



University of North Texas
College of Health and Public Service
Department of Kinesiology, Health Promotion, & Recreation
KINE 4050
Quantitative Analysis in Kinesiology

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Office Hours: Mondays 8:00am-11:00am *or by appointment*
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Course Description

3 hrs. 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.

Pre-requisites: PHED 1000, KINE 2030, and KINE 2050 with a cumulative GPA of 3.0 across all three courses. MATH 1680 is also required.

Required Textbooks

Weir, Joseph P. & Vincent, William J. (2021). *Statistics in Kinesiology (5th Edition)*. Human Kinetics. ISBN: 9781492560715

Bailey, C. (2021). *Quantitative Analysis in Exercise and Sport Science*. University of North Texas Libraries. <https://dx.doi.org/10.12794/sps.ot-quantitative-analysis-exss>

Course Objectives

By the end of this course, students will be able to:

1. Understand and apply basic statistical concepts in human performance measurement and evaluation.
2. Understand the differences between reliability and validity in measurement.
3. Be comfortable with collecting and analyzing human performance data.
4. Evaluate and interpret results from data analyses in order to create actionable feedback.

Course Expectations

As the instructor in this course, I am responsible for

- providing course materials and guidance that will assist & enhance achievement of the stated course objectives,
- providing timely and helpful feedback within the stated guidelines,
- challenge and expose students to new learning opportunities, and
- assisting in maintaining a positive learning environment for everyone.

As a student in this course, you are responsible for

- reading and completing all requirements of the course in a timely manner,
- assisting in maintaining a positive learning environment for everyone,
- and upholding the utmost standards in academic integrity.

Contacting Your Instructor

Email is the preferred method of communication for this course. Prior to messaging your professor, please check the syllabus and Canvas for the answer. A typical response time on weekdays is 24 hours or less; messages sent over the weekend will usually not receive a response until the following Monday.

Course Technology & Canvas

All students in this course will require a computer with Microsoft Office suite installed. Other similar software (i.e., Google Sheets, Apple Numbers, etc.) may be used for class assignments and participation, however, all demonstrations and lessons will be performed via Microsoft Excel. Materials for this course will be available on Canvas (lecture slides, notes, assignments, syllabus, schedule, etc.). Several assignments and evaluations will be completed through Canvas. If you have issues with Canvas, contact your instructor immediately. Assignments and/or quizzes may have time limits or strict deadlines, and undocumented technical difficulties will not be accepted as an excuse for late/incomplete work.

Technical Support

Part of the working in the technological environment involves dealing with the inconveniences and frustrations that can arise when technology breaks down or does not perform as expected. Ultimately, you are responsible for technical issues on your end. Please contact the Student Help Desk (Sage Hall 130, 940-565-2324, helpdesk@unt.edu) for assistance when technical issues arise.

Course Requirements

There are multiple types of assignments for this course and descriptions of each are below. They will reinforce and facilitate application of the material learned from the readings and class sessions. All assignments have tentative due dates that coordinate to their topic, and it is expected that they will be turned in on time. In rare cases, late assignments may be accepted for a reduced grade, but this is at the discretion of the professor. The assignments are as follows:

Assignment/Assessment	Points toward Overall Grade
Class Activities (15 points each)	75
Module Quizzes (10 points each)	110
Assignments (25 points each)	275
Assignment Quizzes (20 points each)	140
Exams (150 points each)	300
Data Project	125

Grading Scale by Points

1,000 – 900 = A 899 – 800 = B 799 – 700 = C 699 – 600 = D Less than 600 = F

Class Activities

Throughout the semester, there are several class activities that are to be completed during class time. Each activity is worth 15 points towards your final grade. Students must be present during lecture to complete in-class assignments. Unexcused absences will not be allowed for make-up opportunities. Please note that some activities may be completed asynchronously or online during class time. Full instructions and due dates for each assignment will be discussed in class and available on Canvas.

Module Quizzes

There are module quizzes throughout the semester that assess understanding of content from assigned readings. Quizzes are to be taken online through Canvas. Quizzes will be available for students to take from midnight on Tuesday and will be closed on Sunday at 11:59pm. Quizzes are available for students to take at a time of their convenience. Once the quiz is started, you cannot exit it, and a time limit will be enforced.

Assignments & Assignment Quizzes

Throughout the semester, there are assignments to apply lessons & course content to real-life examples and data sets. Some assignments may include discussion posts to Canvas, data organization and calculations made in Excel, or assignments related to class discussions and presentations. Each assignment is worth 25 points towards your final grade. Full instructions and due dates for each assignment will be discussed in class and available on Canvas.

Several assignments may also have a coordinating Assignment Quiz. These consist of quiz questions pertaining to data organization, analyses, and interpretation of the respective assignment. It is highly recommended that students complete the Assignment in its entirety before attempting the Assignment Quiz. Each Assignment Quiz is worth 15 points towards your final grade.

Exams

There will be two exams during the semester, and each will be worth 150 points. Exams are take-home and are to be completed individually online via Canvas. Ideally, students are to complete the exam during class time on Thursday, but exams will be available from 12:00am and will close on Thursday at 11:59pm for students to take at a time of their convenience. Once the exam is started on Canvas, you cannot exit it, and a time limit will be enforced. Only one attempt will be allowed. If you fail to complete an exam by the due date you will be given a grade of 0. No make-up will be offered.

Data Project

To demonstrate mastery of quantitative analysis, students will be required to complete final project that will be worth 125 points towards your final grade. Project components are to be submitted on Canvas as well as presented in-class. Project details and instructions will be discussed in class and available on Canvas.

UNT Policies

Academic Integrity Standards and Consequences

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.

Throughout the semester, you will or may use specific Generative AI (GenAI) tools for certain assignments, with guidance on responsible use. These assignments help build ethical resilience and GenAI literacy, preparing you for careers in a GenAI oriented workforce. In accordance with the UNT Honor Code, unauthorized use of GenAI tools is prohibited. Using GenAI content without proper credit or substituting your own work with GenAI undermines the learning process and violates UNT academic integrity policy. If you're unsure whether something is allowed, please seek clarification.

ADA Accommodation Policy

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time; however, ODA notices of 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 accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website at disability.unt.edu

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 the UNT Learning Management System (LMS) for contingency plans for covering course materials.

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 Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at deanofstudents.unt.edu/conduct.

Retention of Student Records

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University's policy. See UNT Policy 10.10, Records Management and Retention for additional information.

Tentative Course Schedule

Dates	Module # and Topic		Assignment/Assessments Due
Aug. 17-23	1	Introductions & Syllabus Review Chapter 1: Measurement, Statistics Bailey Chapter 1: Intro to Quant	<i>In-Class Activity 1</i> on Tues. Aug. 18 <i>Module 1 Quiz</i> and <i>Assignment 1</i> due before 11:59pm on Sunday, Aug. 23
Aug. 24-30	2	Chapter 2: Organizing/Displaying Data; Chapter 3: Percentiles Chapter 6: The Normal Curve	<i>Module 2 Quiz</i> and <i>Assignment 2</i> due before 11:59pm on Sunday, Aug. 30
Aug. 31 -Sept. 6	3	Descriptive Statistics Chapter 4: Central Tendency Chapter 5: Variability	<i>Module 3 Quiz</i> and <i>Assignment 3</i> and <i>Assignment 3 Quiz</i> due before 11:59pm on Sunday, Sept. 6
Sept. 7-13	4	Chapter 8: Correlation & Prediction Chapter 9: Multiple Regression	<i>Module 4 Quiz</i> and <i>Assignment 4</i> and <i>Assignment 4 Quiz</i> due before 11:59pm on Sunday, Sept. 13
Sept. 14-20	5	Chapter 7: Statistical Inference Chapter 1: Research & Hypothesis Testing	<i>In-Class Activity 2: Research Design</i> <i>Module 5 Quiz, Assignment 5, Assignment 5 Quiz</i> due before 11:59pm on Sunday, Sept. 20
Sept. 24	<i>Take-Home Exam 1</i> on Canvas (closes at 11:59pm on Thursday, September 24)		
Sept. 28 - Oct. 4	6	Chapter 10: T-Tests – Comparing Means from Two Sets of Data	<i>Module 6 Quiz</i> and <i>Assignment 6</i> and <i>Assignment 6 Quiz</i> due before 11:59pm on Sunday, Oct. 4
Oct. 5-11	7	Chapter 11: Simple ANOVA Chapter 12: Repeated Measures Project Group Assignments	<i>Activity 3 Quiz, Module 7 Quiz, Assignment 7, & Assignment 7 Quiz</i> due before 11:59pm on Sunday, Oct. 11
Oct. 12-18	8	Reading Research Articles Chapter 13: Reliability Bailey Chapter 6: Reliability & Validity	<i>Module 8 Quiz</i> and <i>Assignment 8</i> and <i>Assignment 8 Quiz</i> due before 11:59pm on Sunday, Oct. 18
Oct. 19-25	9	Bailey Chapter 11: Fitness Testing Bailey Chapter 12: Sports Performance Assessment	<i>In-Class Activity 4: Field Testing</i> <i>Module 9 Quiz</i> and <i>Assignment 9</i> due before 11:59pm on Sunday, Oct. 25
Oct. 26- Nov. 1	10	Article: Thornton et al., 2019 Routledge Chapter 4: Dashboards	<i>Module 10 Quiz</i> and <i>Assignment 10</i> and <i>Assignment 10 Quiz</i> due before 11:59pm on Sunday, Nov. 1
Nov. 2-8	11	Project Presentations – Draft 1	<i>Data Project</i> due before 11:59pm on Sunday, Nov. 8 <i>Assignment 11 (Draft 1 Groups)</i> due during class
Nov. 9-15	11	Project Presentations – Draft 2	<i>Assignment 11 (Draft 2 Groups)</i> due during class
Nov. 16-22	11	Project Presentations – Draft 3	<i>Assignment 11 (Draft 3 Groups)</i> due during class
Nov. 23-29	THANKSGIVING BREAK – No Class All Week		
Dec. 3	<i>Take-Home Exam 2</i> on Canvas (closes at 11:59pm on Thursday, Dec. 3)		
Finals Week	No Class Meetings		<i>Activity 5: Course Reflection</i> due before 11:59pm on Tuesday, Dec. 8