blood borne pathogen standard.
- 10.4 Outline the components of a written exposure plan.
- 10.5 Explain basic wound care procedures.
- 7.1 List considerations to be given when properly fitting headgear.
- 7.2 Debate the advantages and disadvantages of customized versus commercial protective devices.
- 7.3 Identify the types of marketed and fabricated bracing devices as well as techniques.
- 7.4 Debate the advantages and disadvantages of taping versus bracing.
- 7.5 Determine which elastic wraps and wrapping procedures are most appropriate for specific scenarios.
- 7.6 Differentiate between different types of adhesive and cohesive tape, and determine what application is best for a specific scenario
- 7.7 Identify 4 basic tape applications and the rationale of each.
- 11.2 Determine the components of an EAP.
- 11.3 Investigate the acute injury management techniques.
- 11.4 List and describe the signs and symptoms of a concussion and demonstrate the recognition of them.
- 11.5 Explain the steps involved in performing CPR.
- 11.6 Recognize the common causes of cardiopulmonary complications in sports.
- **Standard 4:** Protective materials and products used to prevent athletic injuries are safely and appropriately applied.
- **Standard 5:** Athletic participation in a safe environment is ensured or activity is modified or canceled based on established environmental policies.
- **Standard 8:** Comprehensive athletic emergency action plan (EAP) is established and integrated with local EMS per athletic venue.
- **National Health Science Standards**
- **Foundation Standard 1:** Academic Foundation
- *Understand human anatomy, physiology, common diseases and disorders, and medical math principles.*
- **1.2 Diseases and Disorders**
- 1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders, including, but not limited to the following:
- Arthritis
- Asthma
- Concussion / Traumatic Brain Injury (TBI)
- Cystic fibrosis
- Diabetes mellitus
- Hypertension
- Muscular Dystrophy
- Myocardial Infarction
- Stroke / Cerebrovascular Accident (CVA)
- **Foundation Standard 7:** Safety Practices
- Identify existing and potential hazards to clients, co-workers, and self. Employ safe work practices and follow health and safety policies and procedures to prevent injury and illness.
- 7.1.1 Explain principles of infection transmission.
- Identify classifications of pathogens
- Bacteria
- Fungi
- Parasites
- Protozoa
- Viruses
- Describe characteristics of microorganisms

- Aerobic
- Anaerobic
- Non-pathogenic
- Pathogenic
- Recognize chain of infection
- Describe mode of transmission
- Common vehicle (air, food, water)
- Direct
- Healthcare-associated infections (nosocomial)
- Indirect
- Opportunistic
- Vectors
- 7.1.2 Differentiate methods of controlling the spread and growth of pathogens.
- Asepsis
- Sanitization
- Antisepsis
- Disinfection
- Sterile technique
- Sterilization
- Standard precautions
- Handwashing
- Gloving
- Personal Protective Equipment (PPE)
- Environmental cleaning
- Isolation precautions
- Transmission-based contact
- Bloodborne pathogen precautions
- Vaccinations
- **7.2 Personal Safety**
- 7.2.1 Apply personal safety procedures based on Occupational Safety and Health Administration (OSHA) and Centers for
- Disease Control (CDC) regulations.
- 7.2.2 Demonstrate principles of body mechanics during patient care.
- Ambulating
- Lifting
- Positioning
- 7.2.3 Demonstrate and apply the use of personal protective equipment (PPE).
- **7.3 Environmental Safety**
- 7.3.1 Apply safety techniques in the work environment.
- Ergonomics
- Safe operation of equipment
- Patient/client/employee safety measures
- **7.4 Common Safety Hazards**
- 7.4.1 Observe all safety standards related to the occupational exposure to hazardous chemicals standard (safety data sheets [SDS]).

- 7.4.2 Comply with safety signs, symbols, and labels.
- **7.5 Emergency Procedures and Protocols**
- 7.5.1 Practice fire safety in a healthcare setting.
- 7.5.2 Apply principles of basic emergency response in natural disasters and other emergencies (safe location, contact emergency personnel, follow facility protocols).
- **Foundation Standard 10: Technical Skills**
- Apply and demonstrate technical skills and knowledge common to health career specialties.
- 10.1.2 Obtain training or certification in
- Automated external defibrillator (AED)
- Cardiopulmonary resuscitation (CPR)
- First aid
- Foreign body airway obstruction (FBAO)

Aligned Washington State Learning Standards	
Educational Technology	**1. Empowered Learner-** Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences. **2. Digital Citizen-** Students recognize the rights, responsibilities, and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. **6. Creative Communicator-** Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.
English Language Arts	CCSS.ELA-LITERACY.RST.11-12.4: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics. CCSS.ELA-LITERACY.RST.11-12.5: Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. CCSS.ELA-LITERACY.RST.11-12.7: Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. W.1.11-12: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. L.2.11-12: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
Health and Physical Education	H2.W2.HSa,- Analyze prevention, lifestyle factors, and treatment of communicable and noncommunicable diseases. H2.W2.HSb.- Assess personal risk factors and predict future health status. H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision. H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention practices and behaviors. H1.Sa3.HS- Analyze potential dangers of sharing personal information through electronic media.
Science	HS-PS2 Motion and Stability: Forces and Interactions HS-PS2-5 Plan and investigate individually and collaboratively to produce data to serve as the basis for evidence. HS-PS2-6 Communicate scientific and technical information in multiple formats. Science and Engineering Practices: Planning and Carrying Out Investigations (HS-PS2-5) Obtaining, Evaluating, and Communicating Information (HS-PS2-6) HS-LS1 From Molecules to Organisms: Structures and Processes HS-LS1-3 Plan and investigate individually and collaboratively to produce data to serve as the basis for evidence. HS-LS1-1 Construct and explanation based on valid and reliable evidence obtained from a variety of sources.

COMPONENTS AND ASSESSMENTS

Performance Assessments: Students will successfully complete the following:

- Nutrition Project: Using systems of thinking to balance nutrients in the presence of illness, injury, disease, and food preferences. Students will access and evaluate information to develop separate nutritional plans for athletes with the presence of illness, injury, disease, and food preferences.
- Students will communicate clearly when creating an appropriate pre-game meal for a specific sport (endurance vs. non endurance). Students will orally present their pre-game meal plans to their table group prior to turning them in for grading.
- Use and manage information to assess the claims and health effects of a supplement; researching the components and determining if it is advisable to use the supplement. Prepare a one-pager to communicate clearly their conclusion based on their findings on the health effects of a supplement and is it advisable to use.
- Evaluate food label information critically and competently to identify what information is important for people involved in different athletic activities. Create a media product to communicate their determination as to what food label information is important for people involved in different athletic activities and why.
- **Unit Project/Job Shadow/Extended Learning Options:** 4 hours of book study of "Run, Maddy, Run" or an observation of dietary consult with athletes by the Certified Athletic Trainer or other Health Professional. Write a one-page typed written summary summarizing the scenario and overall takeaways of learnings and how the book study or the observation experiences will help them guide athletes or their own health in the future.

Leadership Alignment:

Students will ***work creatively with others*** and **use systems thinking** would a healthy Caloric-balanced food plan for an athlete based on desire to gain, maintain, or lose weight.

Students will ***make judgments and decisions*** for proper use recommendations for ergogenic aids by analyzing and evaluating information to inform recommendations.

Students will ***work collaboratively with others*** practicing ***flexibility and adaptability*** in teaming to create media products to educate others on the dangers to athletes and active human beings for having poor nutrition.

Students will ***use systems of thinking to reason effectively*** to create a digital presentation communicating a nutrition plan for a given athlete in a scenario and will ***communicate clearly*** why the nutrition plan was determined and developed.

Standards and Competencies

Unit 2: Sports Nutrition-

Class discussion of Kreb's Cycle, ATP vs ADP, and Electrolyte balance.

Examine and consider environmental conditions to learn about how to care for the diabetic athlete with required diet and caloric needs to adequately fuel for competition and activities.

Industry Standards and/or Competencies	**Total Learning Hours for Unit:** 10

- **NATA Objectives -**
- 8.1 List the six classes of nutrients and give an example in each class.
- 8.2 Explain the importance of good nutrition in enhancing performance and injury prevention.
- 8.3 Differentiate between body weight and body composition along with the factors that influence both of them.
- 8.4 Identify methods to calculate percent body fat and issues associated with each.
- 8.5 Identify safe methods for weight loss as well as weight gain.
- **National Health Science Standards -**
- **Foundation Standard 9:** Health Maintenance Practices
- *Differentiate between wellness and disease. Promote disease prevention and model healthy behaviors.*
- **9.1 Healthy Behaviors**
- 9.1.1 Promote behaviors of health and wellness.
- Exercise
- Nutrition
- Weight control

Aligned Washington State Learning Standards

Educational Technology	**1. Empowered Learner-** Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences. **2. Digital Citizen-** Students recognize the rights, responsibilities, and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. **6. Creative Communicator-** Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.
English Language Arts	CCSS.ELA-LITERACY.RST.11-12.4: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics. CCSS.ELA-LITERACY.RST.11-12.5: Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. CCSS.ELA-LITERACY.RST.11-12.7: Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. W.1.11-12: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. L.2.11-12: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
Health and Physical Education	H1.W1.HS- Analyze personal dimensions of health and design a plan to balance health. H2.W2.HSa.- Analyze prevention, lifestyle factors, and treatment of communicable and noncommunicable diseases. H2.W2.HSb.- Assess personal risk factors and predict future health status. H3.W4.HS- Create a resource that outlines where and how students can access valid and reliable health information, products, and services. H5.W6.HS- Predict potential short- and long-term outcomes of a personal health-related decision.
Science	HS-PS1 Matter and its Interactions HS-PS1-4 Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy. *Changes of energy and matter in a system can be described in terms of energy and matter flows into, out of, and within that system. HS-PS1-6 Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium. *Refine a solution to a complex real-world problem, based on scientific knowledge, student-generated sources of evidence, prioritized criteria, and tradeoff considerations. HS-PS1-7 Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction. *The total amount of energy and matter in closed systems is conserved. Science and Engineering Practices: Constructing Explanations and Designing Solutions (HS-PS1-6) Disciplinary Core Ideas: PS1.A: Structure and Properties of Matter (HS-PS1-3, HS-PS1-6) ETS1.C: Optimizing the Design Solution (HS-PS1-6) Crosscutting Concepts: Energy and Matter (HS-PS1-7) HS-PS2 Motion and Stability: Forces and Interactions HS-PS2-1 Analyze data using tools, technologies, and/or models in order to make valid and reliable scientific claims or determine an optimal design solution. HS-PS2-2 Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system. HS-PS2-3 Systems can be designed to cause a desired effect. HS-PS2-4 Different patterns may be observed at each of the scales at which a system is studied and can provide evidence for causality in explanations of phenomena. Analyzing and Interpreting Data (HS-PS2-1)

	Using Mathematics and Computational Thinking (HS-PS2-2, HS-PS2-4) Obtaining, Evaluating, and Communicating Information (HS-PS2-6) Disciplinary Core Ideas: PS1.A: Structure and Properties of Matter Crosscutting Concepts: Patterns (HS-PS2-4) Cause and Effect (HS-PS2-1, HS-PS2-3, HS-PS2-5) Structure and Function (HS-PS2-6) HS-LS1 From Molecules to Organisms: Structures and Processes HS-LS1-1 Systems of specialized cells within organisms help them perform the essential functions of life. HS-LS1-2 Develop and use a model based on evidence to illustrate the relationships between systems or between components of a system. HS-LS1-5 Changes of energy and matter in a system can be described in terms of energy and matter flows into, out of, and within that system. HS-LS1-7 Energy cannot be created, or destroyed-it only moves between one place and another place, between objects and/or fields, or between systems. Science and Engineering Practices: Developing and Using Models (HS-LS1-2) Constructing Explanations and Designing Solutions (HS-LS1-1, HS-LS1-6) Disciplinary Core Ideas: LS1.A Structure and Function (HS-LS1-1, HS-LS1-3) LS1.C Organization for Matter and Energy Flow in Organisms (HS-LS1-6, HS-LS1-7) Crosscutting Concepts: Systems and System Models (HS-LS1-2, HS-LS1-4) Energy and Matter (HS-LS1-5, HS-LS1-6) Stability and Change (HS-LS1-3)

COMPONENTS AND ASSESSMENTS

Performance Assessments: Students will successfully complete the following:

- Naviance Career Exploration in Alternative Medicine research project and presentation by accessing and evaluating information and apply technology effectively to create a media product to communicate clearly what career in Alternative Medicine they researched and what it takes to achieve that career.
- **Unit Project/Job Shadow/Extended Learning Options:** Choose between completing either 2 hour of videos of interviews with Alternative Medical practitioners and writing a written one-page summary of what they observed, heard, their impression, and thoughts about what they observed, **OR** Create a document of questions and answers for a medical history being taken in various Alternative Medicine clinical settings.

Leadership Alignment:
Students will ***think creatively***, ***manage goals and time***, and ***be self-directed learners*** completing their Career Exploration in Alternative Medicine projects.
Students will ***manage their projects*** to ***produce results*** and get their desired outcomes.

Standards and Competencies

Unit 3: Career Exploration in Alternative Medicine

Industry Standards and/or Competencies | **Total Learning Hours for Unit:** 5

- **National Health Science Standards-**
- Foundation Standard 4: Employability Skills
- *Use employability skills to enhance employment opportunities and job satisfaction.*
- 4.1 Personal Traits of the Health Professional
- 4.1.1 Identify personal traits and attitudes desirable in a career ready member of a health team.

- Acceptance of criticism
- Competence
- Dependability
- Discretion
- Empathy
- Enthusiasm
- Honesty
- Initiative
- Integrity
- Patience
- Positive Attitude
- Responsibility
- Self-motivation
- Tact
- Team player
- Willingness to learn
- 4.1.2 Summarize professional standards as they apply to hygiene, dress, language, confidentiality and behavior.
- 4.2 Employability Skills
- 4.2.1 Apply employability skills in healthcare.
- Chain of command
- Communication Skills
- Decision making
- Flexible
- Organization
- Problem Solving
- Scope of practice
- Time Management
- Work Ethic
- 4.3 Career Decision-making
- 4.3.1 Research levels of education, credentialing requirements, and employment trends in health professions.
- 4.3.2 Distinguish differences among careers within a health science pathway.
- Biotechnology research and development
- Diagnostic services
- Health informatics
- Support services
- Therapeutic services
- Foundation Standard 8: Teamwork
- *Identify roles and responsibilities of individual members as part of the healthcare team.*
- 8.1 Healthcare Teams
- 8.1.1 Evaluate roles and responsibilities of healthcare team members.
- 8.1.2 Identify characteristics of effective teams.
- Defined roles
- Common purpose

- Effective communication
- Effective leadership
- Measurable processes and outcomes
- Mutual respect
- Shared goals
- 8.2 Team Member Participation
- 8.2.4 Evaluate why teamwork is an important part of healthcare and how it improves patient care.
- Foundation Standard 9: Health Maintenance Practices
- *Differentiate between wellness and disease. Promote disease prevention and model healthy behaviors.*
- 9.1.4 Investigate complementary and alternative health practices as they relate to wellness and disease prevention.
- Acupuncture
- Eastern medicine
- Holistic medicine
- Homeopathy
- Manipulative therapies
- Natural therapies

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Health and Physical Education	H1.W1.HS- Analyze personal dimensions of health and design a plan to balance health.

COMPONENTS AND ASSESSMENTS

Performance Assessments: Students will successfully complete the following:

- Summative written test being able to demonstrate their knowledge of the physiology and psychology of pain, being able to differentiate between sprains and strains, the various degrees of the injury in a given scenario. Use systems of thinking to analyze how parts of a whole interact with each other to illustrate the various types of fractures and explain the forces required to produce each one through a written explanation or sketched and labeled diagram on their test. List the mechanical properties of tissue as they pertain to the stress-strain curve on the written test. Draw and illustrate on the written test and describe the 5 types of tissue loading. Be able to differentiate through written explanation between HOPS and SOAP. Identify by selecting the right illustrated diagram on the written test what the correct positioning is for being in the anatomical position.
- Perform on a partner in front of the instructor the difference between manual muscle testing and resistive range of motion testing.

- **Unit Project/Job Shadow/Extended Learning Options:** 4 hours of observation of video of a Certified Athletic Trainer performing skills related to assessing, evaluating, treating, and rehabilitating injuries. Paying particular attention to the mechanism of the injury, and the use of HOPS, and SOAP. While observing, completing a written summary of what was observed and what their thoughts were about what they saw. / **OR** develop an in-class role playing skit including at least 2 students to illustrate an injury occurring, the assessment and healing of the injury utilizing HOPS and SOAP. Skit script must be typed out and turned in after skit is performed.

Leadership Alignment:
Students will ***Interact effectively with others*** to create a HOPS and SOAP Note Documentation form.
Students will ***manage their projects*** to ***produce results*** and get their desired outcomes.

Standards and Competencies

Unit 4: Injury Mechanisms, Assessment and Healing (On Field/ATR/SOAP/HOPS/MOI)
CH 9, 10 & 13 in online textbook – 80% correct answers
Create a summary chart of what the rehab focus would be in each phase of tissue healing for one chosen body part/injury.

Industry Standards and/or Competencies | **Total Learning Hours for Unit: 15**

- **NATA Objectives**
- 9.1 Describe and illustrate the three phases of the healing process as it pertains to various soft tissue structures, including cartilage, ligament, muscle, tendon, and nerve.
- 9.2 Explain the physiology and psychology of pain.
- 9.3 Differentiate between sprains and strains, and differentiate between 1st, 2nd, and 3rd degree injuries.
- 9.4 Illustrate various types of fractures and explain the forces required to produce each one.
- 9.5 List the mechanical properties of tissue as they pertain to the stress-strain curve.
- 9.6 Illustrate and describe the 5 types of tissue loading.
- 15.2 Illustrate the “anatomical position.”
- 15.1 Differentiate between HOPS and SOAP.
- 15.3 Differentiate between manual muscle testing and resistive range of motion testing.
- 15.4 Examine cultural differences as it pertains to the manner in which an evaluation is conducted.
- **National Health Science Standards -**
- Foundation Standard 2: Communications
- Demonstrate methods of delivering and obtaining information, while communicating effectively.
- 2.1 Concepts of Effective Communication
- 2.1.3 Distinguish between subjective and objective information.
- 2.1.4 Interpret elements of communication using sender-message-receiver feedback model.
- 2.1.5 Modify communication to meet the needs of the patient/client and be appropriate to the situation.
- 2.1.6 Describe appropriate interactions with patients throughout various stages of psychosocial development.
- 2.2 Medical Terminology
- 2.2.1 Use common roots, prefixes, and suffixes to communicate information.
- 2.2.2 Interpret common medical abbreviations to communicate information.
- 2.3 Written Communication Skills
- 2.3.1 Use proper elements of written and electronic communication (spelling, grammar, and formatting).
- 2.3.2 Prepare examples of technical and informative writing.
- 2.3.3 Demonstrate appropriate use of digital communication in a work environment, such as email, text, and social media.

Aligned Washington State Learning Standards

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Health and Physical Education	H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention practices and behaviors.
Science	HS-PS2 Motion and Stability: Forces and Interactions HS-PS2-5 Plan and conduct an investigation individually and collaboratively to produce data to serve as the basis for evidence. HS-PS2-6 Communicate scientific and technical information in multiple formats. Science and Engineering Practices: Planning and Carrying Out Investigations (HS-PS2-5) Obtaining, Evaluating, and Communicating Information (HS-PS2-6) HS-LS1 From Molecules to Organisms: Structures and Processes HS-LS1-3 Plan and investigate individually and collaboratively to produce data to serve as the basis for evidence. HS-LS1-1 Construct, and explanation based on valid and reliable evidence obtained from a variety of sources.

COMPONENTS AND ASSESSMENTS

Performance Assessments: Students will successfully complete the following:

- Written summative test. Students need to identify basic structures and describe functions of human body systems as it relates to the foot and ankle. Specifically Skeletal structures, anatomical anatomy of the foot and ankle, functions of the foot and ankle skeletal system, posture, protection, muscles located at the foot and ankle that accommodate and allow for movement of the body through the written summative test questions.
- Practical test on assessing foot & ankle injuries and conditions. - Students perform practical tests on a partner in front of their instructor evaluating them on the appropriate tests needed for a given foot and/or ankle injury scenario.
- Design an appropriate stretching/strengthening/rehab program for a chosen injury or area of the foot and/or ankle. Develop a video guiding and leading others identifying the specific injury, what the stretching looks like when done correctly, what the exercises are and look like when done correctly to strengthen and rehab the injured area.
- **Unit Project/Job Shadow/Extended Learning Options:** 4 hours observing eval, treatment, rehab/in class role playing/video with at least 3 hours in person

Leadership Alignment:
Students will ***work effectively in diverse teams*** to design an appropriate stretching/strengthening/rehab program for a chosen injury or area.
Students will ***access and evaluate information*** to analyze in order to determine the type and severity of a possible injury.

Standards and Competencies

Unit 5: Foot & Ankle (Anatomy/Mechanics/Assessment/Rehab/Test/Student Assessment)
CH 18 & 19 in online textbook, 80% correct answers, 75% or better on summative assessment

Industry Standards and/or Competencies	**Total Learning Hours for Unit:** 20

- **NATA Objectives -**
- 13.1 List the safety procedures with each type of modality.

- 13.2 Investigate the role of various rehabilitation professionals.
- 13.3 Understand the five phases of rehabilitation
- **National Health Science Standards -**
- **Foundation Standard 1:** Academic Foundation
- *Understand human anatomy, physiology, common diseases and disorders, and medical math principles.*
- **Human Anatomy and Physiology**
- 1.1.2 Identify basic structures and describe functions of human body systems.
- Skeletal
- Structures of the skeletal system
- Distinguish between axial and appendicular skeletons
- Describe long bone anatomy
- Identify joint types and movement
- Functions of the skeletal system
- Structure and support
- Muscle attachment and movement
- Muscular
- Structures of the muscular system
- Identify types of muscle tissue
- Identify major muscle groups of neck, shoulder, chest, abdomen, back, arms, and legs
- Functions of the muscular system
- Body movement
- Posture
- Protection

Aligned Washington State Learning Standards	
Educational Technology	**1. Empowered Learner-** Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences. **2. Digital Citizen-** Students recognize the rights, responsibilities, and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. **6. Creative Communicator-** Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.
English Language Arts	CCSS.ELA-LITERACY.RST.11-12.4: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics. CCSS.ELA-LITERACY.RST.11-12.5: Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. CCSS.ELA-LITERACY.RST.11-12.7: Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. W.1.11-12: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. L.2.11-12: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
Health and Physical Education	H2.Sa1.HS- Compare how family, peers, culture, media, technology, and other factors influence safety and injury prevention practices and behaviors.
Science	**HS-PS2 Motion and Stability: Forces and Interactions** HS-PS2-1. Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.

	HS-PS2-2. Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system. HS-PS2-3. Apply scientific and engineering ideas to design, evaluate, and refine a device that minimize the force on a macroscopic object during a collision. HS-PS2-4. Use mathematical representations of Newton's Law of Gravitation to describe and predict the gravitational forces between objects. HS-PS2-5 Plan and investigate individually and collaboratively to produce data to serve as the basis for evidence, and in the design: decide on types, how much, and accuracy of data needed to produce reliable measurements and consider limitation on the precision of the data and refine the design accordingly. HS-PS2-6 Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials. Science and Engineering Practices: Planning and Carrying Out Investigations (HS-PS2-5) Analyzing and Interpreting Data (HS-PS2-1) Constructing Explanations and Designing Solutions (HS-PS2-3) Obtaining, Evaluating, and Communicating Information (HS-PS2-6) Disciplinary Core Ideas: PS1.A: Structure and Properties of Matter (HS-PS2-6) PS2.A: Forces and Motion (HS-PS2-1, HS-PS2-2, HS-PS2-3) PS2.B: Types of Interactions (HS-PS2-4) Crosscutting Concepts: Patterns (HS-PS2-4) Cause and Effect (HS-PS2-1, HS-PS2-5, HS-PS2-3) Systems and System Models (HS-PS2-2) Structure and Function (HS-PS2-6) **HS-LS1 From Molecules to Organisms: Structures and Processes** HS-LS1-1 Systems of specialized cells within organisms help them perform the essential functions of life. HS-LS1-2 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. HS-LS1-3 Plan and investigate to provide evidence that feedback mechanisms maintain homeostasis. Science and Engineering Practices: Developing and Using Models (HS-LS1-2, HS-LS1-4, HS-LS1-5, HS-LS1-7) Planning and Carrying Out Investigations (HS-LS1-3) Constructing Explanations and Designing Solutions (HS-LS1-1, HS-LS1-6) Disciplinary Core Ideas: LS1.A: Structure and Functions (HS-LS1-1, HS-LS1-2, HS-LS1-3) Crosscutting Concepts: Systems and System Models (HS-LS1-2, HS-LS1-4) Energy and Matter (HS-LS1-5, HS-LS1-6, HS-LS1-7) Structure and Function (HS-LS1-1) Stability and Change (HS-LS1-3)

COMPONENTS AND ASSESSMENTS
Performance Assessments: Students will successfully complete the following: • Pass summative written test at 80% or better. Students need to identify basic structures and describe functions of human body systems as it relates to the knee. Specifically Skeletal structures, anatomical anatomy of the knee, functions of the knee, posture, protection, muscles located knee that accommodate and

allow for movement of the body through the written summative test questions. Being able to list the five phases of rehabilitation on the test as well as identify the various types of modalities and what safety procedures are needed with each.

- Performing practical tests on a partner in front of their instructor evaluating them on the appropriate tests needed for a given knee scenario around various injuries and conditions of the knee. Achieving 80% or better on the practical test for the various injuries and conditions of the knee.
- **Unit Project/Job Shadow/Extended Learning Options:** 4 hours observing evaluations, treatments, rehabilitation with a written summary stating what was observed and thoughts/learning **OR** in-class role playing, consisting of at least 3 student teams to perform in person role-play around responding to a knee injury, illustrating assessing, evaluating, treating, and rehabilitating the injury. Turning in the typed out skit script after the live role-play.

Leadership Alignment:
Students will ***use and manage information*** to design an appropriate stretching/strengthening/rehab program for a chosen injury or area.
Students will ***reason effectively*** analyzing available information to ***make judgements and decisions*** determining the type and severity of a possible injury.

Standards and Competencies

Unit 6: The Knee (Anatomy/Mechanics/Assessment/Rehab/Test/Student Assessment)
Patellar tendon tape/EAP
CH 20 in the online textbook, 80% correct answers, 75% or better on summative assessment

Industry Standards and/or Competencies	**Total Learning Hours for Unit:** 15

- **NATA Objectives -**
- 13.1 List the safety procedures with each type of modality.
- 13.2 Investigate the role of various rehabilitation professionals.
- 13.3 Understand the five phases of rehabilitation
- **National Health Science Standards -**
- **Foundation Standard 1:** Academic Foundation
- *Understand human anatomy, physiology, common diseases and disorders, and medical math principles.*
- **Human Anatomy and Physiology**
- 1.1.2 Identify basic structures and describe functions of human body systems.
- Skeletal
- Structures of the skeletal system
- Distinguish between axial and appendicular skeletons
- Describe long bone anatomy
- Identify joint types and movement
- Functions of the skeletal system
- Structure and support
- Muscle attachment and movement
- Muscular
- Structures of the muscular system
- Identify types of muscle tissue
- Identify major muscle groups of neck, shoulder, chest, abdomen, back, arms, and legs
- Functions of the muscular system
- Body movement
- Posture
- Protection

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21st Century Skills

Check those that students will demonstrate in this course:

LEARNING & INNOVATION

Creativity and Innovation
☒Think Creatively
☒Work Creatively with Others
☐Implement Innovations

Critical Thinking and Problem Solving
☒Reason Effectively
☒**U**se Systems Thinking
☒Make Judgments and Decisions
☒Solve Problems

Communication and Collaboration
☒Communicate Clearly
☒Collaborate with Others

INFORMATION, MEDIA & TECHNOLOGY SKILLS

Information Literacy
☒Access and /evaluate Information
☒Use and Manage Information

Media Literacy
☒Analyze Media
☐Create Media Products

Information, Communications and Technology (ICT Literacy)
☐Apply Technology Effectively

LIFE & CAREER SKILLS

Flexibility and Adaptability
☒Adapt to Change
☒Be Flexible

Initiative and Self-Direction
☒Manage Goals and Time
☐Work Independently
☐Be Self-Directed Learners

Social and Cross-Cultural
☒Interact Effectively with Others
☒Work Effectively in Diverse Teams

Productivity and Accountability
☒Manage Projects
☒Produce Results

Leadership and Responsibility
☐Guide and Lead Others
☒Be Responsible to Others