San José State University
College of Health and Human Sciences/Kinesiology
KIN 269, Evidence-Based Research in the Practice in Management and Assessment of Injuries to the Upper Extremity, Section 1, Spring, 2019

Course and Contact Information
Instructor: Masaaki Tsuruike, PhD, ATC
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Telephone: (408) 924-3040
Email: masaaki.tsuruike@sjsu.edu
Office Hours: Tues and Wed: 2:30 – 3:30 PM
Class Days/Time: Wednesday 7 – 8:50 PM
Classroom: YUH 128 / SPX 245
Prerequisites: KIN 268 or equivalent

Course Format

Technology Intensive, Hybrid, and Online Courses (Required if applicable)
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
Multidisciplinary approach for recognition, initial care, treatment and rehabilitation used to return an athlete to upper extremity pre-injury fitness levels

Course Goals
Discuss symptomatic shoulders and injuries in overhead athletes, current concept of scapular dyskinesis test, and ulnar collateral ligament (UCL) of the elbow injury and its reconstruction, known as Tommy John surgery, in baseball pitchers.

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. Develop an application of appropriate research publications and current clinical research in the field of athletic training and sports medicine
CLO 2. Identify the mechanism of impingement syndrome and differentiate primary (outlet) and secondary impingement to underling instability of the glenohumeral joint (GHJ)
CLO 3. Assess the micro-instability of GHJ as follows: 1) Sulcus sign (congenital laxity), 2) Subluxation-relocation test (occult instability), 3) Beighton hypermobility index (congenital laxity/multidirectional instability), 4) Anterior instability tests
CLO 4. Identify three different stages in impingement syndrome, known as Neer’s stages
CLO 5. Identify the mechanism of posterior internal impingement for overhead athletes, such as baseball pitchers.
CLO 6. Identify the mechanism of the superior labrum anterior-posterior (SLAP) lesion, known as peal back effect, in overhead athletes and differentiate types of SLAP lesion
CLO 7. Assess SLAP lesion by manually inducing the symptom, and differentiate special tests for SLAP lesion based on previous research
CLO 8. Assess scapular dyskinesis and Kibler’s classification types of SD
CLO 9. Apply the posterior tilt of the scapula to prevent primary impingement syndrome.
CLO 10. Apply enhanced activity of the lower trapezius and serratus anterior muscle to decrease shoulder pathology.
CLO 11. Identify different types of acromion process (Type I to III), related to primary impingement syndrome.
CLO 12. Identify the adaptation of muscle flexibility of the shoulder and scapula between dominant and non-dominant arm in overhead athletes.
CLO 13. Assess the total range of motion of GHJ and glenohumeral internal rotation deficit (GIRD) and horizontal adduction of GHJ
CLO 14. Identify and assess traumatic unilateral the glenohumeral macro-instability: 1) the Bankart lesion, 2) the Hill-Sachs lesion, 3) the Bennett lesion
CLO 15. Identify different types of acromioclavicular joint injuries
CLO 16. Identify adhesive capsulitis with different stages and apply rehabilitative intervention to each of the stages: 1) idiopathic (primary) and 2) trauma/immobilized (secondary) frozen shoulder
CLO 17. Identify the functional anatomy of the ulnar collateral ligament (UCL)
CLO 18. Assess UCL injury by manually inducing the symptoms of injury
CLO 19. Kerlan-Jobe Orthopaedic Clinical (KJOC) Score compared with Conway classification outcome scale
CLO 20. Apply the evidence based practice to post UCL reconstruction rehabilitation
CLO 21. Identify 1) carpal scaphoid fractures, 2) hook of the hamate fractures diagnosed from the carpal tunnel view of radiograph, 3) triangular fibrocartilage complex (TFCC) injury, 4) DeQuervain’s Syndrome
CLO 22. Identify extrinsic hand muscles: 1) flexor digitorum profundus and superficialis tendons, 2) the lumbrical muscle

**Required Readings**
Selected readings have been uploaded to Canvas.

**Recommended Text**

**Course Requirements and Assignments**
Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.

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%
Short Paper (Written Critique): 30%
Final Exam (comprehensive): 25%
Surgery Observation Report: 10%
Dissection Report: 5%

**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) (CLO 2-17)

**Midterm Exam Date: March 13**

**Paper (Written Critique): 30%**
This paper assignment provides an opportunity to develop analytic and critical reading skills. Each student will submit a summary of the topics with the articles selected by the instructor (uploaded to Canvas). The appraisal includes the implications, which impact on our professional’s skills and knowledge, and applications, which help decision making through research findings. You will first summarize the assigned article in your own words. The topic will be “the current issues of UCL in Baseball.” (See the instruction uploaded to the Assignment of Canvas.)
Grading will be based on quality of content, identification of understanding of the study and quality of writing (syntax, grammar, and spelling). (GPLO 1, 2, 4) (GATEPLO 3, 5) (CLO 1)

Each paper will be typed, double-spaced, using a 12-point (or easily readable) font and 1" margins. Each paper should not exceed 8 pages. However, less than 80% are considered too short.

**Paper Due: April 10**

**Surgery Observation: 10%**
You will write a one page surgery observation report. You will be expected to observe a surgery that helps you improve the knowledge of injuries in athletics. You will write about the surgical process, thoughts, and reflection on what you observed and learned and how it all relates to the research. You may ask the Bay Area Surgery Group Inc. for an opportunity to observe a surgery. Dr. DH Haber, Team Orthopedist of Sports Medicine, SJSU will welcome you to observe his surgery. You may also seek an opportunity of surgery observation at your clinical site. (GPLO 3) (GATEPLO 1, 2, 5)

**Dissection Reports: 5%**
You will write a one page reflection on each of the dissections. You have dissection labs with the shoulder and forearm specimens for this class. You will be expected to observe such specimens performed by an orthopedist to improve your professional knowledge and skills. No make-up lab will be available. (GPLO 3) (GATEPLO 1, 2, 4) (CLO 5, 6, 11, 15, 16, 19, 23, 27-32)

**Final Exam: 25%**
The final exam will be given to students who demonstrate mastery of course content. The exam will be comprehensive, including true-false, multiple choice, and short essay questions that require integration and synthesis of knowledge. Excellent responses will demonstrate advanced and in-depth understanding of upper extremity injury especially the elbow, wrist, and hand. Responses should include material from assigned readings and class discussions.

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, 3) (CLO 19-32)

**Determination of Grades**

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<th>Grade</th>
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**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.

**University Policies**

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 at http://www.sjsu.edu/gup/syllabusinfo/”
Course Schedule (Subject to change with advance notice)

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics, Readings, Assignments, Deadlines</th>
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<tbody>
<tr>
<td>1</td>
<td>1/30</td>
<td>Course Intro; Review of Shoulder and Scapula Anatomy and Function</td>
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<td>2</td>
<td>2/6</td>
<td>Clinical Shoulder Examination Tests, Micro-Instability Disabled Throwing Shoulder</td>
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<td>3</td>
<td>2/13</td>
<td>Shoulder Impingement: Primary, Secondary and Internal, SLAP (superior labrum anterior posterior) lesions</td>
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<td>4</td>
<td>2/20</td>
<td>Adaptations to Overhead Performance, shoulder and scapular range of motions compared with scapular dyskinesis</td>
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<td>5</td>
<td>2/27</td>
<td>Rehabilitation of Micro-Instability Disabled Throwing Shoulder</td>
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<td>6</td>
<td>3/6</td>
<td>Macro-Instability and Acromioclavicular Joint Injury, Adhesive Capsulitis</td>
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<td>7</td>
<td>3/13</td>
<td>Midterm</td>
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<td>8</td>
<td>3/20</td>
<td>Injuries to Wrist &amp; Hand</td>
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<td>9</td>
<td>3/27</td>
<td>Paper assignment regarding the current issues of UCL in Baseball due April 10</td>
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<td>10</td>
<td>4/3</td>
<td>Spring Break</td>
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<td>11</td>
<td>4/10</td>
<td>Assessment and Mechanism of Ulnar Collateral Ligament Injury in Overhead Athletes</td>
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<td>12</td>
<td>4/17</td>
<td>Evidence Based Practice in Shoulder Rehabilitation Exercises in Overhead Athletes I</td>
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<td>4/24</td>
<td>Evidence Based Practice in Shoulder Rehabilitation Exercises in Overhead Athletes II</td>
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<td>Upper Extremity Cadaveric Dissections (Bay Area Surgical Center)</td>
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<td>15</td>
<td>5/8</td>
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