

San José State University
College of Health and Human Sciences
Department of Kinesiology
Kin 250, Fundamentals of Quantitative Research
Section 1, Fall 2018, 3 units

Course and Contact Information

Instructor	Emily H. Wughalter, Ed.D.
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Office Hours	Mondays, 3:00-4:00 pm; Tuesdays, 11:00-12:00 am; hours arranged
Class Days/Time	Mondays, 4:00-6:45 pm
Classroom	SPX 151 or SPX 172 (Applied Motor Behavior Lab)
Prerequisites	Kin 175 or equivalent

Course Format

Canvas and MYSJSU Messaging

Course materials such as the course syllabus and major assignment handouts can be found on Canvas, the content management system we use at SJSU. From the SJSU home page you can easily find the Canvas entry page. Your SJSU ID # and password will work with this account and all others at SJSU, called your SJSUOne Account. Upon first arriving on your Canvas home page, be sure to adapt the settings so that your Canvas e-mail is forwarded to your regularly used e-mail account. All announcements for our class will be posted on Canvas and should be checked on a regular basis; students may choose an option to be alerted to their regular e-mail that announcements have been made. Moreover, be sure to regularly check your MySJSU messaging system (or other communication system as indicated by your instructors).

Technology Intensive, Hybrid, and Online Courses

Kin 250 is delivered in a format that is technology intensive. You may find that having a laptop helps you to interpret information presented on slides or you might find that written notes are favored. Every class will be associated with a set of slides found on the modules page of Canvas and that may serve as a base for more in depth note taking. Use your own personal systems for elaborating on the information provided in the slides and various other materials. Laptop computers are available for students to use while in the Applied Motor Behavior Laboratory. SPSS software is available on these laptops. As well, arrangements for computer and Internet access are needed outside the class. SPSS is available through the university for use on your own computer; please follow directions on the page found at this link <http://its.sjsu.edu/services/software/> to download SPSS and other software available to the SJSU community.

Course Description

Design, analysis and interpretation of quantitative research. Course focuses on the research process from the formulation of a research problem through the analysis of data. Topics include: ethics in research, research design and analysis issues and techniques, psychometrics, descriptive statistics, parametric and non-parametric inferential statistics, critiquing research. Prerequisite: KIN 175 (or equivalent).

Note: This course satisfies graduate-level GWAR in this master's program.

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
 - Met by conducting and interpreting a quantitative analysis in response to a problem 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.

Course Requirements and Assignments

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 10, 2018, 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 Component=Summary (5 points * 2 submissions=10 points) Component=Manuscript (35 points) 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.

“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 practice. Other course structures will have equivalent workload expectations as described in the syllabus.”

Final Examination

All exams must be taken, and all assignments must be accepted for a final grade to be assigned; passing grades will not be assigned if tests or assignments are missing. The exception is optional pop quizzes that cannot be made up. The final exam will be given on Monday, December 17, 2018, from 4:00 pm to 11:59 pm.

Grading Information

Grade Calculator	
Points Earned	Grade Assigned
99-100	A+
93-98.99	A
90-92.99	A-
88-89.99	B+
84-87.99	B
80-83.99	B-
78-79.99	C+
74-77.99	C
70-73.99	C-
68-69.99	D+
64-67.99	D
60-63.99	D-
↓ 59.99	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 regularly arriving more than 10 minutes late to lecture and lab classes. The use of anything that beeps or vibrates during class is disruptive and will not be tolerated. Please silence your phone. If you are caught using a phone for unrelated activities (even silently, e.g., texting), you may be asked to leave the classroom.

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity and accommodations are 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/> .

Quantitative Research Methods in Kinesiology, Kin 250 Fall 2018 Course Schedule

Date	Topics	Assignments
Part 1: Quantitative Research Designs		
August 27	Introduction to the course; overview of research in kinesiology	Ch. 1
September 3	No class – Labor Day	
September 10	On-line class -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 17	Searching the literature; reading and evaluating, developing and writing research; using the <i>APA Manual</i> ; meta-analysis designs	Ch. 3, 4, 11, 12
September 24	Descriptive research designs; sampling procedures; survey research; psychometric procedures in quantitative research 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 24	Ch. 5, 7, 9
October 1	For instructions see Canvas on October 3 How to conduct research A-Z: writing proposals, theses, and manuscripts for publication; bring <i>APA Manual</i> to the on-line class DUE: IRB certificates submitted to Canvas link on the Assignment page by midnight	APA Manual Ch. 15
October 8	On-line class -Measurement issues in research	Ch. 16, 17
October 15	Experimental research designs; understanding probabilities; writing hypotheses; discussion of second submission of summary 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. 8
October 22	Midterm Exam	
Part 2: Quantitative Research Statistics		
October 29	Using Microsoft Excel and SPSS statistics; categorizing information; descriptive data analyses; chi square analysis 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 29	Ch. 13
November 5	Inferential data analysis DUE: Critiques 3 and 4 on chi square analysis	Ch. 14
November 12	No Class – Veteran’s Day	
November 19	On-line class Inferential data analysis; nonparametric equivalents to parametric data analyses; application for manuscripts DUE: Critiques 5 and 6 for correlation and t-tests	
November 26	Statistical applications for manuscripts	
December 3	Statistical applications for manuscripts	
December 10	Presentation and critique of class projects – group activity 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 17 beginning at 5:15pm	Final Exam is scheduled by the University Academic Calendar	