# San José State University
## College of Applied Sciences and Arts/Department of Kinesiology
## Kin 250, Quantitative Research Methods in Kinesiology
## Section 1, Fall 2017, 3 units

**Course and Contact Information**

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| **Instructor** | Emily H. Wughalter, Ed.D. |
| **Office Location** | SPX 164 |
| **Telephone** | (408) 924-3043 |
| **Email** | Emily.Wughalter@sjsu.edu |
| **Office Hours** | Mondays, 3:00pm-4:00pm; Thursdays, 11:00am-12:00pm; hours arranged |
| **Class Days/Time** | Mondays, 4:00-6:50pm |
| **Classroom** | SPX 151 |

**Canvas and MySJSU Messaging**

Course materials such as the course syllabus and major assignment handouts can be found on Canvas, the content management system used at SJSU. From the SJSU home page you can easily find the Canvas entry page. Upon first arriving on your Canvas home page, change the settings so that e-mail is forwarded to your regularly used e-mail account. Announcements will be posted on Canvas and should be checked on a regular basis; students may choose to be alerted via text or e-mail that announcements have been made. Additionally, be sure to regularly check your MySJSU messaging system (or other communication system indicated by your instructors).

**Course Description**

This Quantitative Research Methods in Kinesiology course will cover how to design, analyze and interpret quantitative research. Topics include: research ethics, research design and analysis techniques and issues, psychometric procedures, descriptive statistics, parametric and non-parametric inferential statistics, and research critiques.

*A grade of B or better in KIN 250 satisfies the SJSU Graduate Writing Assessment Requirement (GWAR)*

**Course Goals and Student Learning Outcomes**

Upon successful completion of this course, students will be able to:
- Explain the fundamental characteristics of quantitative research methods and their relevance to the field of kinesiology
  - Measured in specific essay items presented on the midterm and final exam
- Design research incorporating various quantitative modes of inquiry
  - Measured in specific essay items presented on the final exam

- Identify a research problem in kinesiology best addressed with a quantitative or mixed-methods approach
  - Measured by the final manuscript assignment that addresses all aspects of the course
- Apply APA style in writing
  - Addressed in the final manuscript assignment rubric on style and format
- Demonstrate competence in utilizing library resources for research
  - Met in that the accumulation of scholarly source materials required for the final manuscript assignment
- Articulate ethical issues in research
  - Met through completion of on-line IRB tutorial; met through essay item on midterm examination
- Develop critical analysis tools for conducting quantitative research in kinesiology
  - Measured by final exam essay that involves critical analysis of a quantitative design
- Understand quantitative research issues that affect the quality of research
  - Met in an essay item on the final examination that involves the article critiques
- Demonstrate competence in data analysis
  - Addressed in the final manuscript
- Demonstrate proficiency in written communication
  - Addressed in essay items and final manuscript assignment
- Discern when and how to take into consideration group characteristics (e.g., age, gender, culture) when analyzing data
  - Addressed in essay item on final exam

**Department Graduate Program Learning Outcomes**

- Conduct and critique research using theoretical and applied knowledge
- Interpret and apply research findings to a variety of subdisciplines within kinesiology
- Effectively communicate essential theories, scientific applications, and ethical considerations in kinesiology
- Acquire skills to become agents of change to address issues in kinesiology through the application of knowledge and research

**General Notes**

- Projects and exams must be submitted and completed when scheduled; only serious and compelling circumstances will be considered for late submissions.
- Students are responsible for checking Canvas for course materials and other specific information including discussion threads that count toward course engagement and to receive help from peers and instructor.
- SPSS is available in the Applied Motor Behavior Lab, on library laptops, and in the open use area of the Academic Success Center on the ground floor of Clark Hall. Please go to this link to get a copy of SPSS for personal use: http://www.sjsu.edu/at/hd/software/downloads/.
- Group engagement is expected, including: individual and group interaction through discussion threads on Canvas, e-mail communication, and various classroom activities.
- Papers should be original compositions written specifically for this course.

**Required Texts/Readings**

Baumgartner, T.A., & Hensley, L.D. (2012). Conducting and reading research in kinesiology (5th ed.). Boston, MA: McGraw-Hill.

American Psychological Association. (2010). Publication manual of the American Psychological Association (6th ed.). Washington

Be sure to get the latest printing of the APA Manual; avoid the first printing of the manual as it contained errors.

**Assignments**

1. *Institutional Review Board required certification*

Institutional Review Board (IRB) approval is required prior to conducting experiments involving people and animals. At SJSU, IRB approval is linked to certification. Please go to the webpage of the Office of Graduate Studies and Research (http://www.sjsu.edu/research/irb/) and link to the IRB training found at the following link for researcher training: http://www.sjsu.edu/research/irb/irb-researcher-training/index.html . Create an account with CITI Program. Complete the human subjects research training. A certificate of your participation and completion of the training is required for completion of the Kin 250 class. Drop an electronic copy of your certificate by clicking on the appropriate link on the Assignments Page of Canvas. This is a criterion referenced assignment that bears no quantitative credit but must be completed to receive a final grade in Kin 250.

2. *Exams*

A midterm and final exam will be administered as indicated on the course calendar (last page of this Course Syllabus). Each exam will consist of essay items developed from classroom and Canvas discussions, and textbook readings.

3. *Research Project/Final Manuscript in the form of an APA manuscript for publication*

The research project/final manuscript will be developed across the semester by continuously advancing ideas through summaries of relevant scholarship and formulation of ideas. As well, the final manuscript will be no more than a maximum of 20 pages of text (not including Title page, Abstract, References, or Appendices). It will include analysis of a fabricated data set (only for educational purposes) and a scientific presentation of research created in APA style.

   *Summary* (2 submissions). Early in the semester, students will submit their first attempt at a 250 word summary outlining a research idea. The summary will be written in APA format. The first summary should be supported by a minimum of 5 scholarly sources narrowly focused to indicate a need for the study; the second summary should provide more than two times the source material as the first (10 or more sources) and much greater specificity and depth. In the second summary the variables for the design of the study and the procedures for conducting the experiment should emerge. Identification of variables and design for the study should begin to lead to a procedure for studying them. The second summary will be submitted approximately 2/3 of the way through the semester. Each summary is worth a total of 5 points: 5=exceeds expectations; 4=meets expectations; 3=somewhat meets expectations; 0=does not meet expectations. A more detailed assignment sheet for the summary assignment will be posted on Canvas.

*Final manuscript*. Students will identify a research idea to answer, for example, a relationships or differences question and through the research process lead to a publication style manuscript formatted according to APA, 6th edition. A fabricated data set will be designed that parallels real world variables and real world expectations for scores. The research design will include at least one independent and one dependent variable; additional variables relevant to the question under examination may be identified. Data representing a minimum of 20 participants must be presented. Please increase participant sample size where possible and appropriate. Your analyses should include at least (a) descriptive information on all variables, (b) an analysis to statistically address your null hypothesis, and (c) an inferential statistical analysis to address related questions. Note that the data for this assignment are fabricated only for the purposes of an educational experience. Ethical practice deems the data illegitimate. A detailed assignment sheet for the final manuscript assignment will be posted on Canvas.

4. *Article Critiques and Participation (Engagement)*

Students should attend class regularly ready to discuss a range of short research samples (snippets) to be discussed and critiqued in class. The due dates for critiques are listed on the course calendar. The short critique snippets will be available on Canvas for students to observe and critique. Participation in discussion threads on Canvas and activities in class are required.

5. *Presentation*

On the last night of class, December 11, 2016, students will participate in a group activity to present their research and to engage in critical analysis of research ideas.

## Course Activities and Evaluation

| Student Activity | Points for Assignment | Points Earned |
|---|---|---|
| Institutional Review Board certificate tutorial; complete, save certificate and drop into assignments on Canvas | Criterion referenced | |
| Midterm exam | 15 | |
| Final exam | 25 | |
| Class Project – Final Paper<br>    Component=Summary (5 points * 2 submissions=10 points)<br>    Component=Manuscript (35 points)<br>    Component=Presentation (5 points) | 50 | |
| Article Critiques and Class Engagement | 10 | |
| Total Points | 100 | |

All exams must be taken and all assignments must be accepted for a final grade to be assigned.
Passing grades will not be assigned when tests or assignments are missing.


Note that "All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades." See University Policy F13-1 at http://www.sjsu.edu/senate/docs/F13-1.pdf for more details.

| Grade Calculator | |
|---|---|
| Points Earned | Grade Assigned |
| 99-100 | A+ |
| 93-98.99 | A |
| 90-92.99 | A- |
| 88-89.99 | B+ |
| 83-87.99 | B |
| 80-82.99 | B- |
| 78-79.99 | C+ |
| 73-77.99 | C |
| 70-72.99 | C- |
| 68-69.99 | D+ |
| 65-67.99 | D |
| 63-64.99 | D- |
| ↓ 62.99 | F |

**Library Liaison**

Adriana Poo is our library liaison.  She can be reached at: Adriana.poo@sjsu.edu or by phone (408) 808-2019.

**Classroom Protocol**

Students are expected to be courteous during class. Any student engaging in disruptive behavior will be asked to leave. This includes arriving more than 10 minutes late to lecture and lab class. Please turn all cell phones, pagers, PDA's or other electronic devices to vibrate. Be sure that the vibration during class is not disruptive. If you are caught using a phone (even silently, e.g., texting), you may be asked to leave the classroom.

**University Policies**

To learn more about all of the San Jose State University policies (drop/add) and services (Counseling, Writing) please go to this easy quick link provided by SJSU: http://www.sjsu.edu/gup/syllabusinfo/.

# Kin 250, Quantitative Research Methods in Kinesiology, Kin 250
# Fall 2017 Course Schedule

| Date | Topics | Assignments |
|---|---|---|
| | Part 1:  Quantitative Research Designs | |
| August 28 | Introduction to the course; overview of research in kinesiology | Ch. 1 |
| September 4 | No class – Labor Day | |
| September 11 | Nature and purpose of research; understanding research and developing a research plan; systematic approaches to kinesiology research; research ethics; discussion of first submission of summary | Ch. 1, 2 |
| September 18 | Searching the literature; reading and evaluating, developing and writing research; using the *APA Manual*; meta-analysis designs | Ch. 3, 4, 11, 12 |
| September 25 | Descriptive research designs; sampling procedures; survey research; psychometric procedures in quantitative research<br>*DUE:*  First submission of 250 word summary of topic including 5 sources in APA format; summary should be submitted to Canvas by submitting to the appropriate link on the Assignment page by 11:59 pm on September 26 | Ch. 5, 7, 9 |
| October 2 | On-line class – *Stanford Expo*<br>For instructions see Canvas on October 3<br>How to conduct research A-Z:  writing proposals, theses, and manuscripts for publication; bring *APA Manual* to the on-line class<br>*DUE:*  IRB certificates submitted to Canvas link on the Assignment page by midnight | APA Manual<br>Ch. 15 |
| October 9 | Measurement issues in research<br>*DUE:*  Critique 1 and 2 on descriptive research – Materials for critiques can be found on-line; students should be prepared to discuss the materials in class. | Ch. 16, 17 |
| October 16 | Experimental research designs; understanding probabilities; writing hypotheses; discussion of second submission of summary | Ch. 8 |
| October 23 | Midterm Exam | |
| | Part 2:  Quantitative Research Statistics | |
| October 30 | Using Microsoft Excel and SPSS statistics; categorizing information; descriptive data analyses; chi square analysis<br>*DUE:*  Second submission of 250 word summary of topic including more than 10 source materials should be submitted to Canvas by clicking on the appropriate link on the Assignment page by midnight on October 31 | Ch. 13 |
| November 6 | Inferential data analysis<br>*DUE:*  Critiques 3 and 4 on chi square analysis | Ch. 14 |
| November 13 | Inferential data analysis; nonparametric equivalents to parametric data analyses<br>*DUE:*  Critiques 5 and 6 for correlation and t-tests | |
| November 20 | Inferential data analysis application for manuscripts | |
| November 27 | Statistical applications for manuscripts | |
| December 4 | Statistical applications for manuscripts | |
| December 11 | Presentation and critique of class projects – group activity<br>*DUE:*  Publication style manuscript due electronically by clicking on the appropriate link on the Assignments page on Canvas by Wednesday, December 14 at 11:59 pm | |
| December 18 beginning at 5:15pm | Final Exam is scheduled by the University Academic Calendar | |
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