ACKNOWLEDGEMENT

UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xwməθkwəy̓əm (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on their culture, history, and traditions from one generation to the next on this site.

COURSE INFORMATION

Course Title	Course Code	Credit Value	Location	Class Meeting Times
Introduction to Statistics in Kinesiology	KIN 206 (002) This course was formally listed as KIN 371	3 credits	Buchanan (BUCH) A101	Monday, Wednesday, and Friday 8-9am

INSTRUCTOR CONTACT INFORMATION

Students are always welcome to contact the instructor and teaching assistants via email. When contacting the instructor and teaching assistants, students should use professional email etiquette and should have the course code (KIN 206) in the subject line. Please keep in mind that it may take us (myself and the teaching assistants) up to 48 hours to respond to your email during the week and we do not check our email on weekends. Please keep this in mind around assignment due dates and just before the midterms and final exam.

Some questions can be answered through email while others need to be discussed in a meeting. As such, students are *strongly encouraged to stop by during virtual and/or in person office hours*.

Course Instructor	Contact Details	Office Hours
Carolyn McEwen, PhD	Email: carolyn.mcewen@ubc.ca Typically, I am able to respond to email inquiries within 48 hours during business hours (Monday-Friday, 9-5 PT).	Tuesdays (10-11am PT) – **Online** (Zoom) Wednesdays (9:30-10:30am PT) – **In person** (Osborne Unit 2 room 208)

Teaching Assistant Information and Office Hours

Teaching assistants (TAs) are available to meet with students online through Zoom or in person given their preference. Please send an email to the TA assigned (by your last name) to you with your availability to schedule a time that is convenient for both you and the TA.

Students will be assigned alphabetically by their last name to a teaching assistant. This teaching assistant will be a point of contact for students throughout the term if students have questions or concerns.

Teaching Assistant	Contact Details	TA will be working with students (assigned by last name)
Brook Hadwen		A-L
Ben Hives		M-Z

COURSE DESCRIPTION

During the course, we will cover the following themes: stages of the research process, examining data, descriptive statistics, variability, normal curve, standard normal curve, Z-scores, standard error, basic probability and hypothesis testing, statistical inference, t-tests, correlations, regression, one-way analysis of variance (ANOVA), and select nonparametric analysis.

COURSE RATIONALE

The focus of this course is to develop students' **research literacy** skills. The ability to critically evaluate research and information is essential for students to foster evidence-based practice in their chosen careers (e.g., physiotherapist, personal trainer, physical educator etc.). Statistical analyses are used to summarize and make sense of quantitative data. Research within Kinesiology is often quantitative in nature and employs the scientific method. An understanding of statistical analyses and how to interpret them are thus essential to be able to read and critically evaluate research in Kinesiology. Knowledge of statistical analyses and quantitative research design will allow students to understand and critically evaluate course content in Kinesiology courses.

COURSE LEARNING AIMS AND OUTCOMES

The overarching aim of this course is for students to develop research literacy skills to foster evidence-based practice in their chosen careers and the ability to critically evaluate Kinesiology course content. Accordingly, students can expect to develop the following skills throughout KIN 206.

The ability to:
- Read and interpret a results section of a peer-reviewed journal article.
- Ask critical questions when reading academic journal articles.

Specific Learning Objectives:

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

- Perform and interpret basic statistical procedures.
- Interpret results based on research hypotheses and statistical output.
- Identify statistical assumptions.
- Match statistical methods with specific research questions and designs.
- Use JASP (statistical software) to organize data and analyze and interpret basic statistics

CLASS FORMAT

KIN 206 is a 3 credit course that will be delivered over one semester (January-April 2023).

The course content is delivered in two formats:

1. **In-person classes.** In person classes (BUCH A101) will take place during scheduled class time (Monday, Wednesday, and Friday 8-9am PT). In person classes will include course content delivery (e.g., lectures), review exercises, and interactive activities. Class time will be recorded and posted to Canvas (under the corresponding module). Class recordings will only capture the

front of the classroom and may not capture all the content presented. Students are responsible for all content covered in class time regardless of whether it is captured in the recording or if the technology fails. Students are strongly encouraged to attend in-person meetings to benefit from interacting with the instructor (e.g., ask questions) and other students. The intent of recording the in-person classes is to provide access to course material for students who may be ill and to encourage them to stay home if ill.

2. **Work to be done outside of class time.** Online self-paced activities include some course content, recorded videos, self-assessment questions, reflection exercises, working on textbook practice problems, textbook readings, JASP tutorials, and completion of assignments.

Learning activities will be communicated to students each week through the Canvas course announcements. Each module in the course builds off the previous module. Thus, it is incredibly important that students complete all learning activities for the week by the following Monday to stay on pace with the course and to be able to understand the present course concepts being delivered.

The course will emphasize individual responsibility and require significant outside of class involvement in learning course content, reading, working on practice problems, and assignments.

If you are sick, it is important that you stay home. Complete a self-assessment for Covid-19 symptoms here: https://bc.thrive.health/covid19/en. Please see the above policy on class recordings under in-person classes.

If you miss class because of illness:

- Make a connection early in the term to another student or group of students in the class. You can help each other by sharing notes. If you don't yet know anyone in the class, you will be provided with opportunities within class to meet students.

- Consult the class resources on Canvas. Please see the information stated above in 'in-person classes' with regards to class recordings.

- Attend office hours if you have questions after reviewing the content.

If you are feeling ill and cannot attend class for a midterm: Please email the instructor (carolyn.mcewen@ubc.ca) right away. If you arrive for a midterm and you are clearly ill, we will make alternate arrangements with you. It is better to email ahead of time and not attend.

If you are feeling ill at the time of a final exam: Do not attend the exam. You must apply for deferred standing (an academic concession) through KIN Academic Advising (kin.advising@ubc.ca). Students who are granted deferred standing (SD) will write the final exam/assignment at a later date.

If I (the instructor) am feeling ill: If I am unwell, I will not come to class. I will make every reasonable attempt to communicate plans for class as soon as possible (by announcements on Canvas, etc.). Our classroom will still be available for you to sit in and attend an online session. In this instance:

- If I am well enough to teach, but am taking precautions to avoid infecting others, we may hold the class online. If this happens, you will receive an announcement in Canvas informing you to join the class via Zoom (same link as what we use for office hours).
- One of the TAs or former TA who is familiar with the course will substitute
- I may ask you to do an activity, watch a video, or read something in place of class time

Course Communication

The instructor (Carolyn) will use Canvas course announcements as a primary means to communicate the 'plan for the week', any changes to the course, and friendly reminders. Students are responsible for all information contained within course announcements. Please make sure your email address that is listed for notifications in Canvas is one you frequently check.

LEARNING MATERIALS

Course Readings

Students are responsible for all readings assigned in the course syllabus and during class time. The required text will be an essential resource for students as it provides foundational knowledge of basic statistics and contains many practice questions.

Required Materials

1. *Required Text*

Tokunaga, H. T. (2019). *Fundamental statistics for the social and behavioral sciences (2nd edition).* Thousand Oaks, California: Sage.

Approximate book store prices: New $180

Approximate online prices: New $135; EBook $104, E-rental as low as $76 (for one term)

     a. Students may use the first edition of the text. There are a few differences between the first and second editions, but the core content remains the same.

     b. There are copies of the textbook in the UBC Library (see Online Course Reserves on Canvas) and in the Kinesiology Learning Centre (Osborne Unit 2). If there is a reason why you may not be able to access the copies in the library or the Kinesiology Learning Centre and you are financially not able to purchase the textbook please contact the instructor (carolyn.mcewen@ubc.ca).

     c. Students may gain free access to the textbook's companion website here: https://edge.sagepub.com/tokunaga2e. This excellent resource includes eFlashcards and practice quizzes to help you with the course material. Students are strongly encouraged to use these online resources to reinforce course concepts and prepare for exams.

2. *JASP (statistical analysis software)*. Students will be required to download (free to download and use) and have access to JASP. Download the latest version of JASP here: https://jasp-stats.org/download/

3. *Microsoft Excel.* Students will be required to open a data file that was created in Microsoft Excel. Students must have basic skills in using EXCEL and WORD (see **www.free-training-tutorial.com**)

4. *Calculator.*

5. *Course Website.* In-person and outside of class content including Zoom office hour links, videos, lecture/video notes, information about the course, self-assessment questions, handouts, JASP tutorials, and important reminders can be accessed through the Canvas course website at http://canvas.ubc.ca.

Summary of Technology in the Course
In this course students will use Canvas (+ extensions and integrated apps), Mentimeter, H5P, Zoom, JASP, and Padlet.   All technologies will be integrated into the course webpage in Canvas except for JASP, which students will be required to download onto their computers.

Class Notes
Class notes will be made available in PDF format through the course website. Please keep in mind that these notes provide an overview of what will be covered and do not contain information related to discussions, in-class activities, or detailed explanations and examples. Please ensure that you are taking additional notes. This information can be accessed through the Canvas course website at http://canvas.ubc.ca

ASSESSMENTS OF LEARNING

Assessment 1	**Midterm 1 (Chapters 1-5)**
Format	Multiple choice, fill in the blank, and short answer
Details	Students will be required to answer questions based on prescribed textbook readings and lectures
Due Date	Wednesday February 8, 2023 8-8:50am PT.
Weighting	20%
Learning Outcomes	To perform and interpret basic statistical procedures; To identify statistical assumptions

Assessment 2	**Midterm 2 (Chapters 6-10)**
Format	Multiple choice, fill in the blank, and short answer
Details	Students will be required to answer questions based on prescribed textbook readings and lectures
Due Date	Wednesday March 22, 2023 8-8:50am PT.
Weighting	25%
Learning Outcomes	To perform and interpret basic statistical procedures; To interpret results based on research hypotheses and statistical output; To identify statistical assumptions; To match statistical methods with specific research questions and designs

Assessment 3	**Final Exam (Chapters 1-10, 11, 13, 14)**
Format	Multiple choice, fill in the blank, and short answer

Details	Students will be required to answer questions based on prescribed textbook readings and lectures
Due Date	TBA
Weighting	35%
Learning Outcomes	To perform and interpret basic statistical procedures; To interpret results based on research hypotheses and statistical output; To identify statistical assumptions; To match statistical methods with specific research questions and designs

Assessment 4	**Assignment 1**
Format	Short answer
Details	Students will work with real data to calculate and interpret statistical output using JASP
Due Date	Monday February 6, 2023 11:59pm PT
Weighting	5%
Learning Outcomes	To perform and interpret basic statistical procedures; To identify statistical assumptions; To interpret statistical output; To use JASP (statistical software) to organize data and analyze and interpret basic statistics

Assessment 5	**Assignment 2**
Format	Short answer
Details	Students will work with real data to calculate and interpret statistical output using JASP
Due Date	Friday March 17, 2023 11:59pm PT
Weighting	7%
Learning Outcomes	To perform and interpret basic statistical procedures; To interpret results based on research hypotheses and statistical output; To identify statistical assumptions; To match statistical methods with specific research questions and designs; To use JASP (statistical software) to organize data and analyze and interpret basic statistics

Assessment 6	**Assignment 3**
Format	Short answer
Details	Students will work with real data to calculate and interpret statistical output using JASP
Due Date	Wednesday April 12, 2023 11:59pm PT
Weighting	8%
Learning Outcomes	To perform and interpret basic statistical procedures; To interpret results based on research hypotheses and statistical output; To identify statistical assumptions; To match statistical methods with specific research questions and designs; To use JASP (statistical software) to organize data and analyze and interpret basic statistics

Grading

Assessment	%	Due Date
Midterm 1 (Chapters 1-5)	20%	Wednesday February 8, 2023
Midterm 2 (Chapters 6-10)	25%	Wednesday March 22, 2023
Final Exam (Chapters 1-10, 11, 13, 14)	35%	TBA
Assignment 1	5%	Monday February 6, 2023
Assignment 2	7%	Friday March 17, 2023
Assignment 3	8%	Wednesday April 12, 2023

Students unable to write a midterm with an approved reason will have the percentage of the missed assessment transferred to the final exam**.**

Due dates/exams will not be rescheduled for any reason other than a medical issue or family emergency. If you miss a due date or exam for an emergency, you must contact your instructor as soon as possible following the class/exam. If you do not contact your instructor, your assignment will be considered late (see below) or in the case of missing an exam, it will be given a score of zero. All extensions, rescheduling, or other concessions are at the discretion of the instructor.

Assignments are due at 11:59pm PT on the corresponding due date. Assignments are considered late ten minutes after the due date time. Late assignments will be deducted at a rate of 10% per day. Deductions will commence from the date and time the assignment is due, and will accumulate for each subsequent 24-hour period, including weekends. Assignments are not accepted after 6 days (e.g., if an assignment is due on a Wednesday at 11:59pm PT, it can be handed in up until the following Tuesday at 11:59pm PT with a 60% deduction). All assignments should be submitted through Canvas (see Canvas for further instructions). Assignments will not be accepted through email. Assignments must have the student's name and student number on the front page.

UNIVERSITY POLICIES

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available on **the UBC Senate website.**

Inclusivity
Education is a multidisciplinary field that brings together faculty, students and others from diverse academic and personal backgrounds. UBC's Faculty of Education is committed to creating a respectful workplace and learning environment that supports inclusion based on the principles of equity, diversity

and social justice in order to create an environment that supports its community members' full participation. The Faculty of Education is committed to providing accessible, usable, and welcoming spaces for faculty, staff, students, and visitors who have disabilities, are members of racialized communities, Indigenous, transgender, two-spirit and gender-diverse people, regardless of their age, sexual orientation, social status, religion, ethno- linguistic, nationality and/or citizenship status.

School of Kinesiology courses take place in learning environments that are inclusive of gender identity, gender expression, sex, race, ethnicity, class, sexual orientation, ability, age, etc. Learners and educators expect to be treated respectfully at all times and in all interactions. Non-sexist, non-racist, non-homophobic, non-transphobic and non-heterosexist language is expected in School of Kinesiology classes, course content, discussions and assignments.

Please feel welcome to e-mail your instructor (carolyn.mcewen@ubc.ca) your name and pronouns and how you would like these to be used.

Academic Integrity
The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences.

Students may work in groups consisting of up to 3 people for assignments 1, 2, and 3. When working in groups, students will submit only one final copy of the assignment for grading and each group member will receive the same grade for the submitted assignment. It is expected that each student will have contributed to the submitted assignment. Groups and individuals must submit unique and distinct assignments from other groups and/or individuals.

OTHER COURSE POLICIES

STUDENT RESPONSIBILITIES

You are responsible for all material covered in the course (including course announcements and missed class meetings). You are also responsible for getting your own notes from classes and videos as well as information pertaining to changes in the course outline, readings, assignments, and information pertaining to any exams.

Please note the following dates:

Term Dates: **Monday January 9, 2023 – Thursday April 13, 2023**

Last date for withdrawal without a W on your transcript: **January 20, 2023**

Last date for withdrawal with a W standing on your transcript (course cannot be dropped after this date): **March 3, 2023**

Midterm break: **February 20-24**

Exam dates: **Monday April 17 – Friday April 28**

ACADEMIC ACCOMODATION FOR STUDENTS WITH DISABILITIES

Academic Accommodation for Students with Disabilities
The University's goal is to ensure fair and consistent treatment of all students, including students with a disability, in accordance with their distinct needs and in a manner consistent with academic principles. Students with a disability who wish to have an academic accommodation should contact and register with the [Centre for accessibility](#) without delay. Please contact the instructor (Carolyn) early to discuss any accommodations that you require. I (Carolyn) also welcome feedback and suggestions on how to make this course more widely accessible to all students.

LEARNING ANALYTICS

Learning analytics includes the collection and analysis of data about learners to improve teaching and learning. This course will be using the following learning technologies: Canvas (+ extensions and integrated apps), Mentimeter, H5P, Padlet, and Zoom. Many of these tools capture data about your activity and provide information that can be used to improve the quality of teaching and learning. In this course, I plan to use analytics data to:

- View overall class progress
- Review statistics on course content being accessed to support improvements in the course
- Track your progress in order to provide personalized feedback
- Understand your engagement with the course

COPYRIGHT

All materials of this course (course handouts, lecture slides, assessments, course readings, instructor recorded videos etc.) are the intellectual property of the Course Instructor or licensed to be used in this course by the copyright owner. Redistribution of these materials by any means without permission of the copyright holder(s) constitutes a breach of copyright and may lead to academic discipline.

Students are not permitted to record classes or take photographs during class unless they are granted prior permission from the instructor.

COURSE READING SCHEDULE

The topics and assigned readings for each class are listed below, although they may be subject to change. Any changes to the schedule of topics and corresponding readings will be communicated to students through an announcement on Canvas.

Week	Dates	Textbook Readings
1	Jan. 9-13	Chapter **1**: Introduction to Statistics
2	Jan. 16-20	Chapter **2**: Examining Data: Tables and Figures Chapter **3**: Measures of Central Tendency
3	Jan. 23-27	Chapter **3**: Measures of Central Tendency Chapter **4**: Variability
4	Jan. 30-Feb. 3	Chapter **5**: Normal Distributions
5	Feb. 6-10	Chapter **6**: Probability and Introduction to Hypothesis Testing
6	Feb. 13-17	Chapter **6**: Probability and Introduction to Hypothesis Testing Chapter **7**: Testing One Sample Mean
Reading Break	Feb. 20-24	Enjoy your break ☺
7	Feb. 27-March 3	Chapter **7**: Testing One Sample Mean Chapter **8**: Estimating the Mean of a Population
8	March 6-10	Chapter **8**: Estimating the Mean of a Population Chapter **9**: Testing the Difference Between Two Means
9	March 13-17	Chapter **9**: Testing the Difference Between Two Means Chapter **10**: Errors in Hypothesis Testing, Statistical Power, and Effect Size
10	March 20-24	Chapter **11**: One-Way Analysis of Variance (ANOVA)
11	March 27-31	Chapter **11**: One-Way Analysis of Variance (ANOVA) Chapter **13**: Correlation
12	April 3-7	Chapter **13**: Correlation Chapter **14**: Linear Regression and Multiple Correlation
13	April 10-12	Chapter **15**: Chi-Square

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