

University of North Texas
Department of Kinesiology, Health Promotion and Recreation
KINE 4050 Section 2, Fall 2026
Quantitative Analysis in Kinesiology

Catalog Description:

A study of measurement theory, instruments used to collect data and procedures for data analysis specific to exercise and sports. The use of computers for data analysis is included. Prerequisite(s): MATH 1680. Kinesiology majors must have passed KINE 3080 and KINE 3090 with a minimum grade of C and have a 2.5 overall GPA or higher.

Please see the instructor immediately if you have not completed the prerequisites for this course.

Professor Information: Myungjin Jung, Ph.D.

- Class times: Mon & Wed, 12:45 – 2:05 PM
- Classroom: BLB 080
- Office: PEB 210E; (940) 369-7494 or (940) 565-2651 (Main Office)
- Outlook e-mail: myungjin.jung@unt.edu
- Office Hours: Mon & Wed, 9:00 – 11:00 AM, other times by appointment only

Course Information:

1. Recommended Texts

- Morrow, J.R., Jr., Mood, D. P., Zhu, W., & Kang, M. (2023) *Measurement and Evaluation in Human Performance*, (6th ed.) Champaign, IL: Human Kinetics.
- Supplementary materials may be used throughout the course and will be made available via Canvas.

2. Canvas

- All course materials, announcements, and assignments will be available on Canvas.

3. Internet Access

- Students must have reliable Internet access, preferably high-speed Internet, throughout the duration of the course.

4. Microsoft Office Programs (Excel) and Statistical Software (SPSS)

- Students must have access to a computer with Microsoft Excel installed.
 - Please refer to the UNT UIT Student Help Desk for instructions on installing

Microsoft Office on your personal device: <https://it.unt.edu/installoffice365>

- Students must also have consistent access to a professional word processor and presentation/PDF software.
- SPSS statistical software must be downloaded from:
<https://aits.unt.edu/software/spss.html>
 - Detailed installation instructions are provided in the “SPSS Download” PDF file available on Canvas.

Course Description:

Quantitative Analysis in Kinesiology is a course designed to teach students the importance of proper measurement and evaluation procedures in the collection, analysis, and interpretation of data. The course covers measurement theory, statistical concepts and applications, hypothesis testing, data collection instruments, and data analysis procedures specific to the affective, cognitive, and psychomotor domains. Note that this course includes hands-on data analysis activities using computer applications.

Course Structure:

This course will be conducted fully in-person. Class sessions will include both lecture-based instruction and hands-on applications of course concepts using statistical software such as SPSS and Microsoft Excel. Topics covered in class will include measurement theory, hypothesis testing, data analysis procedures, and interpretation of statistical results.

Canvas will still be used to provide supplementary course materials, announcements, assignments, and occasional learning resources. Students are expected to regularly check Canvas and complete assigned coursework by the posted deadlines.

Because this course includes hands-on data analysis activities, students are required to bring a laptop capable of running both Microsoft Excel and SPSS to class. If you do not have access to such a device, you may rent one from the UNT Library (<https://library.unt.edu/services/laptop-checkout/>) or the UIT Help Desk (<http://www.unt.edu/helpdesk/index.htm>).

Course Objectives:

The objective of this course is to introduce students to the fundamental concepts of measurement and evaluation used in Exercise and Sport Science.

Upon successful completion of this course, students will be able to:

- Understand statistical concepts related to measurement and evaluation.
- Distinguish between reliability and validity in measurement.
- Collect and analyze health-related data using appropriate statistical procedures.
- Evaluate and interpret data analysis results and communicate findings effectively.

Course Expectations:

- **Keeping up with course materials and announcements:** It is your responsibility to stay current with course materials, assignments, and announcements throughout the semester. Students are expected to regularly check the Canvas course page and their UNT email for important course-related updates. Please check the Announcements section first, as important information will be posted there.
- **Academic performance concerns:** If at any point during the semester you are unhappy with your performance in this class, please contact the instructor as soon as possible—do not wait until after the final exam. No additional regular or extra credit opportunities will be available at that time.
- **Accommodations:** If you have any special learning needs, please inform the instructor as soon as possible and provide the appropriate documentation from the Office of Disability Accommodation.
- **Academic integrity:** Academic dishonesty (e.g., copying, plagiarism, cheating) will not be tolerated. Such actions will result in a failing grade for the course and may be reported to the Dean of Students for further discipline.

Grading Procedures:

- **Attendance (20 pts total):** Attendance in this course will be assessed through completion of required in-class activities. On Mondays, attendance will be determined by completion and submission of the scheduled quiz. On Wednesday, students will complete an in-class SPSS practice activity or data analysis exercise and submit the required work to the instructor via email before the end of the class period. Specific submission requirements for Wednesday will be provided during class.

To receive attendance credit, students must be present in class, complete the required activity, and submit it by the end of the class period. Attending class without completing and submitting the required work will not count toward attendance. Failure to complete or submit the required activity by the end of class will result in no attendance credit for that class session. No make-up attendance credit will be provided unless the absence is university-excused or prior approval has been granted by the instructor.

- **Exams (200 pts total):** Four exams will be administered during the course. Two exams will be written, in-class exams consisting of multiple-choice, true/false,

matching, fill-in-the-blank, and short-answer questions. Each in-class exam will be worth 50 points. The other two exams will be take-home data analysis exams, each worth 50 points, and will require students to conduct statistical analyses using SPSS and interpret the results based on course content and lecture materials. If you fail to complete an exam by the due date, you will receive a grade of 0. No make-up exams will be offered unless the absence is university-excused or prior approval has been granted by the instructor.

- **Quizzes (80 pts total):** Eight open-book quizzes will be administered during the course, each worth 10 points. Quizzes will be completed during class on Monday before the end of the class period and will assess your understanding of lecture materials and course concepts. If you fail to complete and submit a quiz, you will receive a grade of 0 for the quiz and will be considered absent for that class session. No make-up quizzes will be offered unless the absence is university-excused or prior approval has been granted by the instructor.
- **Group Project Presentation (100 pts total):** Students will complete a group-based project designed to provide hands-on experience in applied quantitative analysis. Students will work in groups of approximately four members to develop a simple and interesting research question, collect original data from the UNT community, and apply an appropriate statistical technique covered in the course to address their research questions.

Appropriate statistical techniques may include:

- Correlation
- Linear regression
- T-test
- One-way ANOVA
- Moderation
- Mediation

This project is a classroom learning activity conducted solely for instructional purposes. Data collected for this project may not be used for research, publication, presentation outside the course, or other dissemination. All projects must use minimal-risk data collection methods, such as brief surveys, and may not involve invasive procedures, physiological testing (e.g., $VO_{2\max}$ testing or blood sampling), or other procedures that could pose safety or ethical concerns.

Each group must collect data from a minimum of **60 participants**. Because the primary purpose of this project is to practice statistical analysis rather than conduct

publishable research, a formal power analysis is not required. Survey instruments should be brief and focus on a small number of variables using a limited number of questionnaire items.

Examples of acceptable research questions include:

- *Example 1: Is there a statistically significant difference in weekly physical activity among first-year, sophomore, and junior students at UNT?*
- *Example 2: Is there a statistically significant difference in weekly physical activity between male and female students at UNT?*
- *Example 3: Is there a significant association between weekly physical activity and self-reported sleep duration among UNT students?*

Presentation Requirements (Group Submission): Each group will deliver a PowerPoint presentation lasting **no more than 10 minutes**. The Presentation should include the following:

- 1) **Background:** State the research question and briefly explain why the group selected the topic. A literature review or academic justification is not required.
- 2) **Methods:** Describe the participants, main variables and how they were measured, data collection procedures, and statistical analysis performed.
- 3) **Results:** Report relevant assumption checks, key statistical results, and appropriate visualizations (e.g., tables or graphs).
- 4) **Discussion:** Interpret the main findings, provide possible explanations for the results, and briefly discuss what the group learned from the analysis. A formal academic or literature-based discussion is not required.

In addition to the presentation slides, each group must submit the cleaned SPSS dataset (**.sav**) used for the final analysis. The submitted dataset must be the final version used to generate all statistical results reported in the presentation.

Evaluation Procedures:

		Grading Scale
1. Attendance	20 pts	90 - 100% = A
2. Quizzes (8)	80 pts (10 pts each)	80 - 89% = B
3. Exams (4)	200 pts (50 pts each)	70 - 79% = C
4. Group Project	100 pts	60 - 69% = D
		Below 59% = F

Total	400 pts
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TENTATIVE AGENDA: If changes are made, you will receive advance notification in class.

Week	Subject	
Week 1 (8/17, 19)	Overview of the course (8/17) Concepts in Tests and Measurements (8/19)	
Week 2 (8/24, 26)	Data Entry & Descriptive Statistics	Quiz #1 (8/24)
Week 3 (8/31, 9/2)	Correlation Simple and Multiple Linear Regression	Quiz #2 (8/31)
Week 4 (9/7, 9)	<i>Labor Day (no class on 9/7)</i> Applying AI Technologies in Sports – online	
Week 5 (9/14, 16)	Independent-samples t-test	Quiz #3 (9/14)
Week 6 (9/21, 23)	Paired-samples t-test	Quiz #4 (9/21)
Week 7 (9/28, 30)	SPSS work review (9/28) Exam 1 (9/30)	
Week 8 (10/5, 7)	Take-Home Data Analysis Exam 1 (10/7)	
Week 9 (10/12, 14)	One-way ANOVA	Quiz #5 (10/12)
Week 10 (10/19, 21)	Moderation of Multiple Regression	Quiz #6 (10/19)
Week 11 (10/26, 28)	Mediation of Multiple Regression	Quiz #7 (10/26)
Week 12 (11/2, 4)	<i>Group Project Meeting with Instructor</i>	

Week 13 (11/9, 11)	Criterion-referenced Validity and Reliability – online	Quiz #8 (11/11)
Week 14 (11/16, 18)	SPSS work review (11/16) Exam 2 (11/18)	
Week 15 (11/23, 25)	<i>Thanksgiving Break (no classes)</i>	
Week 16 (11/30, 12/2)	Presentation of group project	
Week 17 (12/7, 9)	Take-Home Data Analysis Exam 2 (12/7)	

Note. All groups are required to schedule a **10-minute project meeting** with the instructor during regular class time in **Week 12**. Additional details regarding available time slots will be provided later. Prior to the meeting, each group should prepare a **clear research question**, a brief description of the proposed variables and data collection plan, and the **planned statistical analysis** based on techniques covered in this course. The purpose of this meeting is to receive feedback on feasibility, appropriateness, and clarity of the proposed project before beginning data collection. Groups should not begin data collection until after this meeting. Preparation for the meeting may be presented orally, in a brief written document, or in PowerPoint slides, at the group's discretion.

UNT POLICIES

Attendance Policy:

Research has shown that students who attend class are more likely to be successful. You should attend every class unless you have a university excused absence such as active military service, a religious holy day, or an official university function as stated in the [Student Attendance and Authorized Absences Policy \(PDF\)](https://policy.unt.edu/policy/06-039) (<https://policy.unt.edu/policy/06-039>). If you cannot attend a class due to an emergency, please let me know. Your safety and well-being are important to me.

Attendance will be taken at the BEGINNING of the class and/or at other times during the class. If you are absent when attendance is taken, you ARE ABSENT. Even if you are in class a few minutes later (or earlier), you will be counted absent if you are not present when attendance is taken. If you need to arrive at a specific class later than normal or leave earlier than normal, please let the instructor know. Arriving late or leaving early is NOT to be a general practice. If this is your practice, you will simply be counted absent. We need you in class to participate and engage in class activities. It is impossible for the instructor to differentiate between “excused and unexcused” absences. Thus, an absence is an absence. To be fair to all, the instructor does NOT DIFFERENTIATE AMONG ANY TYPE OF ABSENCES. If you are absent on military orders, please provide a copy of your orders to the Instructor PRIOR for your leaving. If you are traveling on the University of North Texas business, you MUST complete the required form from the Office of the Dean of Students to not have the absence count against you. This form MUST be turned in within 2 class periods of your return to class. Otherwise, you will be counted absent.

All students are expected to arrive on time, have reviewed the class Internet site, have read material and watched presentation slides video PRIOR to coming to class and be prepared to participate in class activities. Students are NOT allowed to read the newspaper, conduct other work, sleep, or otherwise be non-participating in class. Such student actions are unprofessional and disrespectful to fellow classmates and to the instructor. Such actions disturb your classmates and/or the professor. Students who behave in any of these inappropriate manners will be asked to leave the classroom and will be counted absent for that period. Do NOT simply stop coming to class without taking formal steps to drop the course. The instructor will drop you “passing” (WP) until the point in the semester where this is no longer possible. Students who simply stop coming to class and do not go through the formal drop procedure will be assigned a grade of “F” at the end of the semester.

Late Assignments:

A 25% deduction per day late will be applied to all assignments that are completed after the posted due date (i.e., 1m-24h late= -25%, 24-48h late= -50%, 48-72h late= -75%, >72 hours late= 0). If you experience extenuating circumstances that may warrant an extension, please speak with the instructor **PRIOR** to the assignment deadline.

Syllabus Change Policy:

The instructor reserves the right to amend this syllabus in Canvas as necessary.

Academic Integrity Policy:

According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. Students found guilty run the risk of having their score changed to zero, receiving a grade of F for the course, and/or dismissal from the University. Students should be familiar with the academic dishonesty policy at UNT. Please review the student rights and responsibilities information online.

Academic Success Resources:

UNT strives to offer you a high-quality education and a supportive environment, so you learn and grow. As a faculty member, I am committed to helping you be successful as a student. To learn more about campus resources and information on how you can be successful at UNT, go to unt.edu/success and explore unt.edu/wellness. To get all your enrollment and student financial-related questions answered, go to scrappysays.unt.edu.

American with Disabilities Compliance:

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodation at any time; however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Office of Disability Accommodation website at <http://www.unt.edu/oda>. You may also contact them by phone on 940.565.4323.

Family Educational Rights and Privacy Act (FERPA Information):

Students have the right to expect their grades to be kept confidential. There are a few things, because of the size and/or nature of the class, the instructor must advise you regarding collection and distribution of test results, quiz scores, assignments, projects, etc. During this class, it may be necessary for you to pass your assignments forward to the instructor or it may be necessary for the instructor to call your name and then return your completed assignment to you by passing it across the room. The instructor, under the reasonable assumption guidelines, assumes students are collecting ONLY their own materials. Every attempt will be made to keep your information confidential. Neither your course grades nor grades for any assignment will be posted in a way that could result in your being identified by other students or faculty members.

Acceptable Student Behavior:

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Center for Student Rights and Responsibilities to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for students apply to all instructional forums, including university and electronic classrooms, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at www.unt.edu/csrr.

Emergency Notification & Procedures:

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials [Campus Closures Policy \(https://policy.unt.edu/policy/15-006\)](https://policy.unt.edu/policy/15-006).

SPOT (Student Perceptions of Teaching):

The Student Perceptions of Teaching (SPOT) is a requirement for all organized classes at UNT. This short survey will be made available to you at the end of the semester, providing you with a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider the SPOT to be an important part of your participation in this class. Completion of the SPOT evaluation will add 10 points to your final grade. To receive credit for the SPOT evaluation, please complete the evaluation and submit a screen print of your receipt to me.

Email Etiquette:

Connect with me through email and/or by attending office hours. During busy times, my inbox becomes rather full, so if you contact me and do not receive a response within three business days, please send a follow-up email. The only email address to be used for the class is your official UNT email address. Please check it frequently. Please note that questions about grades and/or specifics about exam questions will NOT be answered by email.