

**San José State University**  
**Department of Kinesiology**  
**Post-Professional Athletic Training Education Program**

**KIN273: Evidence Based Research in the Practice of  
Therapeutic Modalities**

**Spring 2012**

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<b>Office Hours:</b>	MTh: 1:30pm-3:30pm All other times, by appointment only.
<b>Class Days/Time:</b>	Th: 7:00 – 8:50pm
<b>Classroom:</b>	SPX 075
<b>Prerequisites:</b>	None listed; however it is recommended that you have at least completed an undergraduate course in Therapeutic Modalities and at least one graduate level Evidence Based Medicine/ Research course (i.e., KIN268).

**COURSE DESCRIPTION:**

This is a 2-credit graduate course designed to critically examine current practices in therapeutic modalities with regard to the healing and rehabilitation processes. The course will take a multidisciplinary approach, incorporating *scientific (research) and philosophical* bases. The efficacy of traditional and non-traditional therapeutic modalities for use in clinical practice will be discussed. The course is intended to provide the student with the information necessary to perform prudent clinical applications of therapeutic modalities.

**KIN PROGRAM LEARNING OBJECTIVES:**

1. Ability to interpret and apply evidence-based research to clinical and/or professional settings.
2. Apply and be receptive to the broad concept of cultural competence and diversity as related to social justice and equity issues.

3. Promote and model efficient movement and a holistic and sustainable approach to health and wellness across the life-span.
4. Develop and apply critical thinking and creativity through an interdisciplinary approach.
5. Become agents of change through the development of leadership skills to include community interaction and service.

### **STUDENT LEARNING OBJECTIVES:**

The overall purpose of this course will be to help students achieve an understanding of the evidence based medicine as it pertains to therapeutic modalities. Specific objectives are as follows:

1. To gain further understanding of the physical laws that govern therapeutic modalities.
2. To achieve better results from the numerous therapeutic methods designed to facilitate the healing and strengthening of collagenous tissue.
3. To review physiological and biomechanical effects, indications and contraindications, clinical use and proper techniques for the application of common therapeutic modalities employed in the healing and rehabilitation processes.
4. To better understand the biomechanical, neurophysiological and metabolic changes that occur during the use of therapeutic modalities.
5. To use critical thought and scientific evidence to make sound decisions regarding the application of therapeutic modalities.
6. To critically think about the application of therapeutic modalities and related principles across diverse populations.

### **RECOMMENDED TEXTBOOKS:**

1. Denegar CR, Saliba E & Saliba S. *Therapeutic Modalities for Musculoskeletal Injuries (third edition)*. Human Kinetics (Champaign, IL), ISBN 978-0-7360-5582-6, copyright 2010.
2. Knight KL & Draper DO. *Therapeutic Modalities: The art and science*. Lippencott Williams & Wilkins (Baltimore, MD), ISBN 978-0-7817-5744-7, copyright 2008.
3. Law MC & MacDermid J. *Evidence-Based Rehabilitation: A Guide to Practice (second edition)*. Slack Publishers (Thorofare, NJ), ISBN 978-1-55642-768-8, copyright 2008.
4. Selected readings to be provided by the instructor.

### **LIBRARY LIAISON:**

The Department of Kinesiology library liaison is Peggy Cabrera. She can be reached at [peggy.cabrera@sjsu.edu](mailto:peggy.cabrera@sjsu.edu) or (408) 808-2034.

## COURSE EVALUATION:

**ABSTRACTS (160 points):** You will read and critically review 4 peer-reviewed journal articles pertinent to EBM and current modalities concepts (*the articles must be written after 2004 and 2 of the 4 must be systematic reviews/meta-analyses*). From each article, YOU will SYNTHESIZE an “abstract” based on the guidelines below. Each abstract will be worth 40 points and **MUST be turned in via dropbox on D2L** on its due date in order to receive credit. Late abstracts will not be accepted unless prior arrangements have been made with the instructor. (PLO 1,3,4; SLO 1-6)

<u>Abstract #:</u>	<u>Due Date</u>
1	THUR, Feb 16
2	THUR, Mar 15
3	THUR, Apr 19
4	THUR, May 15

### Abstract Guidelines:

1. Articles **MUST** be selected from current scientific, peer-reviewed sources and you **MUST** submit a hard copy of the article with your abstract.
2. Your abstract is limited to 500 words with title and headings.
3. **DO NOT COPY** the original abstract for the article. I would suggest you do NOT look at the abstract at all. Instead, read the article, analyze it and synthesize the findings as if they were your own.
4. Papers **MUST** be typed using 12-point font, either Times New Roman or Calibri, and single-spaced. Margins should be 1” on all sides. Do NOT include a title page. Simply write your last name on the upper right hand corner.
5. The abstract should be formatted in APA format.

**PILOT PROJECT & PRESENTATION (450 total pts):** In accordance with the Student Learning Objectives, students will be asked to propose an experiment designed to provide evidence for a traditional or non-traditional modality as part of a management strategy for a specific injury. Students will submit their chosen modality and preferred measure(s) for prior instructor approval (**DUE MON, FEB 9th**). Following the proposal phase, the student will be expected to conduct the pilot project, analyze the data, and report the empirical evidence. The final project will include a written report with references, as well as a 15-minute oral presentation, including technical demonstrations, as needed. (PLO 1,2,4; SLO 1-6)

The proposal (**150 pts**) will include: (1) a 1-2 page introduction; (2) a mini-Review of Literature (no more than 8 pages); and (3) a complete methods section. The proposal must elucidate physiological implications, demonstrate a need for use of the modality, compare it to the gold standard (if one exists), discuss 2-3 techniques for measuring the intended

parameter with supporting evidence, and provide an APA-style reference list. **The proposal will be due on THUR, MARCH 15th.**

Following the proposal phase, the student will conduct the actual pilot project, collecting data on a minimum N of 5 subjects (single cohort model or greater). The student will analyze the data (typically pre- to post-intervention) using a t-test (for a single cohort) or ANOVA (for multiple groups) and report the empirical evidence in a results section. The final project (**200 pts**) will include a written report comprised of the revised proposal, results section, and a complete reference list, all representing APA format. **The FINAL paper will be due on the May 15.**

We will have a 2-day symposium at the end of the semester, where presentations (**100 pts**) will be conducted to an audience consisting of students, faculty and invited guests. Presentations will last 12 minutes and should demonstrate the exercise, highlight the pilot project, methodology, results and, finally, provide some discussion/conclusions. The symposium will be open to attendance of other students, faculty and invited guests. (PLO 5; SLO 1-6)

**FINAL EXAM (200 pts):** There will be a cumulative final exam covering materials (lectures, labs, discussions, readings, presentations, etc.) from ALL units discussed during the course of the spring semester. The date and format of the final exam are to be determined. (PLO 1-6)

**PARTICIPATION (50 pts):** Each week will present a different opportunity for you to shine based on your background. Most classes (product presentations included) will encompass lecture, lab and discussion components. Speak up!

### **CLASSROOM PROTOCOL:**

1. As graduate students, you are expected to maintain proper etiquette in the classroom and the clinic, demonstrating respect for yourself and others. Please do your best at all times to demonstrate professionalism to the faculty and staff, your peers and undergraduate AT students, and the profession, itself.
2. Please place all cell phones to the OFF or VIBRATE position prior to entering the classroom. If you are expecting an important call, inform the instructor ahead of time and choose a seat in the class that will permit an easy non-disturbing exit.
3. iPods, MP3 players, and other audio devices should be turned off and headphones, ear buds, etc. be removed prior to entering the classroom.
4. Laptops should be limited to class-related purposes only.

5. Students are responsible for understanding the policies and procedures about expectations regarding classroom behavior. For more information see the Academic Senate Policy S90-5 on Student Rights and Responsibilities.
6. Students are responsible for understanding the San Jose State University Student Conduct Code – 41301: Standards for Student Conduct.

### **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](http://info.sjsu.edu/static/catalog/policies.html) section at <http://info.sjsu.edu/static/catalog/policies.html>. Add/drop deadlines can be found on the [current academic calendar](http://www.sjsu.edu/academic_programs/calendars/academic_calendar/) web page located at [http://www.sjsu.edu/academic\\_programs/calendars/academic\\_calendar/](http://www.sjsu.edu/academic_programs/calendars/academic_calendar/). The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/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](http://www.sjsu.edu/advising/) at <http://www.sjsu.edu/advising/>. Assignments and Grading Policy

### **UNIVERSITY POLICIES:**

#### **Academic integrity**

Students should know that the University's [Academic Integrity Policy](http://sa.sjsu.edu/judicial_affairs/faculty_and_staff/academic_integrity/index.html) is available at [http://sa.sjsu.edu/judicial\\_affairs/faculty\\_and\\_staff/academic\\_integrity/index.html](http://sa.sjsu.edu/judicial_affairs/faculty_and_staff/academic_integrity/index.html). Your own commitment to learning, as evidenced by your enrollment at San Jose State University and the University's integrity policy, require 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](http://www.sa.sjsu.edu/judicial_affairs/index.html) is available at [http://www.sa.sjsu.edu/judicial\\_affairs/index.html](http://www.sa.sjsu.edu/judicial_affairs/index.html).

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include in your assignment any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Policy F06-1 requires approval of instructors.

#### **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 requires that students with disabilities requesting accommodations must register with the [Disability Resource Center](http://www.drc.sjsu.edu/) (DRC) at <http://www.drc.sjsu.edu/> to establish a record of their disability.

### **Student Technology Resources:**

Computer labs for student use are available in the Academic Success Center located on the 1<sup>st</sup> floor of Clark Hall and on the 2<sup>nd</sup> floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library.

A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112. These items include digital and VHS camcorders, VHS and Beta video players, 16 mm, slide, overhead, DVD, CD, and audiotape players, sound systems, wireless microphones, projection screens and monitors.

### **Learning Assistance Resource Center:**

The Learning Assistance Resource Center (LARC) is located in Room 600 in the Student Services Center. It is designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. The center provides support services, such as skills assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. The [LARC website](http://www.sjsu.edu/larc/) is located at <http://www.sjsu.edu/larc/>.

### **SJSU Writing Center:**

The SJSU Writing Center is located in Room 126 in Clark Hall. It is staffed by professional instructors and upper-division or graduate-level writing specialists from each of the seven SJSU colleges. Our writing specialists have met a rigorous GPA requirement, and they are well trained to assist all students at all levels within all disciplines to become better writers. The [Writing Center website](http://www.sjsu.edu/writingcenter/about/staff/) is located at <http://www.sjsu.edu/writingcenter/about/staff/>.

### **Peer Mentor Center:**

The Peer Mentor Center is located on the 1<sup>st</sup> floor of Clark Hall in the Academic Success Center. The Peer Mentor Center is staffed with Peer Mentors who excel in helping students manage university life, tackling problems that range from academic challenges to interpersonal struggles. On the road to graduation, Peer Mentors are navigators, offering “roadside assistance” to peers who feel a bit lost or simply need help mapping out the locations of campus resources. Peer Mentor services are free and available on a drop –in basis, no reservation required. The [Peer Mentor Center website](http://www.sjsu.edu/muse/peermentor/) is located at <http://www.sjsu.edu/muse/peermentor/>.

## KIN273: EBM Modalities

\*\*\*NOTE: The course outline is tentative and subject to change with fair warning; we will cover topics as time permits. The outline is designed to give you a general idea of which materials will be covered in class. Please read supportive (textbook chapters, journal articles, etc.) materials prior to class in preparation for discussion.\*\*\*

<u>Week</u>	<u>Date</u>	<u>Topics, Readings, Assignments, Deadlines</u>
<b>1</b>	1/26	Introduction...Evidence based vs. Your own method
<b>2</b>	2/02	Healing Processes, Pain, Treatment Design
<b>3</b>	2/09	Healing Processes and Pain Basics
<b>4</b>	2/16	Infrared Spectrum: Cryo- & Thermotherapies and modifications
<b>5</b>	2/23	Guest Speaker - TBA
<b>6</b>	3/01	Traditional Manual Therapy Techniques
<b>7</b>	3/08	Guest Speaker – TBA followed by open lab time to practice or work on study
<b>8</b>	3/15	Fire Cupping & Non-Traditional Manual Therapy
<b>9</b>	3/22	Ultrasound, Light Therapy, Etc.
<b>10</b>	3/29	<b>SPRING BREAK: NO CLASS</b>
<b>11</b>	4/05	TBA and open lab time
<b>12</b>	4/12	Therapeutic Electrophysical Agents
<b>13</b>	4/19	TBA/ Open Lab time
<b>14</b>	4/26	WTF!!! Medicinal, Exercise-related, and other Non-traditional Therapies
<b>15</b>	05/03	<b>KIN273 Symposium Day 1</b>
<b>16</b>	5/10	<b>KIN273 Symposium Day 2</b>