THE UNIVERSITY OF BRITISH COLUMBIA

School of Health and Exercise Sciences
HES 482: Advanced Training Methods

Instructor: Liam Stewart
Office: ART 127
Office hours: By Appointment / TBD
Email: liam.stewart@ubc.ca (*primary contact via Course Canvas email*)

TA: Lauren Maier
Email: laurenm7@student.ubc.ca

Academic Calendar Entry

Advanced theory and applications of exercise physiology and training methodology to the conditioning process for sport and physical activity. Formerly offered as HMKN_O 409. Credit will be granted for only one of HES_O 482 or HMKN_O 409. [3-0-0]
Prerequisite: all of HES_O 201, HES_O 211, HES_O 212.

Class Schedule: Mondays & Wednesdays: 3:30pm – 5:00pm in EME 1101

Course Format

This is a lecture-based course designed to allow students to extend their knowledge of the practical applications of exercise physiology to the conditioning process. Students will apply human physiology to training for performance sport and athletic competition. Practical sessions may occur throughout the semester and will be announced; however, there is no official laboratory component to this course. Following this course, students will be able to plan, execute and evaluate an exercise science intervention for a chosen sport or activity. This is not a course on health-related fitness appraisal and exercise prescription.

Course Delivery

This course will be delivered in-person using primarily synchronous learning sessions. Lectures will begin at the designated course time, in-person at the specified location. Attendance to class is expected to promote improved learning, though it is not graded/required.

Course Overview, Content, and Objectives

The aim of this course is to provide students with an opportunity to extend their knowledge of the practical applications of exercise physiology to the conditioning process for improving human performance. It is designed to allow students to plan, execute and evaluate an exercise science intervention for a chosen sport or activity.

Learning Outcomes

After successfully completing this course, students should be able to:

1) Demonstrate a clear understanding of the theory and application of selected principles of training for high-performance sport and athletic competition.
2) Apply selected training methods in the design of individual and team sport athlete training programs.
3) Evaluate the effectiveness of monitoring systems and data acquisition and their application to improving human performance.
4) Critically evaluate the effectiveness of various training methodologies.

Evaluation Criteria and Grading

- Midterm *[LO1]* 40%
- Final Exam *[LO1, LO2, LO3, LO4]* 60%

Course Schedule *(subject to adjustment through term)*

	Topics	UNIT
Week 1 Jan 5 & 7	1. Course Introduction 2. Introduction to Training for Performance	***I**: Athletic Performance & Training Theory*
Week 2 Jan 12 & 14	3. Evaluating Performance Demands 4. Assessing Athletic Capabilities	***I**: Athletic Performance & Training Theory*
Week 3 Jan 19 & 21	5. Principles of Training I 6. Principles of Training II	***I**: Athletic Performance & Training Theory*
Week 4 Jan 26 & 28	7. Muscle Structure Basis for Performance 8. Neuromusuclar Basis for Performance	***II**: Physiological Basis for Performance*
Week 5 Feb 2 & 4	9. Physiological Basis for Performance 10. Cardiopulmonary Basis for Performance	***II**: Physiological Basis for Performance*
Week 6 Feb 9 & 11	11. Review for Midterm Exam 12. **Midterm Exam**	***Midterm Exam***
Week 7 Feb 16 & 18	***READING BREAK***	
Week 8 Feb 23 & 25	13. Review completed Midterm Exam 14. Energy Systems Development	***III:** Training Methods*
Week 9 Mar 2 & 4	15. Training for Endurance Sport 16. Training for Anaerobic Sport	***III:** Training Methods*
Week 10 Mar 9 & 11	17. Training for Strength, Power, and Speed 18. Periodization I	***IV**: Periodization and Program Design*
Week 11 Mar 16 & 18	19. Periodization II 20. Programming for Individual Sports	***IV**: Periodization and Program Design*
Week 12 Mar 23 & 25	21. Programming for Team Sports 22. Monitoring Training Responses I	***V**: Monitoring Training*
Week 13 Mar 30 & Apr 1	23. Monitoring Training Responses II 24. RED-S, Energy Availability and Performance Risk	***V**: Monitoring Training*
Week 14 Apr 6 & 8	No Class 25. Review for Final Exam	***Final Exam Prep***
Apr13-24	***Final Exam Period***	*(Date TBD)*

Required Resources:

- Required readings, videos and other resources will be provided through the term, which will support the content of lecture material and may be used in evaluations of course knowledge/understanding
- There is no required textbook for this course

Recommended Resources:

- To be assigned during the course in alignment with individual lessons.
- Joyce, D, and Lewindon (2022). *High-Performance Training for Sports (2nd edition).* Human Kinetics.
- Bompa, T. O., & Buzzichelli, C. (2019). *Periodization: Theory and methodology of training (6th edition)*. Human Kinetics.
- Inigo Mujika (2023). *Endurance Training - Science and Practice (2nd edition).*

Course Assessment Details:

Midterm
Following the completion of Units I & II, students will complete a written test related to the respective topics. Midterm will be completed on paper during class time (Feb 11th), and students will be provided approximately 80 minutes to complete the midterm assessment. The midterm exam will consist of multiple choice and short answer questions.
Course Weight: 40%
Date: February 11, 2026

Final Exam
A cumulative final examination will be completed during the UBCO final exam period. This exam will be comprised of material covered throughout the term, including course lessons, required readings, and other ancillary resources as assigned through the term. The final exam will be completed in-person, via paper-and-pen format and all other UBCO policies for exams apply. The final exam will consist of multiple choise, short answer, and case-study based questions requiring interpretation of physiological and training data.
Course Weight: 60%
Due Date: To Be Announced

Final Examinations
The examination period for Term 2 of Winter 2025-2026 session is April 13-24 inclusive. Except in the case of examination clashes and hardships (three or more formal examinations scheduled within a 24-hour period) or unforeseen events, students will be permitted to apply for our-of-time final examinations only if they are representing the University, the province or the country in a competition or performance; serving 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 can be found under Policies and Regulation in the *Okanagan Academic Calendar* https://okanagan.calendar.ubc.ca/?tree=3,48,0,0

Academic Integrity
The academic enterprise is founded on honestly, 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.

A more detailed description of academic integrity, including the University's policies and procedures, may be found in the Academic Calendar at http://okanagan.students.ubc.ca/calendar/index.cmf?tree=3,54,111,0

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 the faculty, department, or school might change an unofficial grade given by an instructor.

Grades are not official until they appear on a student's academic record.
http://www.calendar.ubc.ca/okanagan/index.cmf?tree=3,41,90,1014

Student Service Resources

UBC Okanagan Disability Resource Centre
The Disability Resource Centre ensures educational equity for students with disabilities and chronic medical conditions. If you are disabled, have an injury or illness and require academic accommodations to meet the course objectives, please contact Earllene Roberts, the Diversity Advisor for the Disability Resource Centre located in the University Centre building (UNC 214).
UNC 214 250.807.9263
email: earllene.roberts@ubc.ca
Web: www.students.ok.ubc.ca/drc

UBC Okanagan Equity and Inclusion Office
Through leadership, vision, and collaborative action, the Equity & Inclusion Office (EIO) develops action strategies in support of efforts to embed equity and inclusion in the daily operations across the campus. The EIO provides education and training from cultivating respectful, inclusive spaces and communities to understanding unconscious/implicit bias and its operation within in campus environments. UBC Policy 3 prohibits discrimination and harassment on the basis of BC's Human Rights Code. If you require assistance related to an issue of equity, educational programs, discrimination or harassment please contact the EIO.
UNC 216 250.807.9291
email: equity.ubco@ubc.ca
Web: www.equity.ok.ubc.ca

Health & Wellness
At UBC Okanagan health services to students are provided by Health and Wellness. Nurses, physicians and counsellors provide health care and counselling related to physical health, emotional/mental health and sexual/reproductive health concerns. As well, health promotion, education and research activities are provided to the campus community. If you require assistance with your health, please contact Health and Wellness for more information or to book an appointment.
UNC 337 250.807.9270
email: healthwellness.okanagan@ubc.ca
Web: www.students.ok.ubc.ca/health-wellness

Student Learning Hub
The Student Learning Hub (LIB 237) is your go-to resource for free math, science, writing, and language learning support. The Hub welcomes undergraduate students from all disciplines and year levels to access a range of supports that include **tutoring in math, sciences, languages, and writing, as well as help with study skills and learning strategies**. For more information, please visit the Hub's website (https://students.ok.ubc.ca/student-learning-hub/) or call 250-807-9185.

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