

Sports Medicine

Dress Code	Attire appropriate to the occupational area
SLC Orientation	Event explained to the competitors and individual time cards handed out. Students will return to the event room at least 5 minutes before their allotted time. Students will have a secret scenario to solve when it is their turn to compete. Students should not share the secret scenario when they leave the event as it is an automatic disqualification.
Round # 1	Competitors must submit technical skill video to Montana HOSA by deadline. Additionally, competitors will take an online test during the testing window. Advisors will be informed of which competitors have moved on from Round 1 to qualify to participate in Round 2 at SLC.
Round # 2	Skill procedures from rubric guidelines will be performed by each competitor. Competitors may be asked to do one or multiple of the performance skills.
Scoring	Round 1 online testing scores will be combined with Round 2 skill procedures for a total score.

Official References

The below references are used in the development of the test questions and skill rating sheets.

- a. [Beam, Joel W. *Orthopedic Taping, Wrapping, Bracing, and Padding*. F.A. Davis, Latest edition.](#)
- b. [France, Bob. *Introduction to Sports Medicine and Athletic Training*. Cengage, Latest edition.](#)
- c. [Prentice, William E. *The Role of the Athletic Trainer in Sports Medicine: An Introduction for the Secondary School Student*. McGraw Hill, Latest edition](#)

Round One Test

[Test Instructions](#): The written test will consist of 50 multiple-choice items to be completed in a maximum of 60 minutes.

Written Test Plan

The test plan for Sports Medicine is:

- Injury / Illness Prevention and Wellness Promotion - 30%
- Examination, Evaluation, and Assessment - 30%
- Immediate and Emergency Care - 16%
- Therapeutic Intervention - 16%
- Healthcare Administration and Professional Responsibilities - 8%

Sample Test Questions

1. Which professional can best advise an athlete on the psychological aspects of the rehabilitation process and how to cope with an injury? (Prentice pp 15)
 - A. Sports physiologist
 - B. Sports neurologist
 - C. Sports psychologist**
 - D. Sports massage therapist
2. Which vitamin is essential for the metabolism of carbohydrates and some amino acids, maintenance of normal appetite and functioning of the nervous system? (France pp 96)
 - A. Ascorbic acid
 - B. Niacin
 - C. Riboflavin
 - D. Thiamine**
3. What is a common mechanism of injury for an MCL sprain? (Beam pp 157)
 - A. Quick deceleration, cutting, twisting, and landing movement
 - B. Abduction and lower leg rotation on a planted foot
 - C. Falling on the anterior knee while in a flexed position
 - D. Adduction and internal rotation of the knee**

Round Two Skills

Round Two is a selected skill(s) performance. The Round Two skills approved for this event are:

Skill I: Anatomical Landmark Identification	7 minutes
Skill II: Joint Action and Maximum Range of Motion Identification	15 minutes
Skill III: Taping / Wrapping	
A. Ankle (Inversion)	5 minutes
B. Achilles Tendon	6 minutes
C. Shoulder Spica	5 minutes
D. Wrist / Hand (Circular Wrist/Figure Eight)	4 minutes

NOTE: Skill II Options- This skill may use a live patient to demonstrate poses for competitors to identify. In this case, the competitor will have 15 minutes to identify 15 different numbered poses. The competitor will be responsible for telling the patient when the competitor is ready to move to the next numbered pose. Competitors may request the live patient repeat poses as often as needed during this timeframe, and poses do not need to be done in order. As an alternative to a live patient, numbered photographs of patients in varying poses may be used. **Spelling counts!** Competitors should come prepared for either option.

The selected skill(s) will be presented to competitors as a written scenario at the beginning of the round. The scenario will be the same for each competitor. Some scenarios may involve the combination of multiple skill sheets, in which case some elements may not be scored due either to being duplicative or not appropriate within the scenario. A sample scenario can be found [here](#).

The scenario is a secret topic. Competitors MAY NOT discuss or reveal the secret topic until after the event has concluded or will face penalties per [the GRRs](#).

Judges will provide competitors with information as the rating sheets directed. Competitors may ask questions of the judges while performing skills if the questions relate to the patient's condition. Judges will only respond if requested information is included in the scenario or judge script/rating sheet.

Competitors must provide:

- Appropriate tape of any size, color or type Elastic wrap (used for Skill III-C)
- Bandage scissors or athletic tape cutter
- Thin foam pads (heel and lace pads) with skin lubricant (used for Skill III-A & B)

- Pad for shoulder (used for Skill III-C)
 - Underwrap of any size, color or type
- Note:** It is the competitor's responsibility to know what size and type(s) of tape/elastic wrap is (are) needed for each taping/wrapping skill, and to bring the appropriate materials to the event.

Skill I: Anatomical Landmark Identification

Anatomy of the:	Bones (including bony landmarks & joint names)	Ligaments or Other Structures	Muscles (including origin & insertion, belly, & tendons)
Foot	Phalanges 1-5 Metatarsals Tarsals	Transverse arch Metatarsal arch Longitudinal arches	Adductor Hallucis Flexor/Extensor Digitorum Extensor Hallucis Longus
Ankle & Lower Leg	Tibia Fibula Tarsals	Anterior/Posterior Tibiofibular Anterior/Posterior Talofibular Deltoid Calcaneofibular	Fibularis(Peroneus) Longus/Brevis Achilles Tendon Extensor/Flexor Digitorum Longus Soleus Tibialis Anterior Extensor/Flexor Hallucis Longus Gastrocnemius
Knee	Femur Patella Tibia Fibula	Medial Collateral Lateral Collateral Patellar Ligament/Tendon	Rectus Femoris Vastus Lateralis Vastus Medialis Oblique Sartorius Gracilis Biceps Femoris Semitendinosus Semimembranosus Popliteus
Elbow & Forearm	Humerus Radius Ulna	Ulnar Collateral Radial Collateral Annular	Biceps/Triceps Brachioradialis Supinator Pronator Teres Pronator Quadratus Flexor/Extensor Carpi Ulnaris Flexor/Extensor Carpi Radialis
Wrist, Hand & Fingers	Phalanges 1-5 Carpals Metacarpals	Anatomical Snuffbox Thenar/Hypothenar Eminence	Flexor/Extensor Digiti Minimi Abductor Pollicis Longus Flexor/Extensor Pollicis
Shoulder	Clavicle Scapula Humerus	Sternoclavicular Acromioclavicular Glenohumeral Coracoclavicular Coracoacromial	Infraspinatus Teres Major/Minor Deltoid Biceps/ Triceps Rhomboids Major/Minor Levator Scapula Trapezius Serratus Anterior Latissimus Dorsi
Neck, Spine & Head	Cervical Spine 1-7 Thoracic Spine 1-12 Lumbar Spine 1-5 Parietal Occipital Temporal Zygomatic Frontal Nasal Maxilla Mandible	None	None

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Competitor #: _____ Judge's Signature: _____

Skill I Anatomical Landmark Identification (Prentice, Time: 7 minutes)	Possible Points	<i>Awarded</i>
<p><i>A. This skill enables competitors to demonstrate their knowledge of musculoskeletal anatomy. Competitors will place a small adhesive label over the specified anatomical location of a live patient. Competitors will have 15 seconds to identify each landmark requested by the judge. Landmarks may include specific boney sites, muscles (origin, insertion, belly, tendon), or ligaments.</i></p> <p>The Head Athletic Trainer (judge) will inform the competitor which 21 locations are to be identified, one at a time. The competitor will then have 15 seconds to place the small adhesive label on the patient in the correct location. Competitor should verbalize when they are finished with each landmark so the judge can move on to the next one. The timekeeper will stop competitor once 15 seconds has elapsed, so judge can verbalize next landmark.</p> <p><i>Competitor earns 2 points for correctly identifying each landmark within the given time frame.</i></p>		
<p>B. Anatomy of the Foot:</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p>	<p>2 0</p> <p>2 0</p> <p>2 0</p>	
<p>C. Anatomy of the Ankle & Lower Leg:</p> <p>4. _____</p> <p>5. _____</p> <p>6. _____</p>	<p>2 0</p> <p>2 0</p> <p>2 0</p>	
<p>D. Anatomy of the Knee:</p> <p>7. _____</p> <p>8. _____</p> <p>9. _____</p>	<p>2 0</p> <p>2 0</p> <p>2 0</p>	

Skill I Anatomical Landmark Identification (Cont'd)	Possible Points	Awarded
E. Anatomy of the Neck, Spine & Head: 10. _____ 11. _____ 12. _____	2 0 2 0 2 0	
F. Anatomy of the Shoulder: 13. _____ 14. _____ 15. _____	2 0 2 0 2 0	
G. Anatomy of the Elbow & Forearm: 16. _____ 17. _____ 18. _____	2 0 2 0 2 0	
H. Anatomy of the Wrist, Hand & Fingers: 19. _____ 20. _____ 21. _____	2 0 2 0 2 0	
TOTAL POINTS -- SKILL I	42	

Skill II: Joint Action & Maximum Range of Motion Identification

□ Foot/Ankle eversion	20 degrees
□ Foot/Ankle inversion	40 degrees
□ Ankle dorsiflexion	20 degrees
□ Ankle plantarflexion	45 degrees
□ Knee flexion	140 degrees
□ Hip adduction	40 degrees
□ Hip abduction	45 degrees
□ Hip extension	10 degrees
□ Hip flexion	125 degrees
□ Hip internal rotation	45 degrees
□ Hip external rotation	45 degrees
□ Shoulder flexion	180 degrees
□ Shoulder extension	50 degrees
□ Shoulder abduction	180 degrees
□ Shoulder adduction	40 degrees
□ Shoulder internal rotation	90 degrees
□ Shoulder external rotation	90 degrees
□ Elbow flexion	145 degrees
□ Forearm pronation	80 degrees
□ Forearm supination	85 degrees
□ Wrist extension	70 degrees
□ Wrist flexion	80 degrees
□ Wrist radial deviation/abduction	20 degrees
□ Wrist ulnar deviation/adduction	45 degrees

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Section # _____
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Division: _____ SS _____ PS/Collegiate
 Judge's Signature _____

Skill III-A Taping – Ankle (Inversion) Time: 5 minutes)		Possible		Awarded
1.	Obtained instructions (scenario) from Head Athletic Trainer (judge).	1	0	
2.	Assembled equipment.	1	0	
3.	Washed hands or used alcohol-based hand-rub for hand hygiene.	2	0	
4.	Greeted patient and introduced self.	1	0	
5.	Identified patient and explained skill.	2	0	
6.	Positioned patient sitting on a taping table with the leg extended off the edge with the foot in dorsiflexion.	1	0	
7.	Demonstrated spraying area with tape adherent (without actually spraying adherent on patient).	1	0	
8.	Applied thin foam pads with skin lubricant over the heel and lace areas to provide additional adherence and lessen irritation.	1	0	
9.	Applied one thin, smooth layer of pre-wrap to foot and ankle (pre-wrap may be under or over thin foam pads above).	1	0	
10.	Using non-elastic tape, applied two anchor strips at a slight angle around the distal lower leg, just inferior to the gastrocnemius belly.	1	0	
11.	Placed an anchor strip around the midfoot, proximal to the fifth metatarsal head.	1	0	
12.	Started the first stirrup on the medial lower leg anchor and proceeded down over the posterior medial malleolus, across the plantar surface of the foot and continued up and over the posterior lateral malleolus, finishing on the lateral lower leg anchor.	1	0	
13.	Began the first horseshoe strip on anchor of the medial aspect of the midfoot, continued around the distal Achilles tendon, across the distal lateral malleolus, and finished on the anchor of the lateral midfoot, proximal to the fifth metatarsal head.	1	0	
14.	Started the second stirrup on the medial lower leg anchor by overlapping the first by ½ of the tape width, continued down over the medial malleolus, across the plantar foot, up and over the lateral malleolus, and finished on the anchor of the lateral lower leg.	1	0	

Skill III-A Taping – Ankle (con't)		Possible		Awarded
15.	Began the second horseshoe on the medial rearfoot and overlapped the first by ½ of the tape width.	1	0	
16.	Applied the third stirrup, beginning on the medial lower leg anchor, overlapping the second and covered the anterior medial and lateral malleoli.	1	0	
17.	Starting on the medial rearfoot, applied the third horseshoe, overlapping the second.	1	0	
18.	Beginning at the third horseshoe, applied closure strips in a proximal direction, overlapping each by ½, up to anchor strip on lower leg.	1	0	
19.	Applied two to three closure strips around the midfoot in a medial-to-lateral direction.	1	0	
20.	The tape strips and anchors did not put pressure on the 5 th metatarsal head.	2	0	
21.	Anchored the first heel lock across the lateral lace area at an angle toward the medial longitudinal arch. Continued across the arch, then angled the tape upward and pulled across the lateral calcaneus, around the posterior heel, finishing on the lateral lace area.	1	0	
22.	Repeated the same pattern on the other side of the ankle joint moving in the opposite direction.	1	0	
23.	Applied two or three heel locks to ensure maximum stability (<i>use of either individual heel locks or continuous heel locks is acceptable</i>).	1	0	
24.	Reported skill and observations to the Head Athletic Trainer (judge). (<i>Judges evaluate taping at this time</i>)	4	0	
25.	Upon direction of the athletic trainer (judge), properly used bandage scissors/athletic tape cutter to remove taping.	2	0	
26.	All tape applied with mild to moderate roll tension.	1	0	
27.	Allowed tape to fit the natural contour of the skin.	1	0	
28.	Skill completed on the correct side / body part using equipment/materials appropriate for the task.	4	0	
29.	Properly disposed of used taping materials.	1	0	
30.	Washed hands or used alcohol-based hand-rub for hand hygiene.	2	0	
31.	Used appropriate verbal and nonverbal communication with patient and other personnel.	2	0	
TOTAL POINTS -- SKILL III-A		43		
70% Mastery for Skill III-A = 30.1				

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Skill III-B Taping – Achilles Tendon (<i>Technique Two</i>) (Time: 6 minutes)	Possible		Awarde d
1. Obtained instructions (scenario) from Head Athletic Trainer (judge).	1	0	
2. Assembled equipment.	1	0	
3. Washed hands or used alcohol-based hand-rub for hand hygiene.	2	0	
4. Greeted patient and introduced self.	1	0	
5. Identified patient and explained skill.	2	0	
6. Positioned patient prone or kneeling on a taping table, with the lower leg extended off the edge.	1	0	
7. Placed hand on the plantar surface of the distal foot and slowly moved foot into dorsiflexion until patient notifies competitor that pain occurs.	1	0	
8. When painful range of motion is determined, placed foot in pain-free range & maintained the position during application.	1	0	
9. Demonstrated spraying the lower leg and plantar surface of the foot with tape adherent (<i>without actually spraying adherent on patient</i>).	1	0	
10. Placed thin foam pad over the heel to prevent irritation.	1	0	
11. Applied pre-wrap over the area being taped to lessen irritation (pre-wrap may be under or over thin foam pad above).	1	0	
12. Applied two anchors around the lower leg, inferior to the knee, around the upper portion of the gastrocnemius belly.	1	0	
13. Placed the other anchor around the ball of the foot.	1	0	
14. Anchored a strip of heavyweight elastic tape on the mid-to-distal plantar foot. Proceeded over the middle calcaneus, and finished on the distal lower leg anchor.	1	0	
15. Anchored the next strip of heavyweight elastic tape at an angle over the head of the 5 th metatarsal, continued over the medial calcaneus, and finished on the medial lower leg anchor.	1	0	
16. Placed the last heavyweight elastic tape strip at an angle over the head of the 1 st metatarsal, proceeded over the lateral calcaneus, and finished on the lateral lower leg anchor.	1	0	
17. Completed the series by placing 2-3 circular strips of elastic tape around the foot.	1	0	
18. Placed 4-6 strips of elastic tape around the lower leg.	1	0	
19. Reported skill and observations to the Head Athletic Trainer (judge). (Judges evaluate taping at this time)	4	0	
20. Upon direction of the athletic trainer (judge), properly used bandage scissors/athletic tape cutter to remove taping.	2	0	
21. Completed tape allows for normal, yet pain free, action of the Achilles tendon with support.	2	0	
22. Skill completed on the correct side / body part using equipment/materials appropriate for the task.	4	0	
23. Properly disposed of used taping materials.	2	0	
24. Washed hands or used alcohol-based hand-rub for hand hygiene.	2	0	

25. Used appropriate verbal and nonverbal communication with patient and other personnel.	2	0	
TOTAL POINTS -- SKILL III-B 70% Mastery for Skill III-B = 26.6		38	

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Section # _____ Division: _____ SS _____ PS/Collegiate
 Competitor # _____ Judge's Signature _____

Skill III-C Wrapping – Shoulder Spica^ (Time: 5 minutes)	Possible		Awarded
1. Obtained instructions (scenario) from Head Athletic Trainer (judge).	1	0	
2. Assembled equipment.	1	0	
3. Washed hands or used alcohol-based hand-rub for hand hygiene.	2	0	
4. Greeted patient and introduced self.	1	0	
5. Identified patient and explained skill.	2	0	
6. Requested patient stand with hand of the involved arm placed on the lateral hip in a relaxed manner.	1	0	
7. Placed pad or ice pack (as indicated in scenario) over the injured area	1	0	
8. Anchored the extended end of the wrap on the mid-to-proximal lateral upper arm and proceeded around the upper arm in a medial direction to encircle the anchor.	1	0	
9. At the posterior upper arm, continued the wrap in a medial direction over the lateral shoulder, across the chest, under the axilla of the non-involved arm, then across the upper back.	1	0	
10. Next, continued over the lateral involved shoulder, under the axilla, and encircle the upper arm.	1	0	
11. Repeat this spica pattern two to four times with the wrap, overlapping slightly.	1	0	
12. Finished the wrap over the involved shoulder, upper back, or thorax area.	1	0	
13. Anchored elastic tape at the end of the wrap and applied 1-2 spica patterns over the wrap with this tape.	1	0	
14. Reported skill and observations to the Head Athletic Trainer (judge). <i>(Judges evaluate taping at this time)</i>	4	0	

15.	Upon direction of the athletic trainer (judge), properly used bandage scissors/athletic tape cutter to remove taping.	2	0	
16.	Wrap tension is moderate, yet prevents constriction and irritation of the axilla areas.	2	0	
17.	Skill completed on the correct side / body part using equipment/materials appropriate for the task.	4	0	
18.	Properly disposed of used taping materials.	2	0	
19.	Washed hands or used alcohol-based hand-rub for hand hygiene.	2	0	
20.	Used appropriate verbal and nonverbal communication with patient and other personnel.	2	0	
TOTAL POINTS -- SKILL III-C				
70% Mastery for Skill III- C = 23.1			33	

^This wrap may be done over a tee shirt or tank top for this event.

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Section # _____
 Competitor # _____

Division: _____ SS _____ PS/Collegiate
 Judge's Signature _____

Skill III-D Taping – Wrist/Hand (Circular Wrist/ <i>Figure of Eight</i>) (Time: 4 minutes)	Possible		Awarded
1. Obtained instructions (scenario) from Head Athletic Trainer (judge).	1	0	
2. Assembled equipment.	1	0	
3. Washed hands or used alcohol-based hand-rub for hand hygiene.	2	0	
4. Greeted patient and introduced self.	1	0	
5. Identified patient and explained skill.	2	0	
6. The patient should sit on table or bench with the wrist in a neutral position and the fingers in abduction.	1	0	
7. Demonstrated spraying area with tape adherent (without actually spraying adherent on patient).	1	0	
8. Applied pre-wrap to the wrist and hand to lessen irritation.	1	0	
9. Anchored non-elastic tape over the ulnar styloid process and continued in a circular, lateral-to-medial direction around the wrist and returning to the anchor.	1	0	
10. Applied 4-5 additional circular strips around the wrist, overlapping by ½ the width of the tape. (<i>Strips may be applied individually or continuously</i>)	1	0	
11. Beginning again at the ulnar styloid process, applied tape in a medial direction over the dorsum of the hand, over the thenar web space, then across the distal palm. (<i>Tape may need to be creased through the thenar web space to prevent constriction</i>)	1	0	
12. Continued from the fifth metacarpal over the dorsum of the hand to the distal radius around the wrist, & returned to the ulnar styloid process.	1	0	
13. Repeated this figure eight pattern, overlapping by 1/3 the tape width, and anchored on the dorsal wrist.	1	0	
14. Reported skill and observations to the Head Athletic Trainer (judge). (Judges evaluate taping at this time)	4	0	
15. Upon direction of the athletic trainer (judge), properly used bandage scissors/athletic tape cutter to remove taping.	2	0	
16. Tape is of moderate tension and does not cause constriction of the hand and thumb.	2	0	
17. Tape remains proximal to the metacarpophalangeal joints of hand.	1	0	
18. Skill completed on the correct side / body part using equipment/materials appropriate for the task.	4	0	
19. Properly disposed of used taping materials.	2	0	
20. Washed hands or used alcohol-based hand-rub for hand hygiene.	2	0	
21. Used appropriate verbal and nonverbal communication with patient and other personnel.	2	0	
TOTAL POINTS – SKILL III-D 70% Mastery for Skill III-D = 23.8	34		