

San José State University
CASA/Kinesiology
KIN 268, Evidence-Based Research in the Practice in Management and
Assessment of Injuries to Lower Extremity, Fall, 2018

Course and Contact Information

Instructor:	Masaaki Tsuruike, PhD, ATC
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Office Hours:	M & W: 3 – 4 PM
Class Days/Time:	Wednesday 7 - 8:50 PM
Classroom:	YUH 128
Prerequisites:	Prerequisite: BIOL 065, BIOL 066, KIN 155, KIN 158 and KIN 188.

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

The course emphasizes current practices in the orthopedic assessment and care of lower extremity and injuries to competitive athletes. The course will take a multidisciplinary approach with scientific and clinical outcomes along with case studies. Also, the orthopedic assessment and care of the lower extremity segments and joints are discussed. The course intensively discuss the lower extremity injuries in a variety of athletes.

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. Identify clinical anatomy and lower extremity function related to injuries
- CLO 2. Identify the mechanism of each of the lower extremity injuries and symptoms to underling a variety of athletic circumstances
- CLO 3. Assess the outcomes of orthopedic surgery for active athletes, and demonstrate decision making for their return to play
- CLO 4. Demonstrate advanced communication skills with different healthcare providers in terms of the management, treatment, and rehabilitation of athletic lower extremity injuries.
- CLO 5. Develop an application of appropriate research publications and current clinical research in the field of athletic training and sports medicine

Required Readings

Selected readings to be provided by the instructor and all are posted in the Modules of Canvas.

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](http://www.sjsu.edu/senate/docs/S12-3.pdf) 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

- Article Assignments: 20%
- Midterm Exam: 35%
- Dissection Lab Reports: 10%
- Final Exam: 35%

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%

Article Assignments:

Each of the students will prepare for a hand-out sheet and take a moderator to initiate the article assigned to discuss. The students develop the hand-out sheet with outlines and the descriptions, and upload in the **Assignments of Canvas** **by 3 PM on Wednesday** each. (10 points each)

Midterm Exam:

There will be one midterm exam covering all materials (in-class discussions, reading assignments, students' hand-out sheet, etc.) to date from ALL units discussed up to the Achilles tendinopathy and rupture. The date and format of the midterm exam are to be determined.

Midterm Exam Date: October 3

Dissection Reports: 10%

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:

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 lower extremity injury especially the hamstring injury, ACL, meniscus, hip/groin injury. Responses should include material from assigned readings and class discussions with students' hand-out sheets.

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)

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 classroom.
- The class will basically have no break.

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/) at <http://www.sjsu.edu/gup/syllabusinfo/>

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Course Schedule Tentatively (Subject to change with advance notice)

Week	Date	Topics	Reading Assignments
1	8/22	Class orientation	
2	8/29	Foot	1. Chauvin. 2018;22:104-117 2. Burge. 2012;4:518-534 3. Georgiannos. 2017;45:1388-1394
3	9/5	Ankle	4. Fraser. 2018 5. Vuurberg. 2018;52:956 6. Kaminski. 2013;48:528-545
4	9/12	Mobilization with movement Mulligan Concept of Mobilization	7. Woodman. 2013;18:e1-e7 8. May. 2017;26:486-496 9. Mau. 2014;9:540-548 10. Hoch. 2010;19:226-232
5	9/19	Chronic Ankle Instability Return to play (RTP) Functional performance Self-outcome assessment: Sports Ankle Rating System, Foot and Ankle Ability Measure	11. Brumitt. 2013;8:216-227 12. Clanton. 2012;4:471-474 13. Hall. 2015;50:36-44 14. Linens. 2014;49:15-23
6	9/26	Achilles tendinopathy and rupture Review Foot and Ankle	15. Magnan. 2014;20:154-159 16. Trofa. 2017;45:2864-2871
7	10/3	Midterm Exam	
8	10/10	Hamstrings strain (<i>Tsuruike</i>)	(<i>Only review</i>) 17. Guex. 2012;47:390-395 18. Guex. 2013; 43:1207-1215
9	10/17	ACL (<i>Dr. Reynolds</i>)	(<i>Only review</i>) 19. Padua. 2018;53(1):5-19
10	10/24	Meniscus	20. Eberbach. 2018;26:762-771 21. Lennon. 2017;25:194-207
11	10/31	Neuromuscular training ACL injury prevention	22. Sugimoto. 2014 23. Sugimoto 2016
12	11/7	Femoroacetabular Impingement (<i>Guest speaker</i>)	24. King. 2018;52(9):566-580. 25. King. 2018;48(7):584-593. 26. Ross. 2018; 14:128-133.
13	11/14	Cadaveric Dissections (<i>by Dr. Haber, Bay Area Surgical Center</i>)	Dissection Report I
14	11/21	No Instructional Day for Thanksgiving	
15	11/28	Cadaveric Dissections (<i>by Dr. Haber, Bay Area Surgical Center</i>)	Dissection Report II

Week	Date	Topics	Reading Assignments
16	12/5	Student presentations	
Final Exam	12/12		

READING ASSIGNMENTS

1. Chauvin, N. A., et al. (2018, February). Ankle and foot injuries in the young athlete. In *Seminars in musculoskeletal radiology* (Vol. 22, No. 01, pp. 104-117). Thieme Medical Publishers.
2. Burge, A. J., et al. (2012). Imaging of sports-related midfoot and forefoot injuries. *Sports health*, 4(6), 518-534.
3. Georgiannos, D., & Bisbinas, I. (2017). Endoscopic versus open excision of os trigonum for the treatment of posterior ankle impingement syndrome in an athletic population: a randomized controlled study with 5-year follow-up. *The American journal of sports medicine*, 45(6), 1388-1394.
4. Fraser, J. J., et al. (2018). Foot impairments contribute to functional limitation in individuals with ankle sprain and chronic ankle instability. *Knee Surgery, Sports Traumatology, Arthroscopy*, 1-11.
5. Vuurberg, G., et al. (2018). Diagnosis, treatment and prevention of ankle sprains: update of an evidence-based clinical guideline. *Br J Sports Med*, bjsports-2017.
6. Kaminski, T. W., et al. (2013). National Athletic Trainers' Association position statement: conservative management and prevention of ankle sprains in athletes. *Journal of athletic training*, 48(4), 528-545.
7. Woodman, R., Berghorn, K., Underhill, T., & Wolanin, M. (2013). Utilization of mobilization with movement for an apparent sprain of the posterior talofibular ligament: A case report. *Manual therapy*, 18(1), e1-e7.
8. May, J. M., et al. (2017). Patient Outcomes Utilizing the Mulligan Concept of Mobilization With Movement to Treat Intercollegiate Patients Diagnosed With Lateral Ankle Sprain: An a Priori Case Series. *Journal of sport rehabilitation*, 26(6), 486-496.
9. Mau, H., et al. (2014). A Modified Mobilization - with - Movement to Treat a Lateral Ankle Sprain. *International journal of sports physical therapy*, 9(4), 540-548.
10. Hoch, M. C., & McKeon, P. O. (2010). The effectiveness of mobilization with movement at improving dorsiflexion after ankle sprain. *Journal of sport rehabilitation*, 19(2), 226-232.
11. Brumitt, J., et al. (2013). Lower extremity functional tests and risk of injury in division iii collegiate athletes. *International journal of sports physical therapy*, 8(3), 216-227.
12. Clanton, T. O., et al. (2012). Return to play in athletes following ankle injuries. *Sports Health*, 4(6), 471-474.
13. Hall, E. A., et al. (2015). Strength-training protocols to improve deficits in participants with chronic ankle instability: a randomized controlled trial. *Journal of athletic training*, 50(1), 36-44.
14. Magnan, B., et al. (2014). The pathogenesis of Achilles tendinopathy: a systematic review. *Foot and Ankle Surgery*, 20(3), 154-159.
15. Linens, S. W. et al. (2014). Postural-stability tests that identify individuals with chronic ankle instability. *Journal of athletic training*, 49(1), 15-23.
16. Trofa, D. P., et al. (2017). Professional athletes' return to play and performance after operative repair of an Achilles tendon rupture. *The American journal of sports medicine*, 45(12), 2864-2871.
17. Guex, K., et al. (2012). Influence of hip-flexion angle on hamstrings isokinetic activity in sprinters. *Journal of athletic training*, 47(4), 390-395.

18. Guex, K., & Millet, G. P. (2013). Conceptual framework for strengthening exercises to prevent hamstring strains. *Sports Medicine*, 43(12), 1207-1215.
19. Padua, D. A., et al. (2018). National Athletic Trainers' Association Position Statement: Prevention of Anterior Cruciate Ligament Injury. *Journal of athletic training*, 53(1), 5-19.
20. Eberbach, H., et al. (2018). Sport-specific outcomes after isolated meniscal repair: a systematic review. *Knee Surgery, Sports Traumatology, Arthroscopy*, 26(3), 762-771.
21. Lennon, O. M., & Totlis, T. (2017). Rehabilitation and Return to Play Following Meniscal Repair. *Operative Techniques in Sports Medicine*, 25(3), 194-207.
22. Sugimoto, D., et al. (2014). Specific exercise effects of preventive neuromuscular training intervention on anterior cruciate ligament injury risk reduction in young females: meta-analysis and subgroup analysis. *Br J Sports Med*, bjsports-2014.
23. Sugimoto, D., et al. (2016). Critical components of neuromuscular training to reduce ACL injury risk in female athletes: meta-regression analysis. *Br J Sports Med*, bjsports-2015.
24. King, M. G., et al. (2018). Lower limb biomechanics in femoroacetabular impingement syndrome: a systematic review and meta-analysis. *Br J Sports Med*, 52(9), 566-580.
25. King, M. G., et al. (2018). Sub-Elite Football Players With Hip-Related Groin Pain and Positive Flexion Adduction Internal Rotation Test Exhibit Distinct Biomechanical Differences Compared With the Asymptomatic Side. *Journal of Orthopaedic & Sports Physical Therapy*, 48(7), 584-593.
26. Ross, J. R., et al. (2018). Characterization and Correction of Symptomatic Hip Impingement in American Football Linemen. *HSS Journal*, 14(2), 128-133.