



KNES-110 – Foundations of Exercise and Physical Fitness

Health and Human Services

Effective Term & Year: Winter 2026
Course Outline Review Date: 2031-09-01

Program Area: Health

Description:

This course introduces students to the foundations of physical fitness, exercise, and human physiology as applied to exercise management, prescription, and their relationship to a healthy lifestyle. The focus will be on the components of fitness and basic training principles, including theory and practice of fitness development through progressive resistance exercise, aerobic fitness, and flexibility. We will explore these components through both traditional fitness methods and current trends in the industry. A portion of the course content is based on the Canadian Fitness Education Service (CFES) Weight Training Instructor Course. Following completion, students may have the opportunity to become a CFES Certified Weight Training Instructor.

Program Information:

This is a required course in the Kinesiology Certificate and Diploma Program and may be used as an elective for students in other disciplines.

Delivery Methods: On-campus (Face-to-Face)

Credit Type: College of the Rockies Credits

Credits: 3

Course type/s: Sciences, Social Sciences, Lab Sciences

Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	30
Seminar/Tutorials	
Laboratory/Studio	30
Practicum/Field Experience	
Co-op/Work Experience	
Other	
Total	60

Course Requisites:

- Complete 1 of the following
 - Earned a minimum grade of D (50%) in at least 1 of the following:
 - [KNES190](#) – Human Anatomy (3)
 - [KNES200](#) – Functional Anatomy & Physiology 1 (3)
 - Or instructor permission for those who have a National Fitness Leadership Alliance affiliated Fitness Knowledge course.

Prior Learning and Recognition: Yes

Students are able to request formal recognition of their prior learning or experience outside the classroom. Challenge examination, portfolio-assisted assessment, work-based assessment or a combination of assessments that is appropriate to identify, assess, and recognize prior skills, competencies, and knowledge to achieve course credit. Tuition fees apply, refer to [Policy 2.5.5 Prior Learning Assessment and Recognition \(PLAR\)](#) or contact an education advisor for more information.

Course Transfer Credit:

For information about receiving transfer credit for courses taken at either British Columbia or Alberta institutions, please see <https://www.bctransferguide.ca/> or <https://transferalberta.alberta.ca> . For more transfer credit information, please visit <https://www.cotr.bc.ca/Transfer>

All requests for course transfer credit from institutions in British Columbia or elsewhere should go to the College of the Rockies Enrolment Services office.

Textbook Resources:

Textbook selection varies by instructor and may change from year to year. At the Course Outline Effective Date the following textbooks were in use:

Canadian Fitness Education Services (Ed.). (2018). *CFES Personal trainer course resource manual (2nd ed.)*. Canadian Fitness Education Services Ltd.

Pickering, J. (2025). *KNES 110 Logbook and lab manual*. In J. Pickering (Ed.) *KNES 110: Foundations of exercise and physical fitness*. College of the Rockies.

Please see the instructor's syllabus or check COTR's online text calculator <https://textbook.cotr.bc.ca/> for a complete list of the currently required textbooks.

Learning Outcomes:

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

- explain the relationships between physical activity, fitness and health;
- use relevant terminology related to physical activity, fitness and exercise;
- participate in basic fitness tests and evaluate the results;
- design, implement, and evaluate health-related fitness training programs;
- measure and calculate heart rates, training intensities and body composition;
- perform various cardiovascular, resistance and flexibility exercises;
- demonstrate safe use of exercise equipment;
- analyze exercises, identifying the muscles, joints and movements involved;
- identify unsafe exercise techniques and provide safer alternatives;
- teach exercises to others using the 3Ds (describe, demonstrate, do), and provide corrective feedback;
- design personalized exercise programs using SMART goals and the F.I.T.T. principle;
- apply appropriate leadership for adult learners;
- provide basic nutrition guidance based on Canada's Food Guide;
- pre-screen individuals for exercise readiness; and
- recognize the CFES scope of practice and when to refer to other professionals.

Course Topics:

Introduction to Physical Activity, Fitness

- Differences between physical activity, exercise and fitness
- Relationship between physical activity and health
- 24 hour movement guidelines

Behaviour Change

- Transtheoretical model of behaviour change
- Barriers to exercise & physical activity
- Goal setting (SMART goals)

Fitness Evaluation

- Health based fitness assessment
- Self-testing & analysis

Fitness Component Overview

- Health-related components of fitness (aerobic endurance, flexibility, muscular strength/endurance, body composition)
- Performance related components of fitness (speed, agility, balance, coordination)

Exercise Prescription Principles

- General training principles including the F.I.T.T. Principle
- Exercise prescription: Cardiorespiratory endurance
- Exercise prescription: Muscular strength and endurance
- Exercise prescription: Flexibility
- Exercise prescription: Body composition
- Exercise prescription: Performance

Resistance Training

- Equipment use
- Stabilization and posture during exercise
- Exercises for each muscle group
- Proper exercise and spotting technique
- Proper breathing techniques

Nutrition, Weight Management, and Physical Activity

- Nutrition, health and physical activity
- Canada food guide
- Body composition components and measurements

Exercise Instruction

- Adult learners
- Participant-centered teaching
- Exercise demonstration, description
- Exercise analysis
- Client monitoring
- Correction/feedback

Exercise Safety

- High risk exercises
- Exercise modification
- Maintaining a safe environment

Program Planning and Exercise Prescription

- Informed consent
- Health pre-screening (GAQ)
- Client consultation
- Workout components
 - Warm-up
 - Cardiovascular training
 - Resistance training
 - Core specific training
 - Cool-down
- Program design
 - Sets, repetitions, resistance
 - Exercise ordering
 - Exercise selection
- Program monitoring and adherence
- Client-specific exercise prescription
- Creating a balanced workout

Professionalism

- Written, verbal and non-verbal communication
- Scope of practice

Current Fitness Trends

- Topics may include: wearable technology, functional training, high intensity interval training (HIIT), kettlebell training, tabata, yoga etc.

Calculations

- Maximal heart rate
- Heart rate training zones
- Predicted 1 repetition maximum
- Body composition- weight loss, weight gain, body mass index, metabolic rates

See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.

Evaluation and Assessments

Assessment Type: On-Campus (face-to-face)

Assessment Type	% of Total Grade
Assignments	55%
Midterms	20%
Final Exam	25%
Total	100%

Grade Scheme

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>=90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	<50

Evaluation Notes: A grade of “D” grants credit, but may not be sufficient as a prerequisite for sequential courses.

Exam Attendance:

Students must attend all scheduled exams at the appointed time and place. Instructors may approve an alternate exam to accommodate an illness or personal crisis. Department heads will consider other written requests. Any student who misses a scheduled exam without prior approval will receive a “0” on the exam.

Academic Policies:

College of the Rockies policies related to courses can be found at <https://cotr.bc.ca/about-us/college-policies/> and include the following:

- Policy 2.1.4 Course Audit
- Policy 2.4.1 Credential Framework
- Policy 2.4.3 Students with Documented Disabilities
- Policy 2.4.4 Student Rights, Responsibilities and Conduct
- Policy 2.4.8 Academic Performance
- Policy 2.4.9 Student Feedback and Concerns
- Policy 2.4.11 Storage of Academic Works
- Policy 2.5.3 Student Appeal
- Policy 2.5.5 Prior Learning Assessment and Recognition (PLAR)

Course Changes:

The College of the Rockies updates course outlines regularly to meet changing educational, employment and marketing needs. The instructor will notify students in writing of any updates to this outline during the semester. The instructor reserves the right to revise, add or delete material while meeting the learning outcomes of this course outline.

