



School of Health and Exercise Sciences
HES 353 – Clinical Exercise Prescription | Winter Term 2, January 2025

We respectfully acknowledge the Syilx Okanagan Nation and their peoples, in whose traditional, ancestral, unceded territory UBC Okanagan is situated.

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Department: School of Health and Exercise Sciences

Office Hours & Open Lab times:

Office Hours & Open Lab (UCH 109): Wednesdays at 10:00am-11:30pm; or by appointment

Academic Calendar Entry

Advanced exercise prescription considerations for individuals with chronic conditions and special populations (e.g., pediatric, aging). [3-2-0] *Prerequisite: HES 352. Registration limited to students in the Clinical Exercise Physiology concentration of the B.H.E.S program.*

Class Schedule (*all times in Pacific Daylight/Standard Time; local time Kelowna, BC*):

- **LECTURE [ART 374]:** Mondays & Wednesdays: 3:30pm – 5:00pm
- **LAB [UCH 109]:** Fridays, 10:00am – 12:00pm

Course Format

The course combines lecture and laboratory components to achieve the learning objectives. Lectures will focus on the physiological, psychological and operational considerations of exercise prescription and program design in clinical populations and provide an overview of current guidelines and recommendations for exercise and physical activity for the prevention, treatment and management of chronic conditions. Labs will provide experiential learning opportunities for students to design, implement and adapt exercise prescriptions, based on care provider referrals, client status, needs, goals and responses to the program.

Course Delivery

LECTURE: Lectures will be delivered **in-person**, with some asynchronous learning phases to complement lecture sessions. Lectures will be hosted in the above room location, unless otherwise noted, and will begin at the scheduled class times. These sessions will also be recorded and uploaded to the course website for students who cannot attend. In the cases of Asynchronous lesson delivery, a pre-recorded lesson or linked video will be posted prior to the scheduled class and students may access that lesson at their preferred time, prior to the subsequent lesson.

LABORATORY: Laboratory sessions will be conducted **in-person** and will begin at the start of students' scheduled laboratory section time. Attendance is mandatory for laboratory sessions unless illness or excused absence (approved by course instructor) precludes student attendance.

OPEN LAB: Optional "open lab" times will be provided through the term (may include some weekend days, and other off-schedule days) to provide students opportunities to enhance practical skills using specialized equipment. Students may be required to sign-up for these sessions and conduct themselves in the same professional manner as other course-related activities. More information will be provided through the term.

Required Readings and Videos

- Bayles, M. P. (2024). *ACSM's Exercise Testing and Prescription*. Wolters Kluwer.
- Liguori, G., Feito, Y., Fountaine, C., & Roy, B. (2022). *ACSM's guidelines for exercise testing and prescription*. (11th Ed). Wolters Kluwer.
- Other Required Resources will be provided through the term.



Recommended Readings

- Readings will be provided during the term, as supplemental resources for learning
- Gordon, B., Chambliss, H., Durstine, J., Jett, D., & Ross, L. (2021). *ACSM's Resources for the Exercise Physiologist: A practical guide for the health fitness professional* (3rd Ed.). Wolters Kluwer.
- Canadian Society for Exercise Physiology – Physical Activity Training for Health (CSEP-PATH). Canadian Society for Exercise Physiology.
- Gibson AL, Wagner DR & Haywood VH (2018) *Advanced Fitness Assessment and Exercise Prescription* 8th Edition. Human Kinetics.

Course Overview, Content, and Objectives

The course is designed to advance student understanding and skill in exercise prescription and integrate the pathophysiological and health-specific needs of individuals with one or more chronic conditions in the design of exercise programs and lifestyle interventions. The learning objectives are:

- To introduce students to current standards, guidelines and recommendations for exercise programming and rehabilitation across various chronic conditions.
- To advance student application of the principles of exercise training and prescription to individuals at risk of, or with chronic conditions.
- To facilitate student appreciation and understanding of a client-centered approach to exercise and training program design, implementation and appraisal, and support student competence in exercise monitoring and decision-making for safe and effective exercise prescription.

Learning Outcomes

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

1. Evaluate current standards and recommendations for exercise and rehabilitation for key chronic conditions and critique additional evidence-based approaches to exercise prescription and rehabilitation.
2. Describe effective implementation strategies for exercise prescription, including exercise training sequencing, goal setting, principles of exercise prescription, as it applies to components of fitness and health (e.g. cardiorespiratory endurance, skeletal muscle strength and endurance, flexibility training, body composition) and considers relevant personal, clinical and environmental factors.
3. Design exercise prescriptions for individuals at risk of, and with chronic conditions based on patient history, clinical status and goals, assessment results, resources available, location of training, medications, comorbidities, and chronic condition considerations.
4. Design & implement safe and effective individual exercise sessions for individuals with chronic conditions and special considerations including appropriate warm-up, main sets and cool down, and in consideration of the sequencing, timing, and progression within the overall training intervention.

Course Assessments	[% of grade]	LEARNING OUTCOMES
Participation	[Pass/Fail]	
Reflections (2 x 2.5%)	[5%]	LO1, LO2
Warm-up Project (5%)	[5%]	LO3, LO4
Tests (15% + 20%)	[35%]	LO1, LO2, LO3
Integrated Interview & Rx Project	[20%]	LO1, LO2, LO3, LO4
Practical Final Exam	[35%]	LO2, LO4



Course Schedule (subject to modification of topics & timelines)

Session	Day	Date	Topic	Resources	Assessment	
1	1 LEC	Monday	06-Jan-25	General Principles of Exercise Prescription	ACSM's ETP: Chpt 8	
	2 LEC	Wednesday	08-Jan-25	General Principles of Exercise Prescription		
	I LAB	Friday	10-Jan-25	Goal Setting and Clinical Exercise Prescription		
2	3 LEC	Monday	13-Jan-25	Special Considerations in ExRx Across the Lifespan	ACSM's ETP: Chpt 9	
	4 LEC	Wednesday	15-Jan-25	Special Considerations in ExRx Across the Lifespan		
	II LAB	Friday	17-Jan-25	Aerobic Training (Continuous & Intervals)		
3	5 LEC	Monday	20-Jan-25	ExRX in CVD I	ACSM's ETP: Chpt 10	
	6 LEC	Wednesday	22-Jan-25	ExRX in CVD II	ACSM's ETP: Chpt 11	
	III LAB	Friday	24-Jan-25	Resistance Training - Strength and Power		
4	7 LEC	Monday	27-Jan-25	ExRX in CVD III	ACSM's ETP: Chpt 12	
	8 LEC	Wednesday	29-Jan-25	ExRX in CVD IV	ACSM's ETP: Chpt 13	
	IV LAB	Friday	31-Jan-25	Balance-focused sessions for older adults		
5	9 LEC	Monday	03-Feb-25	ExRX in Endocrine & Metabolic Conditions I	ACSM's ETP: Chpt 14-15	
	10 LEC	Wednesday	05-Feb-25	ExRX in Endocrine & Metabolic Conditions II	ACSM's ETP: Chpt 18	
	V LAB	Friday	07-Feb-25	Weight loss programming and sessions		Reflection 1 Due
6	11 LEC	Monday	10-Feb-25	Review and Midterm Prep		
	12 LEC	Wednesday	12-Feb-25	TEST #1		Test
	VI LAB	Friday	14-Feb-25	Integrating modalities in training sessions		
		Monday	17-Feb-25	READING BREAK (no classes)		
		Wednesday	19-Feb-25			
		Friday	21-Feb-25			
7	13 LEC	Monday	24-Feb-25	ExRX in Respiratory Conditions I	ACSM's ETP: Chpt 16-17	
	14 LEC	Wednesday	26-Feb-25	ExRX for Chronic Pain	ACSM's ETP: Chpt 19	
	VII LAB	Friday	28-Feb-25	Leading sessions with multiple goals		<i>Warm-Up Project</i>
8	15 LEC	Monday	03-Mar-25	ExRX for Cancer	ACSM's ETP: Chpt 20	<i>WU Proj Ongoing</i>
	16 LEC	Wednesday	05-Mar-25	ExRX for Bone Health	ACSM's ETP: Chpt 21	
	VIII LAB	Friday	07-Mar-25	CLIENT INTERVIEW & CASE ANALYSIS		<i>Interview Practical</i>
9	17 LEC	Monday	10-Mar-25	ExRX for Psych Health	ACSM's ETP: Chpt 22	
	18 LEC	Wednesday	12-Mar-25	ExRX for Physical & Intellectual Disabilities	ACSM's ETP: Chpt 23	
	IX LAB	Friday	14-Mar-25	Leading Small-Group Training Sessions		
10	19 LEC	Monday	17-Mar-25	Critiquing research for practice		
	20 LEC	Wednesday	19-Mar-25	Remote management, CEP technology		
	X LAB	Friday	21-Mar-25	Virtual Training & Remote Programming		
11	21 LEC	Monday	24-Mar-25	Safety considerations and training environments		
	22 LEC	Wednesday	26-Mar-25	Principles of multimorbidity management		
	XI LAB	Friday	28-Mar-25	Program Integration and Progress Monitoring		<i>Warm-Up Project</i>
12	23 LEC	Monday	31-Mar-25	Review session		Reflection 2 Due
	24 LEC	Wednesday	02-Apr-25	TEST #2		Test
	XII LAB	Friday	04-Apr-25	Final Exam Practice Session		
13	25 LEC	Monday	07-Apr-25	Special Topics		
	26 LEC	Wednesday	09-Apr-25	Special Topics		RX Project Due
		No Class	11-Apr-25	Final Exam Lab (Individual Exercise Prescription)		Final Practical Exam
			<i>Final Exam Period (Apr 11-26)</i>	Final Exam Lab (Individual Exercise Prescription)		



Course Assessment Details:

Below are brief descriptions of the assessments involved in this course, including course weighting, assessment topics and estimates of time required to complete the assessment (these are estimates to help guide work requirements, however individual students may require more or less time). Due dates of assignments below are approximate and are subject to change based on course progression to permit students appropriate time for completion. Further information for each assessment will be provided during the course.

Reflection Assignments (5%)

Description: Two short reflective assignments that encourage students to critically analyze course material and/or their experiences in practical learning and integrating professional practice, as well as connecting exercise prescription principles to real-world applications. Specific prompts will be provided through the term for each reflection.

Due: Reflection 1 (Feb 7) and Reflection 2 (Mar 31).

Test #1 and Test #2 (35% Total)

Description: **Test #1 (15%):** Covers foundational principles of exercise prescription, goal setting, and special considerations across the lifespan. **Test #2 (20%):** Focuses on advanced concepts such as exercise prescription for chronic conditions, integrating modalities, and multimorbidity management.

Dates: Test #1 (Feb 12) and Test #2 (Apr 2).

Warm-Up Project (5%)

Description: Students design and lead a warm-up session tailored to a specific client goal or population. The general description and/or goals for the warm up will be provided during the term, but will evaluate student design and leadership of a warm up or cool down given a particular scenario and environment setting. Includes a written summary and practical delivery during lecture or lab.

Due: At assigned date, February 28 - March 28.

Integrated Interview & Clinical Exercise Prescription (Rx) Project (20%)

Description: A two-part project that assesses communication, client assessment, and program design skills. where students: i) Conduct a simulated client interview to gather health, fitness, and lifestyle information (March 7); ii) Develop a comprehensive exercise prescription report (due April 9) that addresses the appropriate training targets to support the client towards their goals and considers aspects of their condition, lifestyle, limitations, medical management and other components.

Participation (Pass/Fail)

Throughout the term, students will be asked to participate as a community of learners, contributing to the ongoing evolution of course material, of peer learning, of interpersonal discourse and peer feedback. Class participation is especially valuable during practical laboratory sessions, where students will work together to conduct activities and experiments to promote learning. Therefore, full attendance and active participation in laboratory activities is required for course completion (exceptions may be granted for students with excused absences). A grade of Pass / Fail will be given for attendance and active participation (e.g., volunteering as a participant, leading measurements, contributing to group discussions, safe and professional conduct) in laboratory sessions through the term.

Due: Ongoing

Final Practical Exam (35%)

Description: A hands-on, individualized exercise prescription implementation where students demonstrate their ability to: i) Apply theoretical knowledge to practical scenarios; ii) Safely and effectively lead a client through a tailored exercise program; iii) Adapt and monitor exercises as needed during the session.

Date: End of Term & Final Exam Period (April 11-26).



Late policy

Assignment deadlines are established to support your continued sequential and progressive learning. At the same time, we acknowledge that there are sometimes unforeseen circumstances that preclude our ability to meet those deadlines. Please inform your instructor of any late submissions, or to seek approval for an extension if needed; refer to the policies for the School of Health & Exercise Sciences (including Self-Declaration policy). With respect to these principles, the following policies apply to these evaluations:

- Assignments will be subject to a late penalty of 5% for the first 24 hours and 10% per day up to 10 days. Assignments submitted after 10 days will be given a grade of zero.
- Regrading of marked assignments will only be performed up to 10 days after an assessment has been marked, and after a reasonable course of action has been taken (e.g., reviewed the assignment rubric, discussed with the instructor, reflected on the answers, support for alternative marking) at which point another teaching member or third party will mark the assignment.

Missed exam policy

If students anticipate the need for rescheduling of a midterm ahead of time (for a reason outlined in the SHES policies), they must make a request to their instructor as early as possible (at least 2 weeks prior). If a midterm is *missed* for medical or other reasons outlined in the SHES policies, students must inform their instructor and request a new date for writing as soon as reasonably possible. The instructor will work with you to determine the best course of action. If you have missed an assessment, it is important that you do not discuss the missed exam with students who have completed the exam, as this constitutes a form of Academic Misconduct. Please note, no re-writes (writing an assessment more than once) will be permitted and requests for moving of a midterm date may or may not be approved. Final exam is addressed below.

Missed Activity Policy:

Throughout the term, students will be asked to participate as a community of learners, contributing to the evolution of course material, peer learning, interpersonal discourse and feedback. Class participation is especially valuable during tutorial sessions, where students will work together to conduct activities that promote learning. Therefore, **full attendance and active participation in laboratory activities is required for course completion** (exceptions may be granted for students with excused absences). A mark of Pass / Fail will be given for attendance and active participation (e.g., contributing to group discussions, safe and professional conduct) in tutorials through the term. *There is a 10% deduction from the total course mark for every unexcused absence to tutorial sessions.* If you are sick or have another unforeseen issue arise, please contact your instructor as soon as possible so that other accommodations may be made.

Generative Artificial Intelligence Use in this Course:

The use of generative AI tools, including ChatGPT and other similar tools, to complete or support the completion of any form of assignment or assessment in this course is not allowed and would be considered academic misconduct.

Passing/Grading Criteria

You must achieve an overall grade of at least 50% and pass the Final Practical Exam in order to pass this course. Individual assessments will have their own grading rubrics and criteria, please ensure you understand their policies through the term.

Learning Resources

Open Lab: In this course, you will be assessed on your competence in a series of skills that relate to exercise testing. In order to support your learning of these practical skills, you be provided opportunities both in-lab and optional (Open Lab) time outside of scheduled lab sessions. To engage in these 'Open Lab' sessions, you may need to sign up, come to UCH with another student in the class, and use the equipment responsibly to practice. A staff member will be present, but will not be leading a session; they will ensure safe practice and may provide feedback to you in your skills. You will need to follow the standard laboratory regulations during Open Lab times.



Estimated Coursework Time:

Quality of learning is more important than quantity; every student learns differently and requires different time to learn and complete tasks, but these estimates highlight some expectations of time required to support your learning.

- *Lecture:* 160mins / week
- *Laboratory:* 120mins / week
- *Reading:* 60mins / week
- *Practice Skills:* 60mins / week
- *Assignments, Study:* 30mins / week

TOTAL COURSE TIME: ~7-9 hrs / week (4.3 independent, 4.6 scheduled time)

Additional UBC-Okanagan Policies

Policies and Regulations

Visit [UBC Okanagan's Academic Calendar](#) for a list of campus-wide regulations and policies, as well as [term dates and deadlines](#).

UBC Values

UBC creates an exceptional learning environment that fosters global citizenship, advances a civil and sustainable society, and supports outstanding research to serve the people of British Columbia, Canada, and the world. UBC's core values are excellence, integrity, respect, academic freedom, and accountability.

Final Examinations

You can find the [Senate-approved term and examination dates here](#). Except in the case of examination clashes and hardships (three or more formal examinations scheduled within a 27-hour period) or unforeseen events, students will be permitted to apply for out-of-time final examinations only if they are representing the University, the province, or the country in a competition or performance; serving in the Canadian military; observing a religious rite; working to support themselves or their family; or caring for a family member. Unforeseen events include (but may not be limited to) the following: ill health or other personal challenges that arise during a term and changes in the requirements of an ongoing job.

Further information on Academic Concession can be found under Policies and Regulation in the Okanagan Academic Calendar <http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,48,0,0>

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 usually result in a failing grade or mark of zero on the assignment or in the course.** Careful records are kept to monitor and prevent recidivism. A more detailed description of academic integrity, including the University's policies and procedures, found in the [Academic Calendar](#).

Academic Misconduct

The academic enterprise is founded on honesty, civility, and integrity. Violations of academic integrity (i.e., [academic 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 for consideration for academic discipline. Careful records are kept to monitor and prevent recurrences. Any instance of cheating or taking credit for someone else's work, whether intentionally or



unintentionally, can and often will result in at minimum a grade of zero for the assignment, and these cases will be reported to the Head of the Department and Associate Dean Academic of the Faculty.

Grading Practices

Faculties, departments, and schools reserve the right to scale grades in order to maintain equity among sections and conformity to University, faculty, department, or school norms. Students should therefore note that an unofficial grade given by an instructor might be changed by the faculty, department, or school. Grades are not official until they appear on a student's academic record.

<http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,41,90,1014>

Student Service Resources

Walk-In Well-Being Clinic

The Walk-In Well-Being clinic offers no-fee, brief, single-session psychological services. Sessions are led by a doctoral student in clinical psychology and supervised by a registered psychologist (UBCO Faculty member). Clinicians can provide support with stress management, sleep, self-care, depression, anxiety, interpersonal issues, substance misuse, coping with academic demands/stressors, and provide options for connecting to additional resources. Virtual or in-person sessions are available at the UBCO Psychology Clinic, located in ASC 167 with or without an appointment, on Tuesdays and Thursdays between 10 am and 3 pm from September to June, excluding campus closures.

UNC 337 250.807.8421 (ext. 1)

Email: ipc.ok@ubc.ca

Web: <https://psych.ok.ubc.ca/psychology-clinic/walk-in-wellness/>

Student Supports, Resources & Campus Services

Visit the [Student Support and Resources page](#) to find one-on-one help or explore resources to support your experience at UBC Okanagan, as well as many other campus services available to all students.

Advising Options

Visit the [Advising Options page](#) to find out about the variety of advising options available to students including but not limited to academic, career and accessibility.

Safewalk

Don't want to walk alone at night? Not too sure how to get somewhere on campus? Call Safewalk at 250-807-8076. **Web:** www.security.ok.ubc.ca