

COURSE SYLLABUS



COURSE TITLE: AET 320 – Human Motor Control

CLASS SECTION: 01XA/01XB

TERM: Fall 2024

COURSE CREDITS: 3

DELIVERY METHOD(S): Lecture, Lab

Camosun College campuses are located on the traditional territories of the Lək̓ʷəŋən and W̱SÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here.

Learn more about Camosun's [Territorial Acknowledgement](#).

INSTRUCTOR DETAILS

NAME: Dr. Johanna Hurtubise

EMAIL: hurtubisej@camosun.ca

OFFICE: PISE 212D

OFFICE HOURS: Monday 11:30-2:00, Thursday 1:00-2:00, or by appointment

As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.

INSTRUCTIONAL ASSISTANT DETAILS

NAME: Mike Davies

EMAIL: DaviesM@camosun.ca

CALENDAR DESCRIPTION

The psychological influences and underlying neural mechanisms of skilled performance and motor control are discussed including central and peripheral nervous systems control of movement, reflexes, voluntary behaviour and neuromuscular disorders. Further topics include the role of attention, information processing and feedback in controlling performance.

PREREQUISITE(S): "C" in KIN 230, "C" in KIN 210

CO-REQUISITE(S): none

COURSE LEARNING OUTCOMES / OBJECTIVES

At the completion of this course, students will be able to:

- a) Describe the relationship between psychology and the neurophysiology of skilled motor learning and performance.
- b) Explain central and peripheral nervous system control of movement.
- c) Discuss the differences among motor skill, behavior, and performance with consideration for different ages and populations.
- d) Demonstrate the ability to analyze motor skills, behaviors, and performance.
- e) Discuss neuromuscular disorders which affect movement such as Parkinson's disease, spinal cord injury, stroke and Multiple Sclerosis.
- f) Identify successful treatment practices to improve or maintain function for a variety of neuromuscular disorders.
- g) Design safe and effective therapy programs for individuals with neuromuscular disorders.

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

Recommended Text:

- Magill, R., & Anderson, D. (2024). *Motor Learning and Control: Concepts & Applications*. New York: NY. McGraw Hill LLC.

Referenced Texts:

- Latash M.L. & Singh, T. (2024). *Neurophysiological Basis of Motor Control (3rd Edition)*. Champaign: IL. Human Kinetics.
- Lundy-Ekman, L. (2018). *Neuroscience: Fundamentals for Rehabilitation (5th Edition)*. St. Louis: MI. Elsevier Inc.
- Purves, D., Augustine, G. J., Fitzpatrick, D., Hall, W. C., LaMantia, A. S., McNamara, J. O., & Williams, S. M. (2004). *Neuroscience (3rd Edition)*. Massachusetts: Sinauer Associates Inc Publishers.
- Rosenbaum, D.A. (2010). *Human Motor Control (2nd Edition)*. Burlington: MA. Elsevier Inc.
- Schmidt, R.A., Lee, T.D., Winstein, C.J., Wulf, G., & Zelaznik, H.N. (2019). *Motor Control and Learning: A Behavioral Emphasis (6th Edition)*. Champaign: IL. Human Kinetics.
- Shumway-Cook, A. & Woollacott, M.H. (2007). *Motor Control: Translating Research into Clinical Practice (3rd Edition)*. Philadelphia: PA. Lippincott Williams & Wilkins.
- Tortora, G., & Derrickson, B. (2014). *Principles of Anatomy & Physiology (14th edition)*. John Wiley & Sons.

COURSE SCHEDULE, TOPICS, AND ASSOCIATED PREPARATION / ACTIVITY / EVALUATION

The following schedule and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

Lecture (ALL): Wednesday 11:30-12:50 CHW 341
 Lecture (ALL): Thursday 11:30-12:50 TEC 181

 Lab: Tuesday 8:30-10:20 LACC 107 *see schedule below for dates*

	DATE	Lab Group	LAB TOPIC
Week 1	Tues Sept 3		Course Introduction
Week 2	Tues Sept 10	A	Lab 1: Defining & Classifying Skills & Abilities
Week 3	Tues Sept 17	B	
Week 4	Tues Sept 24	A	Lab 2: Information Processing & Decision Making
Week 5	Tues Oct 1	B	
Week 6	Tues Oct 8	A	Lab 3: Sensory Contribution & Balance
Week 7	Tues Oct 15	B	
Week 8	Tues Oct 22		Midterm Week – No Lab
Week 9	Tues Oct 29	A	Lab 4: Introduction to Myotomes/Dermatomes/Reflexes
Week 10	Tues Nov 5	B	
Week 11	Tues Nov 12	A	Lab 5: Coordination, Attention, & Working Memory
Week 12	Tues Nov 19	B	
Week 13	Tues Nov 26	A	Lab 6: Motor Learning
Week 14	Tues Dec 3	B	

	DATE	TOPIC	READINGS
Week 1	Wed Sept 4	Course Introduction Motor Skills & Abilities	Chapter 1, 3
	Thurs Sept 5		
Week 2	Wed Sept 11	Neural Control of Movement: An Overview Neural Control of Movement: The Brain	Chapter 8
	Thurs Sept 12		
Week 3	Wed Sept 18	Neural Control of Movement: The Brain Neural Control of Movement: Basal Ganglia & Cerebellum	Chapter 4
	Thurs Sept 19		
Week 4	Wed Sept 25	Neural Control of Movement: The Spinal Cord & Motor Tracts Peripheral Neuromuscular Mechanisms	
	Thurs Sept 26		
Week 5	Wed Oct 2	TEST 1	
	Thurs Oct 3	Sensory Contribution: Somatosensory System	Chapter 6
Week 6	Wed Oct 9	Sensory Contribution: The Vestibular & Visual Systems Sensorimotor Integration	
	Thurs Oct 4		
Week 7	Wed Oct 16	Motor Control Theories Postural, Coordination, & Balance	Chapter 5 Chapter 7 (pg.175)
	Thurs Oct 17		
Week 8	<i>Midterm Week (no class)</i>		
Week 9	Wed Oct 30	Locomotion & Gait Motor Learning: Skill Acquisition, Retention, & Transfer	Chapter 7 (pg. 183) Chapters 11-13
	Thurs Oct 31		
Week 10	Wed Nov 6	TEST 2	
	Thurs Nov 7	Motor Learning: Skill Acquisition, Retention, & Transfer	Chapters 11-13
Week 11	Wed Nov 13	Motor Memory Attention & Performance	Chapter 9, 10
	Thurs Nov 14		
Week 12	Wed Nov 20	Practice Conditions	Chapters 16-19
	Thurs Nov 21		
Week 13	Wed Nov 27	Feedback & Learning	Chapters 14, 15
	Thurs Nov 28		
Week 14	Wed Dec 4	Dysfunctions of the Motor System	
	Thurs Dec 5		

Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced noticed is required. Deadlines can be reviewed on the [CAL exams page](https://camosun.ca/services/academic-supports/accessible-learning/academic-accommodations-exams). <https://camosun.ca/services/academic-supports/accessible-learning/academic-accommodations-exams>

EVALUATION OF LEARNING

DESCRIPTION	DATE	WEIGHTING
Term Test 1	Wednesday Oct 2 nd	25%
Term Test 2	Wednesday Nov 6 th	20%
Term Test 3	TBD (exam schedule)	25%
Lab Assignments (5 x 2% each)	See schedule	10%
Course Assignment	Friday Nov 22 nd	20%
	TOTAL	100%

If you have a concern about a grade you have received for an evaluation, please come and see me as soon as possible.

Refer to the [Grade Review and Appeals](#) policy for more information.

<https://camosun.ca/sites/default/files/2021-05/e-1.14.pdf>

Term Tests

Written test questions will cover class lectures, labs, and assigned readings. Test format will include multiple choice, true/false, matching, diagrams, short answer, and long answer.

Lab Assignments

Lab assignments consist of answering several questions related to the lab material. Attendance in the lab is required to obtain information needed to answer these questions, and so assignments will not be accepted from those who are absent from lab. Assignments are due by the start of the next lab either in person or via D2L. Late assignments will not be accepted. There are a total of 5 lab assignments, with each worth 2%, for a total of 10% of the final grade.

Course Assignment

Students are expected to design an infographic highlighting effective treatment programs for a neurological disorder affecting motor control. One treatment modality must include exercise. A minimum of 2-3 research articles must be cited. More information regarding this assignment can be found on D2L.

COURSE GUIDELINES & EXPECTATIONS

Professional standards for students:

- Students are expected to exhibit polite, mature, and respectful behaviour in class (lectures, labs, seminars, or practicums) and actively participate as needed.
- Students are expected to conduct themselves in a manner that maximizes the learning of all students.
- Students are expected to come prepared for discussion and/or presentation of material.
- Students are responsible for catching up on any missed material by asking a peer for notes before contacting the instructor.
- Students are expected to dress appropriately for class/lab activities. Please bring clothing and footwear that will allow you to participate fully. Students who do not come prepared to actively participate in labs may be asked to leave.
- Students are expected to always respect their peers.

Policy on Cell Phones, PDAs, other Electronic Devices:

Cell phones, PDAs, and other electronic devices are not to be used during scheduled class and lab times. Please remove ear buds, headphones, etc. prior to entering the classroom. Please be advised that audio/video recordings and photos of lectures and seminars are prohibited unless valid documentation for accommodations are provided by CAL (Centre for Accessible Learning). **YOU MAY NOT RECORD ANY PERSON WITHOUT THEIR CONSENT (VIDEO OR AUDIO/PHOTO CAPTURE ETC.)**

Attendance Policy:

Research shows a strong correlation with class attendance and academic success. Given the practical nature of this course, and the need to understand the theory utilized during the labs, lab attendance will be taken. An excused absence includes:

- a) Bonafide intercollegiate trip with supporting documentation.
- b) Permission of instructor prior to absence.
- c) Compassionate reasons.

Exams & Assignments:

The course exams and assignments are pre-scheduled by the instructor and due as outlined in this course outline or as posted on D2L. The final exam will be scheduled by the Registrar's office.

Exams: Midterm and final examinations must be written on the date scheduled. Final examinations may be scheduled at any time during the examination period; therefore, students should avoid making prior travel, employment, or other commitments for this period. **All students are expected to write the final exam at the time, date, and location set by the Office of the Registrar.** If a student is unable to write an exam through no fault of his, her, or their own, valid documentation must be provided, and it must be discussed with the instructor well in advance of the exam date. If the student is absent for an exam or presentation and has not made arrangements with the instructor in advance, a zero grade will be applied.

Assignments: Papers and/or assignments that are handed in after the due date/time will receive an 10% per day deduction. After the 5th day the assignment will receive a grade of 0%. Papers and/or assignments that are deemed unacceptable by the faculty will be returned and receive an automatic 10% deduction on the grading of said item. Reasons that a faculty may deem an item unacceptable include, but are not limited to the following: grammar, spelling, content, punctuation, and inappropriate referencing/citations. Failure to turn in an assignment may result in an incomplete final grade being assigned for the course.

STUDENT RESPONSIBILITY

Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

SUPPORTS AND SERVICES FOR STUDENTS

Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit camosun.ca/services.

Support Service	Website
Academic Advising	camosun.ca/services/academic-supports/academic-advising
Accessible Learning	camosun.ca/services/academic-supports/accessible-learning
Counselling	camosun.ca/services/health-and-wellness/counselling-centre
Career Services	camosun.ca/services/co-operative-education-and-career-services
Financial Aid and Awards	camosun.ca/registration-records/financial-aid-awards
Help Centres (Math/English/Science)	camosun.ca/services/academic-supports/help-centres
Indigenous Student Support	camosun.ca/programs-courses/iecc/indigenous-student-services
International Student Support	camosun.ca/international
Learning Skills	camosun.ca/services/academic-supports/help-centres/writing-centre-learning-skills
Library	camosun.ca/services/library
Office of Student Support	camosun.ca/services/office-student-support
Ombudsperson	camosun.ca/services/ombudsperson
Registration	camosun.ca/registration-records/registration
Technology Support	camosun.ca/services/its
Writing Centre	camosun.ca/services/academic-supports/help-centres/writing-centre-learning-skills

If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

Academic Integrity

Students are expected to comply with all College policy regarding academic integrity; which is about honest and ethical behaviour in your education journey. The following guide is designed to help you understand your responsibilities: <https://camosun.libguides.com/academicintegrity/welcome>

Please visit <https://camosun.ca/sites/default/files/2021-05/e-1.13.pdf> for Camosun's Academic Integrity policy and details for addressing and resolving matters of academic misconduct.

Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc.). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs, and where disability-related barriers to access in your

courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course instructors. Please visit the CAL website for contacts and to learn how to get started:

<https://camosun.ca/services/academic-supports/accessible-learning>

Academic Progress

Please visit <https://camosun.ca/sites/default/files/2023-02/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

Course Withdrawals Policy

Please visit <https://camosun.ca/sites/default/files/2021-05/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <https://camosun.ca/registration-records/tuition-fees#deadlines>.

Grading Policy

Please visit <https://camosun.ca/sites/default/files/2021-05/e-1.5.pdf> for further details about grading.

Grade Review and Appeals

Please visit <https://camosun.ca/sites/default/files/2021-05/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <https://camosun.ca/sites/default/files/2021-07/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun's Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them understand what supports are available and their options for next steps. The Office of Student Support respects a student's right to choose what is right for them. For more information see Camosun's Sexualized Violence and Misconduct Policy: <https://camosun.ca/sites/default/files/2021-05/e-2.9.pdf> and camosun.ca/services/sexual-violence-support-and-education. To contact the Office of Student Support: oss@camosun.ca or by phone: 250-370-3046 or 250-370-3841

Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College's Student Misconduct Policy at

<https://camosun.ca/sites/default/files/2021-05/e-2.5.pdf> to understand the College's expectations of academic integrity and student behavioural conduct.

Looking for other policies?

The full suite of College policies and directives can be found here: <https://camosun.ca/about/camosun-college-policies-and-directives>

Changes to this Syllabus: Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.