SPORTS MEDICINE AND ATHLETIC TRAINING (UC)

INDUSTRY SECTOR: Health Science and Medical Technology Sector
PATHWAY: Patient Care
CALPADS TITLE: Advanced Patient Care (Capstone)
CALPADS CODE: 7922

HOURS:

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Classroom</th>
<th>Laboratory/CC/CVE</th>
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<tr>
<td></td>
<td>180</td>
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<thead>
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<th>O*NET CODE</th>
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<tr>
<td>Physical Therapist Aides</td>
<td>31-2022.00</td>
<td>Physical Therapist Assistants</td>
<td>31-2021.00</td>
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<tr>
<td>Athletic Trainers</td>
<td>29-9091.00</td>
<td>Occupational Therapy Aides</td>
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COURSE DESCRIPTION:

In this UC D-Science Lab approved CTE and science standards-based course, students will learn about the anatomy and physiology of the human body, the interaction of body systems, theories, and methods of prevention, evaluation, management and rehabilitation of sports and exercise-related injuries. Cellular structure and the body’s chemical response to pharmaceutical agents, disease, injury, and stress will be addressed. Students will use scientific methods of observation, investigation, experimentation, data collection and data analysis. Laboratory and practicum work is performed both in and outside of the classroom. Students are provided substantial opportunities to practice and apply learned theories and techniques working with school athletes, athletic trainers, and other practicing professionals in the field after school hours.

A-G APPROVAL: D

ARTICULATION:

<table>
<thead>
<tr>
<th>College</th>
<th>Course Code</th>
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<tbody>
<tr>
<td>Irvine Valley College</td>
<td>KNES 85</td>
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<tr>
<td>Orange Coast College</td>
<td>KIN A273</td>
</tr>
<tr>
<td>Saddleback College</td>
<td>KNES 53</td>
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DUAL ENROLLMENT: None

PREREQUISITES:

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<tbody>
<tr>
<td>Algebra</td>
</tr>
<tr>
<td>Chemistry (Recommended)</td>
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<tr>
<td>Anatomy &amp; Physiology (Recommended)</td>
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<tr>
<td>Biology</td>
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</table>
METHODS OF INSTRUCTION

- Direct instruction
- Group and individual applied projects
- Multimedia
- Demonstration
- Field trips
- Guest speakers

STUDENT EVALUATION:

- Student projects
- Written work
- Exams
- Observation record of student performance
- Completion of assignment

INDUSTRY CERTIFICATION:

- AHA Basic Life Support for Healthcare Provider (CPR and AED) Certification

RECOMMENDED TEXTS:

- Hole’s Anatomy - David Shier and Ricki Lewis
- Introduction to Sports Medicine and Athletic Training - Robert France

PROGRAM OF STUDY

<table>
<thead>
<tr>
<th>Grade</th>
<th>Fall</th>
<th>Spring</th>
<th>Year</th>
<th>Course Type</th>
<th>Course Name</th>
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<td></td>
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<td>Introduction to Medical Careers</td>
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<td>Introductory</td>
<td>Medical Terminology</td>
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<td>10, 11, 12</td>
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<td></td>
<td>Concentrator</td>
<td>Emergency Medical Responder</td>
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<td>11, 12</td>
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<td></td>
<td>Capstone</td>
<td>Sports Medicine and Athletic Training (UC)</td>
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### I. INTRODUCTION AND ORIENTATION

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| 3  | 0      | **Academic:**
|    |        | WS: 11-12.2 |
|    |        | **CTE Anchor:**
|    |        | Responsibility and Flexibility: 7.3, 7.4, 7.7 |
|    |        | **CTE Pathway:**
|    |        | B12.2 |

- Demonstrate understanding of course objectives and competencies
- Understand the course requirements and student expectations
- Demonstrate awareness of the industry standards and career opportunities
- Practice safety measures required for each sport played during the semester

### II. THE SPORTS MEDICINE INDUSTRY

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| 6  | 7      | **Academic:**
|    |        | LS: 11-12.6 |
|    |        | WS: 11-12.2b, 11-12.2 |
|    |        | WHSSST: 11-12.2 |
|    |        | **CTE Anchor:**
|    |        | Communications: 2.3, 2.4 |
|    |        | Ethics and Legal Responsibilities: 8.2, 8.3, 8.4 |
|    |        | Technical Knowledge and Skills: 10.1, 10.2 |
|    |        | **CTE Pathway:**
|    |        | B12.1, B12.3 |

- Understand the education and skill requirements of the sports medicine field and other health-related fields.
- Demonstrate appropriate communication skills and strategies
- Determine the scope of practice for athletic trainer aides and physical therapy aides
- Understand patients' rights
- Discuss ethical situations that may occur in health care
- Define HIPAA guidelines and regulations regarding confidentiality and how it is interpreted in sports medicine
- Describe liability issues in sports medicine

### III. WORKPLACE SAFETY

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|    |        | LS: 11-12.1 |
|    |        | **CTE Anchor:**
|    |        | Health and Safety: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8 |
|    |        | **CTE Pathway:**
|    |        | B10.1, B10.2, B10.3, B10.4, B10.5, B10.6, B10.7 |

- Exhibit an understanding of occupational safety issues and describe the policies, procedures, regulations, and agencies that govern workplace safety
- Understand the importance of emergency preparedness and describe the elements of an emergency preparedness plan
- Describe proper procedures for handling hazardous materials
- Operate equipment safely so as not to endanger themselves or others.
- Explain personal health and safety precautions in the workplace including universal precautions, stress management, and ergonomics

### IV. FUNCTIONS OF THE APPENDICULAR AND AXIAL SKELETAL

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|    |        | **CTE Anchor:**
|    |        | Technical Knowledge and Skills: 10.1 |
|    |        | **CTE Pathway:**
|    |        | B2.1, B2.2, B2.3, B2.4, B5.1, B5.4, B5.5, B5.6 |

- **Skeletal System**
  - Identify and palpate the major bones and anatomical bony landmarks of the skeletal system
  - Describe and explain the organization and articulation of the major bones in the skeletal system
  - Describe the importance of bone articulation in relation to sports medicine

- **Joints and Movement**
  - Identify and palpate the major joints of the upper and lower limbs
  - Describe both the movement and function of the joints in the upper and lower limbs
### Muscular System
- Identify the major skeletal muscles
- Identify a muscle's origin and insertion
- Know the structures of a skeletal muscle and be able to describe the importance of striations
- Describe the steps involved in muscle contraction
- Explain the importance of ligaments and tendons and why their healing process is different than muscle

### V. ANKLE, FOOT AND LOWER LEG
- Know and locate the major bones of the lower limbs
- Identify the major muscles of the lower limbs
- Identify the ligaments and tendons of the lower limbs

#### Recognition of Mechanisms of Injury:
- Identify the causes of sprains, strains, and fractures

#### Prevention/Treatment
- Understand and describe appropriate injury prevention techniques
- Synthesize knowledge and information to evaluate, design, and monitor appropriate care and rehabilitation

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<td>CTE Pathway: B2.4, B2.3, B2.1, B7.1, B7.2</td>
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### VI. KNEE
- Know and locate the major bones that articulate at the knee
- Identify the major muscles that originate and insert at the knee
- Identify the ligaments and tendons involved in the function of the knee

#### Recognition of Mechanisms of Injury:
- Identify the causes of sprains, strains, and fractures

#### Prevention/Treatment
- Understand and describe appropriate injury prevention techniques
- Synthesize knowledge and information to evaluate, design, and monitor appropriate care and rehabilitation

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<td>CTE Pathway: B2.1, B2.3, B2.4, B7.2, B7.1, B7.4</td>
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### VII. HIP AND THIGH
- Know and locate the major bones of the upper leg and pelvis regions
- Identify the large muscles of the upper leg
- Identify the ligaments and tendons of the upper leg and pelvis regions

#### Recognition of Mechanisms of Injury:
- Identify the causes of sprains, strains, and fractures

#### Prevention/Treatment
- Understand and describe appropriate injury prevention techniques
- Synthesize knowledge and information to evaluate, design, and monitor appropriate care and rehabilitation

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<tr>
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<td></td>
<td>CTE Pathway: B2.4, B2.3, B2.1, B7.1, B7.2, B7.4</td>
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### VIII. HEAD AND FACE

- Know the anatomy related to the head and face including:
  - Eyes
  - Ears
  - Nose
  - Throat
  - Brain
- Demonstrate a systemic process for evaluating concussions and mild head injuries
- Determine proper sideline and follow-up management of sport-related concussions
- Discuss the value of neuropsychological tests in determining the state of recovery post-concussion
- Understand and describe appropriate injury prevention techniques
- Describe the mechanism of injury, signs, and symptoms, and appropriate treatment for the various injuries to the face, eyes, ear, nose, and throat

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CTE Anchor: Problem Solving and Critical Thinking: 5.3  
Technical Knowledge and Skills: 10.1  
CTE Pathway: B2.1, B2.3, B2.4, B7.2, B7.4, B7.1 |

### IX. NECK AND BACK

- Know and locate the major bones of the neck and back
- Identify the major muscles of the neck and back regions
- Identify the ligaments and tendons involved in the function of the neck and back

**Recognition of Mechanisms of Injury:**
- Identify the causes of sprains, strains, and fractures

**Prevention/Treatment**
- Understand and describe appropriate injury prevention techniques
- Synthesize knowledge and information to evaluate, design, and monitor appropriate care and rehabilitation

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CTE Anchor: Problem Solving and Critical Thinking: 5.3  
Technical Knowledge and Skills: 10.1  
CTE Pathway: B2.4, B2.3, B2.1, B7.1, B7.4 |

### X. SHOULDER

- Know and locate the major bones of the upper limbs and shoulders
- Identify the major muscles of the upper limbs and shoulders
- Identify the ligaments and tendons of the upper limbs and shoulders

**Recognition of Mechanisms of Injury:**
- Identify the causes of sprains, strains, and fractures

**Prevention/Treatment**
- Understand and describe appropriate injury prevention techniques
- Synthesize knowledge and information to evaluate, design, and monitor appropriate care and rehabilitation

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CTE Anchor: Problem Solving and Critical Thinking: 5.3  
Technical Knowledge and Skills: 10.1  
CTE Pathway: B2.1, B2.3, B7.2, B7.1, B7.4 |

### XI. FOREARM, ELBOW AND WRIST

- Know and locate the major bones that articulate at the elbow and wrist
- Identify the major muscles that originate and insert at the elbow and wrist
- Identify the ligaments and tendons involved in the function of the elbow and wrist

**Recognition of Mechanisms of Injury:**
- Identify the causes of sprains, strains, and fractures

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CTE Anchor: Problem Solving and Critical Thinking: 5.3 |
## Prevention/Treatment
- Understand and describe appropriate injury prevention techniques
- Synthesize knowledge and information to evaluate, design, and monitor appropriate care and rehabilitation

### XII. EMERGENCY AND IMMEDIATE CARE

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<th>Standards</th>
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| 4  | 4      | **Technical Knowledge and Skills:** 10.1  
**CTE Pathway:**  B2.2, B2.1, B2.4, B7.2, B7.1, B7.4 |
|    |        | **Academic:**  
**CTE Anchor:**  
Technical Knowledge and Skills: 10.1, 10.5  
**CTE Pathway:**  B4.5, B4.1, B4.4, B7.2, B8.2, B8.3, B8.4, B9.1, B11.4 |

- Attain certification in Cardiopulmonary Resuscitation (CPR) and demonstrate first aid skills
- Interpret, differentiate and treat sprains, strains, and abrasions
- Describe and demonstrate primary and secondary survey
- Describe and demonstrate the procedures for immobilization, splinting and logrolling
- Evaluate an athletic injury using a systematic approach such as History, Observation, Palpation, and Special Tests (HOPS)
- Understand the importance of documenting injuries
- Synthesize knowledge and information to identify and treat heat illnesses

### XIII. THE INTEGUMENTARY SYSTEM

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**CTE Anchor:**  
Problem Solving and Critical Thinking: 5.3  
Technical Knowledge and Skills: 10.1  
**CTE Pathway:**  B2.3, B2.4, B2.1, B7.1, B7.2 |

- Identify and describe the importance of the integumentary system to maintaining homeostasis

### XIV. THE NERVOUS SYSTEM

<table>
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**CTE Anchor:**  
Problem Solving and Critical Thinking: 5.3  
Technical Knowledge and Skills: 10.1  
**CTE Pathway:**  B2.1, B2.4, B2.3, B7.2, B7.1 |

- Identify the structures of the nervous system and know the importance of integration and coordination

### XV. THE ENDOCRINE SYSTEM

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<tr>
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<th>Lab/CC</th>
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</table>
- Understand and explain the importance of hormone regulation
- Identify and describe the effects of popular doping drugs with regard to the nervous, endocrine, and major muscle systems

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<th>XVI. THE CARDIORESPIRATORY SYSTEM</th>
<th>CR</th>
<th>Lab/ CC</th>
<th>Standards</th>
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</thead>
</table>
| • List the anatomical components of the cardiorespiratory system
• Explain how blood circulates through the body
• Explain blood pressure and pulse
• Define the different types of bleeding and their treatment
• Describe the signs and symptoms and treatment of shock | 4 | 4 | Academic:
CTE Anchor:
Problem Solving and Critical Thinking: 5.3
Technical Knowledge and Skills: 10.1
CTE Pathway:
B2.4, B2.3, B2.1, B7.1, B7.2, B7.4 |

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<tr>
<th>XVII. THE THORAX AND ABDOMEN</th>
<th>CR</th>
<th>Lab/ CC</th>
<th>Standards</th>
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</thead>
</table>
| • Understand the anatomy of the thorax and abdomen
• Be familiar with techniques for assessing thoracic and abdominal injuries
• Recognize injuries to the structures of the thorax and abdomen | 4 | 4 | Academic:
CTE Anchor:
Problem Solving and Critical Thinking: 5.3
Technical Knowledge and Skills: 10.1
CTE Pathway:
B2.3, B2.4, B2.1, B7.1, B7.2, B7.4, B10.1 |

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<tr>
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<th>CR</th>
<th>Lab/ CC</th>
<th>Standards</th>
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</table>
| • Understand energy systems and the energy required for physical activity
• Describe how energy requirements affect body composition and weight control | 5 | 5 | Academic:
A-CED: 1
CTE Anchor:
Problem Solving and Critical Thinking: 5.5, 5.6
Technical |
### XIX. Employment Literacy

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|    |         | LS: 11-12.1, 11-12.2 |
|    |         | **CTE Anchor:**
|    |         | Communications: 2.4 |
|    |         | Career Planning and Management: 3.1, 3.2, 3.4, 3.5 |
|    |         | **CTE Pathway:**
|    |         | B2.1, B3.1, B3.2, B4.4, B12.4 |

- Identify available positions in the industry through the use of networking or the Internet
- Complete an application form correctly
- Prepare a written resume
- Participate in a simulated employment interview
- Prepare a portfolio
- Research internship and externship opportunities

### XX. Personal Skills Related to Employment

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|    |         | LS: 11-12.1 |
|    |         | **CTE Anchor:**
|    |         | Responsibility and Flexibility: 7.3, 7.7 |
|    |         | **CTE Pathway:**
|    |         | B12.1, B12.2 |

- Demonstrate promptness and attend class regularly
- Develop and maintain acceptable working relations
- Demonstrate the ability to manage time wisely
- Demonstrate a positive and cooperative attitude
- Demonstrate values of honesty and integrity
- Demonstrate respect for others
- Dress in a professional manner according to industry standards
- Demonstrate appropriate personal hygiene/grooming, and dress
- Demonstrate responsibility by exerting a high level of effort and working toward a goal

### XXI. Interpersonal Skills and Group Dynamics

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<th>Standards</th>
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| 3  | 0       | **Academic:**
|    |         | LS: 11-12.1 |
|    |         | **CTE Anchor:**
|    |         | Problem Solving and Critical Thinking: 5.1, 5.2 |
|    |         | Responsibility and Flexibility: 7.3, 7.7 |
|    |         | Ethics and Legal Responsibilities: 8.2, 8.3, 8.4 |
|    |         | **CTE Pathway:**
|    |         | B12.2, B12.1 |

- Demonstrate the ability to work as a member of a team
- Identify proper procedures for handling harassment
- Demonstrate leadership skills by working independently, making appropriate decisions, working well with others, and accepting constructive criticism
- Demonstrate the ability to accept and work with individuals from various cultures

### XXII. Thinking and Problem-Solving Skills

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|    |         | LS: 11-12.1 |
|    |         | **CTE Anchor:**
<p>|    |         | Problem Solving and Critical Thinking: 5.1, 5.2, 5.3 |
|    |         | Leadership and Teamwork: 9.2, 9.3 |</p>
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<th>XXIII. COMMUNICATION SKILLS</th>
<th>CR</th>
<th>Lab/CC</th>
<th>Standards</th>
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</table>
| • Demonstrate effective verbal and written skills  
• Read technical journals, and write technical reports using appropriate terminology  
• Listen attentively, follow directions, and relay directions to others  
• Demonstrate the ability to research and retrieve information | 3 0 | Academic:  
LS: 11-12.1,  
11-12.2  
RSIT: 11-12.7  
CTE Anchor:  
Communications:  
2.3, 2.7, 2.8  
Technology: 4.1,  
4.2, 4.3  
CTE Pathway:  
B4.5, B5.1, B13.5 |