THE UNIVERSITY OF BRITISH COLUMBIA
School of Kinesiology
Kinesiology 211
Fall 2024: Term 1

Human Motor Behaviour

Instructor: Professor Nicola Hodges **Rm:**
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Please be aware that the course syllabi may need to change to adjust to current circumstances (from in-person to online or recorded when and where necessary).

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.

Lectures and seminars: Tuesday, Thursday: 3:30 – 4:50pm. There will be 5 motor-lab/tutorial sessions with in-class scheduled time. The labs are short activities, which are completed with the MotorLab software package (see below). There are quizzes associated with the labs (both fully graded and 'for practice' with participation marks). Discussion boards are available on Canvas for all Q&A between students and with the TAs and instructor. Please use the module appropriate discussion board for asking questions /responding to queries. **If your question might be helpful/ relevant for others in the class, use the discussion board and NOT individual email. I will redirect or not reply to content email. Email is for personal matters only.** Communication will be through class and Canvas announcements.

Instructor Zoom link: Dr Hodges
https://ubc.zoom.us/j/64360440998?pwd=L2dpMytMeVA4VHlvTWtmN0d1VmFBZz09
Meeting ID: 643 6044 0998; Passcode: 141270 <One tap mobile: +17789072071>
Office Hours: *TBD*

Course information is on CANVAS. If you need help/ have questions, follow these 5 steps:

Step 1: READ the book/check class notes/check notes on Canvas/ cross-check with class-mates
Step 2: POST questions on Canvas "Discussion board" for specific Module or general questions
Step 3: COME to Motor Labs/Tutorial sessions for in-person help.
Step 4: EMAIL TA/ATTEND TA office hours
Step 5: EMAIL me/ATTEND Instructor office hours

****DO NOT LEAVE STUDY, READING, AND QUESTIONS TO THE LAST MINUTE. KEEP UP AS YOU GO TO AVOID BEING OVERWHELMED/ANXIOUS DURING EXAM PERIODS****

Course Description

KIN 211 provides a foundation for understanding human motor skills. This includes the characteristics and principles of motor learning and motor control and how different factors influence learning and performance with a focus on sport application. This course is an introduction to the area of human motor learning/motor skill acquisition and motor control. It introduces students to the sensory-cognitive processes that underlie human movement, the process of learning motor skills and the factors that influence acquisition, performance, and movement control. Students of this course will gain knowledge, appreciation, and understanding of the conceptual and empirical foundations of motor behaviour.

Rationale, Scope and Application

This course exists to give you basic knowledge concerning how and why we move and acquire motor skills. It is designed to make you think about how and why we respond, plan and organize actions and attend to and process visual and verbal information in order to move, learn and teach motor skills. This course is a foundational course in motor behavior, which provides a background for KIN 311. This course fits generally with neuro-mechanical related courses and sport psychology/sport performance courses. Concepts covered in this course have broad application to the field of Kinesiology with respect to workplace design, coaching, rehabilitation, physical education, strength and conditioning, and sport performance.

Required Course Text and Lab software

- Schmidt, R.A., and Lee, T.D. (2019). ***Motor Learning and Performance (6th Ed.).*** **Champaign, Illinois: Human Kinetics (and web study guide)**. Do not use an old version of the book. The e-book is fine to use.
- MotorLabs software (24.2.0) license required for running online labs <https://motorlab.ca/purchase>. There is a small cost of $6 to purchase the license.

**Motor Control in Everyday Actions Narratives -- from the web study guide can be accessed here: http://courses.humankinetics.com/lcourses/MLP6EWSG/index.html#/lessons/qE_mM-AGxcj2mOyvforDiirnZFidiPGz . They are also in this book: Lee, T.D. (2011). "Motor control in everyday actions"*
https://canada.humankinetics.com/products/motor-control-in-everyday-actions

Books are available from the UBC library. Note that if you buy a text book without the web-study guide you will need to get the online narratives from someone who has the web-study guide (consider sharing pdfs), or read them in the Lee (2011) book. There are other useful resources with the webstudy guide, including great test/study quizzes (but these are not required).

General Course Learning Objectives/Outcomes

1. Understand fundamental principles and concepts in motor learning and control.
2. Remember and understand essential terms and language used in motor learning and control.
3. Understand the role of cognition, attention, and memory in motor learning and control.
4. Know and evaluate the roles of augmented information and practice organization in motor skill acquisition.
5. Know and evaluate how the information-processing framework is applied to motor learning and control.
6. Demonstrate understanding of how and why certain research methods and experiments aid our knowledge of motor learning and control.
7. Apply concepts and principles in motor learning and control to teaching, coaching, skill development, and overall motor performance.

Structure
This is a 3-credit course with mostly lectures (and 5 lab/tutorial sessions and one revision session). The lectures will focus upon the concepts, principles, and research in human motor behaviour. The readings will ***complement*** the text and other posted resource materials. Students are responsible for reading the text book and any assigned readings. There are 10 modules (which follow the order of chapters in the text book) and the course is subdivided into 3 sections; i) pre-midterm 1 content, ii) from midterm 1 to midterm 2 content and iii) post-midterm 2 content.

Lecture notes: Class notes will be made available in .pdf file-format through the canvas course website and if working/available, I will record and post lecture content.

I will be using iclicker Cloud: Please see UBC's **iClicker Cloud student guide (https://lthub.ubc.ca/guides/iclicker-cloud-student-guide/)**. Please set up your iClicker account ahead of the next class, to troubleshoot any potential technical issues.

Motor labs: There are 9 motor labs associated with this course which complement lecture and reading material (and content from these labs is also tested on all exams). You can work with others and in small groups when doing these labs., **as long as each person has their own data**. Time is available in class tutorial times to do the labs. TAs will be available for help with these labs and any other questions from the course (5 tutorial/lab sessions throughout the term).

There are BOTH fully **graded quizzes (4 in total) and participation mark quizzes (5 in total) associated with the labs during the term (see "assignments")**. The FOUR labs that are fully graded and require data to be uploaded are: Hicks, Slater-Hammel, Fitts Law and CI lab. The rest of the labs and associated quizzes are for practice/study (but there will be a 1% participation mark associated with each quiz as long as you submit on time and get more than 50%).

To purchase the license and download motor labs please go to: https://motorlab.ca/.

All the details you will need for each motor lab are listed in canvas for each module. There are 3 attachments for each lab and a link to a QUIZ:

1. **Instructions.** This is a powerpoint file containing MotorLab computer instructions and some background information
2. **DataAnalysis.** This is an excel sheet to enter and graph your data
3. **LabActivity.** This is a word document containing details about the motor lab activity and what to do with your data. This sheet is good preparation for the quiz.

Supplementary resources: I have added podcast, video and reading resources associated with the text to canvas to help you understand and apply the material. I strongly recommend reading/watching/listening to this material to help you study and remember for the long term (some of the videos would have already been shown in class). None of the extra content associated with supplementary resources will be directly examined.

Assignments and grading (please see canvas modules for details)*

Summary:

• Module review quizzes	10% (1 week after module end with >50% for mark; 0.5-1.5%)
• Motor-Lab quizzes	25% (1 week after lab. Four = 5% each, Five = 1% each)
• Midterms 1 and 2	35% (in person; 15%/20% weight)
• Final exam	30% (in person)

1. **Module review quizzes:** For every Module of the course there are end of module practice quizzes. These contain ~5-10 questions designed to test knowledge of the material (class & readings). These are primarily for study/review purposes, but there is also a .5% - 1.5% participation mark for each quiz (you have 1 week from the end of the module to complete the quiz for mark (by 3:30pm) and you need to get more than 50% correct to get the mark). You can have as many attempts as you need and feedback is provided for all questions through the canvas quiz function. If you complete all 10 quizzes on time, there is an additional 1%.

2. **Motor Lab Quizzes:** There is class time scheduled to run through nine "Motorlabs". These are computer activities downloaded from the motorlab.ca webpage and that help to "bring-to-life" some of the concepts we discuss in the course. Associated with each motorlab is a quiz

   i. **Four labs have fully-graded practice quizzes (5% each)**. Your own data graphs /excel sheet, must be uploaded to get marks for each lab. (max 2.5% each lab without the uploaded data). Graded Labs = #2Hicks Law, #5Slater-Hammel/ anticipation, #6Fitts Law and #8Contextual Interference. You will need to have completed the labs and have your own data before doing the quiz. Quizzes open only after the scheduled lab time. These can be open book, but must be completed alone. You have 45 min to complete the quiz once started. You will have 1 week to complete the quiz (open 5pm, close 3:30pm).

   ii. **Five labs are for practice (5%)**– There will be 5 additional labs with quizzes and there is a 1% "participation mark" associated with each completed quiz. The quizzes are open during lab time and are open for one week after the lab (due 3:30pm). You must score >50% to get the 1%. You can have as many attempts as needed and you can work together.

3. **Midterms 1 and 2 (35% total) – Two stage exams**. The midterms are closed book and completed in class. There is both an individual and group (~n=4/group) component. These will be mostly if not exactly the same exams. Exams will cover material from all lectures and assigned readings, narratives and Motor Labs. Examinations will include multiple choice, true/false and short-answer or numeric answer questions.

   - Stage 1=Individual (**85%**), **40 min** – your grade cannot decrease on writing the group.
   - Stage 2=Group (**15%**), **25 min** – your overall grade will either remain or increase.

   i. Midterm 1 (15%)* –all material up until midterm 1; Oct 8th (40 min & 25 min)
   ii. Midterm 2 (20%) -all material between midterm 1 and 2; Nov 5th (40 min & 25 min)

   * Your highest grade for the midterm will be weighted 20% (other = 15%).

***For a summary of quizzes/assignments with dates, please see p6.**

Midterm exam instructions

- Exam starts upon entering the room (start ~3:35pm). No talking, only a pen and calculator are allowed on desks. NO PHONES. Bags must be out of your sight and not blocking gangways. No hoodies/ball hats.
- You will have 40 mins to complete Stage I (end 4:15pm).
- At 4:15pm, ALL exams will be collected. Make sure your name is on it.
- Quickly organize yourselves into groups of 4. Once in your group, please put up your hand and a new "group" exam will be given to your group (start ~4:20pm). If you are not in a group come to the front of the class and the TAs will help assign you to a group. Please write ALL your names on the front page.
- You will have 25 mins to complete Stage II (end 4:45pm). Put up your hand when completed and the exam will be collected and you can leave.

4. **Final Exam (30% total)**: all material after midterm 2, all Motor Labs (graded and ungraded labs) (~1.5 hr, date tbd, in-person).

Missed exams: Individuals who do not write a mid-term exam will get 0 for the exam unless acceptable supportive reasons and/or documentation is provided to the instructor. Academic concessions are a privilege not a right. If you are ill at the time of a final exam, you must apply for deferred standing (an academic concession) through Academic Advising (https://kin.educ.ubc.ca/undergraduate/bkin/academic-concession/). If an exam is missed, then any concessions to write a make-up exam or get reweighting of grades, need to be conveyed to the instructor BEFORE the missed exam and will only be available in exceptional circumstances. The instructor reserves the right to decide on any concessions regarding make-up exams or changing the weighting for other exams (only with valid reasons).

Missed lectures/content: I will post lecture notes (pdfs) associated with course content. Where possible, in-person lectures will be recorded and made available after the class. Please use the discussion board on canvas to ask ANY and ALL content related questions.

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 Access and Diversity without delay. Please let me know if/how I can help.

Academic Integrity: All UBC students are expected to behave as honest and responsible members of an academic community. Breach of those expectations or failure to follow the appropriate policies, principles, rules, and guidelines of the University with respect to academic honesty may result in disciplinary action. **It is your responsibility to become familiar with the University of British Columbia's Academic Honesty and Plagiarism Policies**, as well as the Student Declaration and the consequences of violating these policies.

Honesty Pledge: (to be reaffirmed before all exams/graded quizzes): I hereby pledge that I have read and will abide by the rules, regulations, and expectations set out by the instructor and in the UBC Academic Calendar, with particular attention paid to:

1. The Student Declaration (http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,285,0,0)
2. The Academic Honesty and Standards (http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,286,0,0)
3. The Student Conduct During Examinations (http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,41,90,0)

Illness guidelines for instruction

If I am feeling ill I will not come to class. I will make every reasonable attempt to communicate plans for class as soon as possible (by email, on Canvas, etc.). Our classroom will still be available for you to attend. We may hold the class online (ZOOM) or the lecture may be cancelled and (recorded) notes posted online as soon as possible after the missed class.

Quiz and Course Summaries:

	Quiz Summary KIN 211			
	Name	**Opens**	**Due**	**max (%)**
1	**Quiz1: Introduction**	**12-Sep**	**19-Sep**	**1.0**
2	MotorLab1: Error Measures	19-Sep	26-Sep	1.0
3	**MotorLab2: Hicks Law**	**19-Sep**	**26-Sep**	**5.0**
4	**Quiz2: InformationProcessing**	**24-Sep**	**01-Oct**	**1.0**
5	**Quiz3: Attention**	**26-Sep**	**03-Oct**	**1.0**
6	**Quiz4: SensoryContr. I**	**01-Oct**	**08-Oct**	**0.5**
7	MotorLab3: Memory	03-Oct	10-Oct	1.0
8	MotorLab4: PRP	03-Oct	10-Oct	1.0
9	**Midterm 1**	**08-Oct**	**08-Oct**	**15.0**
10	**Quiz5: sensoryContr. II**	**10-Oct**	**17-Oct**	**0.5**
11	**Quiz6: MotorPrograms**	**17-Oct**	**24-Oct**	**1.0**
12	**Quiz7: SpeedAccuracy**	**22-Oct**	**29-Oct**	**0.5**
13	**MotorLab5: Anticipation**	**24-Oct**	**31-Oct**	**5.0**
14	**MotorLab6: Fitts**	**24-Oct**	**31-Oct**	**5.0**
15	**Quiz8: Learning&Transfer**	**31-Oct**	**07-Nov**	**1.0**
16	**Midterm 2**	**05-Nov**	**05-Nov**	**20.0**
17	MotorLab7: Variability	19-Nov	26-Nov	1.0
18	**MotorLab8: ContextualInter.**	**19-Nov**	**26-Nov**	**5.0**
19	**Quiz9: ConditionsofPractice**	**21-Nov**	**28-Nov**	**1.5**
20	MotorLab9: Feedback	28-Nov	05-Dec	1.0
21	**Quiz10: AugmentedInformation**	**03-Dec**	**10-Dec**	**1.0**

Date	Module/Lecture	Topic Outline	Chapters and *"Narratives"*
(wk1) 1. Sep 5th (th)	INTRO	Introduction to Motor Behaviour	none
(wk2) **2.** Sep 10 (tu)	INTRO	Classification of Motor Skills and Measuring Motor Performance	Ch1 & Ch 2
3. Sep12 (th)	INTRO & INFO. PROCESSING	Measuring Motor Performance (3a) and Information Processing Intro (3b)	Ch2 *"Cutting wood & missing putts"* *"Jumping the gun"*
(wk3) 4. Sep 17th (tu)	INFO. PROCESSING	Stages of Processing: Identify, Select (anticipation/compatibility) & Program	Ch2 *"Red light, Green light", "Grocery store"* *"Push or pull"*
Sep 19th (th)	**LAB 1**	**MOTOR LAB: COURSE MATERIAL 1-4** **1 = Error calculation (participation mark); 2 = Hicks Law (fully graded)** ***(Donders, S-R compatibility, simple RT motorlabs = also good learning aids)***	
(wk4) 5. Sep 24th (tu)	INFO. PROCESSING & ATTENTION	Memory (5a) & Attention Intro (5b)	Ch2 & Ch3 *"Gumbo", "Turn right at next Gorilla"*
6. Sep 26th (th)	ATTENTION	Attention & selection (automaticity) and programming PRP	Ch3 (*ch4*) *"Toad and centipede", "Fakes"*
(wk 5) 7. Oct 1st (tu)	SENSORY CONTR. I	Sensory Contributions to Skill	Ch4 *"Curling draw", "Tickling"*
Oct 3rd (th)	**LAB 2**	**MOTOR LAB: COURSE MATERIAL 5-7** **3 =Memory, 4 =PRP, (both participation marks)** ***(Probe RT & Stroop motorlabs = also good learning aids)***	
(wk6) Oct 8th (tu)	**MIDTERM #1 -- in-person --**		
8. Oct 10th (th)	SENSORY CONTR. II	Vision & sensory systems	Ch4
(wk7) 9. Oct 15th (tu)	MOTOR PROGRAMS	Open-loop control & motor programs	Ch5 "*anti-lock brakes", "point-of-no-return"*
10. **Oct 17th(th) **(NO IN-PERSON/ RECORDING)**	MOTOR PROGRAMS	GMPs (10a) and GMPs/schema theory (10b)	Ch5 *"forensic motor control"*
(wk8) **11.** Oct 22nd (tu)	SPEED & ACCURACY	Principles of Speed and Accuracy (Fitts & Schmidts Law)	Ch6 "the calculator", "the gimme putt"
Oct 24h (th)	**LAB 3**	**MOTOR LAB: COURSE MATERIAL 8-11** **5 = Slater-Hammel anticipation; 6 = Fitts Law (both fully graded)** ***(Henry & Rogers/response complexity motorlab = also good learning aid)***	
(wk 9) 12. Oct 29th (tu)	LEARNING & TRANSFER	Learning Defined & Measured	Ch8 *"learning to win from losing"*
13. Oct 31st (th)	LEARNING & TRANSFER	Transfer and learning	Ch8&9 *"like riding a bicycle"*
(wk10) Nov 5th (tu)	**MIDTERM #2 -- in-person --**		
14. Nov 7th (th)	CONDITIONS OF PRACTICE	Practice Organization (spacing, variability)	Ch9 &10
(wk 11)	**MIDTERM BREAK – NO CLASS (NOV 12th, tu)**		
15. Nov 14th (th)	CONDITIONS OF PRACTICE	Practice Methods (Contextual interference and hybrid methods)	Ch9 & 10 *"but I was great on the practice range"*
(wk 12) Nov 19th (tu)	**LAB 4**	**MOTOR LAB: COURSE MATERIAL 14-15** **7 = Practice Variability (participation), 8 = Contextual inter. (fully graded)**	
16. Nov 21st (th)	CONDITIONS OF PRACTICE	Practice methods – guidance and Challenge Point Framework	Ch10&11 *"The Golfers little Helper"*
(wk 13) **17.** Nov 26th (tu)	AUGMENTED INFORMATION	External post practice info. (KR & KP)	Ch11 *"The Coach as a dictionary"*
Nov 28th (th)	**LAB 5**	**MOTOR LAB: COURSE MATERIAL 17** **9= Feedback/KR (participation)**	
(wk 14) 18. Dec 3rd (tu)	AUGMENTED INFORMATION	Covert forms of practice (observational practice and imagery practice)	Ch10
Dec 5th (th)	**-----Revision session (details tbd)-----**		