San José State University  
CASA/Kinesiology  
KIN 271, Advanced Topics in Athletic Training, Fall, 2019

Course and Contact Information

Instructor:  
Masaaki Tsuruike, PhD, ATC

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Office Hours:  
Monday and Tuesday: 2:00 - 3:00 pm

Class Days/Time:  
Tuesday 4 - 6:50 pm

Classroom:  
YUH 128

Prerequisites:  
Biology 65 (Human Anatomy), Biology 66 (Human Physiology), KIN 188 (Prevention and Care of Athletic Injuries) or equivalent

Course Format

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on the Canvas learning management system used at SJSU. You are responsible for changing the settings so that e-mail that is sent to your Canvas account is forwarded to your regularly used email account. Announcements will be posted on Canvas and should be checked on a regular basis; students may choose to be alerted via text or email that announcements have been made.

Course Description

This course is designed to improve the knowledge of clinical athletic training. Topics include: outcome research and practical applications for sports-related concussion or mild traumatic brain injury, alteration evaluation skills for movement patterns and athletic injuries, and research design in the field of athletic training. The course will take a multidisciplinary approach, incorporating scientific (research) and clinical bases.

Department of Kinesiology Graduate Program Learning Outcomes (GPLO)

Upon completion of the Master’s degree program in the Department of Kinesiology, students should be able to:

1. Demonstrate the ability to conduct and critique research using theoretical and applied knowledge.

2. Interpret and apply research findings to a variety of disciplines within Kinesiology.

3. Effectively communicate essential theories, scientific applications, and ethical considerations in each student's Kinesiology program concentration.
4. Interpret and apply research findings through acquired skills in order to become agents of change to address issues in Kinesiology through the application of knowledge and research.

Graduate Athletic Training Education Program Learning Outcomes (GATEPLO)

The mission of the Graduate Athletic Training Program is to enhance the mastery of athletic training discipline through a sound theoretical and research base, as well as diversity of thought and experiences. The Graduate Athletic Training Education Program seeks to:

1. Develop critical and independent thinkers
2. Facilitate and promote community interaction/aid in sports medicine with other health care providers
3. Foster scholarly and research activities
4. Develop exemplary athletic training professionals
5. Enhance and augment athletic training skills through evidence based exploration

Course Learning Outcomes (CLO)

Upon successful completion of this course, students will be able to:

CLO 1. Examine physical conditioning with alternation evaluation techniques and skills for a variety of athletic injuries.
   1.1. Demonstrate the Functional Movement Screen (FMS) test to identify the movement patterns
   1.2. Demonstrate corrective exercises to improve the FMS scores.
   1.3. Demonstrate the Selective Functional Movement Assessment (SFMA) to identify pain come from either deficit of the motor control or the tissue extensibility
       1.3.1. A comparison of the concept of SFMA and traditional HOPS (history, observation, palpation, and special) tests
   1.4. Demonstrate corrective exercises to improve the SFMA

CLO 2. Understand the updated knowledge of sport-related concussion or mild traumatic brain injury (mTBI) in sports
   2.1. The published number of athletes concussed in each of the levels
   2.2. Human brain and behavior
       2.2.1. Cerebrum and the lobes of the cerebral cortex
       2.2.2. The supplementary motor area
       2.2.3. The premotor cortex
       2.2.4. Prefrontal lobe: decision making
       2.2.5. The rostro-caudal axis of the frontal lobe hierarchical
       2.2.6. Parietal lobe
       2.2.7. Temporal lobe
       2.2.8. Subcortical structures: Hippocampus, Basal ganglia
       2.2.9. Parkinson's disease
       2.2.10. Huntington's disease
       2.2.11. Alzheimer's disease
2.2.12. Depression
2.2.13. Working memory

CLO 3. Based on the function of human brain and behavior, evaluate somatic, cognitive, and emotional problems after mTBI to make sound decisions regarding the management of athletes with mTBI using Sport Concussion Assessment Tool (SCAT)-5th Edition.

CLO 4. Demonstrate the assessment of vestibular system, dizziness, and postural balance tests, such as Modified Balance Error Scoring System (BESS) and the Tandem Gate test.

CLO 5. Demonstrate Standardized Assessment of Concussion (SAC) to identify deficits of working memory, especially anterograde amnesia in concussed athletes on the sideline.

CLO 6. Demonstrate upper limb coordination with the index finger to nose repetitions followed by the index finger of concussed athlete to your index finger as the examiner.

CLO 7. Demonstrate the King-Devick test to assess the relationship between oculomotor functions and learning abilities.

CLO 8. Apply neurocognitive tests to compare the baseline of scores in the course of competitive.

8.1. Utilizing the paper-pencil neuropsychological test, compared with ImPACT (Immediate Post-Concussion Assessment and Cognitive Test).

CLO 9. Demonstrate the benign paroxysmal positional vertigo or labyrinthine concussion in which rotatory vertigo or dizziness is induced as the head position is changed relative to gravity.

CLO 10. Identify a number of concussion occurrence in the NFL, compared with collegiate or high school athletes.

10.1. Chronic traumatic encephalopathy (CTE)

10.1.1. Dementia pugilistica
10.1.2. Tauopathies
10.1.3. Tau pathology in brain tissue
10.1.4. Neurofibrillary tangles in the frontal neocortex
10.1.5. Tauopathy affecting widespread brain regions
10.1.6. Neurofibrillary tangles

CLO 11. Demonstrate unloading taping techniques using a variety of tapes, such as cover rolls or Kinesio tapes

Required Readings

Selected readings to be provided by the instructor. All readings are shown in the end of syllabus.

Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five (45) hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in University Policy S12-3 at http://www.sjsu.edu senate/docs/S12-3.pdf.

Each student will be required to:
1. Review the articles selected in each of the topics to discuss proficiency in using numerous psychomotor skills to rehabilitate various anatomical and supportive structures.
2. Participate in class discussions and hands-on practices actively, including dissection laboratories.
3. Select an injury and understand its detailed mechanisms of overhead injuries, utilizing supportive literature of sound results and outcomes.
4. Present the aforementioned rehabilitation program for the upper extremity and demonstrate the techniques to the class.
5. Critically review selected literature.

**Grading Information**

- Midterm Exam: 30%
- Class Laboratory Assignments: 40%
- Final Exam (comprehensive): 30%

**Determination of Grades**

The course is based on a percentage scale (100%). The breakdown is as follows:

- A: 100-93%  A-: 92.9-90%
- B+: 89.9-87%  B: 86.9-83%  B-: 82.9-80%
- C+: 79.9-77%  C: 76.9-73%  C-: 72.9-70%
- D+: 69.9-67%  D: 66.9-63%  D-: 62.9-60%  F: <60%

**Midterm Exam: 30%**

There will be one midterm exam covering all materials (lectures, labs, discussions, readings, etc.) to date from ALL units discussed during the course of the spring semester up to the shoulder and scapula. The date and format of the midterm exam are to be determined. (GPLO 1-4) (GATEPLO 1, 3, 5) (CLO 1-9)

**Midterm Exam Date: October 29**

**Class Laboratory Assignments: 40%**

The class provides a number of laboratory assignments regarding SRC and FMS, SFMA.

1) Students will explain the concept of stability, compared with mobility in movement patterns from the viewpoint of Functional Movement Screen
2) Students will explain "corrective exercise," compared with conditioning exercise from the viewpoint of Functional Movement Screen.
3) Students will explain the mechanism of mobility strategy techniques that improve the shoulder mobility score.
4) Students will explain differences in the concept of assessment between SFMA and FMS
5) Students will explain each of the symptoms related to concussion in terms of brain function and the mechanisms which possibly induce the concussion symptom inventory for the patient with post-symptomatic free.
6) Students will explain positive and negative aspects for the ImPACT, compared with the paper and pencil test
7) Students will explain how healthcare providers utilize Balance Error Scoring System (BESS) and a tandem gait task test for post-concussed athletes with subsided symptoms.
8) Students will explain the mechanism of Nystagmus, the Dix–Hallpike test, and Roll test for horizontal benign paroxysmal positional vertigo (BPPV).
9) Students will find out how we can design the next study of SRC.
** Each paper should be typed, **double-spaced**, using a 12-point (or easily readable) font and 1" margins. Each paper should **not exceed one**. However, less than 80% are considered too short (less 17 /22 lines per page) Put your name, date, and the indication of lab assignment number in the header. *(Not to put these information in the top of document.)* *(GPLO 1-4) (GATEPLO 1, 3, 5) (CLO 1-10)*

**Final Exam: 30%**

The final exam will be given to students who demonstrate mastery of course content. The exam will be comprehensive short essay questions that require integration and synthesis of knowledge with regard to the concept of FMS and SFMA as well as these corrective exercises. Excellent responses will demonstrate advanced and in-depth understanding of alternative assessment instruments compared with the traditional assessments for injuries in athletes.

Exams are to be taken on the dates scheduled. Make-up exams are permitted only for illness and emergency *(TRULY EXTRAORDINARY CIRCUMSTANCES)*. The student is responsible for notifying the instructor and making arrangements at the earliest possible time. In most cases, the midterm exam must be completed before the next class meeting. All requests for make-up exams will be evaluated on an individual basis.

*(GPLO 1-4) (GATEPLO 1-5) (CLO 10)*

**Classroom Protocol**

- All students in the class must be required to set a silent mode for your cell phone. Students are allowed to use your PC in the class. However, you are not allowed to access any unnecessary internets or emails.
- No food is allowed in the class.
- The class will basically have no break.
- *GATEP students must have time enough to get to the classroom each time while working as a GA at their clinical site, such as avoiding traffic jams in the evening for those driving a car from the clinical site. All of your supervisors must be aware of your class schedules, and allow you to leave for school. You are also expected to show your supervisor your class schedules clearly.*

**University Policies (Required)**

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs’ [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/)
# KIN 271, Advanced Topics in Athletic Training, Fall, 2019

## Course Schedule (Subject to change with advance notice)

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics</th>
<th>Assignments (tentatively)</th>
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<tbody>
<tr>
<td>1</td>
<td>8/27</td>
<td>Introduction of expected course works</td>
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<td>Discuss interprofessional allied health professionals</td>
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<tr>
<td>2</td>
<td>9/3</td>
<td>Continued to discuss interprofessional allied health professionals</td>
<td>Group Presentation</td>
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<td>and post-professional athletic training education program</td>
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<tr>
<td>3</td>
<td>9/10</td>
<td>Functional Movement Screen (FMS)</td>
<td>Paper Assignment Due</td>
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<td>4</td>
<td>9/17</td>
<td>Functional Movement Screen (FMS) II</td>
<td>Lab Assignment 1 Due</td>
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<td>Corrective Exercises for FMS I</td>
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<td>5</td>
<td>9/24</td>
<td>Corrective Exercises for FMS II</td>
<td>Lab Assignment 2 Due</td>
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<td>6</td>
<td>10/1</td>
<td>Selective Functional Movement Assessment</td>
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<td>7</td>
<td>10/8</td>
<td>Selective Functional Movement Assessment II</td>
<td>Lab Assignment 3 Due</td>
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<td>8</td>
<td>10/15</td>
<td>Corrective Exercises for SFMA</td>
<td>Lab Assignment 4 Due</td>
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<td>9</td>
<td>10/22</td>
<td>Corrective Exercises for SFMA II</td>
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<td></td>
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<td>Review midterm</td>
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<td>10</td>
<td>10/29</td>
<td><strong>Midterm</strong></td>
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<tr>
<td>11</td>
<td>11/5</td>
<td>Updated a mild traumatic brain injury/sports-related concussion</td>
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<td>The Sport Concussion Assessment Tool 5(^{th})</td>
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<td>Brain and Human Behavior</td>
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<td>12</td>
<td>11/12</td>
<td>Neuropsychological and cognitive tests for MTBI</td>
<td>Lab Assignment 5 Due</td>
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<td>Paper and Pencil Tests ImPACT</td>
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<td>Vestibular System, Dizziness, and Postural Balance Test, Balance Error Scoring System</td>
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<tr>
<td>13</td>
<td>11/19</td>
<td>Persistent post-concussive syndrome</td>
<td>Lab Assignment 6 Due</td>
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<td>Chronic Traumatic Encephalopathy (CTE)</td>
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<td>14</td>
<td>11/26</td>
<td>Introduction of Postural Restoration Institution (PRI) and Integration for Baseball</td>
<td>Lab Assignment 7 Due</td>
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<tr>
<td>15</td>
<td>12/3</td>
<td>Updated Taping Concept and Techniques</td>
<td>Lab Assignment 8 Due</td>
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<td>Final</td>
<td>12/17</td>
<td><strong>Final Exam 17:15-19:30</strong></td>
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## Readings

**Functional Movement Assessment (FMS)**


Below the articles related to sports-related concussion, updated by early 2017.


