San José State University  
Department of Kinesiology (CASA)  
KIN 273 Evidence-Based Research in the Practice of Therapeutic Modalities Spring, 2016

Course and Contact Information

Instructor: Masaaki Tsuruike, PhD, ATC  
Office Location: Spartan Complex (SPX) 115  
Telephone: (408) 924-3030  
Email: masaaki.tsuruike@sjsu.edu  
Office Hours: Tues Wed : 4:00 – 5:00 pm  
All other times by appointment only.  
Class Days/Time: T: 7:00 pm – 8:50 pm  
Classroom: 

Prerequisites: Students must have the background of athletic training education or equivalent to the knowledge

Canvas

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 describes current concepts and literature regarding neurophysiological healing process in connective tissues, pain perceptive mechanisms, differences in scar and adhesion formation, and muscle spasm based on scientific and clinical outputs. Also, the efficacy of traditional and non-traditional therapeutic modalities for use in clinical practice will be discussed. Furthermore, the course invites a professional practitioner demonstrate special instruments which mobilize the fascia underneath the skin. The course is intended to provide the student with the information necessary to perform prudent clinical applications of therapeutic modalities.

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

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:

1. Identify neuro- and patho-physiological basis underlying tissue healing processes, including the mechanisms of clot coagulation, angiogenesis, granulation tissues scar formation and collagen type I fiber.

2. Identify the effects of therapeutic modalities on pain perception, adhesion formation, muscle spasm, and the relationship of therapeutic exercise to the remodeling phase of healing process.

3. Identify integration of pain controls at the peripheral level by using NSAIDs during the healing process

4. Identify integration of pain controls at the spinal level through descending pathways during the healing process

5. Utilize conventional therapeutic ultrasound devise based on current research findings.

6. Demonstrate skill in critical reading and evaluation of published research articles on sports medicine topics.

7. Demonstrate comprehensive therapeutic modalities in sports.
Required Texts/Readings

Textbook / Readings

Selected readings to be provided by the instructor. All readings are as follows (articles **Bold** and *italic* are reading ones for short paper assignments):


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. Read the articles selected in each of the topics to discuss proficiency in using numerous psychomotor skills to rehabilitate various anatomical and supportive structures.
2. Actively participate in class discussions, presentations and hands-on exercises.
3. Select an injury and describe its detailed rehabilitative process, utilizing supportive literature of sound results and outcomes.
4. Present the aforementioned rehabilitation program and demonstrate the techniques (exercise, interventions, etc.) to the class.
5. Critically review selected literature.

EVALUATION & GRADING

- Short Paper (Written Critique): 40%
- Presentation regarding a case study with therapeutic modality: 15%
- Contributions to class discussions: 5%
- Midterm exam: 20%
- Final exam (comprehensive): 20%
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%

**Short Paper (Written Critique) 40%**

This short paper provides an opportunity to develop analytic and critical reading skills. Each student will submit a written critique of the articles below selected by the instructor. The student will also describe how you can apply the content of the article you reviewed for your patient(s). You will first summarize the assigned article **IN YOUR OWN WORDS**, followed by the application of the article to your patient(s) in either of the past or present.

Grading will be based on quality of content, identification of understanding of the study and quality of writing (syntax, grammar, and spelling).

Each paper should be typed, double-spaced, using a 12-point (or easily readable) font and 1" margins. Each paper should not exceed two pages. However, less than 80% are considered too short. (GPLO 1-4) (GATEPLO 1, 3, 5) (CLO 1-4)

**Reading Articles**

<table>
<thead>
<tr>
<th>Article</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Ossipov 2010</td>
<td>TUES, Feb 9</td>
</tr>
<tr>
<td>2) Zeilhofer 2007</td>
<td>TUES, Feb 16</td>
</tr>
<tr>
<td>3) Danese 2014</td>
<td>TUES, Feb 23</td>
</tr>
<tr>
<td>4) Takagi 2011</td>
<td>TUES, Mar 1</td>
</tr>
<tr>
<td>5) Arnoczky 2014</td>
<td>TUES, Mar 8</td>
</tr>
<tr>
<td>6) Rigamonti</td>
<td>TUES, Mar 15</td>
</tr>
<tr>
<td>7) Shanks 2010</td>
<td>TUES, Mar 22</td>
</tr>
<tr>
<td>8) Waugh 2015</td>
<td>TUES, Apr 6</td>
</tr>
</tbody>
</table>

**Midterm Exam: 20%**

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. The date and format of the midterm exam are to be determined. (GPLO 1, 2) (GATEPLO 1, 4, 5) (CLO 1-4)

**Exam**

<table>
<thead>
<tr>
<th>Tentative Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm</td>
</tr>
<tr>
<td>March 22 (Tuesday)</td>
</tr>
</tbody>
</table>
Presentation regarding a case study with therapeutic modality: 15%

This assignment provides the opportunity to develop oral communication skills and to practice presenting concepts and ideas. Students will present the study that was critiqued in the current usage of therapeutic modalities. During the presentation, students should provide a brief background for the study, including purpose and applications. Explain the indication and contraindication of the therapeutic modality you select, and explain which phase in the healing process is applied based on the scientific outputs, and summarize the conclusions. In the oral presentation, you present the study as though you conducted in professional workshops. The presentation should last between 10 and 15 minutes. Less than 10 minutes is too short; presenters will be stopped at 15 minutes. Following the presentation, the class is open for discussion. At this time, discussion should focus on both scientific and clinical outputs.

Evaluation will be based on: adherence to time limit, connection with audience (rapport, poise, ability to interest audience), content, application of study, and delivery (clarity, organization, voice, pace, use of audio-visual aids).

(GPLO 1-4) (GATEPLO 1-5) (CLO 5-7)

Contributions to class discussions: 5%

All students are expected to actively participate in each of the lectures. Because the class is conducted once a week (1 and 5/6 hours each), your absence more than two (2) times will affect your activity points. One (2) % are deducted for one missing class. Students who consider missing the class due to their clinical duties, such as covering your team’s game or travelling with your team, may make up the class absence to submit the assignment given by the instructor only if a student asks at least a week prior to the class he or she misses. No more than two assignments are given to make up in the course.

Final Exam: 20%

The exam provides the opportunity to demonstrate mastery of course content. Exams may include true-false, multiple choice, matching, and essay questions that require integration and synthesis of knowledge. Excellent responses will demonstrate advanced and in-depth understanding of neuro- and pathophysiological systems, factors limiting the effects of therapeutic interventions on the healing process. Responses should include material from assigned readings, class discussions, and presentations by other students.

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, 5) (CLO 1, 5-7)
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

General Expectations, Rights and Responsibilities of the Student

As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU’s policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. See University Policy S90–5 at http://www.sjsu.edu/senate/docs/S90-5.pdf. More detailed information on a variety of related topics is available in the **SJSU catalog**, at http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not serve to address the issue, it is recommended that the student contact the Department Chair as a next step.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester’s **Catalog Policies** section at http://info.sjsu.edu/static/catalog/policies.html. Add/drop deadlines can be found on the current academic year calendars document on the **Academic Calendars webpage** at http://www.sjsu.edu/provost/services/academic_calendars/. The **Late Drop Policy** is available at http://www.sjsu.edu/aars/policies/latedrops/policy/. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the **Advising Hub** at http://www.sjsu.edu/advising/.

Consent for Recording of Class and Public Sharing of Instructor Material

**University Policy S12-7**, http://www.sjsu.edu/senate/docs/S12-7.pdf, requires students to obtain instructor’s permission to record the course and the following items to be included in the syllabus:

- “Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor’s permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.”
It is suggested that the greensheet include the instructor’s process for granting permission, whether in writing or orally and whether for the whole semester or on a class by class basis.

In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.

Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.”

Academic integrity

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The University Academic Integrity Policy S07-2 at http://www.sjsu.edu/senate/docs/S07-2.pdf requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The Student Conduct and Ethical Development website is available at http://www.sjsu.edu/studentconduct/.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the Accessible Education Center (AEC) at http://www.sjsu.edu/aec to establish a record of their disability.

SJSU Writing Center

The SJSU Writing Center is located in Clark Hall, Suite 126. All Writing Specialists have gone through a rigorous hiring process, and they are well trained to assist all students at all levels within all disciplines to become better writers. In addition to one-on-one tutoring services, the Writing Center also offers workshops every semester on a variety of writing topics. To make an appointment or to refer to the numerous online resources offered through the Writing Center, visit the Writing Center website at http://www.sjsu.edu/writingcenter. For additional resources and updated information, follow the Writing Center on Twitter and become a fan of the SJSU Writing Center on Facebook. (Note: You need to have a QR Reader to scan this code.)
SJSU Counseling Services

The SJSU Counseling Services is located on the corner of 7th Street and San Fernando Street, in Room 201, Administration Building. Professional psychologists, social workers, and counselors are available to provide consultations on issues of student mental health, campus climate or psychological and academic issues on an individual, couple, or group basis. To schedule an appointment or learn more information, visit Counseling Services website at http://www.sjsu.edu/counseling.
## KIN296, EBP in Therapeutic Modalities, Spring 2016

### Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics, Readings, Assignments, Deadlines</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2/2</td>
<td>Introduction to pain control at peripheral, spinal, and higher center level</td>
</tr>
<tr>
<td>2</td>
<td>2/9</td>
<td>Healing process-inflammatory phase: role of platelets, neutrophils angiogenesis, macrophagy, eicosanoids</td>
</tr>
<tr>
<td>3</td>
<td>2/16</td>
<td>Proliferative phase: non-steroid anti-inflammatory drugs (NSAIDs)</td>
</tr>
<tr>
<td>4</td>
<td>2/23</td>
<td>Medication and injection issues lectured by Dr. Nishime, MD</td>
</tr>
<tr>
<td>5</td>
<td>3/1</td>
<td>Collagen, ground substance, extracellular matrix</td>
</tr>
<tr>
<td>6</td>
<td>3/8</td>
<td>Ultrasound application</td>
</tr>
<tr>
<td>7</td>
<td>3/15</td>
<td>Hands on therapeutic modalities</td>
</tr>
<tr>
<td>8</td>
<td>3/22</td>
<td>Midterm exam</td>
</tr>
<tr>
<td>9</td>
<td>3/29</td>
<td><strong>SPRING BREAK</strong></td>
</tr>
<tr>
<td>10</td>
<td>4/5</td>
<td>Field trip (tentatively)</td>
</tr>
<tr>
<td>11</td>
<td>4/12</td>
<td>Guest speaker (tentatively)</td>
</tr>
<tr>
<td>12</td>
<td>4/19</td>
<td>Manual therapy: Técnica Gavilán I</td>
</tr>
<tr>
<td>13</td>
<td>4/26</td>
<td>Manual therapy: Técnica Gavilán II</td>
</tr>
<tr>
<td>14</td>
<td>5/3</td>
<td>Therapy techniques: Presentation I</td>
</tr>
<tr>
<td>15</td>
<td>5/10</td>
<td>Therapy techniques: Presentation II</td>
</tr>
<tr>
<td>Final</td>
<td>5/20</td>
<td>Final Exam</td>
</tr>
</tbody>
</table>