KIN 610: Quantitative Analysis of Research in Kinesiology

Department of Kinesiology, Cal State Northridge
Fall 2022 | Tuesday, 4:00-6:45 p.m (RE 276)

Table of contents

Download the syllabus as PDF[1]

1 Instructor Info

Ovande Furtado Jr., Ph.D.

Dr. Furtado received a B.A. in Physical Education from the Federal University of Parana, Curitiba, PR - Brazil. He earned his M.S. and Ph.D. degrees in Motor Behavior from the University of Pittsburgh, PA. Dr. Furtado's line of research focuses on two main areas: (1) validation of observational models in psychomotor assessment instruments and (2) the relationship between motor skill competence, perceived motor competence, physical activity levels, and body composition.

Office Hours

See Section 1.5.5 for more information

Contact Info

Email: ovandef@csun.edu
Office: Redwood Hall 289

1.1 Course Description

This course focuses on the introductory statistical techniques used in social science research. Students will be introduced to concepts such as reliability, validity, measures of central tendency, variability, probability, and statistical techniques including: t tests (independent & dependent samples), Analysis of Variance (ANOVA), Chi-square, correlation, and regression.

Students are expected to take the material/concepts presented in this course and apply them through a series of homework assignments and quizzes. The overall goal of the course is not only to help students understand the mathematical/statistical concepts presented but also to assist in the application of these procedures.

---

[1]syllabus.pdf

1.2 Expectations and Goals

Upon completion of this course, you will be able to adequately:

1. Introduce statistical concepts utilized in research within the social sciences
2. Apply the mathematical/statistical techniques presented for social science research
3. Demonstrate an ability to analyze and interpret data within the social sciences
4. Provide practical examples as to when statistical techniques presented are appropriate methods for analysis.

1.3 Text, readings & instructional resources

1.3.1 Textbook (optional)

Weir and Vincent (2021)[1]

1.3.2 Other readings

All extra study content for this course can be found in the course's website[2].

1.3.3 Instructional resources

- jamovi Statistical Software[2] (Free)
- jamovi Video Tutorials[3] (Free)

1.4 Structure & Requirements

I will adopt the 4 "Ps"[4] in this course. This means that while taking this course you will be asked to `prepare`, `participate`, `practice`, and `perform`.

You are responsible for the material covered in class prior to attending each class. Note that the week's readings are specified in the course schedule[5].

In addition to these readings, the instructor may assign supplemental readings throughout the semester. These supplemental readings do not appear on the schedule as these readings will be assigned at the instructor's discretion.

The assignments used to enhance your learning experience in this course include:

---

[2]https://drfurtado.github.io/kin610/
[3]Class Dates: Aug 29, 2022 - Dec 12, 2022
[4]Students are expected to read and study the assigned chapters prior to attending each class meeting.
[5]index.qmd

1.4.1 Participation & Attendance

Class presence and participation points are given to encourage your active class participation and discussion. You will be rewarded with a perfect score `as long as you frequently come to class and actively contribute to the class discussion during lecture`s.

Although it is not required, most students send their professor a brief e-mail to explain their absence in advance.

1.4.2 Preparedness

You will be evaluated on your preparedness by submitting an assignment before each class (Major Takeaways).

1.4.3 Quizzes

Following each class, you will complete a multiple-choice quiz on the week's topic. You must score 100% on each quiz. If you score below 100%, you will have to retake the quiz until you score 100%. You can only move to the following quiz if you score 100% on a quiz.

1.4.4 Labs

Students will complete a series of labs on this course. The purpose of each lab is to assist students in applying their understanding of the statistical procedures discussed in class as well as to provide an opportunity for students to respond to the readings.

> ⚠️ Warning
>
> You are allowed to discuss the labs with other students (and with the instructor), but you must write final answers yourself, in your own words. Solutions prepared "in committee" or by copying or paraphrasing someone else's work are not acceptable; your hand-in assignments must represent your own thoughts (refer to [Academic Dishonesty Policy](#dishonesty) for more information); especially, the information about PLAGIARISM.

1.4.5 Exams

You will be required to complete two (2) exams in this course. Students may use their notes and textbook for the exams, but no other outside resource other than a calculator can be used.

Each exam have 10 questions, with each question worth 10 points. Exams must be completed in the allotted time. The focus of the exams (and quizzes) will be on concepts and interpretation, with most of the computational activities occurring in the homework assignments.

Although the quizzes and exams will not focus on previously tested material (they are not meant to be cumulative), knowledge of previously tested material may be inherently required to answer questions related to new material.

Most of the computational activities will be via the homework assignments. In addition, selected readings will be assigned through the semester. The content of these readings will be included on exam and quiz questions and in homework assignments.

1.5 Course Policy

I will detail the policy for this course below. Basically, don't cheat and try to learn stuff.

1.5.1 Grading

Assignment	Percentage
Participation & Attendance	5%
Weekly Quizzes	10%
Major Takeaways[6]	20%
Labs	25%
Exam 1	20%
Exam 2	20%

1.5.2 Grading Scale

A 93.00-100.00 | A- 90.00-92.99 B+ 87.00-89.99 | B 83.00-86.99 | B- 80.00-82.99 C+ 77.00-79.99 | C 73.00-76.99 | C- 70.00-72.99 D+ 67.00-69.99 | D 63.00-66.99 | D- 60.00-62.99 F <59.99

---

[6]The major takeaways assignment is due before class.

> **ℹ Note**
>
> In recognition of the fact that grading, however carefully done, will always be imperfect, this class will utilize a "round up" rule for assigning final grades. I will round up from .5% and above, but anything below this will round down. In other words, 79.5 will round up to 80, while 79.4 will round down to 79 even.

> **❗ Important**
>
> Requests for an Incomplete (I) must conform to university policies[a]. Among other requirements, "I" is possible only for instances in which you are demonstrating passing work in the class.
> _____
> [a]https://bit.ly/3bDxwZi

1.5.3 Attendance

Showing up is 80 percent of life – Woody Allen, via Marshall Brickman[7]

Attendance will be taken at the beginning of every class; please, plan accordingly.

1.5.4 E-mail

Please, do not use the built-in email (Inbox) in Canvas. Instead, use your CSUN Gmail to communicate with me.

If your message concerns a non-private matter (e.g., assignments, content, deadlines, etc.), then please post your question to our mailing list**, which can be answered by any student taking the course.** The mailing list address is provided in Canvas.

1.5.5 Office Hours

1.5.5.1 In-person

Thursdays from 2-4 pm at RE 289.

1.5.5.2 Online via Zoom

By appointment only: www.calendly.com/drfurtado

_____
[7]http://quoteinvestigator.com/2013/06/10/showing-up/#note-6553-1

1.5.6 Late Assignments

It is important to note that late assignments are assessed a 10% deduction for each day it is late, not to exceed four days. After the fourth day of the deadline, no assignments will be accepted. Therefore, it is important to plan ahead and submit all assignments on time to receive full credit for your work. The instructor reserves the right to make exceptions to this policy on a case-by-case basis.

1.5.7 Extra Credit

There is no individual extra credit granted. Therefore, do not plan to make-up poor grades at the end of the semester by asking to do extra credit work. I might provide extra credit opportunities, but these will be offered to the entire class, not to individuals.

1.5.8 Disabilities

Federal law mandates the provision of services at the university-level to qualified students with disabilities.

This instructor, in conjunction with California State University Northridge, is committed to upholding and maintaining all aspects of the federal Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973.

If you are a student with a disability and wish to request accommodations, please contact the office of Students with Disabilities Resources located in 110 Student Services Building, or call (818) 677-2684 for an appointment. Any information regarding your disability will remain confidential. Because many accommodations require early planning, requests for accommodations should be made as early as possible. Any requests for accommodations will be reviewed in a timely manner to determine their appropriateness to this setting.

1.5.9 Academic Dishonesty

TL;DR: Don't cheat!

*Please, **stop** and read the information below; this is important!*

> ❗ Important
>
> Each student is expected to be familiar with, and abide by, the conditions of student conduct, as presented in the CSUN Catalog, with emphasis on sections entitled, Student Conduct Code, Academic Dishonesty, Faculty Policy on Academic Dishonesty, and Penalties. Any student engaging in academic dishonesty (e.g., cheating, fabrication, fa-

cilitating academic dishonesty, plagiarism) is subject to discipline, which may include a failing grade in the course, and may also be subject to more severe discipline by the University. Students are encouraged to visit the link below and become familiar with the Standards for Student Conduct.
http://www.csun.edu/a&r/soc/studentconduct.html

1.5.9.1 About Plagiarism

Plagiarism means using words, ideas, or arguments from another person or source without citation[8]. Cite all sources consulted to any extent (including material from the internet), whether or not assigned and whether or not quoted directly. For quotations, four or more words used in sequence must be set off in quotation marks, with the source identified.

Plagiarism is a serious violation of the CSUN Student Conduct Code. Please read my comment about plagiarism under Homeworks. Any form of cheating will immediately earn you a failing grade for the entire course. **By remaining enrolled, you consent to this policy**.

> Turnitin (see below) will detect such misconducts as it checks every submission against a database of papers, as well as against the Internet.

What is Turnitin?

Turnitin[9] is an automated system that instructors can use to quickly and easily compare each student's assignment with billions of websites, as well as an enormous database of student papers that grows with each submission. Accordingly, you will be expected to submit assignments through the Canvas Assignment Tool in electronic format. After the assignment is processed, as an instructor, I receive a report from *Turnitin* that states if and how another author's work was used in the assignment.

1.6 Final (yet important) Notes

1.6.1 How to Access our Course and Get Started

- Log into Canvas: https://canvas.csun.edu
- Under "My Courses," locate our course and click on it.
- This will take you to the course home page.

---

[8]Except for Homeworks. your hand-in assignments must represent your own thoughts (refer to Academic Dishonesty Policy for more information); especially, the information about PLAGIARISM.
[9]https://www.turnitin.com/

1.6.2 Technology Requirements and Support:

- A computer and access to the internet (reliable connection)
- Firefox, Safari, etc. (web browser)

1.6.3 What I Expect of You:

1. Plan your schedule to ensure you several hours per week to spend on this class and take time to identify where and when you'll do your learning.
2. Review the due dates for the assignments (refer to our Course Schedule in Canvas) to orient yourself to the flow of the learning.
3. This course requires regular engagement and practice using jamovi (Statistical Package).

1.7 How to be Success in this Course

Consider the goals you have for engaging in this course as you determine how to allocate time to complete course requirements.

Each student has a different pace when comes to studying for a course. Thus, I will let you figure out how many hours you need to reserve each week for this course. Regardless of the number of hours chosen, try to divide your time so that you devote more time to `assignments` and `assigned readings`.
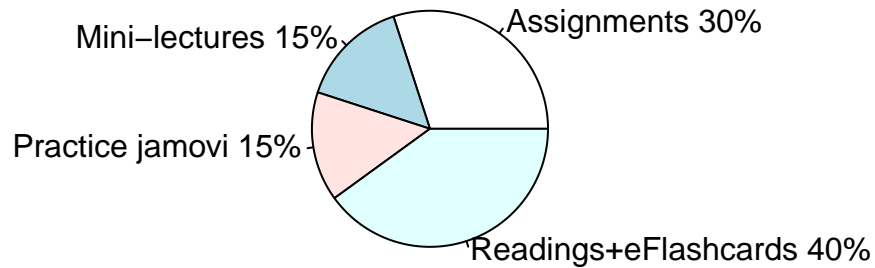
The Module Time chart below provides a visual representation of the typical time spent completing a module, followed by an example weekly schedule.

1.7.1 Module time

A typical module in this course is comprised of the following categories:

1. Readings + eFlashcards
2. Mini-lecture
3. Practice `jamovi`
4. Assignments (major takeaways, quizzes)

Module Time

1.7.2 Example Weekly Schedule

- Monday-Tuesday (or get a jump-start on the weekend)
    - Read the chapter(s) + Study the eFlashcards
- Wednesday-Thursday
    - Watch the mini-lectures + Practice jamovi
- Friday-Sunday
    - Complete the assignments

1.8 Student Support Services

CSUN aims to make all learning experiences as accessible as possible, and has a variety of resources available to help support students. If you believe the design of this course poses barriers to effectively participate or demonstrate your learning, please contact me to discuss possible options and adjustments.

- The IT Help Center (818)677-1400, helpcenter@csun.edu is available to help with Canvas, CSUN e-mail, SOLAR/Portal, and other technical issues.

- CSUN Device Loaner Program (https://bit.ly/3t1G0An) provides devices that can be checked out that includes laptops, webcams, hotspots and headsets
- The Learning Resource Center (818) 677-2033 The mission of the LRC is to enable students to improve their academic performance through a variety of learning programs, including workshops, one-on-one and group tutoring, supplemental instruction classes and interactive subject area computer programs and videos. Student who use the LRC learning programs will develop and strengthen their critical thinking skills, study strategies, writing skills and performance in subject matter courses.
- University Counseling Services (818) 677-2366, Bayramian Hall 520. UCS provides resources and information to assist students in dealing with a variety of large and small psychological obstacles that may interfere with academic progress and/or relationship satisfaction. Services include individual, group, and crisis counseling.
- In accordance with the CSUN Accessibility Policy (https://bit.ly/3yqGHE9), CSUN is working to ensure that campus communication and course materials are accessible to everyone. Please reach out to me if you have difficulty with any of the materials for this course.
- If you have a disability and need accommodations, please register with the Disability Resources and Educational Services (DRES) office or the National Center on Deafness (NCOD).
    - The DRES office can be reached at (818) 677-2684.
    - NCOD can be reached at (818) 677-2611.
    - Reasonable accommodations and services will be provided to students if requests are made in a timely manner and with appropriate documentation
    - If you would like to discuss your need for accommodations with me, please drop in office hours or contact me to set up an appointment.
- Food Pantry (https://bit.ly/38nTsVH) at CSUN: Anybody who faces challenges securing food or housing and believes this impacts course performance, should contact CSUN's Food Pantry website and the corresponding contacts. If you also feel comfortable contacting me, the department chair, or the Dean's Office, we can also facilitate assistance. You don't have to be alone in this moment.
- Emergency MataCare grants (https://bit.ly/2WAZkIz), one-time grants to prevent evictions, urgent child care issues, etc. - DACA (Deferred Action for Childhood Arrivals) Resources: Check out the Central American Resource Center facebook page (https://bit.ly/2Yg0p9z), legal resources listed on CSUN's Educational Opportunity Program (EOP) Dream Center that was created to support all undocumented students & allies (Dream Center flyer). CSUN President Harrison issued a support statement on the CSUN homepage for DACA and resources.
- Help lines (https://bit.ly/3sYbMOo)(after hours when the University Counseling is closed) for numerous topics/needs (e.g., suicide, drug, rape, LGBQT, military, or any crisis). You don't have to manage these feelings alone.
- Pride Center (https://bit.ly/3jqNZUi) offers support and resources to lesbian, gay, bisexual, transgender, queer, & questioning students, faculty, & staff.

- Klotz Student Health Center (https://bit.ly/3zx1Y0s): Numerous health services including primary care, dental, nutritional counseling, acupuncture, massage and lots more.
- Career Center (https://bit.ly/3jtTcL2) for resume writing & interviewing and much more; Matty's Closet (https://bit.ly/3jAResx) has free professional clothes for students who need interview or professional attire.
- USU 9https://bit.ly/38uz59j) for more student services; Clubs & Organizations (https://bit.ly/38tBhOa): Hopefully a dozen people have already advised you to "get involved" (https://bit.ly/3ysqYVb) at CSUN in something that interests you.
- Associated Students (https://bit.ly/3yuWjGT) offers recycling, and a Children's Center providing child care
- Financial Aid & Scholarships (https://bit.ly/3sYFzqr) offers aid for applications
- University Library https://bit.ly/3yuIEQ9) for many additional academic resources
- Veterans Resource Center (https://bit.ly/38qYtg7) assists CSUN students as they transition from military service to academic success.

Title 5, California Code of Regulations,§ 41301. Standards for Student Conduct – (a) Campus Community Values: The university is committed to maintaining a safe and healthy living and learning environment for students, faculty, and staff. Each member of the campus community should choose behaviors that contribute toward this end. Students are expected to be good citizens and to engage in responsible behaviors that reflect well upon their university, to be civil to one another and to others in the campus community, and contribute positively to student and university life.

CSUN with A HEART If you are facing challenges related to food insecurity, housing precarity/homelessness, mental health, access to technology, eldercare/childcare, or healthcare, you can find guidance, help, and resources from CSUN with A HEART (https://www.csun.edu/heart).

1.9 Course Schedule[10]

Textbook: Weir and Vincent (2021)[1]

Week	Date[11]	Reading[12]	Assignments[13]
Wk1[14]	Jan 26	Course Intro & Data Collection	Read and study the syllabus
2[15]	Feb 2	Ch01: Measurement, Statistics, and Research	Quiz; Major Takeaways

---

[10]The schedule is subject to change.

[14]/weeks/week-1.html

[15]/weeks/week-2.html

Week	Date[11]	Reading[12]	Assignments[13]
3[16]	Feb 9	Ch02: Organizing and Displaying Data Ch03: Percentiles	Quizzes; Major Takeaways
4[17]	Feb 16	Ch04: Measures of Central Tendency Ch05: Measures of Variability	Quizzes; Major Takeaways
5[18]	Feb 23	Ch06: The Normal Curve	Quiz; Major Takeaways; Homework 1
6[19]	Mar 2	Ch07: Fundamentals of Statistical Inference	Quiz; Major Takeaways
7[20]	Mar 9	Ch08: Correlation and Bivariate Regression	Quiz; Major Takeaways
8[21]	Mar 16	Ch09: Multiple Correlation and Multiple Regression	Quiz; Major Takeaways; Homework 2
9[22]	Mar 23	**Previously covered chapters**	na
10[23]	Mar 30	Ch10: The Student's t-test	Quiz; Major Takeaways
11[24]	Apr 6	Ch11: Simple Analysis of Variance	Quiz; Major Takeaways
12[25]	Apr 13	Ch12: Analysis of Variance With Repeated Measures	Quiz; Major Takeaways; Homework 3
13[26]	Apr 20	Ch14: Factorial Analysis of Variance	Quiz; Major Takeaways
14[27]	Apr 27	Ch15: Analysis of Covariance	Quiz; Major Takeaways

[16]/weeks/week-3.html
[17]/weeks/week-4.html
[18]/weeks/week-5.html
[19]/weeks/week-6.html
[20]/weeks/week-7.html
[21]/weeks/week-8.html
[22]/weeks/week-9.html
[23]/weeks/week-10.html
[24]/weeks/week-11.html
[25]/weeks/week-12.html
[26]/weeks/week-13.html
[27]/weeks/week-14.html

Week	Date[11]	Reading[12]	Assignments[13]
15[28]	May 4	Ch16: Analysis of Nonparametric Data	Quiz; Major Takeaways
16[29]	May 11		
Exam 2	TBD	All chapters covered	na

1.10 References

1. Weir, J. P., & Vincent, W. J. (2021). *Statistics in Kinesiology.* Human Kinetics. https://us.humankinetics.com/products/statistics-in-kinesiology-5th-edition-with-web-resource
2. The jamovi project. (2021). *Jamovi.* Retrieved from https://www.jamovi.org[30]

---

[28]/weeks/week-15.html

[29]/weeks/week-16.html

[11]Class Dates: Aug 29, 2022 - Dec 12, 2022

[12]Students are expected to read and study the assigned chapters prior to attending each class meeting.

[13]The major takeaways assignment is due before class.

[30]Retrieved%20from%20https://www.jamovi.org