

# Nutrition, Exercise and Sports

## Course Syllabus

<https://courses.edx.org/courses/course-v1:WageningenX+NUTR107x+1T2022/course/>

## Topic

Nutrition is crucial to live an active and healthy life, to support training, and to optimize performance. In this course, researchers and teachers from Wageningen University & Research will familiarize you with the nutritional aspects of exercise and sports. What are the basic concepts in exercise physiology and sport nutrition science? How is exercise being fuelled for the different types of sports like; power sports, sprinting and endurance exercise? And how does protein support skeletal muscle mass and performance? In this course you will learn to estimate energy needs and understand thermoregulation and fluid balance. You will learn about the role of micronutrients and supplements in exercise performance. Moreover, you will be introduced to some health issues related to doing exercise.

This course also touches upon how the lessons learned from nutrition and sports research can be applied during ageing. For example, what are the benefits of extra protein in vulnerable age groups? Be aware that this course will not tell you exactly what to eat. Instead, you will learn and understand the nutritional aspects of exercise and sport, so you can make your own informed decisions and critically evaluate nutritional advices and claims.

## Learning Outcomes

After successful completion of this course, you will be able to:

- Mention the key concepts of exercise physiology and sports nutrition science;
- Know and understand the important nutritional aspects of exercise including energy, carbohydrates & fats, protein metabolism and fluid balance;
- Explain why certain nutritional strategies can enhance exercise and sports performance;
- Know the role of micronutrients and supplements in exercise and sports;
- Understand the relationship between exercise, nutrition and health, also during ageing;
- Apply your developed critical mind-set in the field of nutrition, exercise and sports.

## Level & Prerequisites

The level of the course is intermediate. If you have no basic knowledge about nutrition yet, we would recommend you to join the MOOC [Nutrition and Health: Macronutrients and Overnutrition](#) first. The MOOC [Nutrition and Health: Micronutrients and Malnutrition](#) could also serve as a valuable preparation.

## Time Commitment

The course consists of six modules with a study load of approximately six hours per module.

# Course Structure

## Module 1: Introduction to Sport Nutrition Science

In this module, you will be introduced to Sport Nutrition Science. You will learn about different types of sports, the diet of an athlete, the basics of conducting research and how to critically reflect on evidence from literature.

## Module 2: Skeletal Muscle, Exercise and Sports

In this module, we dive into the question: 'What happens during exercise'. You will learn what skeletal muscles look like, how they are built and how they operate when you move. Also, you will learn which energy systems there are and which of these are predominantly used in each of the different types of sports.

## Module 3: Energy and Fluid

This module is all about energy and fluid. You will learn how much energy you use and need, and how to measure energy intake. But also: what happens if there is not enough energy available in your body? And how does your body make sure that you do not overheat? And, linked to that, how much fluid should you drink when exercising?

## Module 4: Macronutrients

This module is very much about nutrition. It will give you insights into how macronutrients can support training and contribute to improving performance.

## Module 5: Micronutrients and Ergogenic Supplements

In this module, we dive into the question: 'What are micronutrients and ergogenic supplements?'. You will learn why athletes need micronutrients, why athletes are sometimes more at risk for deficiencies, and which micronutrients are of extra interest for athletes. Also, you will learn what ergogenic supplements are and what athletes need to do before they consider using them.

## Module 6: Exercise, Nutrition and Healthy Ageing

In this module, you are going to embark on an exciting journey, which is aimed to answer the following question: 'Can we apply what we learned during this course in later stages in our lives?' Proper exercise training and nutrition leads to high levels of physical performance in young people. Can we use it to forever solve age-related declines in physical performance?

# Important Dates

EVENT	DATE	TIME*
Opening course Module 1-4	1 March 2022	17:00 UTC
Due date exams	23 August 2022	17:00 UTC
Closing course		

\* Please be aware that these are UTC times; check what time this is for your time zone.

## Grading Policy

For those of you who are taking the course to obtain a Verified Certificate, a minimum grade of 60% is required. Each exam contributes 33% to your overall grade. The graded exams are only available to learners in the verified track.

MODULE	EXAMINATION TYPE	EXAMINATION WEIGHT
Module 3	Module Exam	33%
Module 5	Module Exam	33%
Module 6	Module Exam	33%

## Academic Policy

We expect each student to complete the module exams on their own, not in collaboration with other students.

## Discussion Forum Participation

As a learner of this course you are part of a diverse learning community that is at the heart of a meaningful learning experience. The discussion forum is an essential part of this online course. In some assignments you are asked to discuss your findings on the forum with other learners. Moderators and/or instructors are participating in the forum to help facilitate an effective dialogue and support the discussion forum guidelines. If you are new to our online courses, please take a moment to read the [discussion guidelines](#).